

CHEVRON REFINERY MODERNIZATION PROJECT

ENVIRONMENTAL IMPACT REPORT

CONSOLIDATED VERSION - VOLUME 2: DRAFT EIR APPENDICES
OCTOBER 2015

STATE CLEARINGHOUSE NO. 2011062042



LEAD AGENCY

CITY OF RICHMOND
450 CIVIC CENTER PLAZA
RICHMOND, CA 94804



CHEVRON REFINERY MODERNIZATION PROJECT

ENVIRONMENTAL IMPACT REPORT

CONSOLIDATED VERSION - VOLUME 2: DRAFT EIR APPENDICES
OCTOBER 2015

STATE CLEARINGHOUSE NO. 2011062042

LEAD AGENCY

CITY OF RICHMOND
450 CIVIC CENTER PLAZA
RICHMOND, CA 94804



TABLE OF CONTENTS

VOLUME 1: DRAFT ENVIRONMENTAL IMPACT REPORT (UNDER SEPARATE COVER)

VOLUME 2: DRAFT ENVIRONMENTAL IMPACT REPORT APPENDICES

APPENDIX 1	NOP AND COMMENT LETTERS
APPENDIX 3	OVERVIEW OF OIL REFINING PROCESS
APPENDIX 4.0	CUMULATIVE PROJECTS
APPENDIX 4.3	AIR QUALITY Appendix 4.3-CHRA Appendix 4.3-CST Appendix 4.3-EE Appendix 4.3-EI Appendix 4.3-HRA Appendix 4.3-MET Appendix 4.3-OP Appendix 4.3-PHYS Appendix 4.3-REG Appendix 4.3-SG Appendix 4.3-SHP Appendix 4.3-TRANS Appendix 4.3-URM
APPENDIX 4.5	CULTURAL RESOURCES – LETTERS
APPENDIX 4.8	GHG Appendix 4.8-BASE Appendix 4.8-CEI Appendix 4.8-CGRP Appendix 4.8-GOP Appendix 4.8-REG Appendix 4.8-SET
APPENDIX 4.10	CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS
APPENDIX 4.13	PUBLIC SAFETY Appendix 4.13-DET Appendix 4.13-OCA Appendix 4.13-PROG Appendix 4.13-REL
APPENDIX 4.16	TRAFFIC – TECHNICAL DATA
APPENDIX 4.17	WATER SUPPLY ASSESSMENT

APPENDICES TABLE OF TABLES

Table A4.0-1	Plans Considered as Part of the Chevron Refinery Modernization Project EIR Cumulative Impact Analysis	1
Table A4.0-2	Chevron Projects within or near the Project Site Considered as Part of the Chevron Refinery Modernization Project EIR Cumulative Impact Analysis	2
Table A4.0-3	Other, Non-Chevron Refinery and Pipeline Projects Considered as Part of the Chevron Refinery Modernization Project EIR Cumulative Impact Analysis	3
Table A4.0-4	Other Projects in the City of Richmond Considered as Part of the Modernization Project EIR Cumulative Impact Analysis.....	4
Table A4.0-5	Other Projects Outside of City of Richmond Considered as Part of the Modernization Project EIR Cumulative Impact Analysis.....	6
Table A4.3-CHRA-1	Carcinogenic and Chronic Noncarcinogenic Toxicity Values.....	67
Table A4.3-CHRA-2a	Construction TAC Emissions Summary by Source Group – Off-Road Construction Equipment	68
Table A4.3-CHRA-2b	Construction TAC Emissions Summary by Source Group – On-Road Vehicles	69
Table A4.3-CHRA-2c	Construction TAC Emissions Summary by Source Group - On-Road Vehicles	86
Table A4.3-CHRA-3	Sensitive Receptor Survey Summary.....	115
Table A4.3-CHRA-4	Construction Off-Road Equipment Modeling Source Parameters	117
Table A4.3-CHRA-5	Construction On-Road Mobile Modeling Source Parameters	118
Table A4.3-CHRA-6	Modeling Adjustment Factors – Construction	119
Table A4.3-CHRA-7a	Exposure Assumptions – Completed and Future Construction (2008-2009, and 2014-2016)	121
Table A4.3-CHRA-7b	Exposure Assumptions – Future Only Construction (2014-2016)	122
Table A4.3-CHRA-8a	Cancer Risk Adjustment Factors – Completed and Future Construction (2008-2009, and 2014-2016)	123
Table A4.3-CHRA-8b	Cancer Risk Adjustment Factors – Future Construction (2014-2016)	124
Table A4.3-CHRA-9a	Health Impact – Construction	125

Table A4.3-CHRA-9b	Health Impact Breakdown – Future Construction Only	127
Table A4.3-CHRA-10	Health Impact – Construction of 2 MW Solar Facility	128
Table A4.3-CHRA-11a	Exposure Parameters – Construction of 14 Tank Domes	129
Table A4.3-CHRA-11b	Health Impact – Construction of 14 Tank Domes	130
Table A4.3-CST-1	Modernization Project Components	23
Table A4.3-CST-2	Summary of Construction Criteria Air Pollutants and Greenhouse Gas Emission Sources	25
Table A4.3-CST-3a	Methodology of Emissions Calculations Associated with Construction Activities – Exhaust, Brakewear, and Tirewear Emissions	26
Table A4.3-CST-3b	Methodology of Emissions Calculations Associated with Construction Activities – Fugitive Dust Emissions	27
Table A4.3-CST-3c	Methodology of Emissions Calculations Associated with Construction Activities – Paving and Architectural Coating	28
Table A4.3-CST-4a	Construction Phasing Schedule and Equipment List – Completed Construction	29
Table A4.3-CST-4b	Construction Phasing Schedule and Equipment List - Future Construction	31
Table A4.3-CST-5a	Construction Equipment Emission Factors – Completed Construction	33
Table A4.3-CST-5b	Construction Equipment Emission Factors – Future Construction	34
Table A4.3-CST-6	Off-Road Construction Equipment Emissions	35
Table A4.3-CST-7a	Vehicle Activities – On-Site Cars, Pickups, Buses, Delivery Trucks, and Flatbeds	37
Table A4.3-CST-7b	Vehicle Activities - Construction Delivery Trucks, Soil Hauling Trucks and Worker Commuting Vehicles	39
Table A4.3-CST-8	On-Road Vehicle Fleet-Mix and Fuel-Mix	41
Table A4.3-CST-9a	Construction On-Road Vehicle Emission Factors – Completed Construction	42
Table A4.3-CST-9b	Construction On-Road Vehicle Emission Factors – Future Construction	43
Table A4.3-CST-10	On-Road Construction Mobile Emissions	45
Table A4.3-CST-11	Architectural Coating Criteria Air Pollutant Emissions	46

Table A4.3-CST-12	Summary of Construction Criteria Air Pollutant and Greenhouse Gas Emissions for Completed and Future Construction	47
Table A4.3-CST-13a	Fugitive Dust Emissions from Grading.....	48
Table A4.3-CST-13b	Fugitive Dust Emissions from Truck Loading	49
Table A4.3-CST-13c	Fugitive Dust Emissions from On-Road Vehicle Movement.....	50
Table A4.3-CST-14	Summary of Construction Fugitive Dust Emissions for Completed and Future Construction	51
Table A4.3-CST-15	Summary of Construction TAC Emission Sources	52
Table A4.3-CST-16	Off-Road Construction Equipment Emissions for HRA	53
Table A4.3-CST-17	On-Road Construction Mobile Emissions for HRA.....	54
Table A4.3-CST-18	Summary of Construction Criteria Air Pollutant and Greenhouse Gas Emissions for 2 MW Solar Facility	55
Table A4.3-CST-19	Summary of Construction Emissions for HRA for 2 MW Solar Facility	56
Table A4.3-CST-20	Summary of Construction Criteria Air Pollutant and Greenhouse Gas Emissions for 14 Tank Dome Installations.....	57
Table A4.3-CST-21	Summary of Construction Emissions for HRA for 14 Tank Dome Installations	58
Table A4.3-HRA-1	Carcinogenic, Chronic, and Acute Noncarcinogenic Toxicity Values	5
Table A4.3-HRA-2	Facility TAC Emissions and Change from Baseline by Scenario, with Project Design Features.....	10
Table A4.3-HRA-3	Refinery Operations TAC Emissions and Change from Baseline by Scenario, with Project Design Feature.....	21
Table A4.3-HRA-4	Shipping TAC Emissions, with Project Design Features	29
Table A4.3-HRA-5	Trucking and Rail TAC Emissions	32
Table A4.3-HRA-6	HARP-Calculated Multipath Scaling Factors	40
Table A4.3-HRA-7	Incremental Cancer Risk at MEISR – Refinery	41
Table A4.3-HRA-8	Incremental Chronic HI at MEISR – Refinery	42
Table A4.3-HRA-9	Incremental Cancer Risk at MEISR – Shipping	43
Table A4.3-HRA-10	Incremental Chronic HI at MEISR – Shipping	44
Table A4.3-HRA-11	Modeled Sensitive Receptors	49
Table A4.3-HRA-12a	Operational Refinery Modeling Source Parameters – Point Sources.....	53

Table A4.3-HRA-12b	Operational Refinery Modeling Source Parameters – Circular Sources.....	55
Table A4.3-HRA-12c	Operational Refinery Modeling Source Parameters – Flare Sources.....	56
Table A4.3-HRA-12d	Operational Refinery Modeling Source Parameters – Polygon Sources	57
Table A4.3-HRA-12e	Modeled Refinery Buildings	59
Table A4.3-HRA-13	Operational On-Road Mobile Modeling Source Parameters	172
Table A4.3-HRA-14a	Shipping Anchorage Maneuvering Modeling Parameters	175
Table A4.3-HRA-14b	Shipping Transiting Modeling Parameters	180
Table A4.3-HRA-14c	Shipping at Berth Modeling Parameters	188
Table A4.3-HRA-14d	Modeled Building Input for Shipping	189
Table A4.3-HRA-15	Exposure Assumptions – Operations.....	190
Table A4.3-HRA-16	Cancer Risk Adjustment Factors – Operations.....	203
Table A4.3-HRA-17a	Health Impact – Operational Trucking, Shipping, and Refinery Sources	207
Table A4.3-HRA-17b	Health Impact Breakdown – Operational Trucking, Shipping, and Refinery Sources	209
Table A4.3-HRA-18a	Refinery Operations Risk Contributors, 93% Utilization, Max Hydrogen Production	210
Table A4.3-HRA-18b	Shipping Risk Contributors, 93% Utilization, Max Hydrogen Production	211
Table A4.3-HRA-18c	Trucking Risk Contributors, 93% Utilization, Max Hydrogen Production	212
Table A4.3-HRA-18d	Refinery Operations Chronic Non-Cancer Hazard Contributors, 93% Utilization, Max Hydrogen Production	212
Table A4.3-HRA-18e	Shipping Chronic Non-Cancer Hazard Contributors, 93% Utilization, Max Hydrogen Production	213
Table A4.3-HRA-18f	Trucking Chronic Non-Cancer Hazard Contributors, 93% Utilization, Max Hydrogen Production	214
Table A4.3-HRA-18g	Refinery Operations Acute Hazard Contributors, 93% Utilization, Max Hydrogen Production.....	215
Table A4.3-HRA-18h	Shipping Acute Hazard Contributors, 93% Utilization, Max Hydrogen Production	215
Table A4.3-HRA-18i	Refinery Operations PM _{2.5} Contributors, 93% Utilization, Max Hydrogen Production	216

Table A4.3-HRA-18j	Shipping PM _{2.5} Contributors, 93% Utilization, Max Hydrogen Production.....	217
Table A4.3-HRA-18k	Trucking PM _{2.5} Contributors, 93% Utilization, Max Hydrogen Production.....	218
Table A4.3-MIT-1	Comparison of Monitored 24-Hour Average SO _x Concentration between 2005 and 2009	3
Table A4.3-MIT-2	Comparison of Monitored 1-Hour Maximum SO _x Concentration between 2005 and 2009	4
Table A4.3-MIT-3	Comparison of Fluid Catalytic Cracker SO _x Emissions between 2005 and 2009	4
Table A4.3-MIT-4	Quantification of Condensable PM Reduction	8
Table A4.3-MIT-5	Summary of Tank Dome ROG Emissions Reductions.....	12
Table A4.3-MIT-6	Ship Parcel Size as a Percent of Capacity Before and After Parcel Size Optimization	15
Table A4.3-MIT-7	Barge Parcel Size as a Percent of Capacity Before and After Parcel Size Optimization	15
Table A4.3-MIT-8	Reductions in Annual Calls and NOx Emissions Due to Parcel Size Optimization	16
Table A4.3-MIT-9	70-year Weighted Tug Boat DPM Emissions Reductions by Leg	22
Table A4.3-MIT-10	Ship Parcel Size as a Percent of Capacity Before and After Parcel Size Optimization	22
Table A4.3-MIT-11	Barge Parcel Size as a Percent of Capacity Before and After Parcel Size Optimization	23
Table A4.3-MIT-12	Reductions in Annual Calls and DPM Emissions Due to Parcel Size Optimization	24
Table A4.3-MIT-13	70-year Weighted DPM Emissions Reductions Due to Shore Power Mitigation Measures	26
Table A4.3-MIT-14	Summary of 70-year Weighted DPM Emissions Reductions Due to Shipping Mitigation Measures	26
Table A4.3-MIT-15	70-year Weighted DPM Emissions Reductions by Area Due to Shipping Mitigation Measures	27
Table A4.3-MIT-16	70-year Weighted DPM Emissions for the 93% Project Scenario	29
Table A4.3-MIT-17	Modeled Shipping Source Parameters.....	30
Table A4.3-MIT-18	70-year Weighted DPM Emissions for the 100% Max Light Scenario	34
Table A4.3-MIT-19	70-year Weighted DPM Emissions for the 89% Project Scenario with 100% Hydrogen Plant Production	34

Table A4.3-OP-1	Emissions Associated with Refinery Operational Process Steps	5
Table A4.3-OP-2	Summary of Flaring Events During the Baseline Period	12
Table A4.3-OP-3	Summary of Emissions from Facility Stationary Sources.....	23
Table A4.3-OP-4	List of Fuel Combustion TACs (RFG).....	24
Table A4.3-OP-5	Comparison of BAAQMD EI Emissions by Year	25
Table A4.3-OP-6	Summary of 2008 CAP Emissions for Refinery Operations from NEI Database	27
Table A4.3-OP-7	Comparison of EPA ICR Liquid Speciation Profiles	29
Table A4.3-OP-8	Comparison of Gasoline Vapor Speciation Profiles	30
Table A4.3-OP-9	Mass Emissions Calculated From Refinery CEMs	33
Table A4.3-OP-10	Engineering Evaluation Components	36
Table A4.3-OP-11	BAAQMD High Heating Values	37
Table A4.3-OP-12	Emission Factors Derived from BAAQMD EE	38
Table A4.3-OP-13	EI Emission Factors Updated after 12/31/2007	42
Table A4.3-OP-14	Existing Setting Baseline and Adjusted Baseline Criteria Emissions	45
Table A4.3-OP-15a	Baseline SRU Emission Factors Derived from the Engineering Evaluation	47
Table A4.3-OP-15b	Additional Baseline Emission Factors Derived from the Engineering Evaluation.....	48
Table A4.3-OP-16	Assignment of EI Abatement Factors.....	49
Table A4.3-OP-17	Modernization Project Emission Factors Derived from the BAAQMD Engineering Evaluation	54
Table A4.3-OP-18	Summary of Emissions Scaling Methods	55
Table A4.3-OP-19	Sources With Throughputs Limited by Title V Firing Rates	57
Table A4.3-OP-20	Sources Scaled by Plant Throughputs	57
Table A4.3-OP-21	Percent Working Loss Used for Specific Materials	60
Table A4.3-OP-22	Estimation of Fugitive Emissions from the Existing Hydrogen Plant	61
Table A4.3-OP-23	Facility Sources for which Emissions are Equal to Baseline Emissions and Do Not Vary With the Modernization Project or Increased Facility Utilization Levels	62
Table A4.3-OP-24	Modernization Project TAC Emission Factors Derived from the BAAQMD Engineering Evaluation	63
Table A4.3-OP-25	TAC Emissions from the Engineering Evaluation.....	67
Table A4.3-OP-26	CAP Emissions by Case, without Project Design Features	69

Table A4.3-OP-27	CAP Emissions by Case, with Project Design Features	71
Table A4.3-OP-28	TAC Emissions by Case, without Project Design Feature Tank Dome	73
Table A4.3-OP-29	TAC Emissions By Case, with Project Design Feature Tank Dome	78
Table A4.3-PHYS-1	BAAQMD Criteria Pollutant Monitoring Stations Operating in Contra Costa County	10
Table A4.3-PHYS-2	2008-2012 Criteria Pollutant Ambient Air Monitoring Data Collected Near the Modernization Project	12
Table A4.3-PHYS-3	2010 Estimated Criteria Pollutant Emissions Inventories by Source (County and Air Basin) (Tons/Day Based on Annual Average).....	16
Table A4.3-PHYS-4	Summary of 2008 Criteria Air Pollutant Emissions for Major Facilities Emitting 0.01 Tons/Day or More of Criteria Air Pollutants (CAPs) in Richmond, California (Tons/Year)	18
Table A4.3-PHYS-5	Criteria Pollutant Emissions at Port of Richmond in 2005 (Total Tons).....	19
Table A4.3-PHYS-6	Summary of Sources and Health Effects of Top 10 Carcinogenic TACs in California	20
Table A4.3-PHYS-7	Comparison of 2008 BAAQMD Emission Inventory TAC Reports for the Facility and Other Richmond Sources (Lbs/Year).....	22
Table A4.3-PHYS-8	Comparison of 2009 Air Toxic Emission Reports for the Facility and Other Richmond Sources (Lbs/Year)	24
Table A4.3-PHYS-9	Comparison of 2010 Air Toxic Emission Reports for the Facility and Other Richmond Sources (Lbs/year)	26
Table A4.3-PHYS-10	Air Quality Data Summary (2008-2010) from Facility	32
Table A4.3-PHYS-11	Air Quality Data Summary (2007-2009) from Richmond 7 th Street and Point Richmond Stations	32
Table A4.3-PHYS-12	Ambient Concentrations of TACs and Other Chemicals (Richmond-7 th Street and San Pablo-Rumrill BAAQMD Monitoring Stations).....	35
Table A4.3-PHYS-13	Maximum Detected Concentrations (ppb) Measured by the Fence Line Monitoring Equipment Located Adjacent to Point Richmond, Atchison Village, and North Richmond	39

Table A4.3-PHYS-14	Summary of Concentrations (PPB) Measured by the Community Monitoring Equipment Located Point Richmond, Atchison Village, and North Richmond.....	41
Table A4.3-PHYS-15	SO ₂ Ambient Monitoring Data Summary (2008-2012) from Facility.....	42
Table A4.3-PHYS-16	CalEnviroScreen Percentiles for Richmond, CA.....	55
Table A4.3-REG-1	Criteria Pollutants, Their Precursors, Sources, and Related Health Effects	2
Table A4.3-REG-2	Ambient Air Quality Standards	4
Table A4.3-REG-3	Summary of Subparts under 40 CFR Part 60 (New Source Performance Standards) Listed in the Facility's Title V Operating Permit	10
Table A4.3-REG-4	Summary of BAAQMD Rules and Regulations Related to Criteria Air Pollutants, Listed in the Facility's Title V Operating Permit	27
Table A4.3-REG-5	Summary of Subparts from 40 CFR Part 60 Referenced in the Facility's Current Title V Permit that are Incorporated into BAAQMD Regulations	34
Table A4.3-REG-6	Summary of Federal HAPs Regulations Cited in Facility's Title V Permit.....	37
Table A4.3-REG-7	BAAQMD Regulations and Rules Relating to TACs and Included in the Facility's Title V Permit	46
Table A4.3-SHP-1	Summary of Shipping Emission Sources	2
Table A4.3-SHP-2	Shipping Baseline and Modernization Project CAP and GHG Emissions, with PDFs	4
Table A4.3-SHP-3	Shipping Baseline and Modernization Project TAC Emissions, with PDFs	6
Table A4.3-SHP-4	Comparison of Modernization Project Shipping Emissions Inventory Engine Horsepower and Vessel Service Speed to Other Emission Inventory Studies	8
Table A4.3-TRANS-1	Rail Associated with Chevron Project Operation	30
Table A4.3-TRANS-2	Switch Emission Factors.....	31
Table A4.3-TRANS-3	Criteria Pollutant and Greenhouse Gas Emissions Calculations Associated with Switching Activity Inside the Project Facilities	32
Table A4.3-TRANS-4	Calculation of 2006 BNSF Switch Diesel Usage.....	33
Table A4.3-TRANS-5	Criteria Pollutant and Greenhouse Gas Emissions Calculations Associated with Switching Activity Outside the Project Fenceline.....	34
Table A4.3-TRANS-6	Line Haul Emission Factors.....	35

Table A4.3-TRANS-7	Criteria Pollutant and Greenhouse Gas Emissions Calculation Associated with the Line Haul.....	36
Table A4.3-TRANS-8	Summary of Criteria Pollutant and Greenhouse Gas Emissions Associated with Rail Activities	37
Table A4.3-TRANS-9	Emissions Comparison between Future Scenarios and the 2016 Baseline.....	38
Table A4.3-TRANS-10	On-Road Mobile Truck On-Site and Off-Site Round-Trip Mileages (CAP Inventory).....	39
Table A4.3-TRANS-11	Methodology of Emissions Calculations Associated with Operational On-road Mobile Activities – Exhaust, Brakewear, and Tirewear Emissions	40
Table A4.3-TRANS-12	On-Road Mobile Truck Type Loading / Laydown (Origin / Destination) Areas	41
Table A4.3-TRANS-13	On-Road Mobile Truck Existing Setting Baseline and 2016 Baseline Scenario Trip Counts	42
Table A4.3-TRANS-14	On-Road Mobile Truck Project and Other Scenario Trip Counts	43
Table A4.3-TRANS-15	On-Road Mobile Truck Emission Factors (CAP Inventory)	44
Table A4.3-TRANS-16	On-Road Mobile Truck CAP Emissions	45
Table A4.3-TRANS-17	Summary of On-Road Mobile TAC Emission Sources	46
Table A4.3-TRANS-18	On-Road Mobile Truck Emission Factors (TAC Inventory)	47
Table A4.3-TRANS-19	On-Road Mobile Truck Onsite and Offsite Round-trip Mileages (TAC Inventory)	48
Table A4.3-TRANS-20	On-Road Mobile Truck TAC Emissions.....	49
Table A4.3-URM-1	Facility Operating Units Included in the URM	2
Table A4.3-URM-2	Baseline Period Crude Oil Blend Characteristics and Crude and Gas Oil Sulfur Content.....	6
Table A4.3-URM-3	Baseline Period Facility Average Daily Operations	8
Table A4.3-URM-4	Existing and Post-Project Unit Throughput Permit Limits (Changes In Bold)	10
Table A4.3-URM-5	Illustration of Potential Crude Oil Use Constraints	13
Table A4.3-URM-6	Gas Oil Demand	16
Table A4.3-URM-7	Illustration of URM Unit Rate Calculations.....	19
Table A4.3-URM-8	Illustration of URM sulfur content and SRU Analysis Crude and Gas Oil Gateway Units Operating at 100% of Capacity	20
Table A4.3-URM-9	List of Facility Units that Use or Produce Hydrogen.....	22

Table A4.3-URM-10	Illustration of URM Hydrogen Demand Analysis	22
Table A4.3-URM-11	Illustration of Facility Hydrogen Demand Adjustment	25
Table A4.3-URM-12	2011 Crude Oil Volume, Weight and Fractional Data Input to the URM	26
Table A4.3-URM-13	2011 Sulfur Content Data Input to the URM	27
Table A4.3-URM-14	2011 Gas Oil Gateway Unit Throughput Data Input to the URM	27
Table A4.3-URM-15	URM Results and 2011 Facility Data	29
Table A4.3-URM-16	Crude Oil Blends, 93% Crude and Gas Oil Gateway Unit Utilization (Barrels Per Day)	31
Table A4.3-URM-17	URM Inputs, Project-Related Cases, 93% Crude and Gas Oil Gateway Unit Utilization	32
Table A4.3-URM-18	URM Project-Related Case Calculations, 93% Crude and Gas Oil Gateway Unit Utilization	32
Table A4.3-URM-19	Crude Oil Blends, 100% Crude And Gas Oil Gateway Unit Utilization (Barrels Per Day)	35
Table A4.3-URM-20	URM Inputs, Project-Related Cases, 100% Crude and Gas Oil Gateway Unit Utilization	35
Table A4.3-URM-21	URM Project-Related Case Calculations, 100% Crude and Gas Oil Gateway Unit Utilization	36
Table A4.3-URM-22	Crude Oil Blend, Very Heavy, Very Light, and Maximum Sulfur Cases (barrels per day)	37
Table A4.3-URM-23	URM Inputs, Very Heavy, Very Light, and Maximum Sulfur Cases	38
Table A4.3-URM-24	URM Very Heavy, Very Light, and Maximum Sulfur Case Calculations 100% Crude and Gas Oil Gateway Unit Utilization	39
Table A4.3-URM-25	URM Analysis Of No-Project Refinery Operations, 93% and 100% Of Crude and Gas Oil Gateway Unit Utilization	42
Table A4.3-URM-26	URM Inputs for Limited Sulfur Cases, 100% and 93% Crude and Gas Oil Gateway Utilization, SRU Limited to 750 LT/D	43
Table A4.3-URM-27	URM Analysis of Limited Sulfur (750 LT/D SRU Limit) Cases, 93% and 100% of Crude and Gas and Gas Oil Gateway Unit Utilization	45
Table A4.8-BASE-1	2008-2010 Facility Operations Greenhouse Gas Emissions (BAAQMD EI and CARB Reports)	4
Table A4.8-BASE-2	2008-2010 Greenhouse Gas Emissions	8
Table A4.8-BASE-3	Non-Project Facility Measures that Reduce Greenhouse Gas Emissions	10

Table A4.8-BASE-4	Baseline: Refinery Greenhouse Gas Emissions	12
Table A4.8-BASE-5	Baseline: Shipping Greenhouse Gas Emissions	12
Table A4.8-BASE-6	Baseline: Rail and On-Road Mobile Greenhouse Gas Emissions	13
Table A4.8-BASE-7	2008-2010 and Baseline Greenhouse Gas Emissions	14
Table A4.8-CGRP-1	Urban Forestry	52
Table A4.8-CGRP-2	Zero Waste Programs	54
Table A4.8-CGRP-3	Zero Waste Programs – GHG Reduction Calculations.....	56
Table A4.8-CGRP-4	Residential Energy Efficiency	57
Table A4.8-CGRP-5	Commercial Energy Efficiency.....	60
Table A4.8-CGRP-6	Residential Solar Rebate (Single-Family and Multi- Family)	62
Table A4.8-CGRP-7	Commercial Solar Rebate	65
Table A4.8-CGRP-8	Pedestrian and Bike Master Plans	67
Table A4.8-CGRP-9	EV Purchase Rebates.....	68
Table A4.8-CGRP-10	EV Station	70
Table A4.8-CGRP-11	Ridehsare (Local Shuttle Circular).....	72
Table A4.8-CGRP-12	Rideshare (Van Service)	73
Table A4.8-CGRP-13	Bicycle Share Program	74
Table A4.8-CGRP-14	Transit Access Program.....	75
Table A4.8-CGRP-15	Wetlands Creation.....	76
Table A4.8-CGRP-16	2-MW Solar Project.....	77
Table A4.8-CGRP-17	Summary of Evaluation Criteria	78
Table A4.8-CGRP-18	Summary of Programs	81
Table A4.8-CGRP-19	Emission Factors	82
Table A4.8-GOP-1	Emissions Associated with Facility Process Steps	4
Table A4.8-GOP-2	Facility On-Site Stationary Combustion Sources.....	6
Table A4.8-GOP-3	Facility On-Site Stationary Process Sources	11
Table A4.8-GOP-4	Facility On-Site Stationary Fugitive Sources	12
Table A4.8-GOP-5	2008-2010 and 2011 BAAQMD EI and CARB Report Total Greenhouse Gas Emissions for On- Site Stationary Combustion and Process Sources	17
Table A4.8-GOP-6	2008-2010 Greenhouse Gas Emissions (On-Site Stationary Combustion and Process Sources)	18
Table A4.8-GOP-7	Non-Project Facility Measures that Reduce Greenhouse Gas Emissions	22
Table A4.8-GOP-8	Baseline Greenhouse Gas Emissions (On-Site Stationary Combustion and Process Sources, including Reduction Measures)	23

Table A4.8-GOP-9	Greenhouse Gas Emissions Sources and Units of Scaling for Calculation of Project Emissions	26
Table A4.8-GOP-10	Facility Sources for which Project Emissions are Equal to Baseline Emissions and Do Not Vary With the Project or Increased Facility Utilization Levels	28
Table A4.8-GOP-11	Calculation of Project Greenhouse Gas Emissions (On-Site Stationary Combustion and Process Sources, Excluding Hydrogen Plant)	29
Table A4.8-GOP-12	Project Greenhouse Gas Emissions from the Future Hydrogen Plant	35
Table A4.8-GOP-13	Project Greenhouse Gas Emissions (On-Site Stationary Combustion and Process Sources, including Hydrogen Plant)	36
Table A4.8-GOP-14	Facility Purchased Electricity Usage, Emission Factor, and Annual Greenhouse Gas Emissions	38
Table A4.8-GOP-15	Facility Purchased Water Usage, Electricity Intensity Factor, Electricity Emission Factor, and Annual Greenhouse Gas Emissions	41
Table A4.8-GOP-16	Facility Project Design Feature Emission Reductions	46
Table A4.8-GOP-17	Facility Modernization Project Greenhouse Gas Emissions by Case	47
Table A4.8-SET-1	Tipping Elements That Could Trigger Abrupt Environmental Changes	19
Table A4.10-1	Consistency Evaluation of Relevant General Plan Goals, Policies, and Actions	1
Table A4.13-DET-1	API Standards Adopted by Cal/OSHA	12
Table A4.13-DET-2	API Standards Regularly Applied at the Facility	13
Table A4.13-REL-1	Major Potential Air Contaminants which Can Escape from a Typical Refinery Operation and Their Major Sources	7
Table A4.13-REL-2	Common Hazardous Chemicals and Chemical Groups Typically Present and Their Most Significant Hazards to Workers	8
Table A4.13-REL-3	API-571 Listing of Damage Mechanisms	21
Table A4.13-REL-4	Facility Units and Identified Project-Related Damage Mechanisms Identified for Further Review	23
Table A4.13-REL-5	Complete Piping Circuits Scheduled for Upgrade to 9Cr in 2017	74
Table A4.13-REL-6	Partial Piping Circuits Scheduled for Upgrade to 9Cr in 2017	75

Table A4.13-REL-7	Chevron Richmond Hydroprocessing Units	87
Table A4.13-REL-8	High Severity Hydroprocessing Unit P50 Sulfur and Nitrogen Feed Cases vs. the High Nitrogen Sensitivity Case	94
Table A4.13-REL-9	SDA Sulfur Levels	106

APPENDICES TABLE OF FIGURES

Figure A3-1	Facility Process Diagram	3
Figure A3-2	Typical Boiling Temperatures (Cut Points) for Different Hydrocarbon Fractions.....	9
Figure A3-3	Typical Flow diagram from Wharf to Crude Unit (Including Desalter, Heat Exchangers, Pipes)	9
Figure A3-4	Distillation Schematic	11
Figure A3-5	Distillation Curve.....	11
Figure A3-6	Breakdown of a Typical Crude Oil Distillation Yield	12
Figure A3-7	Crude Unit Overview; Distillation Column: Crude Oil Separation by Heat into Fractions	12
Figure A3-8	Distillation Column: Crude Oil Separation by Heat into Fractions.....	15
Figure A3-9	Vacuum Distillation Process	15
Figure A3-10	FCC Feed Hydrotreating Process	17
Figure A3-11	Amine Treatment Process.....	19
Figure A3-12	Sulfur Recovery Process	20
Figure A3-13	Fluid Catalytic Cracking Process	22
Figure A3-14	The Hydrocracker Process	24
Figure A4.3-CHRA-1	Modeled Receptor Locations	11
Figure A4.3-CHRA-2	Construction Phases and Areas (1).....	13
Figure A4.3-CHRA-3	Construction Phases and Areas (2) - Project Design Features.....	14
Figure A4.3-CHRA-4	Construction Worker Trips	15
Figure A4.3-CHRA-5	Construction Delivery Truck Trips	16
Figure A4.3-CHRA-6	Construction Flatbed Truck Trips	17
Figure A4.3-CHRA-7	Construction Haul Truck Trips	18
Figure A4.3-CHRA-8	Modeled Construction Areas (1) - Volume Sources	21
Figure A4.3-CHRA-9	Modeled Construction Areas (2) - Volume Sources for Project Design Features	22
Figure A4.3-CHRA-10a	Construction Worker Trips IWCH and IWCH_C: Internal buses, Pickups and Cars from Parking Lot to New Hydrogen Plant	23
Figure A4.3-CHRA-10b	Modeled Construction Worker Trips IWCH and IWCH_C.....	24
Figure A4.3-CHRA-11a	Construction Worker Trips IWCP and IWCP_C: Internal Buses, Pickups and Cars from Parking Lot to SRU Area.....	25
Figure A4.3-CHRA-11b	Modeled Construction Worker Trips IWCP and IWCP_C	26

Figure A4.3-CHRA-12a	Construction Worker Trips IWCT and IWCT_C: Internal Buses, Pickups and Cars from Parking Lot to Tie-in and TKC areas	27
Figure A4.3-CHRA-12b	Modeled Construction Worker Trips IWCT and IWCT_C	28
Figure A4.3-CHRA-13a	Parking Lot to Existing Storage Tank Domed Roof Installation Area	29
Figure A4.3-CHRA-13b	Modeled Construction Worker Trips IWCGOM	30
Figure A4.3-CHRA-14a	Construction Worker Trips IWC_1: Worker Vehicle from Castro St. to Parking Lot	31
Figure A4.3-CHRA-14b	Modeled Construction Worker Trips IWC_1	32
Figure A4.3-CHRA-15a	Construction Worker Trips: Trips from Highways through Richmond Parkway and through Castro Street	33
Figure A4.3-CHRA-15b	Modeled Construction Worker Trips: Trips from Highways through Richmond Parkway and through Castro Street	34
Figure A4.3-CHRA-16a	Construction Delivery Truck Trips: Trucks from Castro Street to Laydown Area and Idling Areas	35
Figure A4.3-CHRA-16b	Modeled Construction Delivery Truck Trips: Trucks from Castro Street to Laydown Area and Idling Areas	36
Figure A4.3-CHRA-17a	Construction Delivery Truck Trips: Trucks from Laydown Area to Project Construction Area and Idling Areas	37
Figure A4.3-CHRA-17b	Modeled Construction Delivery Truck Trips: Trucks from Laydown Area to Project Construction Area and Idling Areas	38
Figure A4.3-CHRA-17c	Modeled Construction Flatbed Truck Trips: Trucks from Laydown Area to Project Construction Area and Idling Areas	39
Figure A4.3-CHRA-18a	Construction Delivery Truck Trips: Trucks from Laydown Area to Existing Storage Tank Domed Roof Installation Area	40
Figure A4.3-CHRA-18b	Modeled Construction Delivery Truck Trips: Trucks from Laydown Area to Existing Storage Tank Domed Roof Installation Area	41
Figure A4.3-CHRA-18c	Modeled Construction Flatbed Truck Trips: Trucks from Laydown Area to Existing Storage Tank Domed Roof Installation Area	42

Figure A4.3-CHRA-19a	Construction Delivery Truck Trips: Trips from Highways through Richmond Parkway and through Castro Street	43
Figure A4.3-CHRA-19b	Modeled Construction Delivery Truck Trips: Trips from Highways through Richmond Parkway and through Castro Street	44
Figure A4.3-CHRA-20a	Construction Haul Truck Trips ITCH_1 and ITCH_2: From Facility Entrance to New Hydrogen Plant	45
Figure A4.3-CHRA-20b	Modeled Construction Haul Truck Trips ITCH_1 and ITCH_2: From Facility Entrance to New Hydrogen Plant	46
Figure A4.3-CHRA-21a	Construction Haul Truck Trips ITCP_1 and ITCP_2: From Facility Entrance to SRU Area.....	47
Figure A4.3-CHRA-21b	Modeled Construction Haul Truck Trips ITCP_1 and ITCP_2: From Facility Entrance to SRU Area.....	48
Figure A4.3-CHRA-22a	Construction Haul Truck trips ITCT_1 and ITCT_2: From Facility Entrance to Tie-In and TKC Areas.....	49
Figure A4.3-CHRA-22b	Modeled Construction Haul Truck Trips ITCT_1 and ITCT_2: From Facility Entrance to Tie-In and TKC Areas	50
Figure A4.3-CHRA-23	Modeled Construction Haul Truck Trips: Idling Areas	51
Figure A4.3-CHRA-24a	Construction Haul Truck Trips: Trips from Highways through Richmond Parkway and through Castro Street	52
Figure A4.3-CHRA-24b	Modeled Construction Haul Truck Trips: Trips from Highways through Richmond Parkway and through Castro Street	53
Figure A4.3-CST-1	Construction Phases and Areas (1)	2
Figure A4.3-CST-2	Construction Phases and Areas (2) – Project Design Features.....	3
Figure A4.3-CST-3	Modeled Facility boundary	5
Figure A4.3-HRA-1	Large Refinery Air Emissions Sources.....	19
Figure A4.3-HRA-2	Modeled Receptor Locations	47
Figure A4.3-HRA-3	Modeled Refinery Operations Point Sources	151
Figure A4.3-HRA-4	Modeled Refinery Operations Circular Sources	152
Figure A4.3-HRA-5	Modeled Refinery Flare Sources	153
Figure A4.3-HRA-6	Modeled Refinery Polygon Sources	154
Figure A4.3-HRA-7a	Operational Truck Trips – Trips from Highways through Richmond Parkway and through Castro Street.....	155

Figure A4.3-HRA-7b	Operational Truck Trips – Trips from Highways through Richmond Parkway and through Castro Street	156
Figure A4.3-HRA-8a	Oxygen Truck Trips – On-Site	157
Figure A4.3-HRA-8b	Modeled Oxygen Truck Trips – On-Site	158
Figure A4.3-HRA-9a	Sulfur Truck Trips – On-Site	159
Figure A4.3-HRA-9b	Modeled Sulfur Truck Trips – On-Site	160
Figure A4.3-HRA-10a	Marketing Rack Truck Trips – On-Site	161
Figure A4.3-HRA-10b	Modeled Marketing Rack Truck Trips – On-Site	162
Figure A4.3-HRA-11a	Propane Truck Trips – On-Site	163
Figure A4.3-HRA-11b	Modeled Propane Truck Trips – On-Site	164
Figure A4.3-HRA-12a	Solid Hazardous Waste Truck Trips – On-Site	165
Figure A4.3-HRA-12b	Modeled Solid Hazardous Waste Truck Trips – On-Site	166
Figure A4.3-HRA-13a	Tally Room Truck Trips – On-Site	167
Figure A4.3-HRA-13b	Modeled Tally Room Truck Trips – On-Site	168
Figure A4.3-HRA-14a	Lubricant Truck Trips – On-Site	169
Figure A4.3-HRA-14b	Modeled Lubricant Truck Trips – On-Site	170
Figure A4.3-HRA-15	Shipping: Modeled Transiting Locations (Legs W, X, Y, and Z)	174
Figure A4.3-HRA-16	Shipping: Modeled Anchorage and Maneuvering Locations	185
Figure A4.3-HRA-17	Shipping: Modeled Point Source Locations	191
Figure A4.3-HRA-18	Modeled Shipping Buildings	195
Figure A4.3-HRA-19	Modeled Refinery Buildings	196
Figure A4.3-HRA-20	Project 93% Case Cancer Risk with Project Design Feature	219
Figure A4.3-HRA-21	Project 93% Case PM _{2.5} Concentration with Project Design Feature	220
Figure A4.3-HRA-22	Project 93% Case Acute HI with Project Design Feature	221
Figure A4.3-HRA-23	Project 93% Case Chronic HI with Project Design Feature	222
Figure A4.3-HRA-24	Max Light 93% Case Cancer Risk with Project Design Feature	223
Figure A4.3-HRA-25	Max Light 93% Chronic HI with Project Design Feature	224
Figure A4.3-HRA-26	Max Light 93% Acute HI with Project Design Feature	225
Figure A4.3-HRA-27	Max Light 93% PM _{2.5} Concentration with Project Design Feature	226

Figure A4.3-HRA-28	Project 100% Cancer Risk with Project Design Feature	227
Figure A4.3-HRA-29	Project 100% Chronic HI with Project Design Feature	228
Figure A4.3-HRA-30	Project 100% Acute HI with Project Design Feature.....	229
Figure A4.3-HRA-31	Project 100% PM _{2.5} Concentration with Project Design Feature	230
Figure A4.3-HRA-32	Max Light 100% Cancer Risk with Project Design Feature	231
Figure A4.3-HRA-33	Max Light 100% Chronic HI with Project Design Feature	232
Figure A4.3-HRA-34	Max Light 100% Acute HI with Project Design Feature	233
Figure A4.3-HRA-35	Max Light 100% PM _{2.5} Concentration with Project Design Feature	234
Figure A4.3-HRA-36	Project 93% Cancer Risk with Project Design Feature Source Contribution – Refinery.....	235
Figure A4.3-HRA-37	Project 93% Cancer Risk with Project Design Feature Source Contribution – Shipping.....	236
Figure A4.3-HRA-38	Project 93% Cancer Risk with Project Design Feature Source Contribution – Operational Trucking.....	237
Figure A4.3-HRA-39	Project 93% Chronic HI with Project Design Feature Source Contribution – Refinery.....	238
Figure A4.3-HRA-40	Project 93% Chronic HI with Project Design Feature Source Contribution – Shipping.....	239
Figure A4.3-HRA-41	Project 93% Chronic HI with Project Design Feature Source Contribution – Operational Trucking.....	240
Figure A4.3-HRA-42	Project 93% Acute HI with Project Design Feature Source Contribution – Refinery	241
Figure A4.3-HRA-43	Project 93% Acute HI with Project Design Feature Source Contribution – Shipping	242
Figure A4.3-HRA-44	Project 93% Acute HI with Project Design Feature Source Contribution – Operational Trucking	243
Figure A4.3-HRA-45	Project 93% PM _{2.5} Concentration with Project Design Feature Source Contribution – Refinery	244
Figure A4.3-HRA-46	Project 93% PM _{2.5} Concentration with Project Design Feature Source Contribution – Shipping	245
Figure A4.3-HRA-47	Project 93% PM _{2.5} Concentration with Project Design Feature Source Contribution – Operational Trucking.....	246

Figure A4.3-HRA-48	Max Light 93% Chronic HI with Project Design Feature Source Contribution – Refinery	247
Figure A4.3-HRA-49	Max Light 93% Chronic HI with Project Design Feature Source Contribution – Shipping	248
Figure A4.3-HRA-50	Max Light 93% Chronic HI with Project Design Feature Source Contribution – Operational Trucking	249
Figure A4.3-HRA-51	Max Light 93% Acute HI with Project Design Feature Source Contribution – Refinery	250
Figure A4.3-HRA-52	Max Light 93% Acute HI with Project Design Feature Source Contribution – Shipping	251
Figure A4.3-HRA-53	Max Light 93% Acute HI with Project Design Feature Source Contribution – Operational Trucking	252
Figure A4.3-HRA-54	Max Light 93% PM _{2.5} Concentration with Project Design Feature Source Contribution – Refinery	253
Figure A4.3-HRA-55	Max Light 93% PM _{2.5} Concentration with Project Design Feature Source Contribution – Shipping	254
Figure A4.3-HRA-56	Max Light 93% PM _{2.5} Concentration with Project Design Feature Source Contribution – Operational Trucking	255
Figure A4.3-HRA-57	Max Light 93% Cancer Risk with Project Design Feature Source Contribution – Refinery	256
Figure A4.3-HRA-58	Max Light 93% Cancer Risk with Project Design Feature Source Contribution – Shipping	257
Figure A4.3-HRA-59	Max Light 93% Cancer Risk with Project Design Feature Source Contribution – Operational Trucking	258
Figure A4.3-MET-1a	Sulfur Weight % vs. API Gravity	5
Figure A4.3-MET-2a	Nitrogen Concentration vs. Sulfur Weight %	5
Figure A4.3-MET-2b	Nitrogen Concentration vs. Sulfur Weight % for Sulfur Weight % < 1%	6
Figure A4.3-MET-2c	Nitrogen Concentration vs. Sulfur Weight % for Sulfur Weight % > 1%	6
Figure A4.3-MET-2d	Nitrogen Concentration vs. API Gravity	8
Figure A4.3-MET-2e	Nitrogen Concentration vs. API Gravity for API Gravity between 28 and 40	8
Figure A4.3-MET-2f	Nitrogen Concentration vs. API Gravity for API Gravity < 28	10
Figure A4.3-MET-3a	Barium Concentration vs. Sulfur Weight %	10
Figure A4.3-MET-3b	Calcium Concentration vs. Sulfur Weight %	11
Figure A4.3-MET-3c	Iron Concentration vs. Sulfur Weight %	11

Figure A4.3-MET-3d	Magnesium Concentration vs. Sulfur Weight %.....	12
Figure A4.3-MET-3e	Nickel Concentration vs. Sulfur Weight %.....	12
Figure A4.3-MET-3f	Titanium Concentration vs. Sulfur Weight %.....	13
Figure A4.3-MET-3g	Vanadium Concentration vs. Sulfur Weight %.....	13
Figure A4.3-MET-3h	Zinc Concentration vs. Sulfur Weight %.....	14
Figure A4.3-MET-3i	Barium Concentration vs. API Gravity	14
Figure A4.3-MET-3j	Calcium Concentration vs. API Gravity	15
Figure A4.3-MET-3k	Iron Concentration vs. API Gravity	15
Figure A4.3-MET-3l	Magnesium Concentration vs. API Gravity	16
Figure A4.3-MET-3m	Nickel Concentration vs. API Gravity	16
Figure A4.3-MET-3n	Titanium Concentration vs. API Gravity.....	17
Figure A4.3-MET-3o	Vanadium Concentration vs. API Gravity.....	17
Figure A4.3-MET-3p	Zinc Concentration vs. API Gravity.....	19
Figure A4.3-MET-4a	Acidity vs. Sulfur Weight %	19
Figure A4.3-MET-4b	Acidity vs. API Gravity	20
Figure A4.3-MET-4c	Acidity vs. API Gravity for API Gravity between 28 and 40	20
Figure A4.3-MET-4d	Mercaptan Sulfur Concentration vs. Sulfur Weight %.....	21
Figure A4.3-MET-4e	Mercaptan Sulfur Concentration vs. Sulfur Weight % for Mercaptan Sulfur < 500ppm	21
Figure A4.3-MET-4f	Mercaptan Sulfur Concentration vs. API Gravity	23
Figure A4.3-MET-4g	Mercaptan Sulfur Concentration vs. API Gravity for Mercaptan Sulfur < 250ppm.....	23
Figure A4.3-MET-4h	Salt Content vs. Sulfur Weight %	24
Figure A4.3-MET-4i	Salt Content vs. API Gravity	24
Figure A4.3-MIT-1	Mitigated Cancer Risk at 93% Utilization (Project Case) Replacing Engines for One Tug	28
Figure A4.3-MIT-2	Shipping: Emission Reductions due to PDF and NNI Mitigation	31
Figure A4.3-MIT-3	Mitigated Cancer Risk at 100% Utilization (Max Light) Parcel Size Optimization Plus Replacing Engines for Six Tugs	33
Figure A4.3-MIT-4	Modernization Project Cancer Risk at 89% Utilization (Project Case)	35
Figure A4.3-OP-1	Large Refinery Air Emission Sources	3
Figure A4.3-OP-2A	Existing Setting Baseline and Adjusted Baseline Criteria Emissions – CO	7
Figure A4.3-OP-2B	Existing Setting Baseline and Adjusted Baseline Criteria Emissions – NO _x	7
Figure A4.3-OP-2C	Existing Setting Baseline and Adjusted Baseline Criteria Emissions – PM ₁₀ /PM _{2.5}	8

Figure A4.3-OP-2D	Existing Setting Baseline and Adjusted Baseline Criteria Emissions – SO ₂	8
Figure A4.3-OP-2E	Existing Setting Baseline and Adjusted Baseline Criteria Emissions – VOC.....	9
Figure A4.3-OP-3A	Comparison of 2008 H ₂ S GLM Data to Flare Events	16
Figure A4.3-OP-3B	Comparison of 2008 SO ₂ GLM Data to Flare Events	17
Figure A4.3-OP-3C	Comparison OF 2009 H ₂ S GLM Data to Flare Events	18
Figure A4.3-OP-3D	Comparison of 2008 So ₂ GLM Data to Flare Events	19
Figure A4.3-OP-3E	Comparison of 2010 H ₂ S GLM Data to Flare Events	20
Figure A4.3-OP-3F	Comparison of 2010 SO ₂ GLM Data to Flare Events	21
Figure A4.3-PHYS-1	Prevailing Winds Near Richmond	3
Figure A4.3-PHYS-2	Gertrude and Pier Meteorological Station and Windroses (Indicating “Blowing From” Distribution).....	5
Figure a4.3-PHYS-3	Map Showing Locations of BAAQMD Ambient Air Monitoring Locations.....	9
Figure A4.3-PHYS-4	2010 Estimated Source Contribution to the 2010 Contra Costa County Emissions Inventory for CO, ROG, NO _x and SO _x	14
Figure A4.3-PHYS-5	2010 Estimated Source Contribution to the 2010 Contra Costa County Emissions Inventory for PM ₁₀ and PM _{2.5}	15
Figure A4.3-PHYS-6	Bay Area Emissions Trend for ROG – Annual Average.....	17
Figure A4.3-PHYS-7	City of Richmond Map, Including North Richmond.....	29
Figure A4.3-PHYS-8	Location of the Project Site and Adjacent Land Use	30
Figure A4.3-PHYS-9	Neighborhoods in the Project Site Vicinity	33
Figure A4.3-PHYS-10	Sensitive Land Uses within a Mile of the Project Site Boundary	34
Figure A4.3-PHYS-11	Map of Fenceline and Community Air Monitoring Stations.....	37
Figure A4.3-PHYS-12	CARE Program Cancer Risk Ranking Estimated in 2015 in the Vicinity of the Project Site	45
Figure A4.3-PHYS-13	Estimated 2015 Cancer Risk from Ambient Air Quality	47
Figure A4.3-PHYS-14	Bay Area-wide Contributions to Airborne Toxic Cancer Risk by Pollutant, Based on 2005 Emissions Inventory.....	48

Figure A4.3-PHYS-15	Bay Area-wide Contributions to Airborne Toxic Cancer Risk by Source Type, Based on 2005 Emissions	50
Figure A4.3-PHYS-16	CARE Impacted Communities	51
Figure A4.3-PHYS-17	CalEnviroScreen Percentiles for Richmond, CA	53
Figure A4.3-REG-1	Map Showing Locations of BAAQMD Ambient Air Monitoring Locations	23
Figure A4.3-REG-2	Location of Project	25
Figure A4.3-SG-1	Firing Rate to Feed Ratio Versus API Gravity – Monthly Averages over the Baseline Period for Crude Unit Pre-Heater Furnaces F-1100A and B (Sources S-4070 and S-4071)	5
Figure A4.3-SG-2	Firing Rate to Feed Ratio Versus API Gravity – Monthly Averages over the Baseline Period for Crude Unit Vacuum Column Heater Furnace F-1160 (Source S-4072)	6
Figure A4.3-SG-3	Firing Rate to Feed Ratio Versus API Gravity – Monthly Averages over the Baseline Period for Diesel Hydrotreater Furnace F-1610 (Source S-4068)	7
Figure A4.3-SG-4	Firing Rate to Feed Ratio Versus API Gravity – Monthly Averages over the Baseline Period for Naphtha Hydrotreater Furnaces F-447 and F-410 (Sources S-4061 and S-4062)	8
Figure A4.3-SG-5	Firing Rate to Feed Ratio Versus API Gravity – Monthly Averages over the Baseline Period for Jet Hydrotreater Furnaces F-247 and F-210A&B (Sources S-4059 and S-4060)	9
Figure A4.3-SG-6	Firing Rate to Feed Ratio Versus API Gravity – Daily Averages over the Baseline Period for Crude Unit Pre-Heater Furnaces F-1100A and B (Sources S-4070 and S-4071)	10
Figure A4.3-SG-7	Firing Rate to Feed Ratio Versus API Gravity – Daily Averages over the Baseline Period for Crude Unit Vacuum Column Heater Furnace F-1160 (Source S-4072)	11
Figure A4.3-SG-8	Firing Rate to Feed Ratio Versus API Gravity – Daily Averages over the Baseline Period for Diesel Hydrotreater Furnace F-1610 (Source S-4068)	12
Figure A4.3-SG-9	Firing Rate to Feed Ratio Versus API Gravity – Daily Averages over the Baseline Period for	

	Naphtha Hydrotreater Furnaces F-447 and F-410 (Sources S-4061 and S-4062).....	13
Figure A4.3-SG-10	Firing Rate to Feed Ratio Versus API Gravity – Daily Averages over the Baseline Period for Jet Hydrotreater Furnaces F-247 and F-210A&B (Sources S-4059 and S-4060).....	14
Figure A4.3-SG-11	Firing Rate to Feed Ratio Versus Sulfur Weight Percent – Monthly Averages over the Baseline Period for Crude Unit Pre-Heater Furnaces F-1100A and B (Sources S-4070 and S-4071)	15
Figure A4.3-SG-12	Firing Rate to Feed Ratio Versus Sulfur Weight Percent – Monthly Averages over the Baseline Period for Crude Unit Bottom Vacuum Column Heater Furnace F-1160 (Source S-4072)	16
Figure A4.3-SG-13	Firing Rate to Feed Ratio Versus Sulfur Weight Percent – Monthly Averages over the Baseline Period for Diesel Hydrotreater Furnace F-1610 (Source S-4068).....	17
Figure A4.3-SG-14	Firing Rate to Feed Ratio Versus Sulfur Weight Percent – Monthly Averages Over the Baseline Period For Naphtha Hydrotreater Furnaces F-447 and F-410 (Sources S-4061 and S-4062).....	18
Figure A4.3-SG-15	Firing Rate to Feed Ratio Versus Sulfur Weight Percent – Monthly Averages over the Baseline Period for Jet Hydrotreater Furnaces F-247 and F-210A&B (Sources S-4059 and S-4060)	19
Figure A4.3-SG-16	Firing Rate to Feed Ratio Versus Sulfur Weight Percent – Daily Averages over the Baseline Period for Crude unit pre-heater furnaces F-1100A and B (Sources S-4070 and S-4071).....	20
Figure A4.3-SG-17	Firing Rate to Feed Ratio Versus Sulfur Weight Percent – Daily Averages over the Baseline Period for Crude Unit Bottom Vacuum Column Heater Furnace F-1160 (Source S-4072).....	21
Figure A4.3-SG-18	Firing Rate to Feed ratio Versus Sulfur Weight Percent – Daily Averages over the Baseline Period for Diesel Hydrotreater Furnace F-1610 (Source S-4068)	22
Figure A4.3-SG-19	Firing Rate to Feed Ratio Versus Sulfur Weight Percent – Daily Averages over the Baseline Period for Naphtha Hydrotreater Furnaces F-447 and F-410 (Sources S-4061 and S-4062)	23

Figure A4.3-SG-20	Firing Rate to Feed Ratio Versus Sulfur Weight Percent – Daily Averages over the Baseline Period for Jet Hydrotreater Furnaces F-247 and F-210A&B (Sources S-4059 and S-4060)	24
Figure A4.3-TRANS-1	Operational Truck Trips: Trips from Highways through Richmond Parkway and through Castro Street	12
Figure A4.3-TRANS-2	Oxygen Truck Trips	13
Figure A4.3-TRANS-3	Sulfur Truck Trips	14
Figure A4.3-TRANS-4	Marketing Rack Truck Trips	15
Figure A4.3-TRANS-5	Propane Truck Trips	16
Figure A4.3-TRANS-6	Solid Hazardous Waste Truck Trips	17
Figure A4.3-TRANS-7	Tally Room Truck Trips	18
Figure A4.3-TRANS-8	Lubricant Truck Trips	19
Figure A4.3-URM-1	General Facility Unit Flow Chart	3
Figure A4.3-URM-2	Illustration of Facility Sulfur Load from Crude Oil Feedstock (1,000 long tons of sulfur in crude Oil; 50% of crude oil sulfur in residuum)	17
Figure A4.8-SET-1	Increases in Carbon Dioxide and Methane Concentrations Over Time	4
Figure A4.8-SET-2	Global Warming Trends and Associated Sea Level Rise and Snow Cover Decrease	8
Figure A4.8-SET-3	GHG Emissions in California (2000-2011)	11
Figure A4.8-SET-4	U.S. GHG Emissions per Capita (2010)	12
Figure A4.8-SET-5	2007 San Francisco Bay Area GHG Emissions by Sector	14
Figure A4.8-SET-6	City of Richmond GHG Emissions (2005)	16
Figure A4.8-SET-7	City of Oakland GHG Emissions (2005)	17
Figure A4.8-SET-8	Contra Costa County GHG Emissions (2005)	18
Figure A4.13-REL-1	Screenshot of CRV Report from OERI	14
Figure A4.13-REL-2	Screenshot of COD Report from OERI	15
Figure A4.13-REL-3	Facility Streams Impacted by Modernization Project	29
Figure A4.13-REL-4	Sulfur Compounds in Crude Oil	54
Figure A4.13-REL-5	Locations of Damage Mechanisms in Crude Units	57
Figure A4.13-REL-6	Chevron Crude Unit Diagram Illustrating Process Monitoring Points	71
Figure A4.13-REL-7	Predicted Sour Water Calculator Results for the Low Severity Hydroprocessing Unit REAC Outlet Piping	95
Figure A4.13-REL-8	Corrosion Rate Curves for Hydroprocessing High Severity Units – RIC HNC REAC – 1-Inch REAC	

	Tube – Alloy 825, Represented as a Function of NH ₄ HS concentration and H ₂ S Partial Pressure	96
Figure A4.13-REL-9	Corrosion Rate Curves for Hydroprocessing High Severity Units – RIC HNC REAC Outlet Piping – 12- Inch Vertical Elbow – Alloy 825, Represented as a Function of NH ₄ HS Concentration and H ₂ S Partial Pressure.....	97
Figure A4.13-REL-10	Corrosion Rate Curves for Hydroprocessing High Severity Units – RIC LNC REAC Outlet Piping– 12- Inch Vertical Elbow – Alloy 825, Represented as a Function of NH ₄ HS concentration and H ₂ S Partial Pressure.....	98
Figure A4.13-REL-11	Corrosion Rate Curves for Hydroprocessing High Severity Units – RIC LNC REAC – 1-Inch REAC Tube – Alloy 825, Represented as a Function of NH ₄ HS Concentration and H ₂ S Partial Pressure	99
Figure A4.13-REL-12	Corrosion Rate Curves for Hydroprocessing High Severity Units – RIC TKC REAC Outlet Piping – 14- Inch Vertical Elbow – Alloy 825, Represented as a Function of NH ₄ HS Concentration and H ₂ S Partial Pressure.....	100
Figure A4.13-REL-13	Corrosion Rate Curves for Hydroprocessing High Severity Units – RIC TKC REAC – 1-Inch REAC Tube – Alloy 825, Represented as a Function of NH ₄ HS Concentration and H ₂ S Partial Pressure	101
Figure A4.13-REL-14	Corrosion Rate Curves for Hydroprocessing High Severity Units – RIC TKN REAC Outlet Piping– 12- Inch Vertical Elbow – Alloy 825, Represented as a Function of NH ₄ HS Concentration and H ₂ S Partial Pressure.....	102
Figure A4.13-REL-15	Corrosion Rate Curves for Hydroprocessing High Severity Units – RIC TKN REAC – 1-Inch REAC Tube – Alloy 825, Represented as a Function of NH ₄ HS Concentration and H ₂ S Partial Pressure	103
Figure A4.13-REL-16	Sour Water Plant Feed System	118
Figure A4.13-REL-17	Sour Water Block Flow Diagram.....	119

APPENDIX 1

NOP and Comment Letters



**SCOPING SESSION SUMMARY REPORT
CHEVRON REVISED RENEWAL PROJECT
SEPTEMBER 1, 2011**

The purpose of this memorandum is to document and summarize the comments received during the public scoping period for the Chevron Revised Renewal Project Draft Environmental Impact Report (EIR).

Notice of Preparation

Pursuant to Section 15082 of the *CEQA Guidelines*, the City of Richmond circulated a Notice of Preparation (NOP) to the State Clearinghouse, public agencies, special districts, and members of the public for a public review period beginning June 10 and ending on July 12, 2011. The purpose of the NOP was to formally convey that the City, as the lead agency, was soliciting input regarding the scope and proposed content of the EIR. The NOP and all comment letters are provided as an appendix to this report.

Scoping Meeting

Pursuant to Section 15082 (c)(1) of the *CEQA Guidelines*, for projects of statewide, regional or areawide significance, the lead agency is required to conduct at least one scoping meeting. The scoping meeting is for jurisdictional agencies and interested persons or groups to provide comments regarding, but not limited to, the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed in the Revised EIR. The City of Richmond hosted a scoping meeting at 6:00 p.m. on June 22, 2011, at the City Council Chambers, 440 Civic Center Plaza, Richmond, California. The scoping meeting was broadcast on ten occasions by KCRT between June 22 and July 24, 2011 and is available for viewing at the following URL: <http://www.kcrt.com/series/chevron-revised-renewal-project.html>.

NOP Scoping Responses

Eight verbal comments were received at the June 22, 2011 scoping meeting. Specific issues raised in the comments received are summarized in Table 1 below. Eight written comment letters were also received during the scoping period. Specific concerns raised in the written comments letters are summarized in Table 2 below.

All comments received during the scoping period will be taken into consideration during the preparation of the Draft Revised EIR.

Table 1: Summary of Scoping Meeting Comments

Commenter/Date	Summary of Verbal Comment
Judy Morgan President/CEO Richmond Chamber of Commerce June 22, 2011	The commenter made a statement in support of the project and requested an open and transparent process.
Dennis Roos June 22, 2011	The commenter made a statement in support of the project and requested an open and transparent process.
Tom Quinn Senior Field Representative Carpenters Union June 22, 2011	The commenter made a statement in support of the project; requested an open and transparent process; and expressed a desire for jobs.
Latrice Maderas Richmond BUILD Graduate June 22, 2011	The commenter made a statement in support of the project and expressed a desire for jobs.
Ken Morgan Insulators Local 16 June 22, 2011	The commenter made a statement in support of the project and requested an open and transparent process.
Dr. Henry Clark Director West County Toxics Coalition June 22, 2011	The commenter stated the following concerns: 1) confusion about the hydrogen pipeline in that the pipeline was going to start at the refinery but refinery would not be plugged into it because it would go to other refineries to supply hydrogen. 2) Safety along the pipeline at the refinery and in Richmond; if there is a problem along the pipeline, how will it affect other parts of the project or the refinery? 3) Toxic contaminants should not be increased or increased disproportionately. 4) Environmental justice laws must be followed. 5) Project needs to reduce emissions below current levels, otherwise the project will not meet requirements of environmental justice.
Paul Cohen President Carpenters Union June 22, 2011	The commenter: urged an expedited project/process, one that will pass muster and move forward; and encouraged the use of the analysis developed for the prior EIR and focus on issues of court decision to move forward. The commenter also expressed a desire for jobs and urged that the no project alternative considers the no jobs aspect.
Rafael Madrigal President 23rd Street Merchant Association June 22, 2011	The commenter made a statement in support of the project and expressed a desire for jobs.

Table 2: Summary of NOP Comments

Commenter/Date	Summary of Written Comment
<i>Public Agencies</i>	
Jean Roggenkamp Deputy Air Pollution Control Officer Bay Area Air Quality Management District July 19, 2011	Provide a discussion of the District's attainment status for all criteria pollutants and the implications for the region if these standards are not attained or maintained by statutory deadlines; a discussion of the health effects of air pollution, especially on sensitive receptors; and a discussion of greenhouse gas (GHG) emissions and the potential impacts from climate change in the Bay Area.
	Provide a map that identifies the distance between the Revised Project and all sensitive receptor locations, such as residences, schools, day cares, hospitals, and nursing care within 1,000 feet.
	Provide a detailed analysis of the Revised Project's potential effects on local and regional air quality from construction and operations (including permitted and non-permitted stationary and area emissions, and mobile emissions). The cumulative impacts for the Revised Project should also be evaluated.
	Estimate both the maximum daily and annual emissions of volatile organic compounds (VOCs), nitrogen oxides (NOx), greenhouse gases (GHGs) and particulate matter (PM2.5 and PM10).
	Estimate and evaluate the potential health risks from construction and operation activities to current and future sensitive populations within the Revised Project area from toxic air contaminants (TACs).
	Include mitigation measures for any identified potentially significant air quality impacts.
	Consult with the District's permit engineers to determine the appropriate baseline emissions for the Revised Project air quality analysis.
	Include a list of all equipment that would be part of the Revised Project, including abatement devices, and equipment makes and models
Linda Scourtis Coastal Planner San Francisco Bay Conservation and Development Commission July 8, 2011	Although it appears the project is located outside our "shoreline band" permitting jurisdiction, the Chevron Richmond Refinery is located within a water-related industry priority use area as shown on Bay Plan Map 4. Under the CZMA, in the event a federal permit or federal funding is needed for the proposed project, the Commission has the authority to determine whether the activity is consistent with its law and policies. If there will be any such federal involvement with the Energy and Hydrogen Renewal Project, the project proponent should contact Ms. Jaime Michaels of our staff.
Joseph G. Doser, REHS Supervising Environmental Health Specialist Contra Costa Health Services July 15, 2011	A permit from the Contra Costa Environmental Health Department is required for any well or soil boring prior to commencing drilling activities, including those associated with environmental investigation and cleanup, and geotechnical investigation.
	Any abandoned wells (water, environmental, or geotechnical) and septic tanks must be destroyed under permit from CCEHD.

Scott Wilson for Carl Wilcox Regional Manager Bay Delta Region Department of Fish and Game July 6, 2011	Provide a complete assessment (including but not limited to type, quantity, and locations) of the habitats, flora and fauna within and adjacent to the project area, including endangered, threatened, and locally unique species and sensitive habitats. The assessment should include the reasonably foreseeable direct and indirect changes (temporary and permanent) that may occur with implementation of the project. Rare, threatened, and endangered species to be addressed should include all those which meet CEQA definition (see CEQA Guidelines, Section 15380).
	Include an analysis of changes in nitrogen deposition rates associated with new operational procedures at the refinery.
	Include any related nitrogen deposition impacts on special-status plants in the vicinity of the project, such as increased competition from exotic plant species, should be discussed and addressed.
	A California Endangered Species Act (CESA) Permit must be obtained if the project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the project.
	The CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program.
	For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, DFG may require a Lake and Streambed Alteration Agreement (LSAA).
	The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for completion of the agreement.
Gary Arnold District Branch Chief Local Development – Intergovernmental Review California Department of Transportation July 12, 2011	The project's fair share contribution, financing, scheduling, implementation responsibilities, and lead agency monitoring should be fully discussed for all proposed mitigation measures.
	Must include documentation of a current archaeological record search from the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) at Sonoma State University if construction activities are proposed within State ROW. Current record searches must be no more than five years old.
	If it is determined that traffic restrictions and pedestrian/bicycle detours are needed, a Transportation Management Plan (TMP) or construction traffic impact study may be required by the developer for approval by the lead agency and the Department prior to construction.
	Project work that requires movement of oversized or excessive load vehicles on State roadways, such as Interstate 580 (I-580) requires a transportation permit that is issued by the Department.

Scoping Session Summary Report
Chevron Revised Renewal Project EIR

John L Rush for William R. Kirkpatrick Manager of Water Distribution Planning Division East Bay Municipal Utility District July 12, 2011	EBMUD determined that the revised project does not require the preparation of a new WSA as the revised project reduces the scope from the original project with the elimination of the co-generation facility and appears not to induce additional water demand from the original estimate. The reduction of water demand should be confirmed in the Draft EIR.
Katy Sanchez Program Analyst Native American Heritage Commission July 18, 2011	Contact the appropriate Regional Archaeological Information Center for a record search.
	Contact the Native American Heritage Commission for: ▪ A Sacred Lands File Check ▪ A list of appropriate Native American contacts for consultation
	Lack of surface evidence of archeological resources does not preclude their subsurface existence.
<i>Individuals</i>	
Linda Schneider, M.A. July 10, 2011	What specific steps will Chevron take to significantly move beyond current emission standards (more than 50%) and from gas and oil production into more green forms of production?
	How can Chevron participate in a community-wide, systemic change which is more beneficial to the overall environment and to the lives of individuals within the community and within Chevron's employ?

P:\11-005 CVRN\PRODUCTS\NOP-IS\Scoping Summary_final.doc

ATTACHMENT 1
Notice of Preparation



JERRY BROWN
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



Memorandum

Date: June 14, 2011
To: All Reviewing Agencies
From: Scott Morgan, Director
Re: SCH # 2005072117
Chevron Revised Energy and Hydrogen Renewal Project



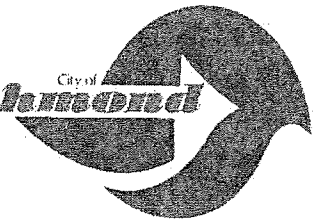
The State Clearinghouse distributed the above-referenced Notice of Preparation on June 13, 2011 to your agency for review and comment. It has come to our attention that the document was issued a previous State Clearinghouse Number in error. For all future correspondence regarding this project, please use the new State Clearinghouse Number **2011062042**. We apologize for any inconvenience this may have caused. All other project information remains the same.

cc: Lina Velasco
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

2011062042

PLANNING DEPARTMENT

City of
Richmond



June 14, 2011

State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

RECEIVED

JUN 14 2011

STATE CLEARING HOUSE

Via email: state.clearinghouse@opr.ca.gov

**RE: New SCH Number for the Revised Energy and Hydrogen Renewal Project
Revised EIR**

The City of Richmond submitted a Notice of Preparation (NOP) for the Revised Energy and Hydrogen Renewal Project Revised Environmental Impact Report (EIR) on Friday, June 10, 2011. Upon receipt of the NOP, the State Clearinghouse (SCH) assigned the previous Draft EIR SCH Number (2005072117) to this project.

Please accept this letter as a request to assign a new SCH number for the Revised Energy and Hydrogen Renewal Project Revised EIR.

Please feel free to contact me at (510) 620-6841 or via email at Lina_Velasco@ci.richmond.ca.us with any questions.

Sincerely,

Lina Velasco
Senior Planner



JERRY BROWN
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



Notice of Preparation

June 14, 2011

To: Reviewing Agencies

Re: Chevron Revised Energy and Hydrogen Renewal Project
SCH# 2011062042

Attached for your review and comment is the Notice of Preparation (NOP) for the Chevron Revised Energy and Hydrogen Renewal Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Lina Velasco
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

**Document Details Report
State Clearinghouse Data Base**

SCH# 2011062042
Project Title Chevron Revised Energy and Hydrogen Renewal Project
Lead Agency Richmond, City of

Type **NOP** Notice of Preparation
Description Note: Reference SCH# 2005072117.

In 2005, Chevron Products (Chevron) proposed the Energy and Hydrogen Renewal Project at the Chevron Richmond Refinery (Refinery). The original project involved several modifications to the Refinery: (1) Hydrogen Plant Replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building).

Lead Agency Contact

Name	Lina Velasco	
Agency	City of Richmond	
Phone	(510) 620-6841	Fax
email	Lina_Velasco@ci.richmond.ca.us	
Address	450 Civic Center Plaza	
City	Richmond	State CA Zip 94804

Project Location

County Contra Costa
City Richmond
Region
Cross Streets Chevron Way
Lat / Long
Parcel No.
Township

Range

Section

Base

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use M-3 (Heavy Industrial)

Project Issues

Reviewing Agencies Resources Agency; Office of Historic Preservation; Department of Parks and Recreation; San Francisco Bay Conservation and Development Commission; Department of Water Resources; Department of Fish and Game, Region 3; Native American Heritage Commission; Public Utilities Commission; California Highway Patrol; Caltrans, District 4; Air Resources Board, Major Industrial Projects; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 2

Date Received 06/13/2011 **Start of Review** 06/13/2011 **End of Review** 07/12/2011

Resources Agt

Resources Agency
Nadell Gayou

Dept. of Boating & Waterways
Mike Sotelo

California Coastal
Commission
Elizabeth A. Fuchs

Colorado River Board
Gerald R. Zimmerman

Dept. of Conservation
Rebecca Salazar

California Energy
Commission
Eric Knight

Cal Fire
Allen Robertson

Central Valley Flood
Protection Board
James Herota

Office of Historic
Preservation
Ron Parsons

Dept of Parks & Recreation
Environmental Stewardship
Section

California Department of
Resources, Recycling &
Recovery
Sue O'Leary

S.F. Bay Conservation &
Dev't. Comm.
Steve McAdam

Dept. of Water Resources
Resources Agency
Nadell Gayou

Conservancy

Fish and Game

Dept. of Fish & Game
Scott Flint
Environmental Services Division

Fish & Game Region 1
Donald Koch

Fish & Game Region 1E
Laurie Harnsberger

Fish & Game Region 2
Jeff Drongesen

Fish & Game Region 3
Charles Amor

Fish & Game Region 4
Julie Vance

Fish & Game Region 5
Don Chadwick
Habitat Conservation Program

Fish & Game Region 6
Gabrina Gatchel
Habitat Conservation Program

Fish & Game Region 6 /M
Brad Henderson
Inyo/Mono, Habitat Conservation
Program

Dept. of Fish & Game M
George Isaac
Marine Region

Other Departments

Food & Agriculture
Steve Shaffer
Dept. of Food and Agriculture

Dept. of General Services
Public School Construction

Dept. of General Services
Anna Garbelf
Environmental Services Section

Dept. of Public Health
Bridgette Binning
Dept. of Health/Drinking Water

Independent

Commissions, Boards
Delta Protection Commission
Linda Flack

Cal EMA (Emergency
Management Agency)
Dennis Castrillo

Governor's Office of Planning
& Research
State Clearinghouse

Native American I
Comm.
Debbie Treadway

Public Utilities Commission
Leo Wong

Santa Monica Bay Restoration
Guangyu Wang

State Lands Commission
Marina Brand

Tahoe Regional Planning
Agency (TRPA)
Cherry Jacques

Business, Trans & Housing

Caltrans - Division of
Aeronautics
Philip Grimmins

Caltrans - Planning
Terri Pencovic

California Highway Patrol
Scott Loetscher
Office of Special Projects

Housing & Community
Development
CEQA Coordinator
Housing Policy Division

Dept. of Transportation

Caltrans, District 1
Rex Jackman

Caltrans, District 2
Marcelino Gonzalez

Caltrans, District 3
Bruce de Terra

Caltrans, District 4
Lisa Carboni

Caltrans, District 5
David Murray

Caltrans, District 6
Michael Navarro

Caltrans, District 7
Elmer Alvarez

Caltrans, District 8
Dan Kopulsky

Caltrans, District 9
Gayle Rosander

Caltrans, District 10
Tom Dumas

Caltrans, District 11
Jacob Armstrong

Caltrans, District 12
Chris Herre

Cal EPA

Air Resources Board

Airport Projects
Jim Lerner

Transportation Projects
Douglas Ito

Industrial Projects
Mike Tollstrup

State Water Resources Control
Board
Regional Programs Unit
Division of Financial Assistance

State Water Resources Control
Board
Student Intern, 401 Water Quality
Certification Unit
Division of Water Quality

State Water Resources Control Board
Steven Herrera
Division of Water Rights

Dept. of Toxic Substances Control
CEQA Tracking Center

Department of Pesticide Regulation
CEQA Coordinator

Other

Regional Water Quality Control
Board (RWQCB)

RWQCB 1
Cathleen Hudson
North Coast Region (1)

RWQCB 2
Environmental Document
Coordinator
San Francisco Bay Region (2)

RWQCB 3
Central Coast Region (3)

RWQCB 4
Teresa Rodgers
Los Angeles Region (4)

RWQCB 5S
Central Valley Region (5)

RWQCB 5F
Central Valley Region (5)
Fresno Branch Office

RWQCB 5R
Central Valley Region (5)
Redding Branch Office

RWQCB 6
Lahontan Region (6)

RWQCB 6V
Lahontan Region (6)
Victorville Branch Office

RWQCB 7
Colorado River Basin Region (7)

RWQCB 8
Santa Ana Region (8)

RWQCB 9
San Diego Region (9)



JERRY BROWN
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



Notice of Preparation

June 13, 2011



To: Reviewing Agencies

Re: Chevron Revised Energy and Hydrogen Renewal Project
SCH# 2005072117

Attached for your review and comment is the Notice of Preparation (NOP) for the Chevron Revised Energy and Hydrogen Renewal Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Lina Velasco
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

**Document Details Report
State Clearinghouse Data Base**

SCH# 2005072117
Project Title Chevron Revised Energy and Hydrogen Renewal Project
Lead Agency Richmond, City of

Type NOP Notice of Preparation
Description In 2005, Chevron Products (Chevron) proposed the Energy and Hydrogen Renewal Project at the Chevron Richmond Refinery (Refinery). The original project involved several modifications to the Refinery: (1) Hydrogen Plant Replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building).

Lead Agency Contact

Name Lina Velasco
Agency City of Richmond
Phone (510) 620-6841 **Fax**
email Lina_Velasco@ci.richmond.ca.us
Address 450 Civic Center Plaza
City Richmond **State** CA **Zip** 94804

Project Location

County Contra Costa
City Richmond
Region
Cross Streets Castro Street
Lat / Long
Parcel No. 561-100-002

Township	Range	Section	Base
-----------------	--------------	----------------	-------------

Proximity to:

Highways Hwy 580
Airports
Railways Santa Fe Railyards
Waterways San Pablo Bay and San Francisco Bay
Schools
Land Use M-3 (Heavy Industrial)

Project Issues Archaeologic-Historic; Biological Resources; Cumulative Effects; Drainage/Absorption; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Water Quality; Water Supply; Aesthetic/Visual; Air Quality; Geologic/Seismic; Other Issues

Reviewing Agencies Resources Agency; Office of Historic Preservation; Department of Parks and Recreation; San Francisco Bay Conservation and Development Commission; Department of Water Resources; Department of Fish and Game, Region 3; Native American Heritage Commission; Public Utilities Commission; California Highway Patrol; Caltrans, District 4; Air Resources Board, Major Industrial Projects; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 2

Date Received 06/13/2011 **Start of Review** 06/13/2011 **End of Review** 07/12/2011

Resources Ag Y

- ☒ Resources Agency
Nadell Gayou
- ☐ Dept. of Boating & Waterways
Mike Sotelo
- ☐ California Coastal Commission
Elizabeth A. Fuchs
- ☐ Colorado River Board
Gerald R. Zimmerman
- ☐ Dept. of Conservation
Rebecca Salazar
- ☐ California Energy Commission
Eric Knight
- ☐ Cal Fire
Allen Robertson
- ☐ Central Valley Flood Protection Board
James Herola
- ☒ Office of Historic Preservation
Ron Parsons
- ☐ Dept of Parks & Recreation
Environmental Stewardship Section
- ☐ California Department of Resources, Recycling & Recovery
Sue O'Leary
- ☒ S.F. Bay Conservation & Dev't. Comm.
Steve McAdam
- ☒ Dept. of Water Resources
Resources Agency
Nadell Gayou
- ☐ Conservancy
- Fish and Game
- ☐ Depart. of Fish & Game
Scott Flint
Environmental Services Division
- ☐ Fish & Game Region 1
Donald Koch

- ☐ Fish & Game Region 1E
Laurie Harnsberger
- ☐ Fish & Game Region 2
Jeff Drongesen
- ☒ Fish & Game Region 3
Charles Armor
- ☐ Fish & Game Region 4
Julie Vance
- ☐ Fish & Game Region 5
Don Chadwick
Habitat Conservation Program
- ☐ Fish & Game Region 6
Gabrina Gatchel
Habitat Conservation Program
- ☐ Fish & Game Region 6 I/M
Brad Henderson
Inyo/Mono. Habitat Conservation Program
- ☐ Dept. of Fish & Game M
George Isaac
Marine Region

Other Departments

- ☐ Food & Agriculture
Steve Shaffer
Dept. of Food and Agriculture
- ☐ Dept. of General Services
Public School Construction
- ☐ Dept. of General Services
Anna Garbett
Environmental Services Section
- ☐ Dept. of Public Health
Bridgette Binning
Dept. of Health/Drinking Water
- Independent Commissions/Boards
- ☐ Delta Protection Commission
Linda Flack
- ☐ Cal EMA (Emergency Management Agency)
Dennis Castriello
- ☐ Governor's Office of Planning & Research
State Clearinghouse

- ☒ Native American Comm.
Debbie Treadway
- ☒ Public Utilities Commission
Leo Wong
- ☐ Santa Monica Bay Restoration
Guangyu Wang
- ☐ State Lands Commission
Marina Brand
- ☐ Tahoe Regional Planning Agency (TRPA)
Cherry Jacques

Business, Trans & Housing

- ☐ Caltrans - Division of Aeronautics
Philip Grimmins
- ☐ Caltrans - Planning
Terri Pencovic
- ☒ California Highway Patrol
Scott Loetscher
Office of Special Projects
- ☐ Housing & Community Development
CEQA Coordinator
Housing Policy Division

Dept. of Transportation

- ☐ Caltrans, District 1
Rex Jackman
- ☐ Caltrans, District 2
Marcelino Gonzalez
- ☐ Caltrans, District 3
Bruce de Terra
- ☒ Caltrans, District 4
Lisa Carboni
- ☐ Caltrans, District 5
David Murray
- ☐ Caltrans, District 6
Michael Navarro
- ☐ Caltrans, District 7
Elmer Alvarez

- ☐ Caltrans, District 8
Dan Kopulsky
- ☐ Caltrans, District 9
Gayle Rosander
- ☐ Caltrans, District 10
Tom Dumas
- ☐ Caltrans, District 11
Jacob Armstrong
- ☐ Caltrans, District 12
Chris Herre

Cal EPA

- Air Resources Board
- ☐ Airport Projects
Jim Lemer
- ☐ Transportation Projects
Douglas Ito
- ☒ Industrial Projects
Mike Tollstrup
- ☐ State Water Resources Control Board
Regional Programs Unit
Division of Financial Assistance
- ☐ State Water Resources Control Board
Student Intern, 401 Water Quality Certification Unit
Division of Water Quality
- ☐ State Water Resources Control Board
Steven Herrera
Division of Water Rights
- ☒ Dept. of Toxic Substances Control
CEQA Tracking Center
- ☐ Department of Pesticide Regulation
CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- ☐ RWQCB 1
Cathleen Hudson
North Coast Region (1)
- ☒ RWQCB 2
Environmental Document Coordinator
San Francisco Bay Region (2)
- ☐ RWQCB 3
Central Coast Region (3)
- ☐ RWQCB 4
Teresa Rodgers
Los Angeles Region (4)
- ☐ RWQCB 5S
Central Valley Region (5)
- ☐ RWQCB 5F
Central Valley Region (5)
Fresno Branch Office
- ☐ RWQCB 5R
Central Valley Region (5)
Redding Branch Office
- ☐ RWQCB 6
Lahontan Region (6)
- ☐ RWQCB 6V
Lahontan Region (6)
Victorville Branch Office
- ☐ RWQCB 7
Colorado River Basin Region (7)
- ☐ RWQCB 8
Santa Ana Region (8)
- ☐ RWQCB 9
San Diego Region (9)
- ☐ Other



**City of Richmond
NOTICE OF PREPARATION
CHEVRON REVISED PROJECT**

To: Affected Agencies (via Certified Mail)
Property Owners within 500 Feet of the Affected Property (via US Mail)
Interested Organizations and Persons (via US Mail)

From: City of Richmond

Lead Agency: City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

Contact: **Lina Velasco**
Senior Planner
(510) 620-6841
Lina_Velasco@ci.richmond.ca.us

Subject: Notice of Preparation of a Revised Environmental Impact Report State CEQA Guidelines § 15082(a)

Notice is hereby given that the City of Richmond will be Lead Agency and prepare a Revised Environmental Impact Report (Revised EIR) for the Revised Energy and Hydrogen Renewal Project (Revised Project) proposed by Chevron Products (Chevron) at the Chevron Richmond Refinery (Refinery). The City is requesting comments on the scope and content of this Revised EIR. The City will use the Revised EIR prepared for this project when considering approval of the Revised Project. Responsible agencies will need to consider the Revised EIR prepared by the City of Richmond when considering any permit or other approval for the proposed project.

Further notice is hereby given that a public meeting to receive comments on this Notice of Preparation and the scope of the Revised EIR will be held by the Richmond Department of Planning and Building Services on June 22, 2011, at 6 pm at the City Council Chambers, 440 Civic Center Plaza, Richmond, CA 94804. You may also submit written comments at the public meeting.

Chevron's Renewal Project was originally approved by the City in July 2008. However, following a court challenge, the EIR for the Renewal Project was found by the Court of Appeal to be insufficient under the California Environmental Quality Act (CEQA). On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR. The Revised EIR is being prepared to meet the requirements set forth in the writ of mandate. In addition, Chevron has reduced the scope of the prior project by eliminating several components. The Revised EIR will consider the project as now proposed.

A description of the Revised Project, its location and the potential environmental effects are contained in the attached materials. The City has determined that an Initial Study is not required.

Your response must be received at the earliest possible date, but not later than July 12, 2011. Please send your response to Lina Velasco at the City of Richmond Department of Planning and Building Services at the address shown above. In your response, please include your name, the name of your agency or organization (if applicable), and contact information. The NOP and project file are available for review between the hours of 8:30 am to 5:00 pm, Monday through Friday at the City of Richmond Department of Planning and Building Services, Second Floor 450 Civic Center Plaza, Richmond CA 94804.

Project Title: Chevron Revised Project
Project Applicant: Chevron

Date: June 10, 2011

NOTICE OF PREPARATION CHEVRON REVISED PROJECT

1) Background

In 2005, Chevron Products (Chevron) proposed the Energy and Hydrogen Renewal Project at the Chevron Richmond Refinery (Refinery). The original project involved several modifications to the Refinery: (1) Hydrogen Plant Replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building).

In July 2008, the City of Richmond (City) certified an environmental impact report (EIR) and issued conditional use and design review permits for the project. Construction of two project components, the Hydrogen Plant replacement and the Hydrogen Purity Improvements, commenced in 2008, but was halted in July 2009 when the Superior Court found the EIR to be insufficient. At that time, construction of these two components was more than 50% complete.

Following an appeal by Chevron, the Court of Appeal found the EIR to be insufficient, and set aside the permits for the project. The Court of Appeal declined to rule on whether the EIR's analysis of cumulative impacts was sufficient. On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR in order for the City to reconsider the permits for the project.¹

On May 23, 2011, Chevron submitted an application to the City for a Revised Project, which reduces the scope original project. The Revised Project will complete only the Hydrogen Plant replacement and the Hydrogen Purity Improvements. It will also include the associated equipment needed to tie the improvements into the Refinery. The Catalytic Reformer Replacement, Power Plant Replacement, and Other New and Replacement Facilities that were part of the original project have been eliminated: The Catalytic Reformer Replacement and the Power Plant Replacement, which was to support the Catalytic Reformer, are no longer needed due to changes in the transportation fuel market. The Other New and Replacement Facilities (storage tanks, control building and central maintenance building) are no longer proposed for economic and other reasons.

Accordingly, the City is now preparing a Revised EIR that addresses the May 23, 2011 application. The Revised EIR will address requirements set out in the Superior Court's writ of mandate. In addition to the City permits, Chevron will seek to obtain an Authority to Construct from the Bay Area Air Quality Management District (BAAQMD) and comply with all applicable plans, rules and regulations of the BAAQMD in respect to air emissions from the Revised Project. The BAAQMD will serve as a responsible agency under CEQA and will rely on the Revised EIR for issuance of the Authority to Construct.

¹ A more detailed description of the City's prior permit proceedings and the court decision is provided in **Appendix A.**

2) Project Location

The Revised Project is located entirely within the boundaries of the existing 2,900 acre Refinery, at 841 Chevron Way in the City of Richmond, County of Contra Costa. As shown in **Figure 1**, the project is located in the central and northern portions of the Refinery and within the existing Refinery footprint. The Hydrogen Plant replacement would be installed in an area of the Central Yard referred to as the “Y”. This area is currently occupied with the partially constructed Hydrogen Plant. Construction of the Hydrogen Purity Improvements would occur within or adjacent to the Sulfur Recovery Units (SRUs) and Fluid Catalytic Cracker Feed Hydrotreater (FCCFHT).

Southeast of the Refinery, across Castro Street and Garrard Boulevard, are the residential communities of Atchison Village, Santa Fe and Iron Triangle. The Shields-Reid residential community lies toward the northeast. Further east are central and downtown Richmond. Parchester Village is located northeast of the Refinery and Point Richmond is located to the southwest. The Point San Pablo Peninsula and the San Francisco Bay form the western border and San Pablo Bay forms the northern boundary of the Refinery property.

The main portion of the Refinery lies within the City’s M-3 Heavy Industrial, Zoning District. The Refinery is bounded by the Chevron Richmond Marketing Fuels Terminal to the southeast, and Chevron Energy Technology Company to the south. The Revised Project components will be located a minimum of 5,000 feet from any residential uses.

3) Project Description

The Refinery processes crude oil blends, externally sourced gas oils, and natural gas into a variety of fuel and oil products. In addition to producing motor gasoline, jet fuel, diesel fuel, and lubricating oils, the Refinery produces industrial fuel oil, liquefied petroleum gas, sulfur, and other products, such as ammonia. The Refinery also produces steam, electricity, fuel gas, and hydrogen, primarily for its own use.

The Revised Project is proposed by Chevron for several reasons. It would allow the Refinery to process crude oil blends and externally-sourced gas oils with higher sulfur content, in order to continue producing competitive transportation fuels and lubricating oils. In addition, it would replace the Refinery’s existing hydrogen production facilities with a modern plant that is more energy efficient yields higher purity hydrogen, and has the capacity to produce more hydrogen.

Each of the Revised Project components is described below. **Appendix B** lists specific equipment changes for the Revised Project.

A. Hydrogen Plant Replacement

The Refinery’s existing Hydrogen Plant produces approximately 95% pure hydrogen, with 5% impurities. Chevron proposes the replacement plant in order to produce more than 99%-pure hydrogen while using less energy. The replacement plant will also increase hydrogen production capacity from 180 million standard cubic feet per day (SCFD) to 230 million SCFD, utilizing refinery fuel gas, natural gas, and some ammonia as feedstock. The new plant will have sufficient

capacity to meet the Refinery's needs and to enable the owner and operator of the Hydrogen Plant to export hydrogen to third-party customers, consistent with the original project.

Improving hydrogen purity will reduce the density of hydrogen streams in the Refinery. This will necessitate replacement or modification of existing refinery compressors to preserve their current operation and capacities. The replacements and modifications will also reduce compressor energy consumption. The Revised Project will also include the installation of low-NO_x burners on five process heaters to maintain compliance with the Refinery-wide NO_x emission limit in BAAQMD Regulation 9, Rule 10.

B. Hydrogen Purity Improvements (Sulfur Removal)

The Hydrogen Purity Improvements will enable the Refinery to process crude oil blends that contain up to approximately 3% sulfur. These improvements will also provide the Refinery with the flexibility to process more externally-sourced medium-high sulfur gas oils (containing 0.5% sulfur or more). This change is likely to result in the replacement of some low-sulfur gas oils by medium-high sulfur gas oils; however, the overall amount of feedstock and petroleum product output will be consistent the Refinery's current capacity. Chevron proposes equipment changes to recover the additional sulfur, which would then be sold as a product.

The primary equipment changes involved in the Hydrogen Purity Improvements are to: increase the capacity of the FCCFHT (from 65,000 to 80,000 barrels per day) in keeping with the potentially higher sulfur feedstock slate; enable sulfur removal from the recycle hydrogen stream of the FCCFHT; add a #6 Hydrogen Sulfide Amine Regenerator; and increase the sulfur recovery capacity of the Sulfur Recovery Units (SRUs) (from 600 to 900 long tons per day). Under the application, there will also be related modifications and additions of ancillary process equipment such as pumps, piping, heat exchangers vessels, tanks, instrumentation, off-plot interconnections and utilities.

C. Associated Infrastructure Improvements

To tie the new Hydrogen Plant and Hydrogen Purity Improvements into the existing Refinery, new pipe racks, piping, and utility infrastructure (including electricity, steam, fuel gas, process gas, water, instrumentation, process and storm sewer connections) will be installed.

4) Potential Environmental Effects.

The Revised EIR will consider potential environmental effects that may be associated with the Revised Project. The Revised EIR will also examine whether changes will occur in other Refinery operations as a result of the changes associated with the Revised Project (e.g., Hydrogen Plant replacement, the Hydrogen Purity Improvements). Consistent with the writ of mandate issued by the Superior Court, the analysis will focus on relevant resources identified in Appendix G to the California Environmental Quality Act (CEQA) Guidelines, including, but not limited to criteria air pollutants, toxic air contaminants, human health risks, water discharges, and GHG emissions.

Although the only physical change to conversion or treating units proposed by Chevron in the Revised Project is an increase in throughput capacity of the FCCFHT, the Revised EIR will

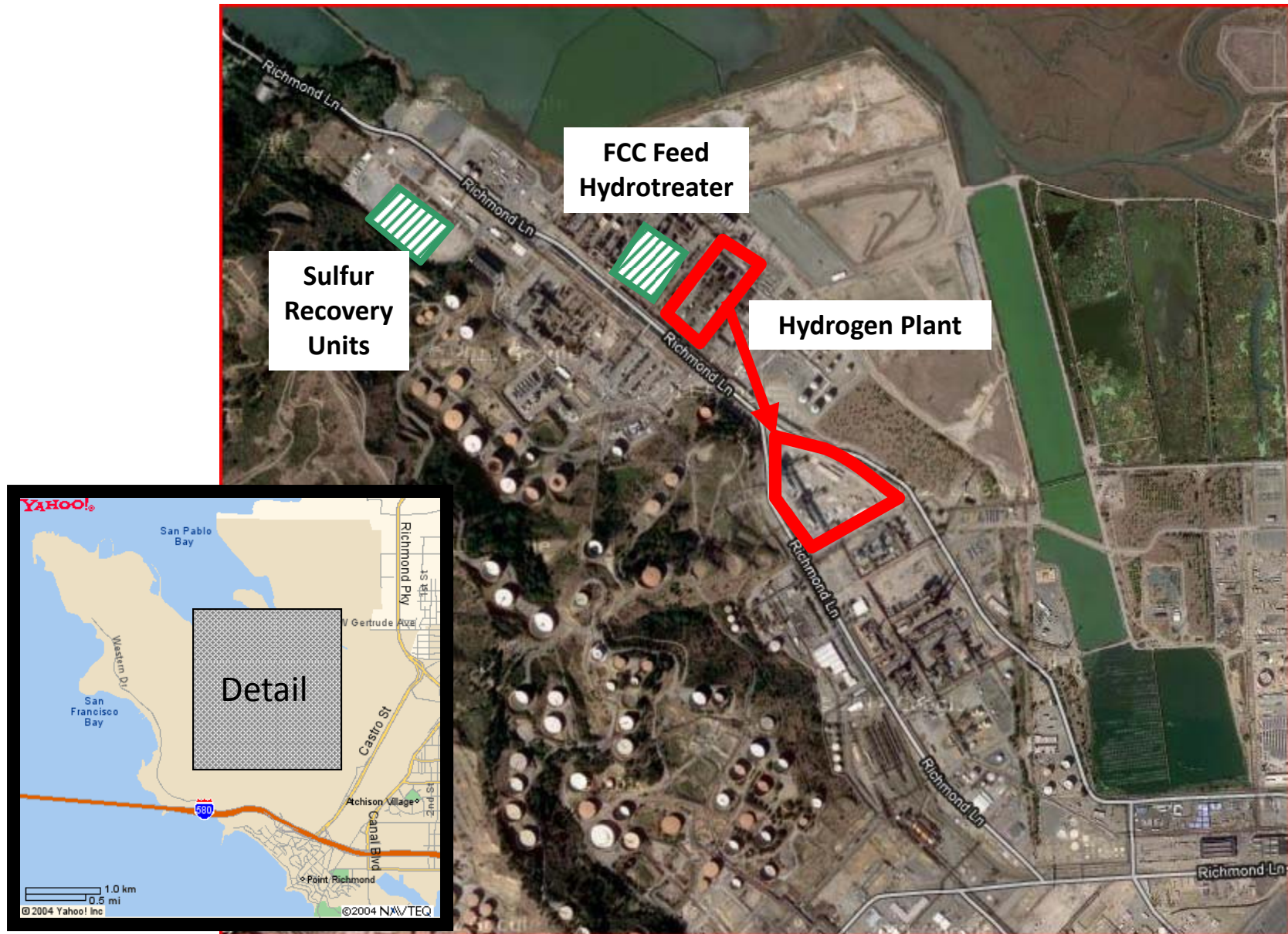
examine a range of foreseeable operating scenarios (e.g., different feedstocks and crude slates) for the full Refinery once the Revised Project is completed and analyze the range of potential environmental effects. This analysis of potential environmental effects will also consider the full Refinery, including refinery emergencies and flaring.

The Appeal Court decision held that the prior EIR: (1) was unclear and inconsistent as to whether the project will enable Chevron to process a heavier crude slate than it is currently processing; and (2) did not state a baseline for crude gravity in order to measure the potential for increased impacts from any changes in the crude oil slate due to the project. The Revised EIR will consider whether the Revised Project includes any changes that would enable processing crude oil blends with heaviness outside the range of the Refinery's current baseline operation, in the light-intermediate crude gravity range. It will also describe the crude slate used by Chevron in recent operations in order to define the operational baseline, and will analyze whether there would be any potential environmental impacts from processing a variety of crude blends that utilize the Refinery's existing capacity.

The Appeal Court decision also held that the City improperly deferred the formulation of GHG mitigation measures to a future, post-EIR process. The Revised EIR baseline and post-project GHG emissions will be calculated consistent with AB-32 requirements, and will identify specific measures to achieve a net-zero emissions standard for GHG emissions over the pre-Revised Project baseline.

The Superior Court decision indicated that the EIR's cumulative impacts analysis may be affected. Therefore, the Revised EIR will consider whether there will be potentially significant cumulative impacts from operation of the Revised Project or the Refinery as modified by the Revised Project.

Figure 1. Richmond Refinery Site Plan



NOTICE OF PREPARATION CHEVRON REVISED PROJECT

APPENDIX A - LEGAL BACKGROUND

On April 6, 2005, Chevron applied to the City of Richmond (City) for permits necessary to construct and operate the Energy and Hydrogen Renewal Project (Original Project) within existing manufacturing facilities at the Richmond Refinery (Refinery). The Original Project involved the replacement of existing equipment at four main process plants with newer technology and included the following components:

- Hydrogen Plant Replacement
- Hydrogen Purity Improvements
- Power Plant Replacement
- Catalytic Reformer Replacement
- Associated Infrastructure Modifications
- Other New and Replacement Facilities (storage tanks, control building and central maintenance building)

On July 17, 2008, the City certified an environmental impact report (Original EIR or EIR) and approved the permits for the Original Project. Following the City's issuance of the Notice of Determination (NOD) on August 5, 2008, and the issuance of an authority to construct by the Bay Area Air Quality Management District (BAAQMD) on September 19, 2008, Chevron proceeded with construction of the Hydrogen Plant Replacement and Hydrogen Purity Improvements. Construction of these components was more than 50% complete when, in July 2009, the project was halted under a writ of mandate and injunction issued by the Superior Court of Contra Costa County ("Superior Court") pursuant to the petition filed by Communities for a Better Environment, West County Toxics Coalition and Asian Pacific Environmental Network. Chevron appealed the Superior Court's ruling and in April 2010, the Court of Appeal issued a decision instructing the Superior Court to "enter a new and different judgment granting the petition for writ of mandate with regard to the EIR's failure to provide an adequate project description and its failure to define mitigation measures for greenhouse gas emissions, while denying mandate relief with regard to the claim of improper segmentation of a larger project." (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70.)

In its decision, the Court of Appeal held that (i) the project description in the Original EIR was unclear and inconsistent as to whether or not the project would enable Chevron to process a heavier crude slate than it currently processes; (ii) the EIR did not establish a baseline for purposes of determining whether there would be any increased impacts from any changes in the crude slate processed at the Refinery; and (iii) the EIR improperly deferred the formulation of greenhouse gas mitigation measures to a future, post-EIR process. The Court of Appeal did not address the EIR's cumulative impacts analysis challenged by Petitioners on the basis that the analysis would likely be affected by a revised project description and greenhouse gas analysis.

As directed by the Court of Appeal, the Superior Court entered a final judgment and issued a writ of mandate (Writ of Mandate) on March 16, 2011, directing the City to set aside: (1) Resolution No. 93-08, under which the City Council certified the Original EIR and adopted findings and a mitigation monitoring and reporting program for the Original Project; (2) Resolution No. 94-08, under which the City Council upheld the Planning Commission's approval of the conditional use and design review permits for the Original Project, and (3) any additional permits, authorizations, and any and all other approvals for the Original Project. The Writ of Mandate also ordered that the City take no action in reliance on the EIR and permits until the City reconsiders its approval of the EIR, brings the EIR into compliance with the requirements of CEQA, and makes the EIR consistent with the Court of Appeal's decision. Additionally, the Writ of Mandate enjoins Chevron from engaging in any project activity until the City complies with the Writ of Mandate and issues new permits for the project.

**NOTICE OF PREPARATION
CHEVRON REVISED PROJECT**

Appendix B - Specific Equipment To Be Installed or Modified As Part of the Revised Project:

Component	Proposed Scope
Hydrogen Plant Replacement (construction 50% complete)	1. Construct new Hydrogen Plant, including hydrogen separation PSA units (2 trains) ² 2. Shut down existing Hydrogen Plant (2 trains) 3. Install hydrogen recovery PSA unit (1) 4. Shut down PSA section of the existing hydrogen recovery unit (1) 5. Construct new cooling water tower (1) 6. Construct new flare (1) 7. Construct a new Hydrogen Plant Control Room (1) 8. Upgrade Richmond Lube Oil Plant (RLOP) Area Compressors (4) 9. Upgrade Distillation and Reforming Area Compressors (3) 10. Install Steam Turbine Generator (1) 11. Install low-nitrogen oxides (NO_x) burners on existing TKN Hydrocracker³ furnaces (3) 12. Install low-NO_x burners on existing Poly (Polymer) Plant furnaces (2) 13. Upgrade Isomax Area Compressors (8) 14. Relocate electrical infrastructure and Refinery power cables (5) 15. Install communication cables (6)

2 The Revised Project includes one new stand-alone hydrogen recovery unit, a Pressure Swing Adsorption ("PSA") unit that recovers hydrogen from the feed to the new hydrogen plant before that feed is sent to the hydrogen plant. This is BAAQMD source S-4451. Each of the new hydrogen plants (S-4449 and S-4450) also includes a PSA unit after the reformer furnace to separate produced hydrogen from byproducts. These PSA units are considered part of each respective hydrogen plant, and are not considered separate units (i.e., they do not have a separate BAAQMD source number).

3 TKN is the trade name of a Hydrocracker at the Refinery.

Component	Proposed Scope
Hydrogen Purity Improvements (construction 57% complete)	1. Construct new Recycle Hydrogen Amine Contactor (1) for Fluid Catalytic Cracker Feed Hydrotreater 2. Refurbish and rename Fresh Amine Storage Tank T-2421 from T-2400 (1) (switched to Amine service from caustic) 3. Construct new Rich Amine Storage Tank T-2420 (1) 4. Construct new Amine Regenerator (1) 5. Upgrade Isomax Area Compressor (1) 6. Construct new Oxygen Storage Tanks (2) 7. Upgrade sour water processing 8. Construct new Acid Gas Scrubber (1) 9. Construct new Fresh Caustic Tank T-2440 (1) 10. Construct new Spent Caustic Tank T-2445 (1) 11. Modify existing Fluid Catalytic Cracker Feed Hydrotreater (1) 12. Modify existing Sulfur Recovery Units (3) 13. Install new sulfur loading rack (1) including option to replace or upgrade existing vent scrubber (1) 14. Install truck and railcar loading and unloading stations for amines, sodium bisulfite, fresh and spent caustic (5) 15. Install automated caustic dilution and delivery system (1)
Associated Infrastructure Improvements (construction 60% complete)	1. Construct P, Q, U, V, and W Pipe Racks from various plants to Hydrogen Plant for Refinery process gas, hydrogen gas and utilities (steam, instrument air, firewater, freshwater). 2. Install approximately 7 miles of new process and utility piping 3. Install or modify Refinery Electrical Infrastructure 4. Install or Modify Instrument and Communication Cables with Pipe-Way Structural Supports

ATTACHMENT 2

Comment Letters



**BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT
SINCE 1955**

ALAMEDA COUNTY
Tom Bates
(Chairperson)
Scott Haggerty
Jennifer Hosterman
Nate Miley

CONTRA COSTA COUNTY
John Giola
(Vice-Chair)
David Hudson
Mark Ross
Gayle B. Uikema

MARIN COUNTY
Harold C. Brown, Jr.

NAPA COUNTY
Brad Wagenknecht

SAN FRANCISCO COUNTY
John Avalos
Edwin M. Lee
Eric Mar

SAN MATEO COUNTY
Carole Groom
Carol Klatt

SANTA CLARA COUNTY
Susan Garner
Ash Kalra
(Secretary)
Liz Kniss
Ken Yeager

SOLANO COUNTY
James Spering

SONOMA COUNTY
Susan Gorin
Shirlee Zane

Jack P. Broadbent
EXECUTIVE OFFICER/APCO



July 19, 2011

Lina Velasco
Senior Planner, Community and Economic Development Group
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

Subject: Notice of Preparation for the Revised Energy and Hydrogen Renewal Project and Revised Environmental Impact Report

Dear Ms. Velasco:

Bay Area Air Quality Management District (District) staff reviewed your agency's Notice of Preparation (NOP) for the Revised Energy and Hydrogen Renewal Project (Revised Project) proposed for implementation at the Chevron Refinery in Richmond (Refinery). The Revised Project would include the development of a new Hydrogen Plant and other Hydrogen Purity improvements. The Hydrogen Plant replacement would allow the Refinery to increase hydrogen production from 180 million standard cubic feet per day (SCFD) to 230 million SCFD. The Hydrogen Purity improvements would enable the Refinery to process crude oil blends that contain up to approximately 3% sulfur.

Revised Project Background

In 2005, Chevron proposed the Hydrogen and Energy Renewal Project at the Refinery (Original Project). In 2008, the City of Richmond (City) certified an environmental impact report (Original EIR) and issued the necessary permits, and the District also issued an Authority to Construct, for the Original Project. In 2009, a Superior court ordered that the entitlements be set aside, and construction activities were stopped due to the aforementioned court order.

Chevron is now proposing to reduce the overall scope of the Original Project. The Revised Project would complete construction and make operational only the Hydrogen Plant replacement and Hydrogen Purity improvement (essentially sulfur removal/handling) portions of the Original Project. The Catalytic Reformer Replacement, Power Plant Replacement including a new Cogeneration Unit, and Other New and Replacement Facilities (e.g., storage tanks) that were part of the Original Project are not part of the Revised Project. The City will prepare a Revised EIR to comply with the court decision regarding the Original EIR and to address changes in the project proposed by Chevron that have reduced the overall project scope:

The Revised EIR will be prepared by the City as the Lead Agency for the purpose of considering conditional use and design review permits for the Revised Project.

Spare the Air

The Air District is a Certified Green Business.

Printed using soy-based inks on 100% post-consumer recycled content paper

939 ELLIS STREET • SAN FRANCISCO CALIFORNIA 94109 • 415.771.6000 • WWW.BAAQMD.GOV

NATURE SAVER™ FAX MEMO 01616		Date	7-19-11	# of Pages	3
To	Lina Velasco		From	C. Riviere	
Co./Dept.			Co.	BAAQMD	
Phone #			Phone #	415-749-4925	
Fax #	510-357-8149		Fax #		

620-6858

Page 1 of 3

In addition, the project sponsor must obtain pertinent permits from the District and comply with all applicable plans, rules and regulations of the District in respect to air emissions from the Revised Project. In this capacity, the District is a responsible agency for CEQA purposes.

Revised EIR Analysis

The District has the following specific comments on the environmental analysis that should be included in the Revised EIR:

1. The Revised EIR should provide a discussion of the District's attainment status for all criteria pollutants and the implications for the region if these standards are not attained or maintained by statutory deadlines; a discussion of the health effects of air pollution, especially on sensitive receptors; and a discussion of greenhouse gas (GHG) emissions and the potential impacts from climate change in the Bay Area.
2. The Revised EIR should provide a map that identifies the distance between the Revised Project and all sensitive receptor locations, such as residences, schools, day cares, hospitals, and nursing care within 1,000 feet.
3. The District's *CEQA Air Quality Guidelines (May 2011)* provide guidance on how to evaluate a project's construction, operational and cumulative air quality impacts. You may download a copy from the District's web site at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx>. The Revised EIR should provide a detailed analysis of the Revised Project's potential effects on local and regional air quality from construction and operations (including permitted and non-permitted stationary and area emissions, and mobile emissions). The cumulative impacts for the Revised Project should also be evaluated.
4. The Revised EIR should estimate both the maximum daily and annual emissions of volatile organic compounds (VOCs), nitrogen oxides (NOx), greenhouse gases (GHGs), and particulate matter (PM_{2.5} and PM₁₀). Emission estimates should be transparent and verifiable. These estimates should be compared to the significance thresholds in the *District's CEQA Air Quality Guidelines*.
5. The Revised EIR should estimate and evaluate the potential health risks from construction and operation activities to current and future sensitive populations within the Revised Project area from toxic air contaminants (TACs).
6. The Revised EIR should include mitigation measures for any identified potentially significant air quality impacts. The District's *CEQA Air Quality Guidelines* contains numerous mitigation measures for lead agencies to consider.
7. The City should consult with the District's permit engineers to determine the appropriate baseline emissions for the Revised Project air quality analysis.
8. The Revised EIR should include a list of all equipment that would be part of the Revised Project, including abatement devices, and equipment makes and models.

The District's CEQA website contains a number of tools and resources to assist lead agencies in analyzing environmental impacts. Available documents include guidance on quantifying plan level greenhouse gas emissions and risk and hazard screening and modeling guidance. Available tools can be viewed and downloaded at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>

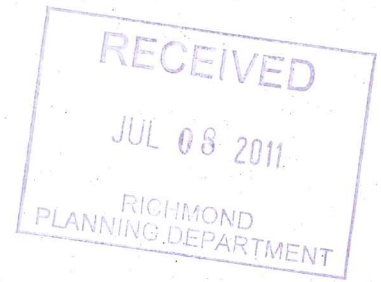
We encourage lead agencies to contact District staff to answer relevant questions and request additional assistance during the environmental analysis process. If you have any questions regarding these comments, please contact Alison Kirk, Senior Environmental Planner, 415-749-5169.

Sincerely,



Jean Roggenkamp
Deputy Air Pollution Control Officer

cc: District Vice Chair John Gioia
District Director David Hudson
District Director Mark Ross
District Director Gayle B. Uilkema



July 8, 2011

Ms. Lisa Velasco
City of Richmond Department
of Planning and Building Services
450 Civic Center Plaza
Richmond, CA 94804

SUBJECT: Notice of Preparation (NOP) for the Revised Chevron Energy and
Hydrogen Renewal Project draft Environmental Report (EIR)
BCDC Permit File 11-90; SCH#: 201062042

Dear Ms. Velasco:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) for the Revised Chevron Energy and Hydrogen Renewal Project draft Environmental Report (EIR). Although the San Francisco Bay Conservation and Development Commission (Commission) has not reviewed the document, the following are staff comments based on our review of the NOP in the context of the Commission's authority under the McAteer-Petris Act (California Government Code Sections 66600 et seq.) and the federal Coastal Zone Management Act (CZMA). The Commission exercises permitting authority over San Francisco Bay to the line of mean high tide, including all sloughs and marshlands lying between mean high tide and five feet above mean sea level. The Commission also has jurisdiction within a shoreline band between the edge of the Bay and a line 100 feet landward and parallel to the shoreline. Any person or government agency wishing to place fill, extract materials, or make any substantial change in use to any land, water or structure within the Commission's jurisdiction requires a permit from the Commission. The Commission can issue a permit if the proposed project is consistent with the McAteer-Petris Act and the provisions of the *San Francisco Bay Plan* (Bay Plan).

Additionally, the Commission designates certain shoreline areas for uses that must be located on the waterfront, such as ports and water-related industry (which includes the shipment of crude oil and related products via tanker or barge), so as to avoid potential filling of the Bay to accommodate water-related uses where the waterfront has been developed for uses that do not require a shoreline location. Although it appears the project is located outside our "shoreline band" permitting jurisdiction, the Chevron Richmond Refinery is located within a water-related industry priority use area as shown on Bay Plan Map 4. Under the CZMA, in the event a federal permit or federal funding is provided the proposed project, the Commission has the authority to determine whether the activity is consistent with its law and policies. If there will be any such federal involvement with the Energy and Hydrogen Renewal Project, the project proponent should contact Ms. Jaime Michaels of our staff.

Please contact me at 415.352-3644 or lindas@bcdc.ca.gov if you have any questions.

Sincerely,

LINDA SCOURTIS
Coastal Planner

cc: Katie Shulte Joung, State Clearinghouse

WILLIAM B. WALKER, M.D.
HEALTH SERVICES DIRECTOR

RANDALL L. SAWYER
CHIEF ENVIRONMENTAL HEALTH & HAZMAT OFFICER

ARILYN C. UNDERWOOD, PH.D. REHS
DIRECTOR OF ENVIRONMENTAL HEALTH



CONTRA COSTA ENVIRONMENTAL HEALTH

2120 Diamond Blvd., Suite 200
Concord, California 94520
Ph (925) 692-2500
Fax (925) 692-2502
www.cocoeh.org

June 15, 2011

Lina Velasco, Senior Planner
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804



RE: Notice of Preparation of a Revised EIR (Chevron Products Project – No Project
I.D. No. Provided)

Dear Ms. Velasco:

The Contra Costa Environmental Health Division (CCEHD) has received a request for agency comments for the above referenced project. The following are our comments:

1. A permit from CCEHD is required for any well or soil boring prior to commencing drilling activities, including those associated with environmental investigation and cleanup, and geotechnical investigation.
2. Any abandoned wells (water, environmental, or geotechnical) and septic tanks must be destroyed under permit from CCEHD. If the existence of such wells or septic tanks are known in advance or discovered during construction or other activities, these should be clearly marked, kept secure, and destroyed pursuant to CCEHD requirements.

These comments do not limit an applicant's obligation to comply with all applicable laws and regulations. If you should have any questions, please do not hesitate to call me at (925) 692-2535.

Sincerely,

Joseph G. Doser, REHS
Supervising Environmental Health Specialist

cc: Christina Bos, Environmental Health Specialist II

JGD:lj





July 6, 2011



Ms. Lina Velasco
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

Dear Ms. Velasco:

Subject: Chevron Revised Energy and Hydrogen Renewal Project, Notice of Preparation, SCH #2011062042, City of Richmond, Contra Costa County

The proposed project consists of expansion and upgrades to an existing petroleum refinery in the City of Richmond, Contra Costa County. The following comments are submitted by the Department of Fish and Game (DFG) in response to a Notice of Preparation (NOP) released pursuant to the California Environmental Quality Act (CEQA).

Please provide a complete assessment (including but not limited to type, quantity and locations) of the habitats, flora and fauna within and adjacent to the project area, including endangered, threatened, and locally unique species and sensitive habitats. The assessment should include the reasonably foreseeable direct and indirect changes (temporary and permanent) that may occur with implementation of the project. Rare, threatened and endangered species to be addressed should include all those which meet CEQA definition (see CEQA Guidelines, Section 15380). DFG recommended survey and monitoring protocols and guidelines are available at [http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols for Surveying and Evaluating Impacts.pdf](http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols%20for%20Surveying%20and%20Evaluating%20Impacts.pdf).

The Environmental Impact Report (EIR) should include an analysis of changes in nitrogen deposition rates associated with new operational procedures at the refinery. Also, any related nitrogen deposition impacts on special-status plants in the vicinity of the project, such as increased competition from exotic plant species, should be discussed and addressed.

Please be advised that a California Endangered Species Act (CESA) Permit must be obtained if the project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the project. Issuance of a CESA Permit is subject to CEQA documentation; therefore, the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the project will impact CESA listed species, early consultation is encouraged, as significant modification to the project and mitigation measures may be required in order to obtain a CESA Permit.

Ms. Lina Velasco
July 6, 2011
Page 2

For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, DFG may require a Lake and Streambed Alteration Agreement (LSAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of an LSAA is subject to CEQA. DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. To obtain information about the LSAA notification process, please access our website at <http://www.dfg.ca.gov/habcon/1600/>; or to request a notification package, contact the Lake and Streambed Alteration Program at (707) 944-5520.

If you have any questions, please contact Ms. Randi Adair, Environmental Scientist, at (707) 944-5596; or Mr. Liam Davis, Habitat Conservation Supervisor, at (707) 944-5529.

Sincerely,



Carl Wilcox
Regional Manager
Bay Delta Region

cc: State Clearinghouse

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION

111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 622-5541
FAX (510) 286-5559
TTY 711



*Flex your power!
Be energy efficient!*

July 12, 2011

CC580154
CC-580-R5.43
SCH# 2011062042

Ms. Lina Velasco
City of Richmond
450 Civic Center Plaza
Richmond CA 94804

Dear Ms. Velasco:

Chevron Energy and Hydrogen Renewal Project – Notice of Preparation (NOP)

Thank you for including the California Department of Transportation (Department) in the early stages of the environmental review process for the Chevron Energy and Hydrogen Renewal project. The following comments are based on the NOP. As the lead agency, the City of Richmond is responsible for all project mitigation, including any needed improvements to State highways. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. This information should also be presented in the Mitigation Monitoring and Reporting Plan of the environmental document. Required roadway improvements should be completed prior to issuance of the Certificate of Occupancy. Since an encroachment permit is required for work in the state right of way (ROW), and the Department will not issue a permit until our concerns are adequately addressed, we strongly recommend that the City of Richmond work with both the applicant and the Department to ensure that our concerns are resolved during the California Environmental Quality Act (CEQA) process, and in any case prior to submittal of a permit application. The Department appreciates the opportunity to submit comments to the NOP and additional comments may be forthcoming as the CEQA process progresses.

Cultural Resources

The project environmental document must include documentation of a current archaeological record search from the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) at Sonoma State University if construction activities are proposed within State ROW. Current record searches must be no more than five years old. The Department requires the records search, and if warranted, a cultural resource study by a qualified, professional archaeologist, and evidence of Native American consultation to ensure compliance with CEQA, Section 5024.5 of the California Public Resources Code and Volume 2 of Caltrans' Standard Environmental Reference (<http://ser.dot.ca.gov>). These requirements, including

Ms. Lina Velasco/City of Richmond

July 12, 2011

Page 2

applicable mitigation, must be fulfilled before an encroachment permit can be issued for project-related work in State ROW; these requirements also apply to NEPA documents when there is a federal action on a project. Work subject to these requirements includes, but is not limited to: lane widening, channelization, auxiliary lanes, and/or modification of existing features such as slopes, drainage features, curbs, sidewalks and driveways within or adjacent to State ROW.

Traffic Management Plan

If it is determined that traffic restrictions and pedestrian / bicycle detours are needed, a Transportation Management Plan (TMP) or construction traffic impact study may be required by the developer for approval by the lead agency and the Department prior to construction. The plans shall be prepared in accordance with the Department's *Manual of Traffic Controls for Construction and Maintenance Work Zones*, which begins as follows: "During any time the normal function of a roadway is suspended, temporary traffic control planning must provide for continuity of function (movement of traffic, pedestrians, bicyclists, transit operations, and access to property/utilities)." Further information is available on the following website:
<http://www.dot.ca.gov/hq/traffops/signtech/signdel/trafficmanual.htm>.

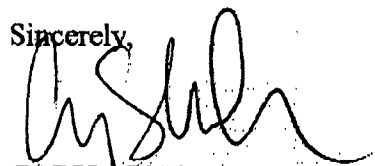
Transportation Permit

Project work that requires movement of oversized or excessive load vehicles on State roadways, such as Interstate 580 (I-580) requires a transportation permit that is issued by the Department. To apply, a completed transportation permit application with the determined specific route(s) for the shipper to follow from origin to destination must be submitted to the address below.

Office of Transportation Permits
California DOT Headquarters
P.O. Box 942874
Sacramento, CA 94274-0001

See the following website link for more information: <http://www.dot.ca.gov/hq/traffops/permits/>.

Sincerely,



GARY ARNOLD

District Branch Chief

Local Development – Intergovernmental Review

c: State Clearinghouse

July 7, 2011

Lina Velasco, Senior Planner
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804



Re: Notice of Preparation of a Revised Environmental Impact Report –
Chevron Revised Renewal Project, Richmond

Dear Ms. Velasco:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Notice of Preparation of a Revised Environmental Impact Report (EIR) for the Chevron Revised Renewal Project located in the City of Richmond (City). EBMUD has the following comments.

GENERAL

EBMUD issued a Water Supply Assessment (WSA) response to the City on April 24, 2007 for the Chevron Energy and Hydrogen Renewal Project. The estimated water demand for the project was 0.7 million gallons per day and is accounted for in EBMUD's water demand projections within EBMUD's service boundaries. Upon reviewing the Notice of Preparation of the Revised EIR, EBMUD determined that the revised project does not require the preparation of a new WSA as the revised project reduces the scope from the original project with the elimination of the co-generation facility and appears not to induce additional water demand from the original estimate. The reduction of water demand should be confirmed in the Draft EIR.

WATER RECYCLING

EBMUD's Policy 9.05 requires that customers use non-potable water, including recycled water, for non-domestic purposes when it is of adequate quality and quantity, available at reasonable cost, not detrimental to public health and not injurious to plant, fish and wildlife to offset demand on EBMUD's limited potable water supply. Appropriate recycled water uses could include landscape irrigation, commercial and industrial process uses, toilet and urinal flushing in non-residential buildings and other applications.

EBMUD provided a written response to the Draft Environmental Impact Report on the original project (see enclosure) encouraging the use of recycled water for the project that would be supplied from the unfinished Richmond Advanced Recycled Expansion (RARE) project at the time. Since then, RARE has started operations as of July 2010, and currently supplies the Chevron Richmond refinery with up to 3.5 million gallons per

Lina Velasco, Senior Planner

July 7, 2011

Page 2

day (mgd) of recycled water for use as boiler feed water. Future phases of RARE could expand production up to 4.0 or 5.0 mgd of recycled water, depending on demand and the availability of secondary effluent supply. This represents additional opportunities for recycled water use for several purposes within the new revised project components and facilities. As such, EBMUD recommends that the City and Chevron continue to consult and coordinate with EBMUD to develop and expand the usage of recycled water at Chevron's Richmond Refinery as they plan and implement these specific projects as described in the revised EIR.

If you have any questions concerning this response, please contact David J. Rehnstrom, Senior Civil Engineer, at (510) 287-1365.

Sincerely,

A handwritten signature in black ink, appearing to read "William R. Kirkpatrick", with a stylized flourish at the end.

William R. Kirkpatrick
Manager of Water Distribution Planning Division

WRK:AMW:sb
sb11_117.doc

Enclosure

cc Bob Chamberlin / Mark Piersante
Chevron
P.O. Box 1272
Richmond, CA 94802-0272



June 22, 2007

Lamont Thompson, Senior Planner
City of Richmond
Planning and Building Regulations Department
1401 Marina Way South
Richmond, CA 94804

Re: Draft Environmental Impact Report – Chevron Energy and Hydrogen
Renewal Project, Richmond

Dear Mr. Thompson:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Draft Environmental Impact Report (EIR) for Chevron Energy and Hydrogen Renewal Project located in Richmond. EBMUD has the following comments.

WATER RECYCLING

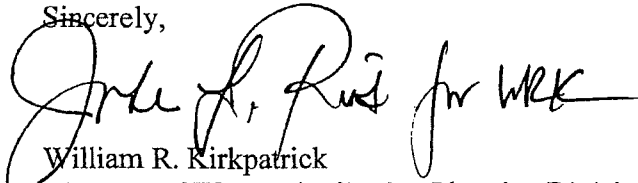
As described in the Water Supply Assessment issued to the City of Richmond on April 24, 2007 for the Chevron Energy and Hydrogen Renewal Project, EBMUD is committed to developing recycled water projects to conserve its limited drinking water supplies and reliably meet the long-term projected water needs of its customers. EBMUD's 1993 Water Supply Management Plan (WSMP) set a recycled water program savings goal of 14 million gallons per day (mgd) for the year 2020. EBMUD presently provides approximately 4 mgd of tertiary treated recycled water from its North Richmond Water Reclamation Plant for use in Chevron's cooling towers. As described on page 4.17-5, and again on page 5-9, of the EIR, EBMUD and Chevron are currently working together to implement the Richmond Advanced Recycled Expansion (RARE) Water Project by the end of 2009. The RARE Water Project would provide up to an additional 4 mgd of high-purity recycled water for use in Chevron's boiler feedwater applications. Combined, the two recycled water projects would meet over 50 percent of Chevron's total water use with recycled water.

The Chevron Energy and Hydrogen Renewal Project presents an opportunity to use high-purity recycled water from the RARE Water Project. EBMUD strongly urges Chevron to continue cooperating with EBMUD to develop the RARE Water Project to offset the increased water usage anticipated by the Chevron Energy and Hydrogen Renewal Project and increase Chevron's use of recycled water at the Richmond refinery.

Lamont Thompson, Senior Planner
June 22, 2007
Page 2

If you have any questions concerning this response, please contact David J. Rehnstrom,
Senior Civil Engineer, at (510) 287-1365.

Sincerely,

A handwritten signature in black ink, appearing to read "J. R. Kirkpatrick for WRK". The signature is fluid and cursive, with the initials "WRK" clearly visible at the end.

William R. Kirkpatrick
Manager of Water Distribution Planning Division

WRK:NJR:sb
sb07_156.doc

cc Chevron Products Company
P.O. Box 1272
Richmond, CA 94802

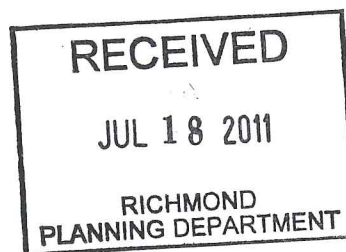
Caron Jo Parker
ESA
436 14th Street, Suite 600
Oakland, CA 94612

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax



July 15, 2011



Lina Velasco
City of Richmond
450 Civic center Plaza
Richmond, CA 94804

RE: SCH# 2005072117 Chevron Revised Energy and Hydrogen Renewal Project; Contra Costa County.

Dear Ms. Velasco:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Preparation (NOP) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
 - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
 - If any known cultural resources have already been recorded on or adjacent to the APE.
 - If the probability is low, moderate, or high that cultural resources are located in the APE.
 - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.
 - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
 - A Sacred Lands File Check. **USGS 7.5 minute quadrangle name, township, range and section required.**
 - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
 - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
 - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
 - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Katy Sanchez

Katy Sanchez
Program Analyst
(916) 653-4040

cc: State Clearinghouse

Native American Contact List
Contra Costa County
July 15, 2011

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28 Ohlone/Costanoan
Hollister , CA 95024
ams@indiancanyon.org
831-637-4238

Amah/Mutsun Tribal Band
Irene Zwierlein, Chairperson
789 Canada Road Ohlone/Costanoan
Woodside , CA 94062
amah_mutsun@yahoo.com
(650) 851-7747 - Home
(650) 851-7489 - Fax

Jakki Kehl
720 North 2nd Street Ohlone/Costanoan
Patterson , CA 95363
jakki@bigvalley.net
(209) 892-1060

Don Hankins
P.O. Box 627 Miwok
Forest Ranch, CA 959421
530-343-3489 - phone/fax

Katherine Erolinda Perez
PO Box 717
Linden , CA 95236
canutes@verizon.net Ohlone/Costanoan
 Northern Valley Yokuts
 Bay Miwok
(209) 887-3415

Amah/Mutsun Tribal Band
Joseph Mondragon, Tribal Administrator
882 Bay view Avenue Ohlone/Costanoan
Pacific Grove, CA 94062
831-372-9015
831-372-7078 - fax

Trina Marine Ruano Family
Ramona Garibay, Representative
30940 Watkins Street Ohlone/Costanoan
Union City , CA 94587 Bay Miwok
soaprootmo@msn.com Plains Miwok
510-972-0645-home Patwin
209-688-4753-cell

Amah/Mutsun Tribal Band
Melvin Ketchum III, Environmental Coordinator
7273 Rosanna Street Ohlone/Costanoan
Gilroy , CA 95020
408-842-3220

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for proposed
SCH# 2005072117 Chevron Revised Energy and Hydrogen Renewal Project; Contra Costa County.

Native American Contact List

Contra Costa County

July 15, 2011

Muwekma Ohlone Indian Tribe of the SF Bay Area

Rosemary Cambra, Chairperson

2574 Seaboard Avenue Ohlone / Costanoan

San Jose , CA 95131

muwekma@muwekma.org

408-205-9714

510-581-5194

Amah/Mutsun Tribal Band

Jean-Marie Feyling

19350 Hunter Court Ohlone/Costanoan

Redding , CA 96003

jmfgmc@sbcglobal.net

530-243-1633

The Ohlone Indian Tribe

Andrew Galvan

PO Box 3152

Fremont , CA 94539

chochenyo@AOL.com

(510) 882-0527 - Cell

(510) 687-9393 - Fax

Ohlone/Costanoan

Bay Miwok

Plains Miwok

Patwin

Linda G. Yamane

1585 Mira Mar Ave

Seaside , CA 93955

rum sien123@yahoo.com

831-394-5915

Ohlone/Costanoan

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for proposed SCH# 2005072117 Chevron Revised Energy and Hydrogen Renewal Project; Contra Costa County.

Lina Velasco

From: linda [linda@self-sustainingcommunities.org]
Sent: Sunday, July 10, 2011 11:01 AM
To: Lina Velasco
Subject: EIR comments re Chevron renewed application

Hello Ms. Velasco,

After hearing Chevron representatives speak yesterday at a neighborhood council meeting in Parchester Village, and upon their asking for proposed questions, I would like to propose the following:

What specific steps will Chevron take to significantly move beyond current emission standards (more than 50%) and from gas and oil production into more green forms of production?

How can Chevron participate in a community-wide, systemic change which is more beneficial to the overall environment and to the lives of individuals within the community and within Chevron's employ?

Thank you.

Linda Schneider, M.A.

APPENDIX 3

Overview of Oil Refining Process

APPENDIX 3

OVERVIEW OF OIL REFINING PROCESS

This appendix provides a high-level, non-project specific description of the refining process as it generally occurs at the Chevron Richmond Refinery (Facility or Project site).

The refining process begins when *crude oils* or *externally sourced (purchased) gas oils* are delivered to the Facility as raw materials or feedstocks. These feedstocks are then refined in five main process steps:¹

- *Distillation* occurs when crude oil is separated by “distilling” into various components, called “crude oil fractions;”
- *Treatment* occurs when crude oil fractions are “treated” to remove sulfur and other natural impurities;
- *Cracking* occurs when molecules in the heavier crude oil fractions are divided by *cracking* these larger molecules into smaller molecular forms that can become transportation petroleum products;
- *Reshaping* (also called “reforming”) occurs when these molecules are “shaped” to meet the specifications for various kinds of products (e.g., octane levels in gasoline); and
- *Blending* occurs in the final product production process, when multiple hydrocarbon fractions are blended to meet the specifications for particular products (e.g., higher octane versus lower octane gasolines). *Blending* occurs

¹ While these five major steps in the refining process are described as discrete steps, not all hydrocarbon molecules in the refining process go through each of these steps, and some of these refining process steps are actually repeated in later refining steps. For example, the first step in the process, *Distillation*, describes the process of applying heat to crude oil to separate it into “fractions,” or separate streams of hydrocarbon molecules that boil at different temperature ranges. The fractions are then piped on to different refinery processing steps to produce different products. While the major distillation process occurs as the first step in the refining process at the crude unit (described in the *Distillation* step below), smaller distillation units also operate at several later stages in the refinery process. For example, the hydrotreating process (described in the *Treatment* step below) results in some cracking (described in the *Cracking* step below), and the cracked hydrocarbon output then is run through a fractionator (a type of distillation unit) to again separate this output into fractions as needed for the next processing steps.

when different products are piped into tanks and typically does not involve mechanical mixing.

The refining process as a whole is depicted in Figure A3-1, *Facility Process Diagram*. A description of the feedstocks processed by the Facility is provided below, followed by a description of each of these major processes.

3.1 FEEDSTOCKS

Crude oil is the Facility's primary “feedstock,” which is the raw material used to make refined petroleum products. A partially refined crude oil fraction called “gas oil” is also received by the Facility and is purchased from external sources (i.e., other refineries). Crude oil and gas oil are described below.

3.2 IMPORTANT CHARACTERISTICS OF CRUDE OIL

Crude oil is found deep beneath the earth's surface in natural underground reservoirs. Crude oil is believed to have been formed from a mixture of mud and very small plants and animals (algae and zooplankton) that lived in ancient seas and oceans millions of years ago. Crude oil was created from this mix through a combination of temperature, pressure, and time.

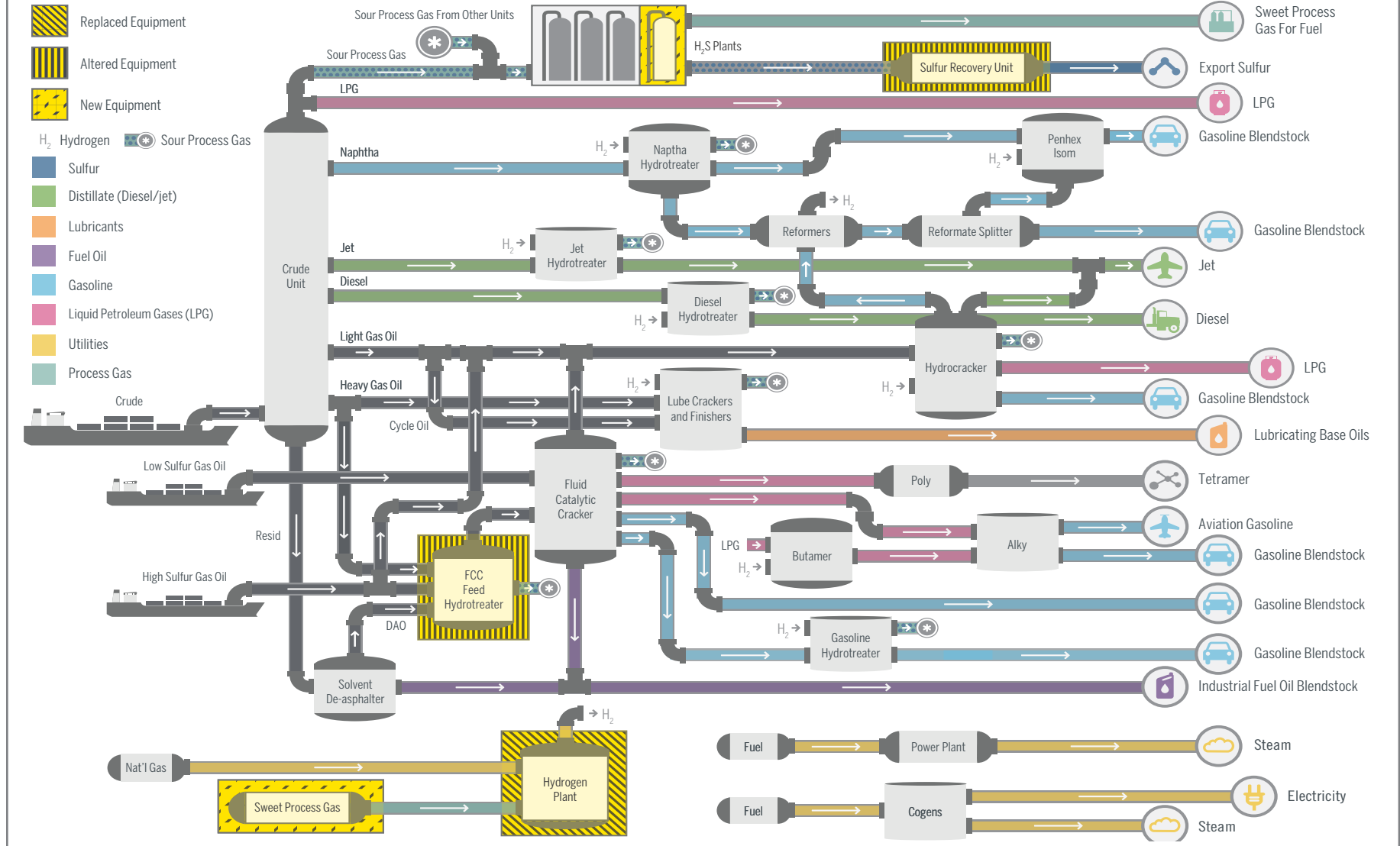
Crude oil is recovered primarily from oil extraction wells, and it is often temporarily stored near extraction areas before being transported (primarily by pipelines and ships) to refineries for processing. Unlike many other refineries in the United States, the Facility is not connected to crude oil supplies through pipelines. Instead, the Facility receives crude oil via tankers and barges that discharge at the Project site over the Long Wharf. Crude oil is stored in tanks at the Project site before being processed in the Facility.

Crude oil is not a single chemical compound. Instead, crude oil is a mixture of different chemical compounds, the vast majority of which include a combination of hydrogen and carbon atoms, and are thus called “hydrocarbons.” Other atoms, including nitrogen and sulfur atoms, can also be part of hydrocarbon molecules. Crude oil hydrocarbons may also contain small amounts of metals. Crude oil also typically includes small amounts of non-hydrocarbon contaminants, such as sediment, salt, and water.

The different hydrocarbon compounds in crude oil have different boiling points (the temperature at which liquids “boil”). Heating crude oil and condensing the heated vapors causes it to be physically separated into different streams of hydrocarbons (called “fractions”) through a simple distillation process (described further below).

What's Changing at the Chevron Refinery

The flow chart below illustrates the main process units and general process flow of the Chevron Richmond Refinery, highlighting what facilities and processes would either be built, replaced or altered in the Refinery Modernization Project. The vast majority of refinery functions will not be affected.



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apptx 8_Refinery 101\A3-1_FacilityProcessDiagram

Source: Chevron (T39r2)

Figure A3-1
Chevron Refinery Modernization Project EIR
Facility Process Diagram

One of the hydrocarbon fractions produced in the Facility's refining process is "gas oil," which is produced during the distillation process and various other processes. In addition to producing gas oil from crude oil feedstocks, Chevron imports surplus gas oil from other refineries. The Facility imports gas oil because it contains equipment that can refine more gas oil than what can be produced economically from its crude oil feedstock. In other words, the crude unit, the solvent de-asphalting unit (SDA unit, described below), and other process units that produce gas oil produce a smaller amount than later steps in the refinery processes can refine due to that equipment's greater capacity. Because a refinery's "efficiency" (also discussed in greater detail below) is directly linked to maximizing utilization of refinery equipment, Chevron imports purchased gas oil to efficiently utilize available Facility capacity.

3.2.1 Density or "Gravity" of Crude

"Density" is the amount of mass contained in a certain volume. The density of a crude oil is determined by the average weight (or "gravity") of its component molecules. "Heavy" crude oil is denser than "light" crude oil because the hydrocarbon molecules in heavy crude oil are larger and have more carbon atoms than those in light crude oil.² Atoms in a larger molecule are tightly bound together and take up less space than the same number of atoms spread out across multiple smaller molecules. Thus the atoms in heavy crude oil are more tightly packed together, taking up less space (volume) and making heavy crude oil denser than light crude oil.

Less dense (or "light") crudes generally have more light hydrocarbons, and light hydrocarbons are the constituents of higher-value refinery products such as gasoline, jet fuel, and diesel. Similarly, the denser ("heavier") crudes generally contain more of lower-value products like gas oil, tar, and bunker fuel commonly used in shipping.

When a refinery processes light crudes, higher-value products can be produced in fewer steps. For example, a light crude may only need to be "distilled" (the first step in the refinery process, described below) to produce large amounts of gasoline *blendstocks*. In contrast, a heavy crude may need to go through all of the refinery processes explained below (*Distillation, Treatment, Cracking*, and

² Heavy crude oil can also be denser than light crude oil because a higher proportion of the hydrocarbon molecules are in a denser form. (This characteristic is identified by the percentage of naphthenes in the crude.) Hydrocarbon molecules that are highly naphthenic can have molecules with the same number of carbon atoms, but those atoms are shaped like a circle rather than a straight chain. The circular structure is more dense than the straight chains.

Reshaping) to produce the same amount of gasoline or other light products. It should be noted that the *very* light hydrocarbons, at the other end of the gravity range, also have limited value. The ultimate light hydrocarbon is methane gas (CH_4), which is the primary component of natural gas. It can be quite a bit less valuable than even crude oil because natural gas is generally widely available. Therefore, the price paid for a “condensate” (a very light combination of hydrocarbons), can be less than a crude oil with significant mid-range hydrocarbon molecules.

The density or gravity of crude oil is important to the refining process in several ways. As mentioned above, when the mixture of compounds in crude oil is heated, lighter hydrocarbon compounds will begin to vaporize (turn into gas), and heavier compounds will not. As the temperature within this initial crude processing step is increased, heavier hydrocarbons will begin to vaporize.³ This physical characteristic of crude oil is key to the first step in the refining process: *Distillation*, in which crude oil (which has been desalted as described below) is heated in a furnace and sent to a large steel column to separate out the different hydrocarbons.

Different hydrocarbons boil at different temperature ranges and are grouped together in “fractions” based on these temperature ranges. The typical boiling temperatures of different fractions are shown in Figure A3-2, *Typical Boiling Temperatures (Cut Points) for Different Hydrocarbon Fractions*. Larger molecules contain more carbon atoms, are generally denser, and have a higher boiling point. Conversely, compounds with a lower carbon count are less dense and boil at a lower temperature.

For example, “gas oil” is the term used to describe the fraction of crude oil that is heavier than common refined products like gasoline, diesel, and kerosene or jet fuels—but lighter (less dense) than the heaviest fractions, which are called “residue” or “residuum.” Petroleum scientists devised a unique name for measuring the density, or weight, of a given hydrocarbon compound, called “American Petroleum Institute (API) gravity.” API gravity describes the density of a crude oil compared to the density of water. The lower the API gravity, the heavier the crude.⁴ The API gravity can be used to categorize crude as “heavy, intermediate, or light” as discussed in Section 4.0.3 of the *Chapter 4, Introduction to*

³ This is different from water—a single chemical compound of two hydrogen atoms and one oxygen atom, or H_2O —which would eventually all boil away into steam at the constant temperature of 212°F at normal pressures.

⁴ For comparison, water has an API gravity of 10 degrees. Generally, hydrocarbons with an API gravity above 10 degrees are lighter than water and will float.

Chapter and Methodology. Definitions for “light” and “heavy” crude oils are based on their specific gravity⁵ or API gravity.⁶ The following are generally accepted definitions for the crude oil gravities (CEC, 2006):

- **Heavy Crude.** Crude oils with API gravity of 18 degrees or less are characterized as heavy. The oil is viscous and resistant to flow, and tends to have a lower proportion of volatile components.
- **Intermediate Crude.** Crude oils with an API greater than 18 and less than 36 degrees are referred to as intermediate.
- **Light Crude.** Crude oils with an API gravity of 36 degrees or greater are referred to as light. Light crude oil produces a higher percentage of lighter, higher-priced premium products.⁷

3.2.2 Sulfur Content in Crude Oil

Another important natural characteristic of crude oil is that different types of crude oil have differing amounts of sulfur content. Sulfur occurs naturally in crude oil, but sulfur content is restricted by federal and State air quality laws in refined products (e.g., there are standards limiting the amount of sulfur that can be present in refined products like gasoline). To meet these regulatory restrictions on sulfur content in refined products, sulfur is removed from the various fractions of crude oil during the refining process.

When an oil has less sulfur, it is referred to as being “sweet.” Crudes with more sulfur are referred to as being “sour.” Although there is no regulatory threshold of sulfur content for dividing sweet crude oils from sour crude oils, oils with less than 0.5% sulfur content are generally referred to as “sweet.”

Most sulfur present in crude oil is bonded within hydrocarbon molecules, although some is present as hydrogen sulfide (H_2S) gas. This is different from “elemental” or pure sulfur (a yellow crystalline substance when at room temperature), which is a usable product. During the refining process, the sulfur

⁵ The specific gravity equals the weight of the compound divided by weight of an equal volume of water.

⁶ The API gravity, measured in degrees ($^{\circ}$), is defined as equal to $(141.5 \text{ divided by specific gravity}) - 131.5$. As a result, the higher the API gravity, the lighter the compound. Note that water has an API gravity of 10° , so any hydrocarbon crude with an API gravity greater than 10° is less-dense (lighter) than water.

⁷ These API breakpoint values are not applied universally. Other petroleum industry sources use varying breakpoints for heavy and light crude oils. The term “intermediate” is also used interchangeably with the term “medium” when referring to mid-range gravity crudes.

atom is removed from the hydrocarbon molecule. This process is called “hydrotreating” because it includes the use of hydrogen. The hydrocarbon fractions are combined with hydrogen in the presence of a catalyst and elevated temperatures and pressures. The catalyst, temperature, and pressure separate the sulfur from the hydrocarbon molecule and the sulfur combines with the available hydrogen to produce a gas called hydrogen sulfide (H_2S). This hydrogen sulfide gas is then treated, as explained below, to create “elemental” sulfur, which is sold as a product by Chevron. The Modernization Project includes several components to allow Chevron to remove more sulfur from the Facility's feedstocks and thereby refine higher sulfur crude oil and gas oil in the future.

3.3 CUTTER AND BLENDSTOCKS

In addition to feedstocks imported by the Facility for processing into transportation fuels and base oils, the Facility imports a small amount of blendstocks to be used in making final products that leave the Facility. The Facility imports two main types of blendstocks, a fuel oil blendstock called “cutter” and light product blendstocks, both of which are imported over the Long Wharf. Once on-site, blendstocks are not processed by the Facility, but rather serve as one of the components when mixing other Facility-produced blendstocks into finished products.

Cutter is used by the Facility to lower the viscosity of fuel oil product. The Facility has several process units that create material that can be used as cutter (e.g., cycle oil) and the Facility can always produce sufficient quantities to meet the Facility's overall cutter demand. As a result, cutter import is unrelated to refinery utilization. Nevertheless, there are times, such as when another facility has a surplus of cutter, in which the Facility may import material from other facilities (including other Chevron facilities) to be used as cutter instead of using internal sources.

Similarly, light product blendstocks can be imported, dependent on market conditions, into the Facility to supplement the various blendstocks or products that are produced by the Facility process units. These blendstocks (e.g., iso-octane) are used in the blending of finished products such as gasoline, but again are not used as feed to the Facility process units.

3.4 OVERVIEW OF THE REFINING PROCESS

3.4.1 Distillation: Separating the Fractions of Crude Oil with Heat

3.4.1.1 Crude Oil is First Pre-Heated and Treated to Remove Contaminants

Before crude oil goes through the first major step of the refining process, *Distillation*, it is preheated and treated to remove contaminants. First, the crude

oil is delivered on ships, pumped into holding tanks, and then pumped from those tanks to the crude unit. En route, the crude oil is heated in a series of “heat exchangers,” where heat from steam or already-heated product is transferred to the incoming cooler crude oil feedstock. (See below for a description of heat exchangers.)

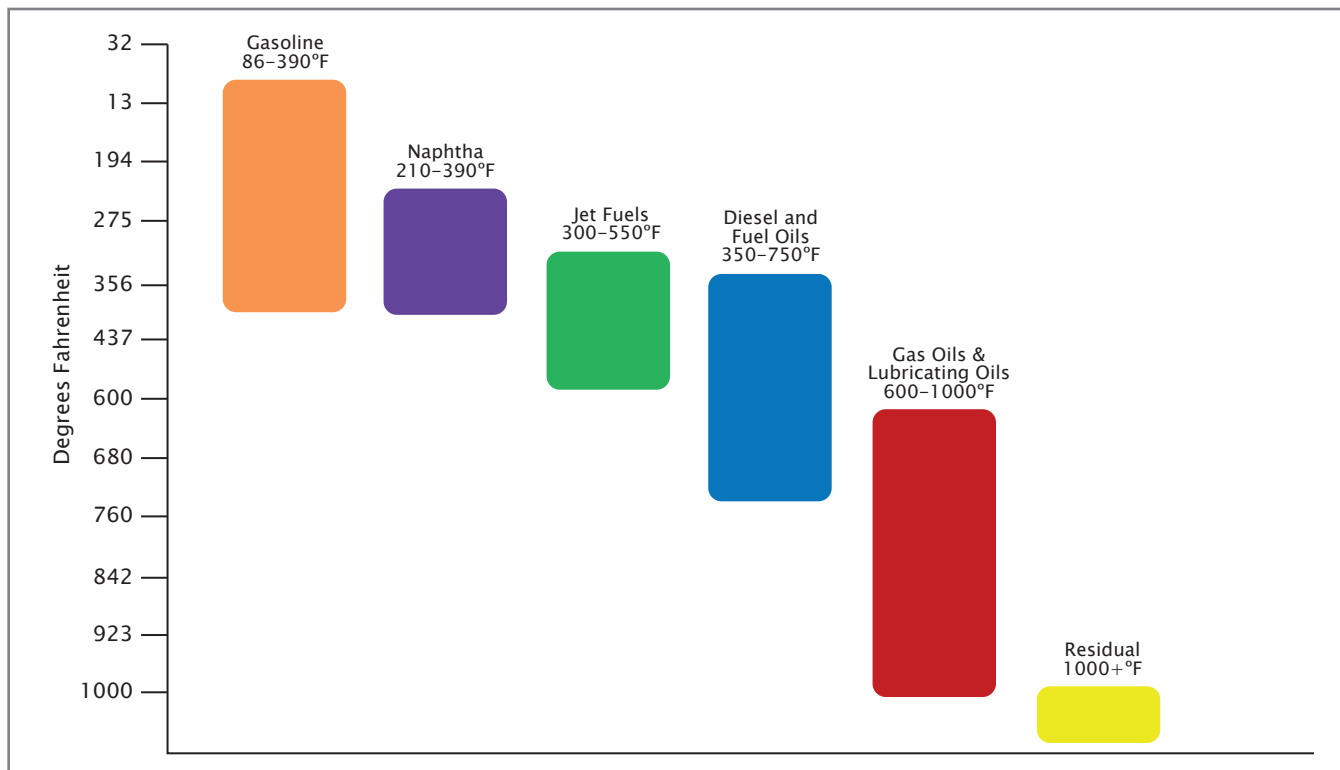
Crude oil typically contains a small percentage of water and salts dissolved in the water. Because the salts are considered contaminants, after the pre-heating process the heated crude oil is next sent to a “desalter,” where these contaminants are removed. This protects the downstream equipment from potential plugging and corrosion mechanisms that can be associated with salts in crude oils.

A desalter is a large cylindrical vessel laid horizontally. The desalter removes contaminants from crude oil by first emulsifying (mixing together) the crude oil with wash water to promote thorough contact of the water and oil. The salts dissolve in this water phase. After the oil has been washed and mixed as an emulsion of oil and water, electrostatic fields are used to break the emulsion, separating the crude oil and water again (Johnson, 2014). The mixture of contaminants and water that has been separated from the crude oil is pumped into a wastewater treatment plant as described below.

Next, the crude oil is further pre-heated in heat exchangers and charged to a pre-flash tower. Light ends are flashed off (rapidly heated), and bypass the furnace. By pre-heating the feedstock and flashing off light ends, the process unit furnaces do not have to work as hard to heat the feedstock, saving energy. The remaining crude oil passes through a furnace where it is heated to a temperature of approximately 700°F. At this temperature, typically about half of the crude oil changes from liquid to vapor (see *Figure A3-3, Flow Diagram from Wharf to Crude Unit*). This combination of liquid and vapor is then ready for *Distillation*, the first major step in the refining process, described below.

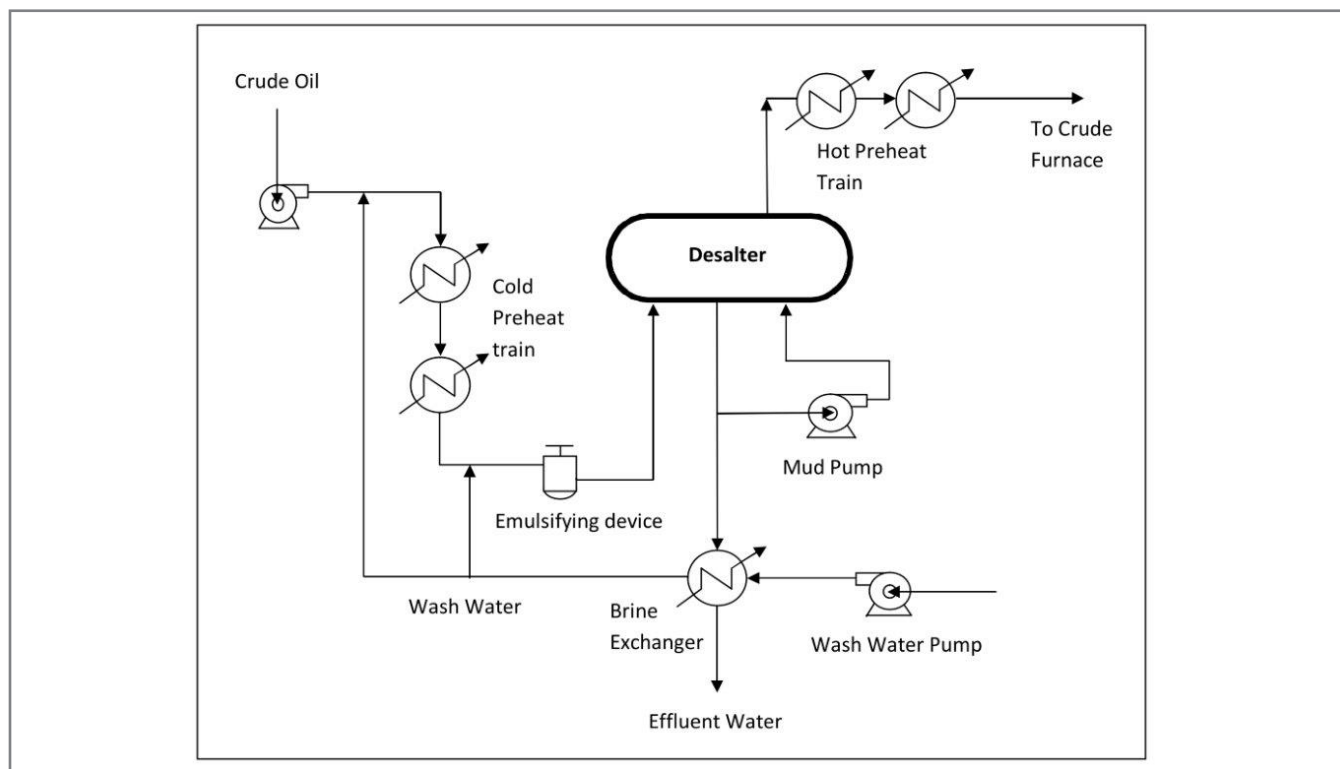
3.4.1.2 The Primary Distillation Process Occurs in the Crude Unit

Distillation is the process of using heat to separate crude oil into different hydrocarbon streams by boiling point (called “cut points”). These separated “fractions” of crude oil are sent on to different parts of the Facility for further processing. Crude oil *distillation* occurs in the Facility's crude unit. The lighter compounds such as butane, gasoline, jet fuel, and diesel “boil off” (vaporize) at lower temperatures, and as the temperature increases, the heavier compounds such as gas oil vaporize last. The material that does not vaporize is referred to as “residuum.”



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx B_Refinery 101\Draft\CVRN Figure A3-2 & A3-3.pdf
Source: Turner, Mason & Company, 2011

Figure A3-2
Chevron Refinery Modernization Project EIR
Typical Boiling Temperatures (Cut Points) for Different Hydrocarbon Fractions



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx B_Refinery 101\Draft\CVRN Figure A3-2 & A3-3.pdf
Source: Enggcyclopedia, 2014

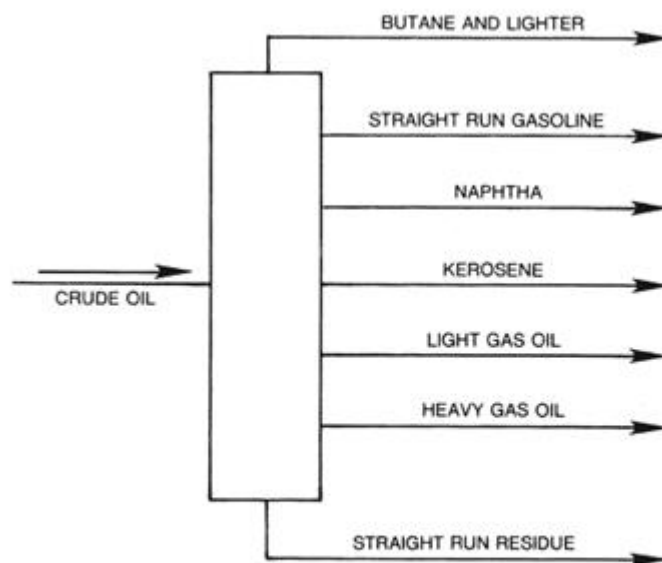
Figure A3-3
Chevron Refinery Modernization Project EIR
Typical Flow Diagram from Wharf to Crude Unit (Including Desalter, Heat Exchangers, Pipes)

A typical distillation schematic in Figure A3-4, *Distillation Schematic*, shows the separation of crude oil into fractions, from lighter at the top to heavier at the bottom. Figure A3-5, *Distillation Curve*, provides a typical distillation curve, showing volume and boiling temperatures (or “cut points”) for the various fractions of crude oil.

Crude oil fractions in the higher boiling point range require more complex equipment to process into transportation fuels and base oils that are in highest demand in the market. Crude oil fractions with lower boiling points still require further processing to meet finished product specifications, but typically require less complex refining. Figure A3-6, *Breakdown of a Typical Crude Oil Distillation Yield*, shows a typical breakdown of the composition of a barrel of crude oil according to the United States Energy Information Administration (EIA). Although this distillation process separates significant quantities of the lower boiling point fractions such as gasoline, by further refining the higher boiling point fractions, such as gas oils, more of the crude oil can be converted to desirable transportation fuels and base oils.

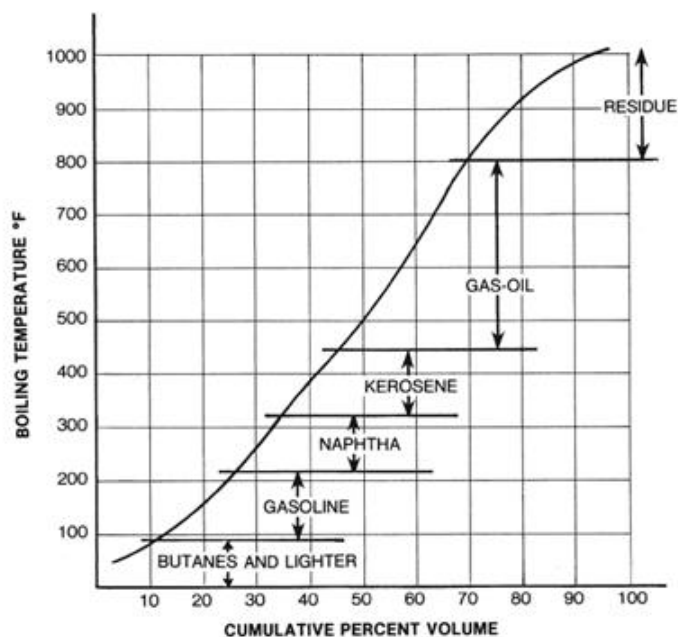
The crude unit is comprised of several pieces of equipment, as depicted in Figure A3-7, *Crude Unit Overview*, each of which is discussed below. The first distillation column in the crude unit at the Facility is the “atmospheric distillation column,” which is named “atmospheric” because the pressure in the unit is similar to the outside atmosphere. It operates on the physical principle of temperature to separate different hydrocarbon fractions and send them to different parts of the Facility for further processing. This is possible because, as discussed above, the different groups of hydrocarbon compounds or “fractions” found in crude oil have different boiling points.

Within the column, the vaporized hydrocarbons rise and the liquid hydrocarbons fall in a column consisting of perforated trays located at 24- to 30-inch intervals. The vapors rise through the perforations in the trays and bubble up through the liquids. As the vapors bubble up through the trays of liquid, some of the heavier (denser) hydrocarbons in the vapor condense (turn back into liquid) and collect on the trays. At several levels on the column, there are “side cuts” that drain liquid forms of hydrocarbons – with lighter products drawn off from the upper parts of the column and heavier liquids drawn from the trays closer to the bottom. Figure A3-8 below, *Distillation Column: Crude Oil Separation by Heat into Fractions* shows a typical separation of crude oil into these fractions, along with general boiling points of these fractions. Each fraction is then sent to different areas of the Facility for further processing.



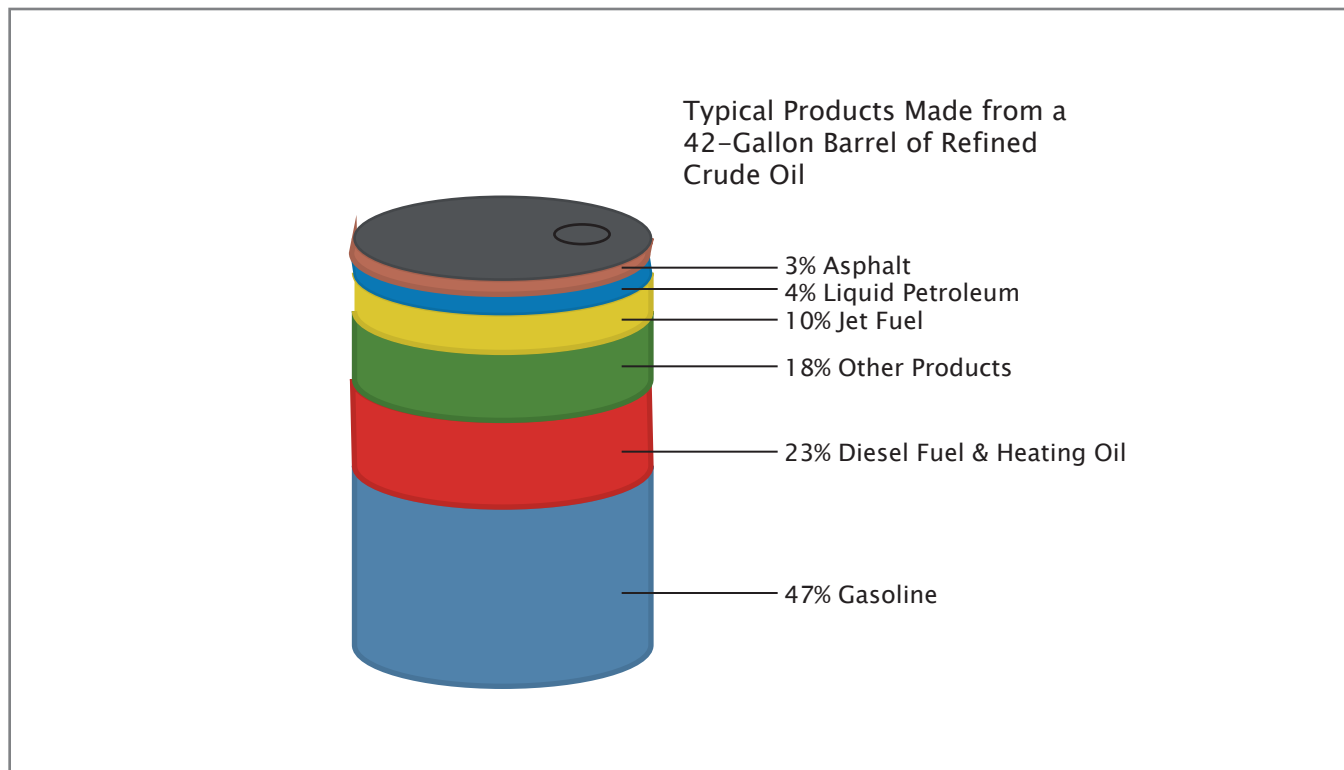
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt B_Refinery 101\Draft\CVRN Figure A3-4 & 5.pdf
 Source: Petroleum Refining in Nontechnical Language, 2008

Figure A3-4
 Chevron Refinery Modernization Project EIR
 Distillation Schematic



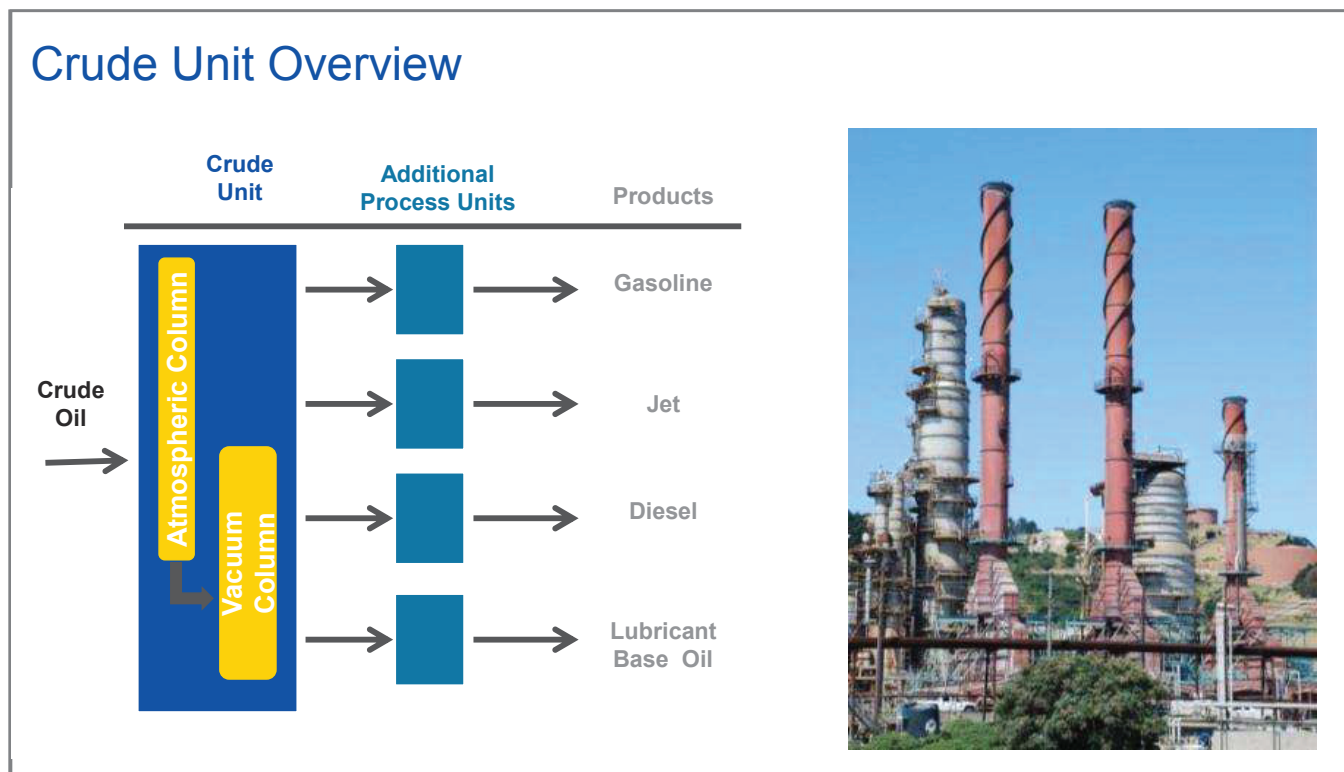
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt B_Refinery 101\Draft\CVRN Figure A3-4 & 5.pdf
 Source: Petroleum Refining in Nontechnical Language, 2008

Figure A3-5
 Chevron Refinery Modernization Project EIR
 Distillation Curve



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apex B_Refinery 101\Draft
Source: U.S. Department of Energy, 2014

Figure A3-6
Chevron Refinery Modernization Project EIR
Breakdown of a Typical Crude Oil Distillation Yield



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apex B_Refinery 101\Draft
Source: Chevron, 2012

Figure A3-7
Chevron Refinery Modernization Project EIR
Distillation Column: Crude Oil Separation by Heat into Fractions

As shown in the distillation curve in Figure A3-5 above, not all of the hydrocarbon fractions would have vaporized even at the highest temperatures reached in the atmospheric distillation column. A different process, called “vacuum distillation,” is used to help distill these heavier fractions by creating a vacuum condition, which is a pressure below atmospheric pressure. This decreased pressure allows the heavier fractions to boil at lower temperatures (just like water boils at a lower temperature in “thin air” that can be found at high mountain elevations) and be converted to vapor and separated.

At the Facility, this vacuum distillation process for separating the heaviest crude fractions is handled at a second distillation column, called the vacuum distillation column (see Figure A3-9, *Vacuum Distillation Process*), which is also part of the crude unit. The vacuum column construction is slightly different from the atmospheric column to minimize pressure loss in the column. The column includes several sections filled with “packing” material, sheets of metal or ceramic rings to allow the gas and liquid in the column to contact each other. There are trays in the column where light and heavy vacuum gas oil are drawn off. The bottoms from the column are residuum and are fed to the SDA unit (described below) to further separate the gas oil from the residuum.

The heaviest fraction from the vacuum distillation column, the residuum, goes through one more *separation* step before moving on to other processes. To remove the remaining gas oil from the residuum, the Facility uses an SDA unit. The SDA unit uses solvent to chemically dissolve the remaining gas oil molecules in the residuum. The gas oil and solvent mixture is sent to a column that operates at lower pressure. At the lower pressure, the gas oil separates from the solvent. The solvent is reused and the gas oil molecules are sent for further processing in the Facility's fluid catalytic cracker feed hydrotreater (FCC FHT) and fluid catalytic cracker unit (described below). The portion that is not absorbed by the solvent leaves the SDA unit as heavy residuum and leaves the Facility as a fuel oil blendstock product. The solvent is recycled back to the SDA process, where it is reused.

3.4.2 Treatment: Removing Sulfur and Other Natural Impurities

Hydrocarbons separated in the crude unit distillation process and SDA unit contain naturally occurring sulfur and other natural impurities such as nitrogen and metals. One of the key later steps in the refinery process involves chemical reaction processes that include a “catalyst” – a material that promotes or speeds up chemical reactions to produce either a finished product or another interim material to be processed further, such as in the *Cracking* step. These impurities can interfere with the *cracking* processes. In addition, they also reduce the quality and performance of finished transportation products and without

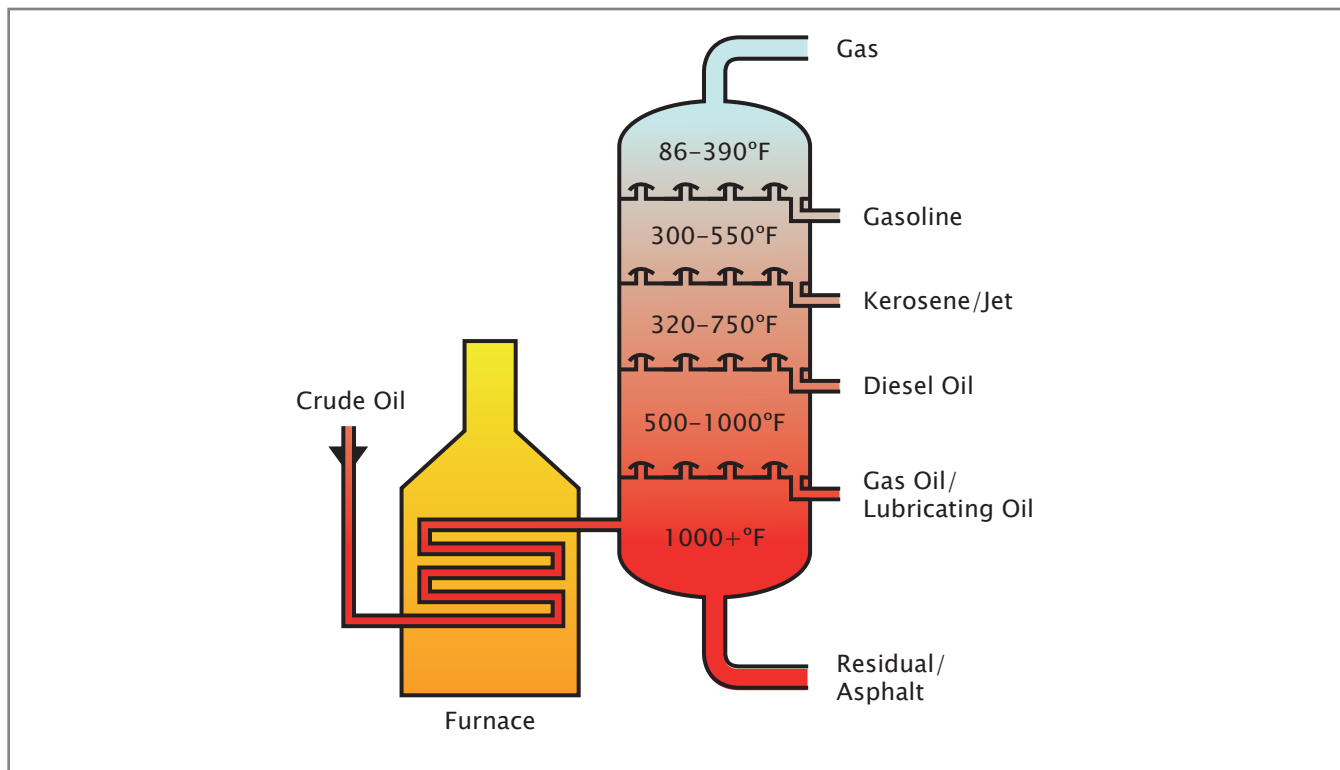
sufficient removal may not comply with finished fuel regulatory standards such as Ultra Low Sulfur Diesel and California's stringent “clean fuel” gasoline standards. The purpose of the *Treatment* step is to largely remove non-hydrocarbon components like sulfur, metals, and nitrogen. *Treatment* primarily occurs when the separated hydrocarbon fractions are sent to “hydrotreaters.” The Facility currently operates five hydrotreaters. Each hydrotreater processes different fractions of the crude oil. The diesel hydrotreater (DHT) treats diesel from the crude unit, the jet hydrotreater (JHT) treats jet fuel from the crude unit, and the gasoline hydrotreater (GHT) treats a gasoline product from the fluid catalytic cracker unit, a unit described in *Section 3.4.8* below. These three hydrotreaters—the GHT, DHT, and JHT—are “finishing” units that produce material used in fuel blending for finished products (see *Section 3.4.12* below).

The other two hydrotreaters, the naphtha hydrotreater and the fluid catalytic cracker feed hydrotreater (FCC FHT), primarily function as pre-treaters for petroleum fractions to be used as feeds to other units at the Facility for further processing before turning into finished products. The naphtha hydrotreater treats naphtha, a lighter-end fraction of crude oil distilled and routed from the crude unit to the naphtha hydrotreater. The FCC FHT treats gas oil from the crude unit and gas oil that is purchased from other refineries. The FCC FHT is labeled “FCC feed hydrotreater” because the gas oil it treats is primarily fed into the next unit in the process, called the fluid catalytic cracker, or FCC unit, which is involved in another step in the process, described below in *Section 3.4.8*. See hydrotreaters labeled in Figure A3-1, *Facility Process Diagram*.

3.4.3 Hydrotreating Removes Sulfur by Reacting Sulfur with Hydrogen to Create Hydrogen Sulfide

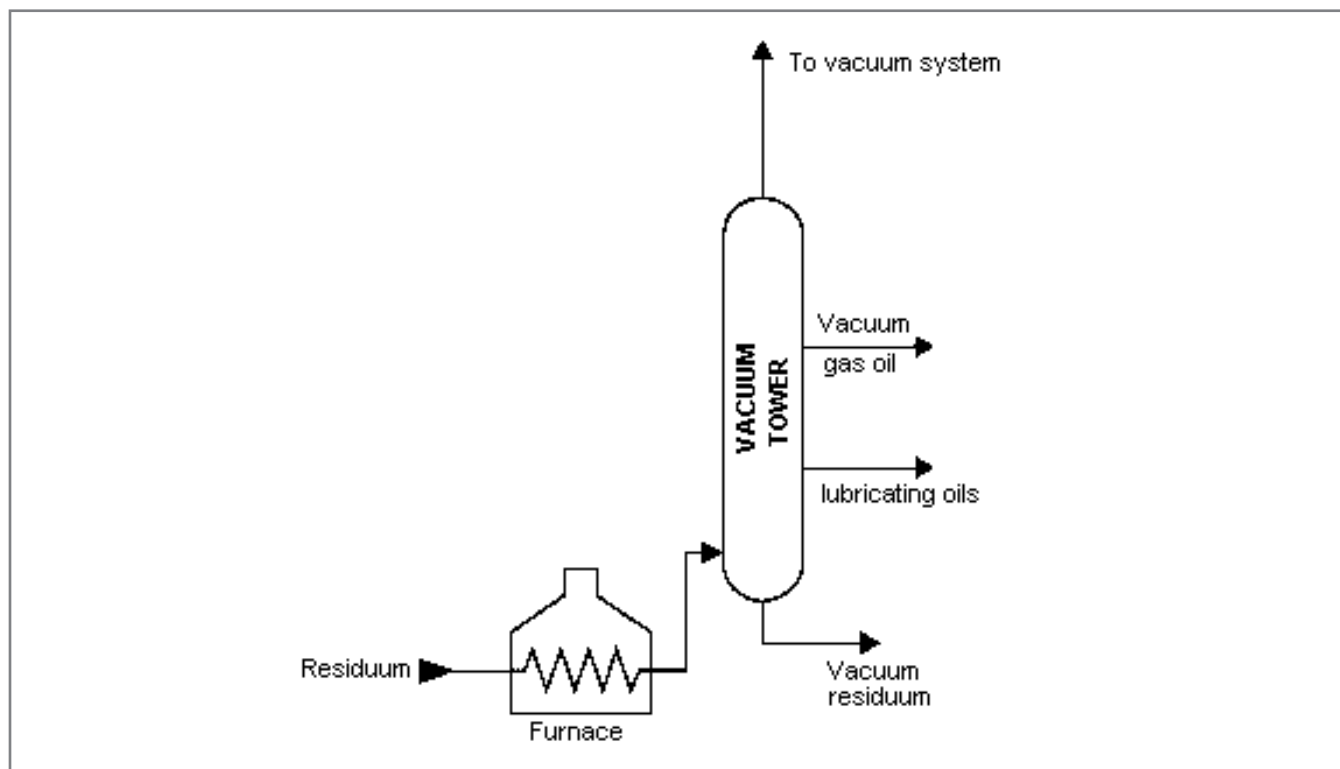
In the hydrotreating process, a hydrocarbon stream is fed through a furnace and the hot hydrocarbon and hydrogen gas are charged to a pressurized reactor that contains a catalyst, usually in a pellet form. The combination of catalyst, temperature, pressure, time, and hydrogen causes a chemical reaction in which the sulfur atoms on the hydrocarbon molecule are removed and hydrogen replaces them on the hydrocarbon molecule. The sulfur reacts with the free hydrogen to produce H_2S .

The hydrotreating process requires an excess amount of hydrogen to be present to ensure the greatest removal of the sulfur and nitrogen. Rather than allow the valuable excess hydrogen to be sent to the fuel gas system and burned as a refinery fuel, the excess hydrogen gas from the hydrotreaters is removed in a hydrogen separator and recycled to the process. The output from the reactor is charged to a fractionator to remove the light ends (which now include a



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apex B_Refinery 101\Draft
Source: Turner, Mason & Company, 2011

Figure A3-8
Chevron Refinery Modernization Project EIR
Distillation Column: Crude Oil Separation by Heat into Fractions



03.04.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apex B_Refinery 101\Draft
Source: Set Laboratories, Inc., 2014

Figure A3-9
Chevron Refinery Modernization Project EIR
Vacuum Distillation Process

combination of usable hydrocarbons, hydrogen, and H_2S). The hydrotreating process is depicted in Figure A3-10, *FCC Feed Hydrotreating Process*.

As shown in the hydrotreating figure, the hydrotreating process relies on hydrogen. As discussed further below, hydrogen comes from four sources at the Facility. It is manufactured at the existing hydrogen plant, it is produced at the reformers, it is recycled when the unreacted hydrogen is recovered from the hydrotreating processes in the Facility, and it is also recovered from process gas through pressure swing adsorption (PSA).

The hydrotreating process occurring in the FCC FHT processing unit also results in some minor incidental cracking, where a catalytic reaction in the presence of hydrogen breaks heavier, longer chain hydrocarbons into lighter, shorter chains like gasoline and jet fuel (“light ends”). This hydrocracking (breaking longer hydrocarbon molecules into smaller ones in the presence of catalyst, temperature, pressure, and hydrogen) is a byproduct of the hydrotreating process. This same cracking phenomenon occurs in all of the hydrotreaters but is less pronounced in the lower pressure hydrotreaters including the NHT, GHT, JHT, and DHT. This “cracking” process is explained further in the next section, since *Cracking* is another major step in the refining process.

3.4.4 Hydrotreating Removes Nitrogen by Creating Ammonia

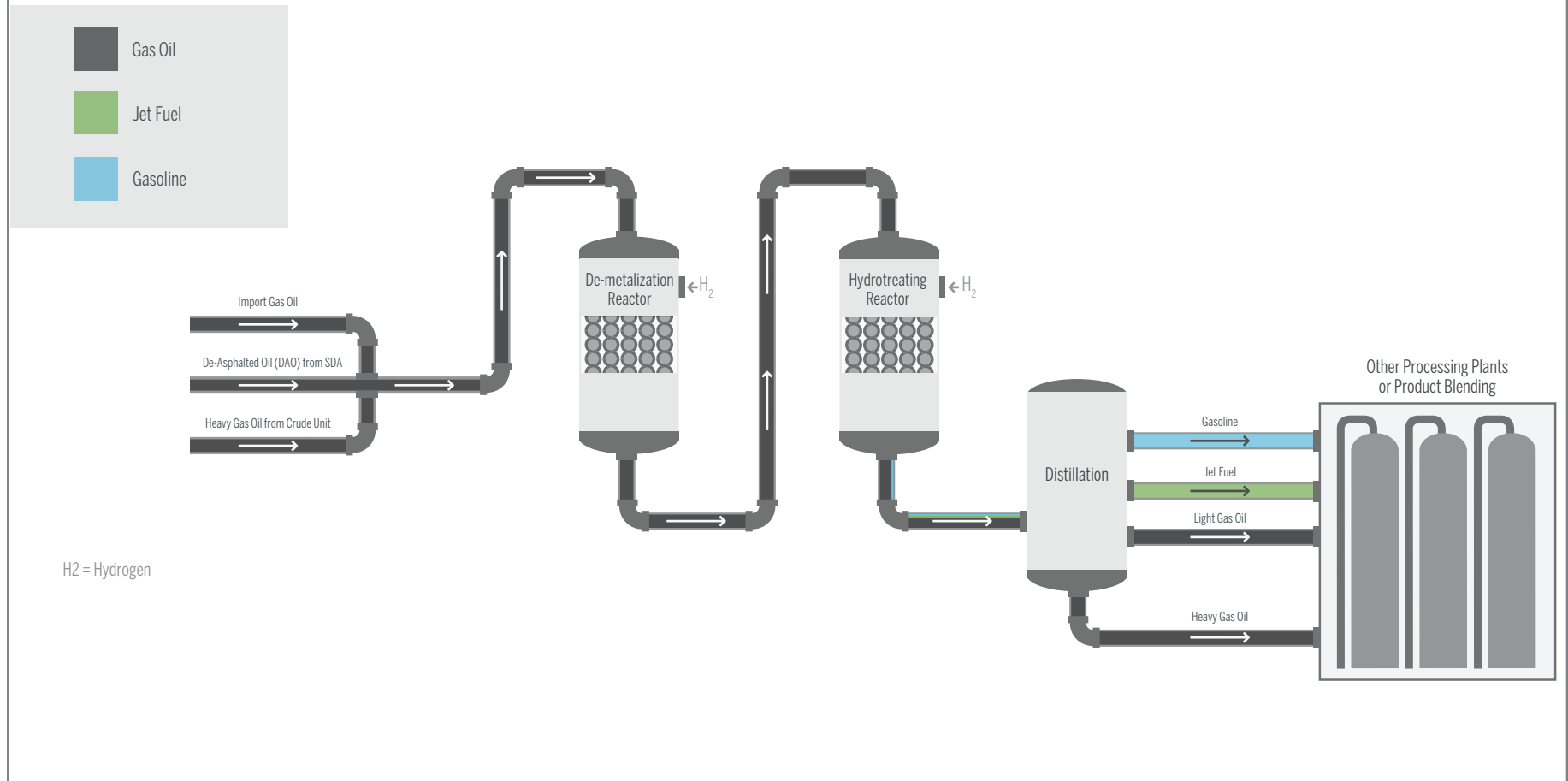
Similarly, nitrogen atoms on the hydrocarbon molecules are replaced by hydrogen in a chemical reaction, and the nitrogen reacts with free hydrogen to produce ammonia (NH_3).

Hydrocarbon outputs from the various units are frequently steam-stripped (i.e., contacted with steam) or water-washed (contacted with water). The condensed water from steam injected into the processes and water from the water washing process absorb ammonia and some H_2S that were produced in the various units. This water/ammonia/ H_2S mixture is charged to a vessel and some of the water is boiled off, yielding concentrated “sour water.” The ammonia and H_2S in the concentrated sour water are removed in sour water strippers that heat the sour water and separate the H_2S and ammonia from the water. The water from the sour water stripper is reused or sent to the water treatment facility. The H_2S stream is sent to the sulfur recovery unit. The ammonia is captured and stored for sale or used in the Facility.⁸

⁸ Ammonia can be used for removing NO_x from furnace stacks in a process called selective catalytic reduction, among other applications.

The FCC Feed Hydrotreating Process

The FCC Feed Hydrotreater (FCC FHT) is designed to remove metals as well as denitrify and desulfurize gas oils prior to being processed by the FCC unit. Some incidental "cracking" occurs during the hydrotreating process, creating a relatively small amount of lighter products such as gasoline blendstocks and jet fuel.



03.04.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 3_Refinery 101\Draft

Source: Chevron (T39r2)

Figure A3-10
Chevron Refinery Modernization Project EIR
FCC Feed Hydrotreating Process

3.4.5 Amine Treatment Units Remove the Hydrogen Sulfide from Usable Hydrocarbons

As noted above, the *Treatment* step in the refining process also creates byproducts including H_2S that must also be managed. At the Facility, the H_2S gas created by the hydrotreaters is routed to a unit called an “ H_2S absorber,” which contains a solvent—diethanolamine (DEA)—designed to absorb the H_2S molecules and separate them from hydrogen and hydrocarbon gas streams. DEA liquid is mixed with the hydrogen sulfide rich gas in the H_2S absorber.

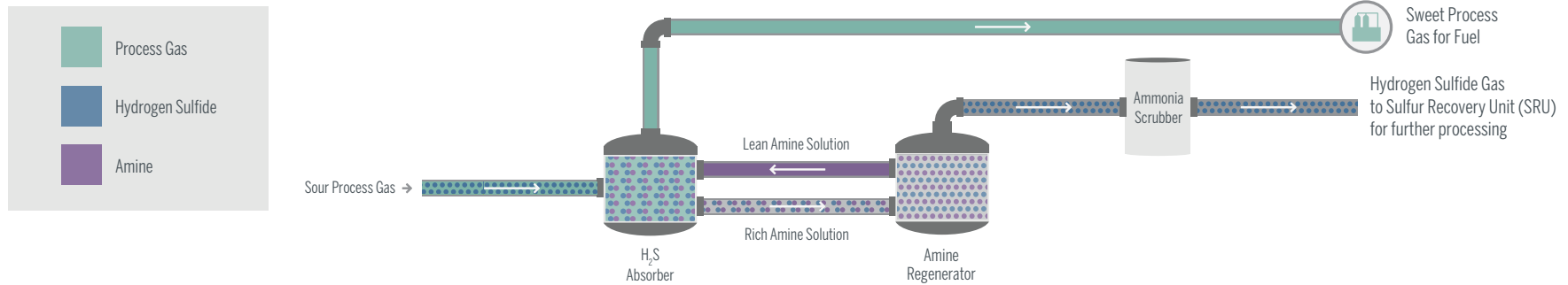
The H_2S absorber produces a liquid consisting of a mixture of H_2S and DEA, which is then piped to an “amine regenerator.” The amine regenerator is a vessel where a lower pressure plus heat added by a steam reboiler “flashes” off the H_2S . In the amine regenerator, the H_2S is stripped from the DEA. The DEA is recycled to be used again, and the H_2S gas (no longer containing hydrogen, hydrocarbons, or DEA) is then sent to a sulfur recovery unit, as described below (see Figure A3-11, *Amine Treatment Process*).

3.4.6 Sulfur Recovery Units Convert Hydrogen Sulfide H_2S Gas into Usable Elemental Sulfur

The separated H_2S stream is sent from the amine regenerator to one of three sulfur recovery units, where it is turned into elemental sulfur, using a process known as the “claus process” as depicted in Figure A3-12, *Sulfur Recovery Process*, below. Some H_2S is burned or oxidized in a furnace, creating sulfur dioxide (SO_2) from the H_2S ($H_2S + \frac{1}{2}O_2 = SO_2 + H_2O$). The SO_2 produced further reacts with the unreacted H_2S to produce elemental sulfur ($H_2S + \frac{1}{2}SO_2 = \frac{1}{2}S + H_2O$). The second step, which produces the elemental sulfur, occurs partially in the reactor furnace and partially in the catalytic reactors. The gases that exit the reactor furnace are routed to a heat exchanger where the elemental sulfur produced in the burner/furnace is condensed and sent to storage. The heat exchanger produces steam for use in the Facility. The gases from the heat exchanger are sent to a vessel that contains a catalyst to continue the conversion of the H_2S to elemental sulfur. The process at the Facility has two conversion stages to produce the majority of the elemental sulfur. The process gas that still contains unconverted H_2S is routed to the equipment called the Wellman-Lord tail gas recovery units, where remaining H_2S is oxidized to SO_2 and returned to the catalytic reactors for further conversion to elemental sulfur. The elemental sulfur that is produced is stored in a tank in a liquid form. It is shipped out of the Facility as a salable product in liquid form by truck.

Amine Treatment Process

An amine solution treats process gases containing hydrogen sulfide (sour gases) generated in the Facility's processing units. The treated gas is used within the Facility as a fuel source and the removed hydrogen sulfide is further treated into an elemental sulfur product.



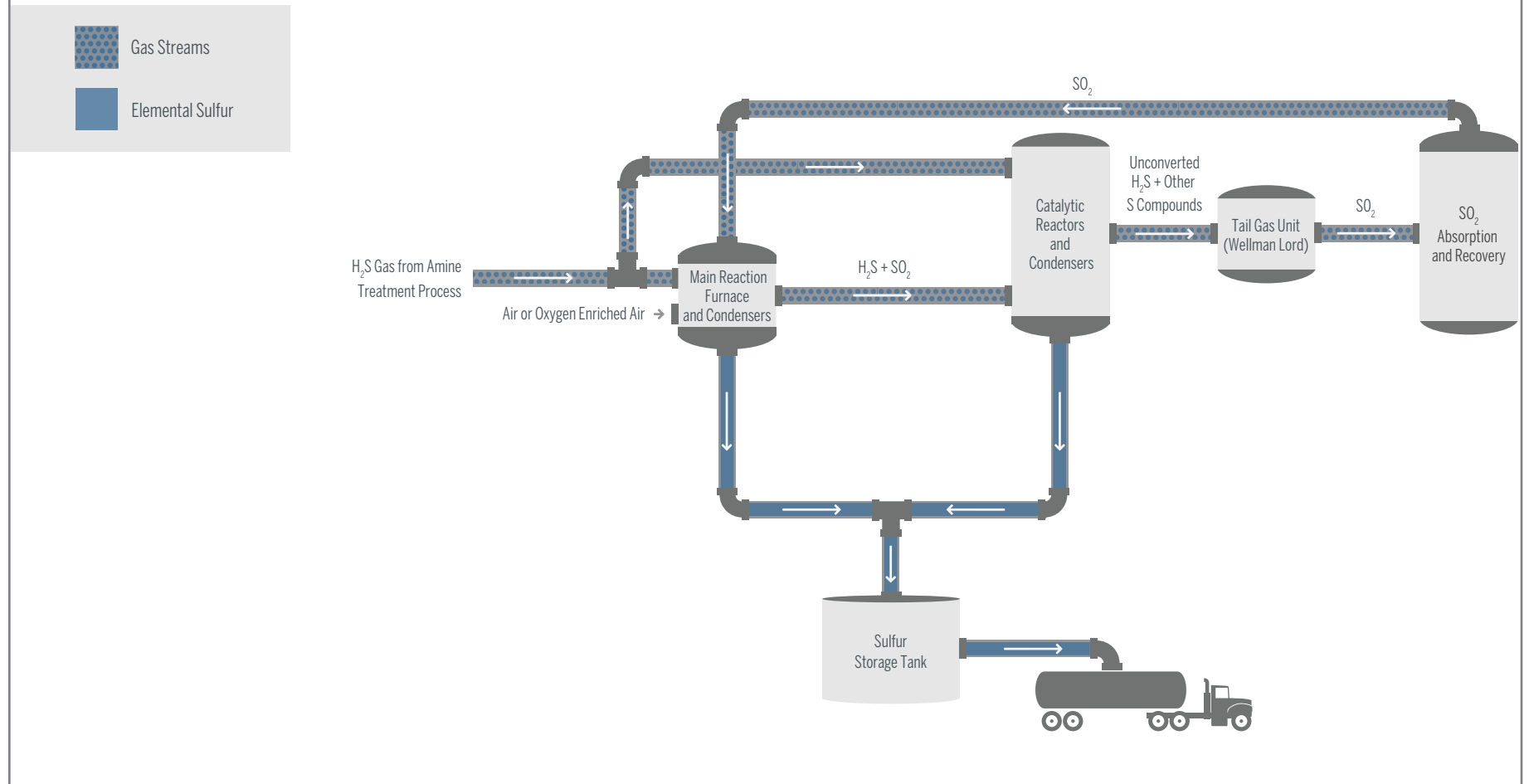
03.04.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx B_Refinery 101\Draft\CVRN Figure A3-11.pdf

Source: Chevron (T39r2)

Figure A3-11
Chevron Refinery Modernization Project EIR
Amine Treatment Process

Sulfur Recovery Unit

The Sulfur Recovery Unit (SRU) recovers elemental sulfur from gas containing hydrogen sulfide. The elemental sulfur leaves the refinery as a salable product.



03.04.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 3_Refinery 101\Draft

Source: Chevron (T39r)

Figure A3-12
Chevron Refinery Modernization Project EIR
Sulfur Recovery Process

3.4.7 Conversion: “Cracking” Remaining Heavy Hydrocarbon Molecules into Light Hydrocarbons

After hydrotreating to remove natural impurities including sulfur, many of the crude oil fractions processed by the Facility are suitable for *Blending* prior to sale as products (e.g., gasoline, diesel, jet fuel), or are ready to be blended into specialty products (e.g., lubricating base oils).

However, gas oil fractions must undergo an additional refining process—thermally or chemically “cracking” the long chains of hydrocarbon molecules that comprise these hydrocarbon fractions—to produce gasoline, diesel, and other high-demand petroleum products.

The Facility uses two types of “cracking” technology: catalytic cracking and hydrocracking.

3.4.8 Catalytic Cracking

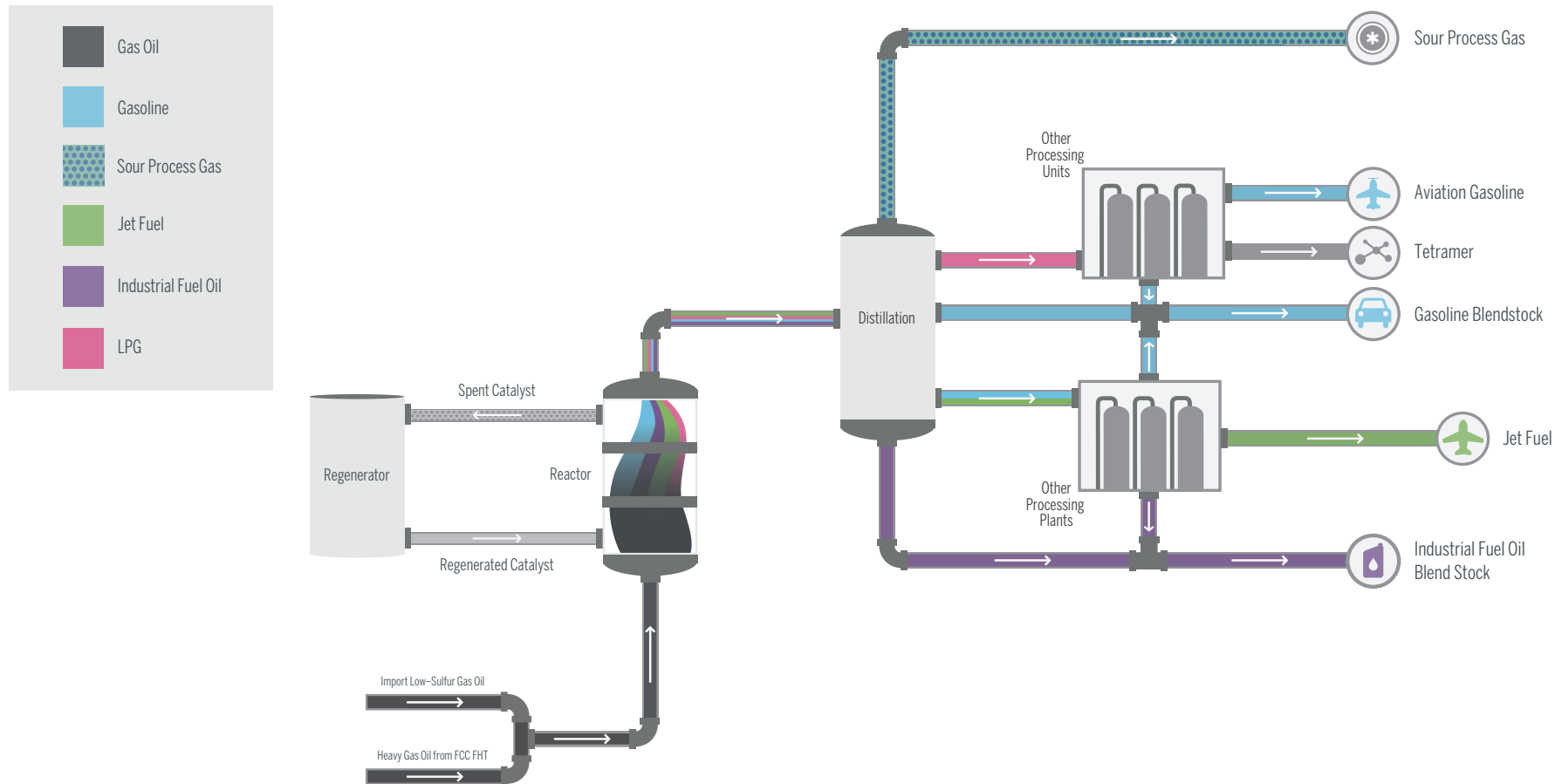
The Facility's fluid catalytic cracking unit is the fluid catalytic cracker. Catalytic cracking, or “cat cracking,” involves heating gas oil fractions to temperatures of around 1,000°F when exposed to a “catalyst” at relatively low pressures (20 to 30 pounds per square inch [psi]) to “crack” the long chain hydrocarbon molecules into shorter chains, and thereby produce lighter hydrocarbons like gasoline. When the long-chain molecules of heated gas oil come into contact with the surface of the catalyst in this chamber, the molecular chains “crack” and become multiple, shorter-chained, lighter hydrocarbon molecules (see Figure A3-13, *Fluid Catalytic Cracking Process*).

The catalyst in the fluid catalytic cracker itself is a chemical compound with the appearance of a very fine powder. Although it comes into contact with the gas oil, the catalyst remains chemically unchanged and can be used again and again. The Facility's catalytic cracker is called a “fluid catalytic cracker” because the reaction takes place in a vessel where the catalyst particles behave like a liquid.

As the hydrocarbons crack, some of the carbon atoms from the cracked hydrocarbons deposit on the surface of the catalyst, which reduces the catalyst's ability to promote chemical reactions. (This deposit of carbon is often called “coking”.) To regenerate the catalyst, air is mixed with the catalyst in a heated environment, and a chemical reaction – the oxidation of coke (essentially burning) – takes place that removes the coke from the catalyst and allows it to be reused.

Fluid Catalytic Cracking Process

The Fluid Catalytic Cracker (FCC) Unit uses catalyst, which moves “fluidly” with the feedstock, to convert larger gas oil molecules into gasoline and other smaller hydrocarbons.



03.04.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 8_Refinery 101\Draft\CVRN Figure A3-13.pdf

Source: Chevron (T39r2)

Figure A3-13
Chevron Refinery Modernization Project EIR
Fluid Catalytic Cracking Process

The fluid catalytic cracker unit receives gas oil from (1) the hydrotreatment process described above, which removes sulfur and other natural impurities; and (2) imported purchased gas oil to the extent that it is already low in sulfur and thus does not require hydrotreatment.

3.4.9 Hydrocracking (TKN Isomax Unit)

The second method of cracking used at the Facility, *hydrocracking*, involves chemical reactions between hydrogen gas and hydrocarbons in the presence of a catalyst, and occurs in a vessel operated at very high pressures on the order of 1,000 to 3,000 psi. The Facility's hydrocracker is called a "TKN Isomax." Hydrocracking converts gas oil into lighter hydrocarbon fractions. Unlike cat cracking, hydrocracking does not produce significant coke because it adds hydrogen atoms to the cracked molecules instead of releasing carbon atoms. (Hydrogen is used in the TKN Isomax unit in this cracking process and is an example of a refinery process where hydrogen is used in a manner that is unrelated to sulfur.) See Figure A3-14, *The Hydrocracker Process*.

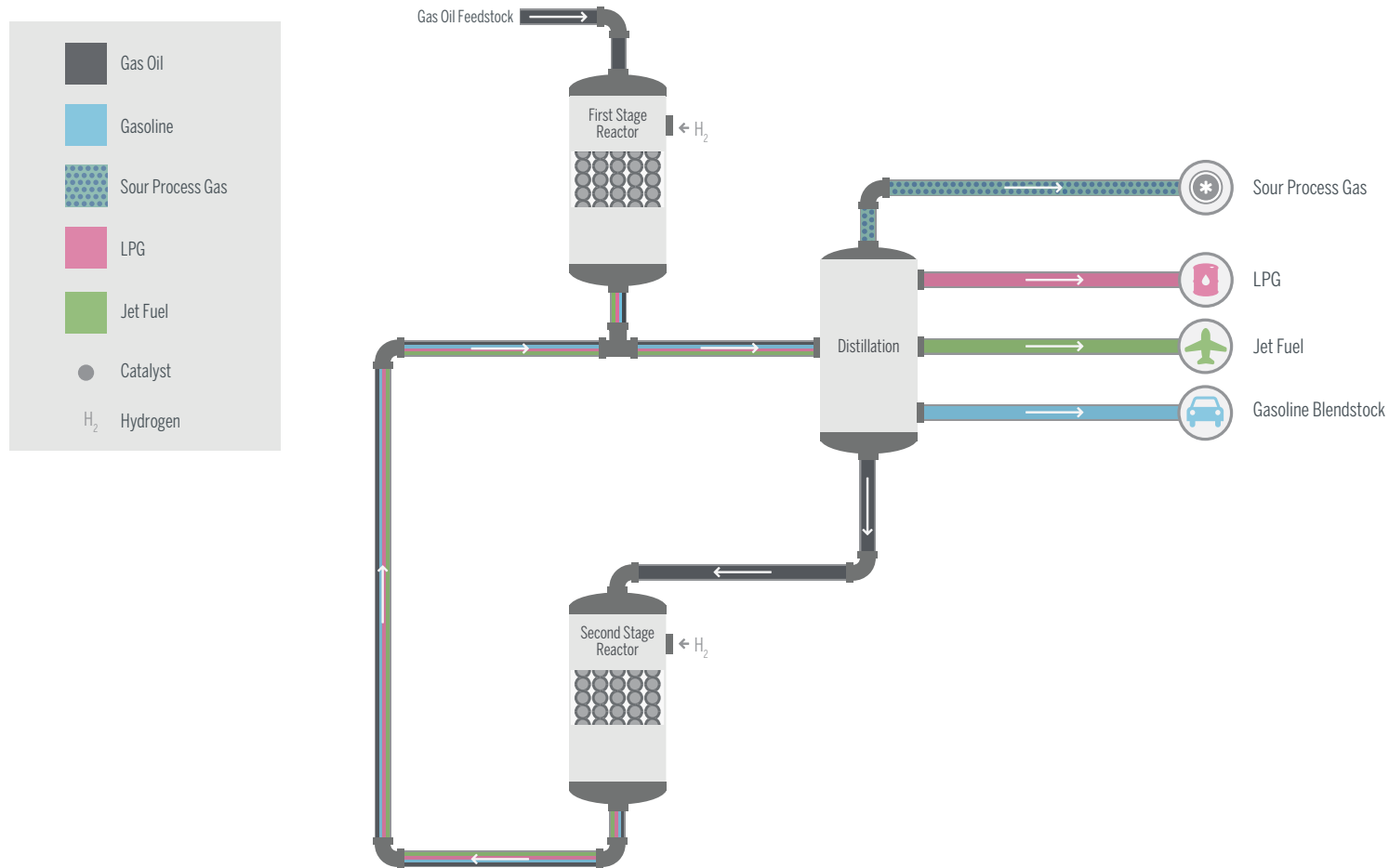
The hydrocracking in the Facility's TKN Isomax unit is a two-stage process that removes impurities from gas oil in the first stage and then "cracks" the gas oil in the second stage. The first stage is called the TKN (Taylor Katalytic DeNitrification). The second stage is called the Isomax. The name of the combined TKN Isomax is typically shortened to just "TKN" because essentially all of the material fed to the TKN is subsequently fed to the Isomax. The TKN unit receives the lighter gas oils produced by the crude unit and treats it to remove impurities, similar to the FCC FHT, which treats the heavier gas oils. The treated gas oil flows from the TKN to the Isomax where the gas oil is cracked into gasoline, jet fuel, and diesel.

The TKN *Treatment* stage removes impurities in a similar fashion as the hydrotreaters. Catalyst, temperature, pressure, and time remove the impurities and hydrogen reacts with sulfur, nitrogen, and hydrogen-deficient hydrocarbons producing H_2S gas and ammonia. As with hydrotreaters, the H_2S produced by the TKN is absorbed in a H_2S absorber by a DEA solvent for further treatment and recovery of elemental sulfur product through the amine regenerators and ultimately the sulfur recovery units. The TKN unit operates at temperatures and pressures that allow the sulfur and nitrogen in the gas oil feed to be converted to H_2S and ammonia for eventual recovery as either salable sulfur or ammonia product.

In the hydrocracking (Isomax) stage, a catalytic reaction in the presence of hydrogen cracks the bigger gas oil molecules into smaller gasoline, jet fuel, and diesel molecules. Since both units use hydrogen, there is some incidental

The Hydrocracker Process

A Hydrocracker unit uses hydrogen and catalyst to convert ("crack") larger hydrocarbon molecules into jet fuel, gasoline and other smaller hydrocarbons.



03.04.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 8_Refinery 101\Draft\CVRN Figure A3-14.pdf

Source: Chevron (T39r2)

Figure A3-14
Chevron Refinery Modernization Project EIR
The Hydrocracker Process

cracking in the TKN and there is some incidental removal of impurities in the Isomax.

Neither catalytic cracking nor hydrocracking creates or destroys hydrogen, carbon, nor any other atom. As larger hydrocarbon molecules are broken, they create larger numbers of smaller molecules. Those smaller molecules have the same molecular weight as the sum of the initial larger molecule plus the very light hydrogen gas, but the smaller molecules collectively take up more space (or volume) than the initial, larger, more dense molecule from which they were created. This expansion of volume through the hydrocracking process is called “processing gain” and it results in production (by volume) of slightly more hydrocarbon lighter end products than the volume of gas oil introduced to hydrocracker units. U.S. refinery processing gain averaged about 6.2% from 1996 through 2010. In 2012, about 44.98 gallons of refined products were produced for every 42 gallon barrel of oil input into U.S. refineries.

3.4.10 Reforming: Increasing Octane Levels in Gasoline

Reforming is a process primarily designed to increase the “octane” of gasoline. Octane is a characteristic of gasoline related to the tendency to “self-ignite” under pressure.⁹ Engines are rated based on their ability to run lower- or higher-octane gasolines. High-performance engines generally need higher-octane gasoline. If the octane level in the gasoline is not suitable for the engine, premature ignition of the gasoline occurs in the cylinder—a condition known as “engine knock” because of the knocking sound that is made when the gasoline ignites too early in the engine's compression stroke. Octane ratings in commercial gasoline range from about 85 anti-knock index (AKI) in regular gasoline in high altitudes like Denver, Colorado, to over 100 for aviation gasoline.

Severe knock causes severe engine damage, such as broken connecting rods, melted pistons, and melted or broken valves and other components. An octane rating is a measure of how likely a gasoline or liquid petroleum fuel is to self-ignite. The higher the number, the less likely an engine is to pre-ignite and suffer damage. California allows a range of octane levels at the pump (87, 89, and 91), and buyers can choose the octane level that is appropriate for their car and budget. Higher octane ratings are typically recommended for higher-performance engines, and higher octane levels also cost more per gallon at the retail level than lower octane levels.

⁹ Octane is also a name for some hydrocarbons that include eight carbon atoms.

The “reforming” process in the Facility takes hydrocarbons that are in the naphtha weight range but have low octane and changes their molecular structure into higher-octane gasoline molecules. The reforming process involves reshaping because the naphtha has the same number of carbon atoms before and after this part of the refinery process, but the molecules are “reshaped” into higher-octane gasoline molecules. This reshaping of molecules also releases hydrogen, which is then used in other Facility processes as part of the Facility's overall hydrogen supply.

The Facility has two catalytic reformer process units (#4 and #5 Rheniformer), each of which consists of four separate catalytic reactors. As with other refinery processes using catalysts, each of these reactors consists of a chamber containing the catalyst material, operated at controlled temperature and pressure levels. Naphtha from the naphtha hydrotreater (which removed sulfur from this naphtha hydrocarbon fraction) is fed through each reactor chamber in series. The feed is treated with perchloroethylene, a chemical that provides chloride atoms to control reforming catalyst activity.

The products of reforming are light gases and a high-octane gasoline component typically called reformate. Hydrogen gas, a by-product generated in this process, is recovered and used in other Facility processes. The light ends produced at the reformer are used in gasoline blending (normal butane), alkylation unit (iso-butane), liquefied petroleum gas (propane) or refinery fuel gas (methane or CH₄). The reformers at the Facility are “semi-regenerative,” which means that they accumulate coke as hydrocarbons are passed over them and a small amount of cracking occurs. This coke must be burned off periodically, which is called “regeneration.” The frequency of the regeneration depends on the octane level achieved for the reformate. Higher octane results in more frequent regeneration. Typical regeneration cycles are every 6 to 24 months and regeneration only takes a few days, unless significant other work is required on the unit.

3.4.11 Specialty Operations: Lubricating Base Oil Production Process

The Facility is also a major national producer of industrial lubricant base oils. This requires a specialty process consisting of gas oil hydrocracking. Gas oil from the crude unit is routed to the lube unit crackers. These are similar in operation to the FCC FHT, but instead of producing a primary output of gas oil for use in the fluid catalytic cracker, they produce material used as input to the lube hydrofinishers. The lube hydrofinishers also use hydrogen to treat this material and ultimately produce a base oil that is the primary building block in producing lubrication oil with the desired physical properties such as viscosity and density.

The base oil production process includes sulfur removal from the feed. The sulfur removal process is the same as the other hydrotreating units. Lighter ends that include H_2S produced in the lube crackers are directed to a H_2S absorber to remove the H_2S by absorption in DEA. The H_2S rich DEA is regenerated in an amine regenerator and the H_2S is changed to elemental sulfur in the sulfur recovery unit.

3.4.12 Blending and Final Product Production Process

The Facility processes produce hydrocarbon fractions that are products ready for shipment, and it also produces hydrocarbon fractions that require blending with other hydrocarbon fractions before being ready for shipment as products.

Blending typically occurs when hydrocarbon fractions are piped to a tank in specific quantities until required product specifications are achieved. All of the Facility's hydrocarbon products are produced either by one or more of the refinery process steps described above, or by blending hydrocarbons produced by one of the refinery process steps described above. How much of any particular product is produced varies based on market factors, but the Facility has consistently served as a primary supplier of gasoline, jet fuel, and base oils in the region.

3.5 OTHER REFINING PROCESS OPERATIONS

The Facility also includes other major equipment and activities that are integral to Refinery Operations but not technically part of the Facility's process for producing products. Other major categories of Refinery Operations described in this section include the Facility's hydrogen plant, furnaces, flaring system, power plant, wastewater treatment plants, and storage tanks.

3.5.1 Hydrogen Plant

As described above, hydrogen plays a critical role in the refinery process steps described above, including in the catalytic processes for removing sulfur in the *Treatment* processes, breaking bonds and forming new bonds in the *Cracking* processes, and the production of lubricant base oils. Hydrogen gas is produced on-site in an existing hydrogen plant as well as from the *Reshaping* process.

3.5.2 Hydrogen Manufacturing Technology

The current hydrogen plant produces hydrogen from a process known as “steam reforming.” The chemistry of the existing plant is relatively simple. Water (H_2O) is combined with methane (CH_4 , the primary component of natural gas) which, through a chemical reaction, produces hydrogen, carbon dioxide (CO_2), and carbon monoxide (CO). This steam reforming reaction is typically carried out using a nickel catalyst, which is packed into tubes of a reforming furnace.

In the mid-1980s, PSA generally replaced the older technology (Meyers, 2004). As explained further below, the primary difference between the two processes is that the final product from the steam reforming process described in the prior paragraph (about 94% pure hydrogen) goes through an additional step in the newer technology in which it is sent to PSA vessel units, where the hydrogen is selectively absorbed at high pressure, leaving the impurities like CO₂ behind. The absorption mixture is depressured, and very pure (99%) hydrogen is all that is left. The impurities and some hydrogen left in the PSA units are burned in the furnace to provide heat for the reaction.

3.5.3 Furnaces, Burners, Heat Exchangers and Thermal Oxidizers

Heating devices provide heat to various liquid or gas streams such as water, process streams (e.g., crude oil), or air. In general, these heating devices are referred to as “furnaces.” Sometimes, heating devices are given special names based on the stream being heated. For example, a heating device that boils water is commonly referred to as a “boiler.” A heating device that provides heat to non-water liquid streams is sometimes also referred to as a “process heater.” However, the general operation and the emissions associated with each are similar in concept.

These heating devices all include burner assemblies. The burners are where fuel (i.e., natural gas or refinery fuel gas) is combusted with oxygen to form a flame and hot combustion gases. (This is a larger scale version of the burners that one would find on a natural gas kitchen stove.) There are different ways a hydrocarbon stream may be heated during the refining process, depending on the configuration of the heating device and the technology of the refining process that the heating device serves. For example, a hydrocarbon stream being heated may pass through tubes that are surrounded by the hot combustion gas. In this case, the heat from the hot combustion gas transfers through the tube, increasing the temperature of the hydrocarbon stream within the tube. The flame component of the heating device may also be near the hydrocarbon stream, which would directly transfer additional radiant heat to the stream through the tubes.

In certain process units, burners are used to directly combust a refinery process stream (i.e., the material being processed through the Facility unit comes into direct contact with the flame from the burner) instead of using burners just as heaters. This occurs, for example, when hydrogen sulfide gas is combusted as part of the sulfur recovery unit process in the *Treatment* process for sulfur removal.

In addition, some burners are designed to combust volatile organic compounds (VOCs) in exhaust streams or fugitive emissions, converting the VOCs into CO₂ and water. Such devices are called thermal oxidizers. Thermal oxidizers are used, for example, to control VOC emissions from pumps and compressor seals at the Facility.

The combustion process for all heaters produces air emissions. The pollutants produced depend on the chemical composition of the fuel and combustion air and can include criteria air pollutants, toxic air contaminants, and greenhouse gases. The design of the device can influence the extent to which air emissions are generated. For example, low-NO_x burners are designed to reduce NO_x formation by controlling fuel and air mixing. Air emissions from burners are described in *Section 4.3, Air Quality*, and *Section 4.8, Greenhouse Gases*.

The combustion gas from a heating device typically remains hot even after transferring heat to the material being refined in the part of the refinery process served by the heating device. This combustion gas can be released as exhaust through a flue stack (subject to required air pollutant controls), or an “economizer” can be used to recover heat from the exhaust gas that would otherwise be released into the atmosphere. The recovered heat can be reused in the refining process to pre-heat a process stream or combustion air, which then results in lower fuel consumption because less fuel is used to bring the stream or combustion air up to operating temperature. An economizer is essentially a “heat exchanger” (described below) that reduces fuel consumption from the same device from which it derives its waste heat. The waste heat from the combustion gas could also be used to heat other streams derived from other units in a conventional heat exchanger.

A “heat exchanger” is a piece of equipment whereby a hotter process stream transfers heat to a cooler process stream. The two process streams do not come into direct contact with each other (i.e., they are not mixed). Rather, they are generally separated by a metal wall that conducts the heat from one stream to another. Heat exchangers are designed such that the surface area of the wall separating the two streams is maximized in order to maximize the amount of heat transferred. There are no emissions associated with heat exchangers because there is no combustion occurring. For example, the hot gases that exit the sulfur recovery unit enter into a heat exchanger where it transfers heat to a stream of water, converting the water to steam.

3.5.4 Flares

A refinery moves raw materials through a network of pipes and processing equipment. As described above, many of the refining processes involve using pressure and/or heat to change hydrocarbons and transporting heated or

pressurized hydrocarbons through the different parts of a refinery. Flare systems are designed to provide for the safe disposal of hydrocarbons that are either automatically vented or manually drawn from process units at refineries. Hydrocarbons must be controlled in a safe and effective manner in the event of an operational upset. Flare systems gather vented gases and combust them to prevent releases of hydrocarbons directly into the atmosphere.

Flaring plays a critical safety role in refinery operations. A “flare” is usually a tall stack equipped with burner equipment that is designed to ignite hydrocarbon gas when it leaves the flare. This flare technology is designed to very quickly and very efficiently consume hydrocarbon gas (similar to a gas stove), with minimal air pollution. The primary function of the flaring system is to relieve pressure to prevent units from overpressure. Flares are primarily used for burning off flammable gas released by a “relief gas header” during either unplanned pressuring of refinery equipment, or during startups and shutdowns. A header for collection of vapor streams is included as an essential element of nearly every refinery process unit. At the Facility, these are typically referred to as “relief gas headers,” since the system, which is generally at near-atmospheric pressure conditions, receives gases “relieved” from higher pressure operations within the unit.

The primary function of the relief gas header is safety. It provides the process unit with a readily available and controlled means of releasing gases to prevent over-pressurization of equipment (routing them to controlled locations for destruction by combustion). It also provides a controlled outlet for any excess vapor flow, nearly all of which is flammable and can be sent to a flare to be burned off, making it an essential safety feature of every refinery. Each relief gas header has connections for equipment depressurization and purging related to maintenance turnaround, startup, and shutdown, as well as pressure relief devices and other safety control valves to handle upsets, malfunctions, and emergency releases.

The Bay Area Air Quality Management District (BAAQMD) has been a global leader in regulating the use of flares. Flaring is not required to operate a refinery's process units during normal operation, and the need for flaring at the Facility has been substantially reduced over time.

The Facility has identified situations or activities likely to cause flaring, including releasing gases to prevent equipment from becoming over pressured, as described below in more detail. Releases of relief gas to the flare result from an imbalance between the quantity of vent gas produced by the Facility and the rate at which it can be compressed, treated to remove contaminants (sulfur compounds), and utilized as fuel gas. Situations that can lead to flaring can be

grouped together based on similarity of cause. At the Facility, flares are used for three primary purposes:

- **Process unit startups and shutdowns and planned maintenance.** To prepare an individual equipment item or a block of refinery equipment for maintenance, it is necessary to isolate it from active operations and clear it of process fluids. Examples include unit shutdowns, working on equipment and/or relief systems, catalyst change, plant leak repairs, and compressor maintenance or repairs. In order to avoid flaring, there must be a balance between producing and consuming fuel gas units. When either a block of equipment or an individual equipment item is removed from service, if it either produces relief gases or consumes fuel gases, then the balance of the fuel gas system is changed and adjustments are necessary to bring the system back into balance. If the net change in gas production or consumption is large and the adjustments in the rate at which gas is produced or consumed by other units cannot be made quickly enough, then flaring results.
- **Upset/malfunction.** An imbalance in the flare gas system can also result from upsets or equipment malfunctions that either increase the volume of flare gas produced or decrease the ability of the fuel gas handling system to accommodate it. Examples include relief valves lifting, pressure relief valve malfunction, equipment overpressure, loss of a utility system, and loss of air fins or condensers.
- **Emergency relief.** Pursuant to BAAQMD Regulation 12, Rule 12, Section 201, an emergency “is a condition at a petroleum refinery beyond the reasonable control of the owner or operator requiring immediate corrective action to restore normal and safe operation that is caused by a sudden, infrequent and not reasonably preventable equipment failure, natural disaster, act of war or terrorism or external power curtailment, excluding power curtailment due to an interruptible power service agreement from a utility.”

To address these situations, the Facility currently operates two flare gas systems, complete with flare gas recovery systems, one covering the “north yard” of the Facility and the other covering the “south yard.”

The operation of the Facility’s flare systems is governed by its flare management plan (FMP) submitted pursuant to the requirements of BAAQMD Regulation 12, Rule 12 (Reg. 12-12). The purpose of this rule is to reduce emissions from flares at petroleum refineries by minimizing the frequency and magnitude of flaring. Flaring is prohibited unless it is consistent with an approved FMP. Each refinery is required to submit a FMP annual update. The FMP defines a series of measures intended to reduce flaring to the extent that is feasible without compromising

safety and necessary refinery operations and practices. It is the Facility's policy that flare events would only occur within the scope of Reg. 12-12, and it would adjust the operation of process units or implement corrective action to prevent flaring in accordance with the regulation.

3.5.5 Power and Steam Generation, Including Boilers

The Facility is designed to generate on-site most of the power it needs to operate. During the baseline period of 2008-2010, the Facility imported an annual average of only 2 megawatts (MW) of electricity, compared to a total annual average of approximately 115 MW of electricity used by the Facility.

Electric power is generated at the Facility by two gas turbines, one steam turbine generator, and the fluid catalytic cracker power recovery system. The gas turbines generate electricity through the combustion of fuel which moves the blades of a turbine, providing mechanical power to operate the electric generator.

A steam turbine generator creates electricity when higher pressure steam is reduced to lower pressure steam, resulting in mechanical power to operate the electric generator. Steam is produced by two heat recovery steam generators at the co-generation unit as well as five fired boilers in the "No. 1 Power Plant."¹⁰ (The combination of the gas turbines, the heat recovery steam generators, and the duct burners comprise the co-generation facility.)

Steam is also generated by process units throughout the Facility. For example, steam is generated in a heat exchanger that takes in hot gases from the sulfur recovery unit, transfers the heat to a water stream, and converts that water to steam. In addition to being used to generate electricity in the steam turbine generator, steam is also piped throughout the Facility and is injected into various processing equipment to be used for heating in the refining process (similar to radiator heat in a house) or for direct contact with hydrocarbons during the refining process.

The Facility uses approximately 2.5 million pounds of steam per hour. However, the boilers in the No. 1 Power Plant generate only about 10% of that amount; the remaining steam is produced by refinery processes.

¹⁰ The five boilers are called the "No. 1 Power Plant" because the unit was built in the 1930s and used to generate electricity. However, "power plant" is a misnomer as the unit today consists of boilers only and generates only steam, not electricity.

3.5.6 Cooling Towers

Process streams require cooling that is usually provided by water in a heat exchanger. Water that picks up heat in the process is sent to a cooling tower where the water is dispersed into thin streams through which air is passed. The air evaporates a small amount of the water and the evaporation cools down the water, which is then pumped back to the heat exchanger again for reuse.

3.5.7 Water Use and Treatment

The refining process results in industrial wastewater that is treated in a wastewater treatment facility. The Facility's process wastewater and most of the stormwater runoff is collected and managed in the Facility's existing industrial wastewater treatment system that is regulated by the RWQCB.

3.5.8 Storage Tanks

The Facility currently operates approximately 160 aboveground storage tanks (including pressurized spheres) containing raw materials, feedstocks, intermediate material, and final products. There are a number of small/auxiliary tanks located throughout the Project site that are not part of the primary Refinery Operations processes.

Most tanks store raw feedstocks (crude oil and gas oil), intermediate stocks, or finished products (gasoline, diesel, jet fuel, etc.). These tanks are located in areas of the Facility known as the Refinery Process and Tank Farm areas (see *Figure 3-2 in Chapter 3, Project Description*). Furthermore, some tanks store chemicals that are involved in Refinery Operations but are neither feedstocks nor product, such as perchloroethylene used in the reforming process.

The tanks range in capacity from under 1,000 barrels to over 650,000 barrels. Over long periods of time (e.g., annually) the average amount of material stored in tanks is approximately constant, but the quantity of material flowing through the tanks on any given day increases or decreases as the feedstock tanks are emptied into the Facility (or product is produced by the Facility feed rate and production volumes change).

3.5.9 Pipelines, Valves, Pumps, and Flanges

The Facility has a complex network of pipelines, and the pipelines have process components that each result in small emissions of hydrocarbons from the seals in the process components. These process components include approximately 5,000 miles of pipe, 105,000 valves (including pressure relief devices), 1,400 pumps and compressors, and 400,000 connectors such as flanges (which are used to connect two lengths of pipe).

3.6 REFERENCES—APPENDIX 3

- California Energy Commission (CEC). 2006. Fossil Fuels Office, Fuels and Transportation Division, Sheridan, Margaret: California Crude Oil Production and Imports, p. 1, CEC-600-2006-006. April.
- Greg Johnson, New Logic Research. 2014. *Petroleum Wastewater—Desalter Case Study*. Accessed March 4, 2014. http://www.waterandwastewater.com/www_services/ask_tom_archive/petroleum_wastewater_desalter_case_study.htm.
- Robert A. Meyers. 2004. *Handbook of Petroleum Refining Processes, Third Edition*, p. 67.

APPENDIX 4.0

Cumulative Projects

TABLE A4.0-1 PLANS CONSIDERED AS PART OF THE CHEVRON REFINERY MODERNIZATION PROJECT EIR CUMULATIVE IMPACT ANALYSIS

Area	Lead Agency (if applicable)	Project/Plan	Project Name	Project Location	Description	Filed/Status		Environmental Review Status
Project site	City of Richmond	Project	Sulfur Tank Replacement	Internal Refinery	Project would replace one of the two existing sulfur storage tanks in-kind (same size and location). Tank would be 70' 40' high.	Est. Construction Quarter 2015	Start: 1st End: 2nd Quarter 2015	Permit application not yet developed.
Project site	City of Richmond	Project	Sulfur Loading Rack Replacement	Internal Refinery	Replace the existing sulfur loading rack which is nearing the end of its useful life. Included are two sulfur loading pumps, a water scrubber, a caustic scrubber, caustic circulation pumps, a vent blower, and a caustic storage tank. The existing loading rack would be decommissioned and dismantled following construction of the replacement rack.	Est. Construction Quarter 2014	Start: 2nd end: 3rd Quarter 2015	Permit application submitted to BAAQMD Oct. 2013.

Source: City of Richmond, 2014. Contra Costa County, 2014.

TABLE A4.0-2 CHEVRON PROJECTS WITHIN OR NEAR THE PROJECT SITE CONSIDERED AS PART OF THE CHEVRON REFINERY MODERNIZATION PROJECT EIR CUMULATIVE IMPACT ANALYSIS

Area	Lead Agency (if applicable)	Project/Plan	Project Name	Project Location	Description	Filed/Status		Environmental Review Status
Project site	City of Richmond	Project	Sulfur Tank Replacement	Internal Refinery	Project would replace one of the two existing sulfur storage tanks in-kind (same size and location). Tank would be 70' 40' high.	Est. Construction Quarter 2015	Start: 1st End: 2nd Quarter 2015	Permit application not yet developed.
Project site	City of Richmond	Project	Sulfur Loading Rack Replacement	Internal Refinery	Replace the existing sulfur loading rack which is nearing the end of its useful life. Included are two sulfur loading pumps, a water scrubber, a caustic scrubber, caustic circulation pumps, a vent blower, and a caustic storage tank. The existing loading rack would be decommissioned and dismantled following construction of the replacement rack.	Est. Construction Quarter 2014	Start: 2nd End: 3rd Quarter 2015	Permit application submitted to BAAQMD Oct. 2013.
Project site	RWQCB	Project	Dredge Spoils to 250' Channel	Internal Refinery	Project would make repairs to the Point Orient Wharf, and construct a pipeline from that wharf across the northern tank farm through the Refinery to the 250' Channel. Includes pumps, electrical, and related infrastructure.	Est. Construction Quarter 2014	Start: 4th End: 4th Quarter 2015	Initial Study to be prepared by RWQCB
Hensley Street / Richmond Parkway	City of Richmond	Project	Hensley Street and Kelham Warehouse Redevelopment Project	Hensley St. (former Ag. Chem facility)	Project to redevelop the Hensley Street and Kelham warehouse sites for light industrial uses.	Est. Construction Quarter 2015	Start: 1st End: TBD	NOP with Initial Study expected to be released 1 st quarter 2014
Project site	City of Richmond	Project	Maintenance Shops Building	Internal Refinery	Construct a new 2-story building to consolidate maintenance shops.	Est. Construction Quarter 2015	Start: 1st End: 1st Quarter 2016	Design Review required by City of Richmond
Project site	City of Richmond	Plan	Major Refinery Turnaround	Internal Refinery	Routine shutdown of process unit(s) for scheduled maintenance.	On-going		
Project site	City of Richmond	Project	Long Wharf Maintenance and Reliability Project	Long Wharf	Maintenance and retrofits to the existing Long Wharf. This includes replacement of three (3) existing vessel access gangway towers, addition of three (3) fire water monitors, addition of three (3) mooring dolphins and hooks, addition of standoff fenders replacement of all existing loading arms, replacement of three (3) existing hose cranes, and seismic retrofit to the Berth 4 loading platform.	Est. Construction Quarter 2015	Start: 2nd End: 3rd Quarter 2017	Permit applications to be submitted 1 st quarter 2014
Project site	City of Richmond	Project	Storage Tank Replacement Project	Internal Refinery	Construct five (5) new hydrocarbon storage tanks and one (1) firewater tank.	Construction Quarter 2011	Start: 2nd End: 3rd Quarter 2015	MND adopted and CUP approved March 2011

Source: Chevron Data Transmittal #56 (Rev #2), 2013.

TABLE A4.0-3 OTHER, NON-CHEVRON REFINERY AND PIPELINE PROJECTS CONSIDERED AS PART OF THE CHEVRON REFINERY MODERNIZATION PROJECT EIR CUMULATIVE IMPACT ANALYSIS

Area	Lead Agency	Project/ Plan	Project Name	Project Location	Description	Filed/Status	Environmental Review Status
City of Benicia	City of Benicia	Project	Valero Improvement Project	3400 East Second Street, Benicia	Modify existing and install new refining equipment, including new hydrogen plant.	Original Authority to Construct (ATC) issued 12/16/2008, request to extend ATC to 2014 submitted to BAAQMD in July 2012	EIR completed
City of Benicia	City of Benicia	Project	Valero Crude by Rail	3400 East Second Street, Benicia	Install a rail car unloading rack, repurpose an existing tank to include crude oil service, and construct associated infrastructure, including rail lines, to allow Valero to receive crude oil by train. Project would allow Valero to receive a larger proportion of its crude oil by railcar, up to 70,000 barrels per day of North American crude.	Land use permit application submitted 12/12	NOP 8/9/2013; Draft EIR release date is tentatively scheduled for March 2014
City of Pittsburg	City of Pittsburg	Project	WesPac Pittsburg Energy Infrastructure Project	696 West 10 th Street, Pittsburg, CA	Crude oil storage. A crude oil terminal to receive and ship crude oil by train, ship, barge, or pipeline.	Est. Construction Start: 3rd Quarter 2014 Est. Start of Operations: 4th Quarter 2015	Preparing to recirculate EIR. Comment period for last Recirculated EIR ended September 13, 2013.
Contra Costa County	Contra Costa County	Project	Phillips 66 Propane and Butane Recovery Project	1380 San Pablo Avenue in unincorporated Contra Costa County, near town of Rodeo.	Construction of Propane Recovery Plant for separating propane and additional butane from refinery fuel gas; construction of new Fuel Gas Hydrotreating Plant to lower sulfur content in refinery fuel gas; construction of ten new propane vessels and associated treatment facilities; new truck and rail infrastructure for loading increased propane and butane as product.	Planning commission approved. Application on appeal to Board of Supervisors starting in 1/2014, pending information from BAAQMD	EIR completed, but not certified by Board of Supervisors.
Contra Costa County	Contra Costa County	Project	New Shell Crude Oil Tank construction	Contra Costa County	The proposed Project will result in an increase of crude oil storage capacity at the facility by approximately 800 thousand barrels (MBbl). Increase in the volume of crude oil shipments received at the marine terminal (approximately one additional ship per week) to maintain production levels as crude oil delivered by vessel replaces San Joaquin Valley crude oil received by pipeline. Implement emission reduction projects as proposed measures to reduce project emissions to, or below, CEQA thresholds.	Application was approved November 2011. Construction expected to be complete late 2014.	EIR certified 11/12
Contra Costa County	Contra Costa County	Project	Shell Green House Gas Reduction project	Contra Costa County	Doing modifications on existing processing equipment and shutting down a coker.	Application submitted 1/2014. Construction starting in 2015	Starting CEQA process
Contra Costa County	Contra Costa County	Project	Praxair 21.5 Mile Hydrogen Pipeline Project	Multi-jurisdictional (Pinole, Hercules, Martinez, Richmond, Unincorporated County)	21.5-miles of hydrogen pipeline from the Chevron refinery in Richmond to the Shell refinery in Martinez, with a lateral line connecting to the ConocoPhillips refinery in Rodeo. The project will also involve the construction of approximately 2.1-miles of 16-inch natural gas line from an existing PG&E line to the Chevron Refinery, which will run adjacent to a segment of the proposed hydrogen line.	On hold.	Draft EIR completed
City of Richmond	City of Richmond	Project	International-Matex Tank Terminals (IMTT) Richmond Wharf Seismic Upgrades	100 Cutting Boulevard, Richmond, CA	Existing wharf will be upgraded to comply with Marine Oil Terminal Engineering and Maintenance Standards by replacing the existing timber wharf and pilings and replacing these portions of the timber structure with three loading platforms supported by steel piles, eight steel monopole dolphins, associated access ramps and catwalks, and new marine transfer manifolds, all within the existing wharf footprint.	Under construction	Categorical Exemption filed Aug. 2013
City of Martinez	State of California	Project	Tesoro Amorco Marine Wharf Terminal Lease Consideration	Martinez, CA	The proposed project includes an application for a new 30-year lease of sovereign lands to Tesoro for the Amorco Terminal, which would allow Tesoro to continue to operate its Amorco Terminal through 2043. This project would result in maintaining the level of crude oil feedstock imported through the existing Amorco Terminal.	Approved February 21 2014	Final EIR certified February 21, 2014
City of Martinez	State of California	Project	Tesoro Avon Marine Wharf Terminal Lease Consideration	Martinez, CA	The proposed project includes approval of a new 30-year lease to Tesoro to continue current operations of the Avon Marine Oil Terminal, and includes upgrades on the Avon Terminal to meet Marine Oil Terminal Engineering Maintenance Standards (including decommissioning of Berth 1; construction of a new berthing area; repairs, retrofits, and construction on the existing approach trestle; and demolition and removal of existing Berth 5).		Notice of Preparation published April 2, 2014

Source: City of Richmond, 2014. Contra Costa County, 2014; City of Pittsburgh, 2014; City of Benicia, 2014.

TABLE A4.0-4 OTHER PROJECTS IN THE CITY OF RICHMOND CONSIDERED AS PART OF THE MODERNIZATION PROJECT EIR CUMULATIVE IMPACT ANALYSIS

Area	Lead Agency	Project/ Plan	Project Name	Project Location	Description	Filed/Status	Environmental Review Status
City of Richmond	City of Richmond	Project	Parkway Commerce Center	Giant Hwy/Richmond Pkwy	11 lots-industrial use	Approved in 2005.	MND adopted
City of Richmond	City of Richmond	Project	Point Molate Project	Waterfront north of Richmond/San Rafael bridge.	Alternative D: Hotel Conference Center, Residential and Commercial Development, Parkland, Ferry Terminal	No significant historical connection found for Guidiville Tribe 9/2/2011	FEIR Certified
City of Richmond	Caltrans	Project	I-580 Scofield Avenue and Western Drive Bridge Deck	Western Drive	Caltrans project east of Richmond-San Rafael Bridge toll plaza to replace concrete decks for three under crossings	In contract award phase	(CE/CE) determination was issued on 3-16-2009
City of Richmond	City of Richmond	Project	Elevated Bay Trail	Castro Street to Richmond-San Rafael Bridge	Elevated, multi-use, ADA accessible trail	Caltrans approval process and final design in 2013	Under review
City of Richmond	City of Richmond	Project	Filbert Townhomes	Fred Jackson Way (formerly Filbert Street)	43 low/mod townhomes	Estimated Completion in 2014	Categorical Exemption
City of Richmond	City of Richmond	Project	Nevin Court	Nevin and First	20-30 low/mod rental units	Estimated Completion in 2014	Under Review
City of Richmond	City of Richmond	Project	Metro Walk Transit Village	West Macdonald	Transit-oriented mixed-use with housing, retail and parking garage	Phase I: Complete- 132 housing units Phase II: 10,750 sq.ft. of retail complete, garage for BART station complete, 99 housing units not yet constructed	MND adopted
City of Richmond	Richmond Housing Authority	Project	Nystrom Village	222 Marina Way South	Phase I: Rehabilitation of 48 units (24 duplex buildings) and 1 management office.	Phase I Date of Completion June 2015	Categorical Exemption
City of Richmond	City of Richmond	Project	Richmond Wet Weather Storage Project	601 Canal Boulevard	Construction of a new diversion box, pump station, pipeline, and an above ground, circular, pre-stressed concrete tank with storage volume of approximately 5 million gallons (MG). The tank will be approximately 150 feet in diameter and approximately 53 feet tall. Water Pollution Control Plant effluent will be used to supply water to the wash down system used to clean the tank. The tank will be covered to contain odors.	Under review by City	Final MND issued December 2013
City of Richmond	City of Richmond	Project	Westshore Marina	Marina Way South	300 residential condos	4/2006 Approved	FEIR 2005
City of Richmond	City of Richmond	Project	Terminal One/Point Richmond Shores	Point Richmond Waterfront/Dornan Drive	258 residential units	Approved 2006; City seeking new developers.	FEIR Completed
City of Richmond	City of Richmond	Project	Shea Homes Bottoms Property	Seacliff Drive	60 Residential Units on 25.27 Acres, 15.1 acres submerged in water. Units developed on 6.23 acres.	Under review by City	NOP issued October 2013
City of Richmond	Water Emergency Transportation Authority	Project	Ferry Terminal	Ford Peninsula, adjacent to Ford Building along an existing wharf	Floating gangway and dock adjacent to Craneway. No new buildings. Generally replacing existing facility. Parking for 266 vehicles.	MNd Scoping Session on June 21, 2012 11/15/2012	IS/MND anticipated to be released 3 rd Quarter 2014
City of Richmond	City of Richmond	Project	Marina Way Live /Work	900 Marina Way South	64 industrial live/work	Approved in 2005 –Phase 1 under construction	MND adopted October 2007
City of Richmond	City of Richmond	Transportation Project	"Moody Underpass" Marina Bay Parkway Grade Separation	845 Marina Bay Parkway	Construction of a roadway undercrossing at the intersection of Marina Bay Parkway and Burlington Northern Santa Fe/Richmond Pacific Railroad Corporation railroad tracks	Approved 4/11/2012 Under construction	CEQA Exemption Filed

TABLE A4.0-4 OTHER PROJECTS IN THE CITY OF RICHMOND CONSIDERED AS PART OF THE MODERNIZATION PROJECT EIR CUMULATIVE IMPACT ANALYSIS

Area	Lead Agency	Project/ Plan	Project Name	Project Location	Description	Filed/Status	Environmental Review Status
City of Richmond	City of Richmond	Project	University of California, Berkeley and Lawrence Berkeley National Laboratory (UCB LBNL) Richmond Bay Campus	Richmond Field Station: 1301 South 46th Street	University of California, Berkeley “Richmond Bay Campus” consolidates biosciences activities managed by Lawrence Berkeley National Laboratory. 134 acres with 5.4 million square feet over 40 years starting in 2017-2020. Estimated daily population of 10,000	Draft EIR released for public comment NOP filed January 4, 2013	Draft EIR completed
City of Richmond	City of Richmond	Project	Miraflores Housing Development	Bound 45th St. and Wall Ave, I-80 and BART	110 affordable rental units for seniors; 226 market-rate detached/attached single-family units.	Approved 12/09. Agreements with for-profit and non-profit developers proceeding. Est. completion 2014 (according to CHDC July 2011).	FEIR certified on 12/14/2009

Source: City of Richmond, 2014.

TABLE A4.0-5 OTHER PROJECTS OUTSIDE OF CITY OF RICHMOND CONSIDERED AS PART OF THE MODERNIZATION PROJECT EIR CUMULATIVE IMPACT ANALYSIS

Area	Lead Agency	Project/ Plan	Project Name	Project Location	Description	Filed/Status	Environmental Review Status
Regional	Caltrans	Transportation Project	I-80 Integrated Corridor Mobility	19.5-mile portion of I-80 from Carquinez Bridge to Bay Bridge		San Pablo Corridor and Arterial Improvements expected completion is Spring 2014.Adaptive Ramp Metering and Active Traffic Management construction expected completion is Summer 2014. Active Traffic Management expected completion is Winter 2014-15. Software and Systems Integration will continue through Summer 2015. Specialty Materials Procurement was awarded in 2012 and work is underway.	IS/MND (No Significant Impact)- July 2011
City of San Pablo	City of San Pablo	Project	Rumrill Sports Park	Rumrill Boulevard and Chesley Avenue	Former BNSF Corporation yard to be developed as three youth soccer fields and smaller practice field	Design 35% complete. Expect construction start in summer 2014.	IS/MND (No Significant Impact) - Dec. 2012 RAW was submitted to the City in May 2013. The City of San Pablo applied for an EPA Clean- up grant in January 2014.
City of Richmond/Regional	Caltrans	Project	Interstate 80/San Pablo Dam Road Interchange Improvements	Interstate-80/San Pablo Dam Road Interchange	Reconstruct the existing interchange and provide improved pedestrian and bicycle facilities	Construction to begin late 2014/early 2015	IS/MND and EA, July 2009
City of El Cerrito	City of El Cerrito	Project	Eden Senior Housing Mixed-Use Apartments	10848 – 10860 San Pablo Avenue	63 senior housing units on 40,000-sq. ft. site; 1,156-square-foot retail/cafe space; 1,906-square-foot community clinic	Use permit approved 12/13. Application approved 1/14	EIR certified 12/13
City of El Cerrito	City of El Cerrito	Project	Ohlone Garden Mixed- Use Residential	6431-6495 Portola Drive	57 affordable rental apartments	Assembling financing; planning & design approvals received. Anticipated construction start date is March 2014	
City of El Cerrito	City of El Cerrito	Project	801 Bates Avenue	801 Bates Avenue	4-lot subdivision		ISMND complete 2010
City of El Cerrito	City of El Cerrito	Project	Creekside	SE Corner of El Cerrito Plaza	Transit-oriented mixed-use development, 128 units on 3 acres	Entitled and a building permit has been submitted.	

Source: City of Richmond, 2014; City of El Cerrito, 2014; City of San Pablo, 2014.

APPENDIX 4.3

Air Quality

APPENDIX 4.3 -CHRA

CHRA: Air Dispersion Modeling and Health Risk
Assessment Methodologies for Construction

APPENDIX 4.3

CHRA: AIR DISPERSION MODELING AND HEALTH RISK ASSESSMENT METHODOLOGIES FOR CONSTRUCTION

This document describes the methods and results of a health risk assessment (HRA) that evaluates potential public health effects from toxic air contaminant (TAC) emissions generated by the construction associated with the Modernization Project. TACs are compounds designated by the California's Environmental Protection Agency (Cal/EPA) Office of Health Hazard Assessment (OEHHA) as known or suspected to cause adverse health effects after short-term (acute) or long-term (chronic) exposure. In addition to naming certain chemicals as TACs, the OEHHA also provides information that allows the prediction of health impacts associated with the public's potential exposure to TACs. This information is used in an HRA to estimate the potential public health impacts resulting from TAC emissions from construction associated with the Modernization Project.

In addition to evaluating TACs, this HRA also predicts the ambient air concentrations of fine particulates—i.e., particulate matter less than 2.5 microns in diameter ($PM_{2.5}$)—to evaluate consistency with Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act (CEQA) thresholds for $PM_{2.5}$.

Concentrations in the air are calculated from TAC emissions using air dispersion modeling. Air dispersion modeling is the mathematical estimation of pollutant impacts from emissions sources within a study area. Information on factors that impact the fate and transport of pollutants in the atmosphere including: meteorological conditions, site configuration, emission release characteristics, and surrounding terrain, are used in the dispersion model. Once concentrations are calculated using air dispersion modeling, the risks are calculated using information on how much air people breathe and the toxicity of the chemical considered. The resulting cancer risks and chronic and acute hazard index (HI), as described above, are compared to the BAAQMD CEQA thresholds to assess significance.

The incremental carcinogenic and non-carcinogenic inhalation health risks from the Modernization Project construction were determined through dispersion modeling of the emissions from the construction associated with the Modernization Project TAC emissions and applying OEHHA toxicity factors to the predicted TAC concentrations consistent with the BAAQMD (2010a) and OEHHA Hot Spots Guidance (OEHHA, 2003).

This HRA was prepared in accordance with the Recommended Methods for Screening and Modeling Local Risks and Hazards (BAAQMD, 2012). In general, the Protocol follows the methodology for preparing Tier 1 risk assessments described in The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2003). Prior to development of the HRA, the general approach and project-specific decisions were discussed with and reviewed by the BAAQMD prior to implementation.

1.1 OVERVIEW OF HEALTH RISK ASSESSMENT

Health risk assessments are used to estimate whether current or future chemical exposures will pose health risks to a broad population, such as a city or a community. Scientific methods used in health risk assessment cannot be used to link individual illnesses to past chemical exposures, nor can health risk assessments and epidemiologic studies prove that a specific toxic substance caused an individual's illness. In general, three types of health impacts are evaluated: cancer risk, chronic (long-term) health impacts, and acute (short-term) health impacts.

In order to evaluate the health impact of a chemical in the ambient air, some evaluation of toxicity must be determined. Consistent with OEHHA guidance, all chemicals that are emitted from the construction of the Modernization Project, and have toxicity values, were evaluated. This list is contained in Table A4.3-CHRA-1.

Individuals can be exposed to chemicals that are emitted into the air several different ways. They can breathe the air, and the chemicals in the air may remain in their lungs or may be absorbed into their bloodstream via the lungs. Chemicals in the air can be deposited on the ground and may come into contact through the skin (this is known as "dermal exposure") because an individual may touch the chemical that has deposited to the ground. The chemical may come into contact with food that an individual eats or may be ingested because it gets on the fingers of an individual. This is known as "oral exposure." Finally, infants can come into chemicals that may contaminate its mother's milk. OEHHA has designated which chemicals may result in risks from dermal, oral, and mothers' milk pathways. Only certain chemicals are recognized by OEHHA to have potential impacts by the oral, dermal or mother's milk routes. These chemicals are specified in the OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines: Technical Support Document for Exposure Assessment and Stochastic Analysis, Appendix E (Cal/EPA, 2012).

OEHHA Hot Spots Guidance (OEHHA, 2003; Cal/EPA, 2012) requires the evaluation of non-inhalation exposure pathways, referred to as a multi-pathway

analysis, in risk assessments prepared to meet the 2010 BAAQMD CEQA Guidelines. Selection of the additional pathways for a multi-pathway analysis is specific to the chemical and land use designations in the area impacted by the facility.

Multi-pathway factors, which represent the mathematical combination of the toxicity values and exposure parameters specific to this HRA, can be generated to estimate health risks for the multi-pathway exposures by combining with the air modeling results. Because risks from construction are primarily related to diesel particulate matter (DPM) and there is no multipath evaluation recommended for DPM, no multipath risks were evaluated for this analysis.

The HRA process requires the completion of four general steps to estimate health impact results: (1) quantify project-generated TAC emissions; (2) identify ground-level receptor locations that may be affected by the emissions (including both a regular grid of receptors and any additional sensitive receptor locations such as schools, hospitals, convalescent homes, and/or daycare centers); (3) perform dispersion modeling analyses to estimate ambient TAC concentrations at each receptor location; and (4) use established methods to estimate potential health effects at each receptor location.

The first step in an HRA is to identify the TACs that are being emitted from a source, and quantifying the amount of chemicals emitted from each location. For future sources of emissions like those associated with the construction of the Modernization Project, engineers use information about similar sources to estimate emissions, and locations of emissions. Once the identity and location of the sources of TAC emissions are known, the next step is to determine how it moves away from the sources into the ambient air.

Engineers use computer models to estimate the amount of pollutant at different distances from the source. Computer models use mathematical equations that represent the processes that occur when a facility releases a pollutant and also the movement of pollutants through the air. Factors such as distance from the source to exposed persons, wind speed and direction, and smokestack height affect these estimates.

The final step in an air pathway exposure assessment is to estimate the amounts each person inhales. To do this, scientists combine estimates of breathing rates and lifespan of an average person with estimates of the amount of pollutant in the air that person breathes. The exposure assessment also considers how much pollutant may reach the individual through contact with the skin or through ingestion.

Toxic air pollutants can cause health problems by interfering with normal body functions. Most commonly they change chemical reactions within individual cells, the building blocks of living things. These changes can kill cells, impair cell function, or re-direct cell activity. The results can be damaged organs, birth defects when the cells of an unborn child are damaged, or cancer that develops when cells begin to grow at an uncontrolled rate.

The dose-response relationship for a specific pollutant describes the association between exposure and the observed response (health effect). In other words, it estimates how different levels of exposure to a pollutant change the likelihood and severity of health effects. Scientists use results of animal and human studies to establish dose-response relationships.

In the absence of clear evidence to the contrary, the United States Environmental Protection Agency (EPA) and OEHHA assume that there are no exposures that have “zero risk”—even a very low exposure to a cancer-causing pollutant can increase the risk of cancer (albeit a small amount). The EPA and OEHHA also assume that the relationship between dose and response is a straight line—for each unit of increase in exposure (dose), there is an increase in cancer response.

For non-cancer causing chemicals, a dose may exist below the minimum health effect level for which no adverse effects occur. The EPA and OEHHA typically assume that at low doses the body’s natural protective mechanisms repair any damage caused by the pollutant, so there is no ill effect at low doses. However, for some substances, noncancer effects may occur at low doses. The dose-response relationship (the response occurring with increasing dose) varies with pollutant, individual sensitivity, and type of health effect.

Risk assessment results are presented as calculated cancer risks and non-cancer hazards during the risk characterization step. Cancer risk estimates represent the probability of cancer (presented as a probability per million people) related to potential exposures to pollutants evaluated in the HRA. Non-cancer hazards are represented as the ratio between the estimated dose (i.e., intake of chemical) and chemical-specific reference exposure level developed and approved by Cal/EPA for a specific health endpoint (e.g., eye or lung irritation). The cancer risk or non-cancer hazard index estimate is then compared to a threshold level that is intended to be protective of public health. This comparison aids the Lead Agency in prescribing appropriate actions to mitigate risks, if needed. If cancer risk estimates exceed the significance level, then all feasible mitigation must be applied to the project.

1.1.1 Quantification of Project Construction TAC Emissions

The major sources of emissions of TACs from Modernization construction is in the exhaust of heavy equipment operating at the Facility and vehicles used to transport materials and people to and from the Facility.

The quantification of TAC emissions generated by construction of the Modernization Project is described in *Appendix 4.3-CST*.¹ The methodology is also briefly described here.

1.1.1.1 Construction TAC Emissions

The estimation of emissions from construction of the Modernization Project is more fully described in *Appendix 4.3-CST*, and briefly summarized here. Construction emissions were estimated for all phases of construction, including: hydrogen plant replacement, existing hydrogen plant dismantling, sulfur removal improvements, project design features (existing storage tank domed roof installation, project water reuse, and light-emitting diode [LED] lighting) (Chevron Data Transmittal #47A (Rev #6), 2014),² and related piping and other ancillary equipment (hydrogen plant tie-in). These construction phases involve emission-generating sources such as off-road construction equipment, delivery trucks, flatbed trucks, haul trucks, worker commuting vehicles, worker transport vehicles, paving and coating activities, and fugitive dust.

There are four general types of construction criteria air pollutant (CAP) sources:

- off-road construction equipment;
- on-road mobile sources;
- architectural coatings and paving;
- fugitive dust sources;
- Only the on-road sources and off-road construction emissions generate TACs that are considered in the construction HRA.

The California Air Resources Board (CARB) 2011 In-use Off-road Equipment Inventory Model (OFF-ROAD 2011), and Emission FACtor Model (EMFAC2011), together with construction schedule and activity data provided by Chevron were

¹ See Tables 4.3-CST-16, 17, 19, and 21 for construction TAC emissions.

² Construction associated with LED lighting is expected to be negligible. Also the emissions associated with the Fluidized Catalytic Cracker Cooling Water Tower Motor Upgrade was not quantified due to the short duration of the activity (Chevron Data Transmittal #360 (Rev #3), 2014).

used to calculate emissions. When site-specific data was not available, default assumptions consistent with CalEEMod™ were used. This methodology is consistent with CalEEMod™ and is capable of incorporating the detailed activity data Chevron provided.

Only TAC emissions used in the HRA were estimated. Because of this, while the physical domain for the TAC emissions inventory includes all on-site construction TAC sources, the physical extent of off-site TAC emissions included for the HRA is smaller than the extent of off-site emissions included for the criteria pollutant inventory. The number of Modernization Project-related construction trucks and worker commuting vehicles on highways is very small relative to highway background traffic; because of this, their emissions will not have a significant health impact on the sensitive population located along the highways. Accordingly, receptors that are exposed only due to their proximity to a highway that may be used by trucks going to and from the Chevron construction sites were not included in the HRA, and thus the portion of emissions from worker commuting vehicles and construction trucks that occurs on the highways were also not included in the TAC inventory used in the HRA. The TAC inventory does include Modernization Project-related truck and worker commuting emissions associated with travel along Richmond Parkway, Castro Street, and on the highway on- and off-ramps.

The TAC emissions inventory includes chemicals emitted from sources that are included for consideration in HRAs consistent with BAAQMD Regulation 2, Rule 5. The TAC emissions inventory for construction is based on DPM emissions from the off-road construction equipment and the diesel on-road vehicles, and gasoline total organic gases (TOGs) from the gasoline on-road vehicles. $PM_{2.5}$ concentrations were also calculated as part of the health risk assessment for comparison to BAAQMD CEQA Thresholds for ambient concentrations of $PM_{2.5}$.

Diesel exhaust, a complex mixture that includes hundreds of individual constituents (CARB, 1998), is identified by the State of California as a known carcinogen (CARB, 2014). Under California regulatory guidelines, DPM is used as a surrogate measure of carcinogen exposure for the mixture of chemicals that make up diesel exhaust as a whole. Cal/EPA and other proponents of using the surrogate approach to quantifying cancer risks associated with the diesel mixture indicate that this method is preferred over the use of a component-based approach. A component-based approach involves estimating risks for each of the individual components of a mixture. Critics of the component-based approach believe it will underestimate the risks associated with diesel as a whole mixture because the identity of all chemicals in the mixture may not be known and/or exposure and health effects information for all chemicals identified within the mixture may not be available. Furthermore, Cal/EPA has concluded

that “potential cancer risk from inhalation exposure to whole diesel exhaust will outweigh the multi-pathway cancer risk from the speciated components” (OEHHA, 2003). The respirable particulate (particulate matter less than 10 microns in diameter) emissions from the off-road construction equipment and the diesel on-road vehicles were assumed to be equivalent to DPM in the emissions estimation.

TACs from exhaust and evaporative TOGs emissions from gasoline-fueled vehicles were evaluated based on the speciation profiles presented in the BAAQMD guidelines, which include: acetaldehyde, acrolein, benzene, 1,3-butadiene, ethylbenzene, formaldehyde, hexane, methanol, methyl ethyl ketone, naphthalene, propylene, styrene, toluene, and xylenes (BAAQMD, 2012).

The construction TACs and PM_{2.5} emissions inventory is contained in Tables 4.3-CST-16, 17, 19, and 21. The emissions by source group are presented in Tables A4.3-CHRA-2a, 2b, and 2c.

1.2 ESTIMATING AIR CONCENTRATIONS USING AIR DISPERSION MODELING

In order to estimate risks, ambient air concentrations resulting from the Modernization Project must be evaluated. This is done by simulating the dispersion of emissions into the air using a mathematical simulation, called air dispersion modeling. Details on the methodologies used to estimate TAC and PM_{2.5} concentrations in the ambient air to be used in the Modernization Project health risk assessment are discussed below.

1.2.1 Model Selection and Options

The regulatory default mode of the EPA’s state-of-the-art regulatory air dispersion model AERMOD (version 12345)³ was used to estimate TAC and PM_{2.5} concentrations at all receptor locations. AERMOD is appropriate for use in estimating ground-level ambient air concentrations resulting from non-reactive buoyant emissions from sources located in simple or complex terrain. This analysis was conducted using AERMOD in the regulatory default mode, which includes the following modeling control options:

³ On November 9, 2005, the EPA promulgated final revisions to the federal Guideline on Air Quality Models, in which they recommended that AERMOD be used for dispersion modeling evaluations of criteria air pollutant and toxic air pollutant emissions from typical industrial facilities. The model can be downloaded at: http://www.epa.gov/scram001/dispersion_prefrec.htm.

- adjusting stack heights for stack-tip downwash;
- using upper-bound concentration estimates for sources influenced by building downwash;
- incorporating the effects of elevated terrain;
- employing the calms processing routine;
- employing the missing data processing routine.

Air dispersion models such as AERMOD require a variety of inputs such as source parameters (including emission rates), meteorological parameters, topographic information, and receptor parameters.

1.2.2 Modeled Receptor Locations

Receptor locations specify where the model will provide air concentration estimates. Consistent with the BAAQMD's recommendations (BAAQMD, 2012), this analysis estimated TAC concentrations at potential sensitive receptor locations including "people—children, adults, and seniors—occupying or residing in:

- Residential dwellings, including apartments, houses, condominiums;
- Schools, colleges, and universities;
- Daycares;
- Hospitals; and
- Senior-care facilities."

BAAQMD CEQA Guidance (BAAQMD, 2012) requires sensitive receptors within Modernization Project "radius of impact," which is typically 1,000 feet surrounding the Facility boundary to be evaluated. Moreover, the Guidance indicates that locations where "people reside for long periods should [also] be considered sensitive, residential receptors," and should be included in the CEQA analysis. Because of the size and nature of the Modernization Project, the receptors included in this analysis extend beyond the radius of impact and beyond the definition of sensitive receptors indicated in the Guidance. Modeling input files, which include a complete list of the receptors are provided in Attachment 1 and shown in Figure A4.3-CHRA-1, and details on modeled receptors are provided below.

1.2.2.1 Coarse Receptor Grid

As shown in Figure A4.3-CHRA-1, receptors were modeled at each point defined by a receptor grid with 200 meter by 200 meter spacing ("coarse grid"), on a 12-by 12-kilometer modeling domain. The type of receptor (e.g., residential or

worker) evaluated at each location in the coarse grid was assigned based on land use.

1.2.2.2 Residents

Concentrations at points in a “fine grid” of receptors spaced 50 meter apart were modeled over several residential areas in the vicinity of the Facility. The residential communities covered by the fine grids include Point Richmond, Atchison Village, Santa Fe, Iron Triangle, Shields-Reid, central and downtown Richmond, and North Richmond. In addition, potential residential receptors at the Point San Pablo Yacht Harbor are covered by the fine grid. Other residential communities further away from the Facility that are covered or partially covered by the coarse grid include Tara Hills, Parchester Village, El Sobrante, San Pablo, East Richmond, Pinole, El Cerrito, and Albany.

1.2.2.3 Other Sensitive Receptors

Concentrations were also estimated at specific receptor locations to represent surrounding sensitive populations. Sensitive receptors evaluated for this Modernization Project include schools, health care facilities, and care centers for children or the elderly.⁴ Sensitive receptor locations within the 94801 and 94804 zip code areas (in the cities of Richmond, Point Richmond, and San Pablo) were identified from searches of the following sources:

- Schools (public and private) – California Department of Education, California School Directory (CDE, 2013)
- Health Care Facilities – California Office of Statewide Health Planning and Development (OSHPD, 2014)
- Childcare and Elderly Care Centers – California Department of Social Services, Community Care Licensing Division (CCLD, 2012)
- Google Map (<https://www.maps.google.com/>, using keyword of “childcare,” “daycare,” and “school” to supplement the searches above)

All the identified addresses within 1 mile of the Facility boundary were then geocoded and mapped in the geographic information system. Quality assurance was performed on all geocoded addresses to confirm that mapped locations

⁴ Residential units and worker receptors were identified using Google Map. List of city parks and community centers was provided to ENVIRON by the City of Richmond. Other sensitive receptor locations were obtained from searching various California government licensing departments, supplemented by Google search.

appear to be the correct facility. The sensitive receptors that were included in the HRA are shown in Table A4.3-CHRA-3.

1.2.2.4 Additional Receptors

Other receptors that do not fall under BAAQMD's definition of sensitive receptors were also included in the risk assessment. Worker receptors at points spaced 50 meters apart in a "fine grid" were modeled over several industrial and office areas in the vicinity of the Facility. The industrial areas covered by the fine grid are the on-site San Rafael Rock Quarry close to the southwest corner of the Facility, and the General Chemical Plant, just outside of the east Facility boundary, across Castro Street from the BNSF Richmond Rail Yard. The office park just outside of southeast corner of the Facility boundary, on the north side of the Chevron Way is also covered by the fine grid.

Furthermore, recreational receptors at off-site recreational facilities (i.e., parks) as well as a series of boundary receptors outlining the Facility boundary were included in the model. The boundary receptors were used to estimate acute non-cancer impacts only, which are independent of receptor type.

1.2.2.5 Receptor Modeling Parameter Specifications

In accordance with BAAQMD guidance, a default breathing height of 1.8 meters was used for all receptors. Figure A4.3-CHRA-1 presents modeled receptors.

1.2.3 Physical Domain for Health Risk Analysis

The physical scope of the health risk analysis includes sources within the Project site boundary ("on-site sources"). However, only the subset of Modernization Project off-site TAC sources that would impact receptors in the vicinity of the Modernization Project was included in the risk analysis. Thus, the physical extent of off-site emissions included in the TAC inventory for the HRA analysis is smaller than the extent included for the criteria pollutant inventory, as the criteria pollutant inventory extends to the BAAQMD boundary.

Off-site emissions consist of on-road emissions from construction worker commuting vehicles, construction haul trucks and delivery trucks. The emission estimates from these off-site activities for the TAC inventory included emissions associated with travel of these mobile sources along the off-site segments on Richmond Parkway, Castro Street, and the highway ramps taken by the vehicles to get on or off the highways. Emissions associated with travel on the highways were not included in the risk analysis, as the number of Modernization Project-related construction haul trucks and delivery trucks, and construction worker commuting vehicles on highways is very small relative to highway background

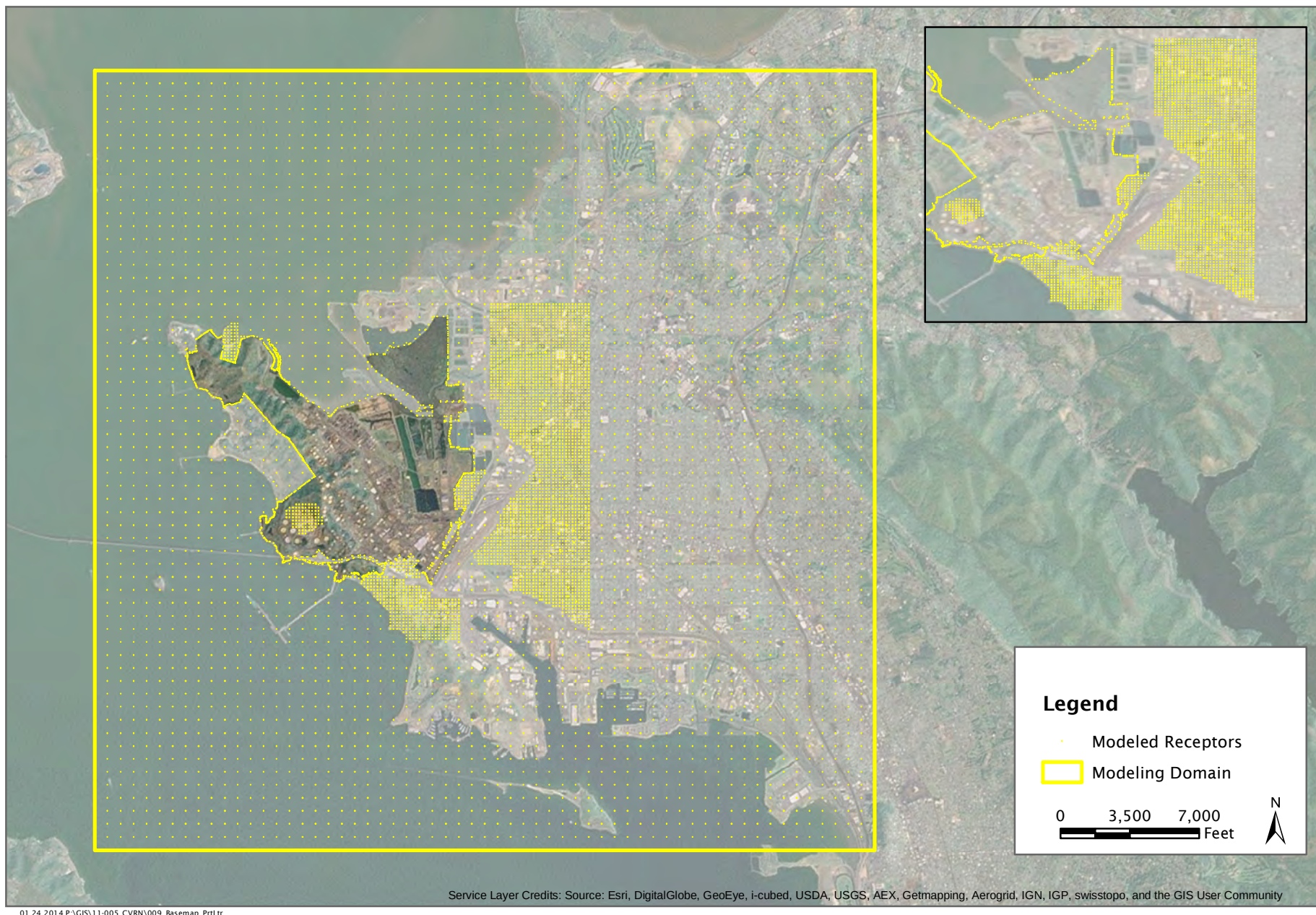


Figure A4.3-CHRA-1
Chevron Refinery Modernization Project EIR
Modeled Receptor Locations

traffic, and therefore, their emissions will not have a significant health impact on the residential and sensitive population along the highways.

1.2.4 Source Types, Locations, and Parameters

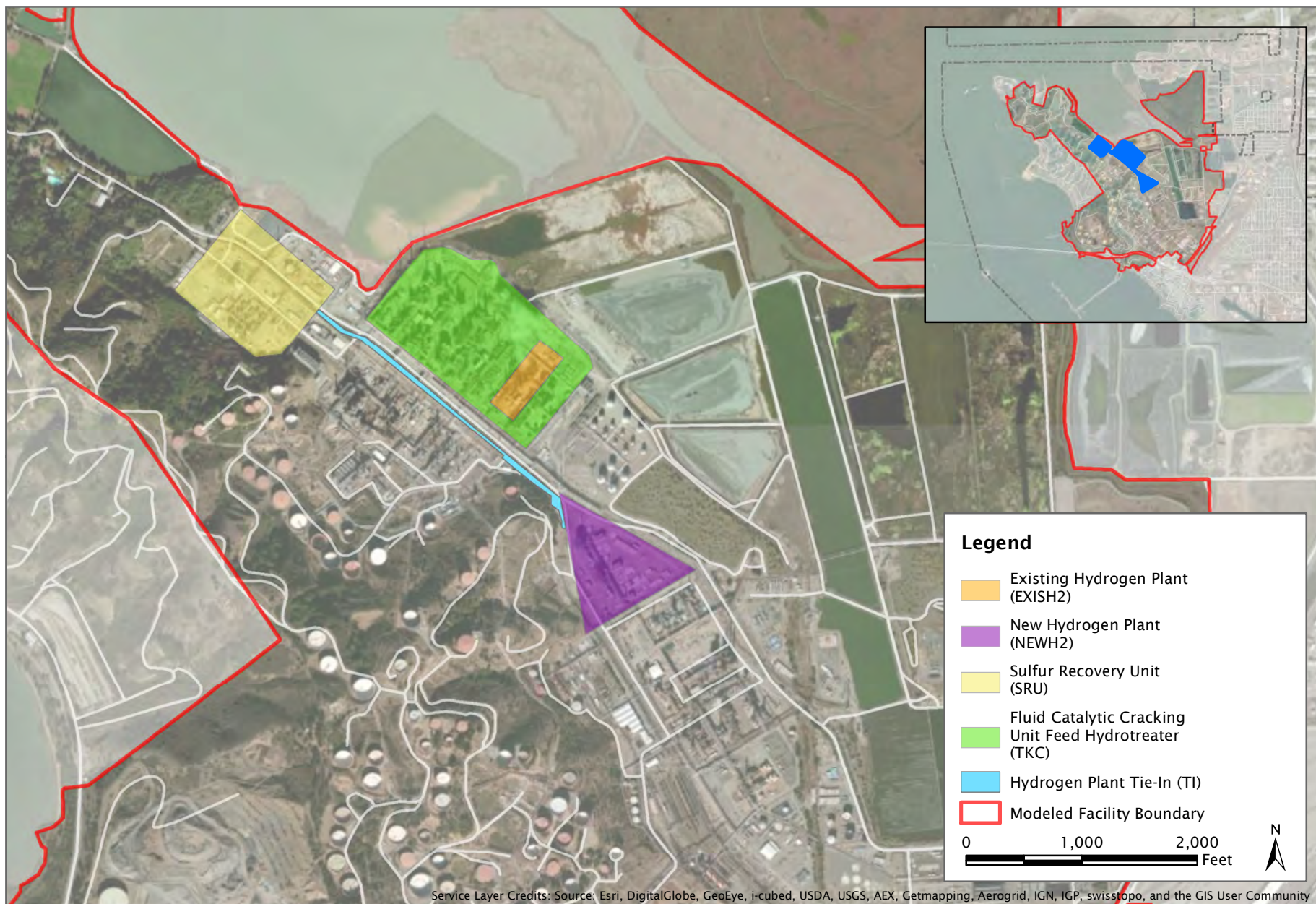
1.2.4.1 Construction

The construction areas for the Modernization Project are located in the center, north, and south areas of the Project site. The general construction areas are presented in Figure A4.3-CHRA-2 and Figure A4.3-CHRA-3. Construction will occur in eight construction areas, indicated in Figure A4.3-CHRA-2 and Figure A4.3-CHRA-3 as new hydrogen plant, existing hydrogen plant, sulfur recovery unit, fluid catalytic cracker feed hydrotreater (FCC FHT), hydrogen plant tie-in, water reuse (two areas), and existing storage tank doomed roof installation (Chevron Data Transmittal #47A (Rev #6), 2014).⁵ Some completed construction activities involving off-road equipment occurred in 2008-2009 within the new hydrogen plant, sulfur recovery unit, FCC FHT and hydrogen plant tie-in areas. Off-road equipment is expected to operate in all eight construction areas for future construction.

In addition, on-road vehicle trips associated with the construction occur both within and outside the Facility boundary. Figures A4.3-CHRA-4 to A4.3-CHRA-7 show the construction worker and truck (delivery truck, flatbed and haul truck) routes. In general, construction haul trucks travel from Interstate 580 (I-580) or Interstate 80 (I-80) to the Facility via Castro Street or Richmond Parkway. Then, construction haul trucks enter the Facility through Gate 31 and travel north to the new hydrogen plant, sulfur recovery unit, FCC FHT, and hydrogen plant tie-in area where soil excavation occurs or clean fill is imported. Construction haul trucks leave the Facility and travel back to the highways using the same routes. According to Chevron, 80% of the construction haul trucks use highway I-80 via Richmond Parkway to arrive at and depart from the Facility, while the remaining 20% use highway I-580 via Castro Street (Chevron Data Transmittal #360 (Rev #3), 2014).

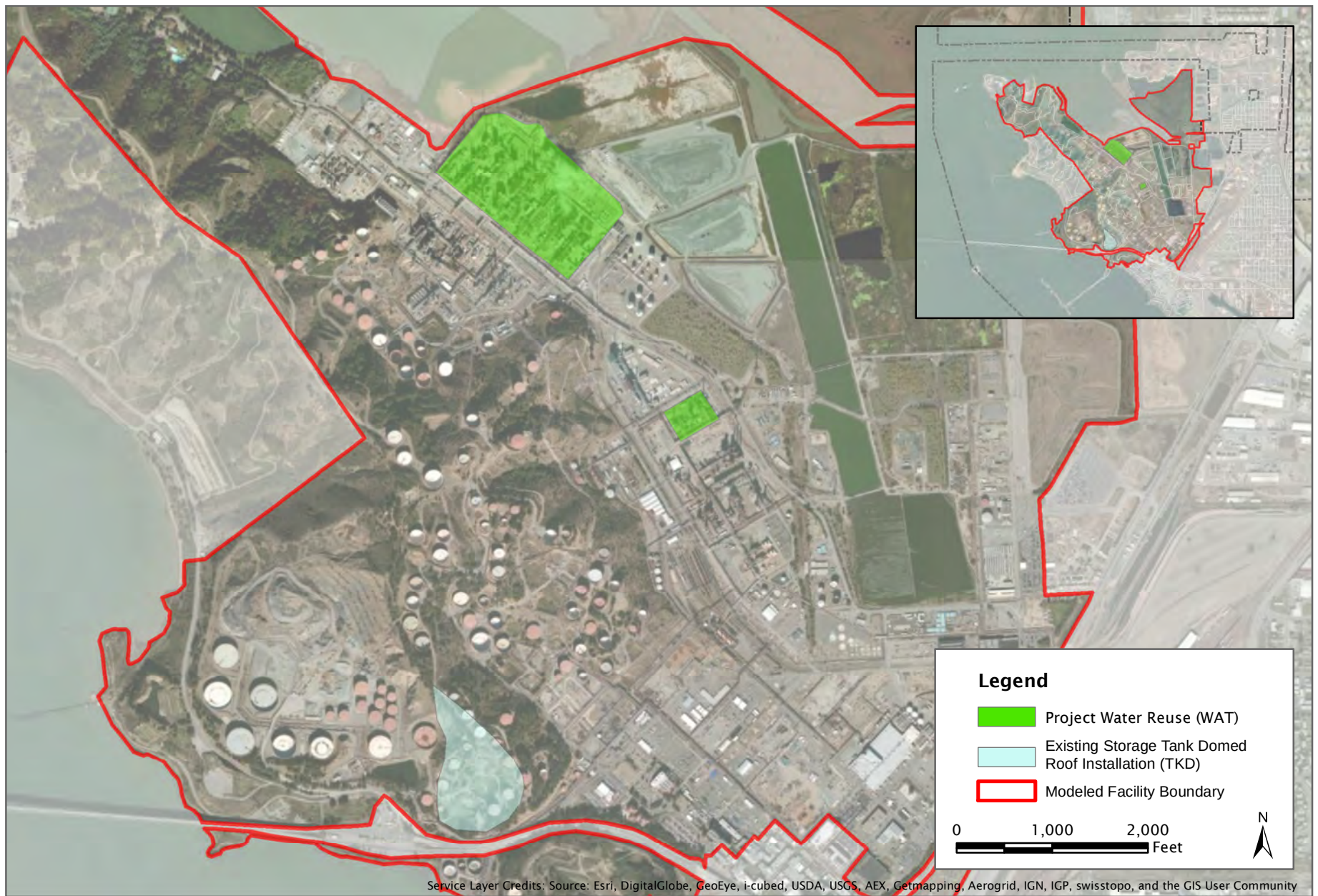
Similarly, construction delivery trucks travel from highways I-580 or I-80 to the Facility via Castro Street or Richmond Parkway. Then, construction delivery trucks enter the Facility through Gate 31 and travel and travel north then south to

⁵ Construction associated with LED lighting is expected to be negligible. Also the emissions associated with the FCC Cooling Water Tower Motor Upgrade was not quantified due to the short duration of the activity (Chevron Data Transmittal #360 (Rev #3), 2014).



01_24_2014 P:\GIS\11-005_CVRN\009_Basemap_PrtLtr
Source: Chevron Transmittals

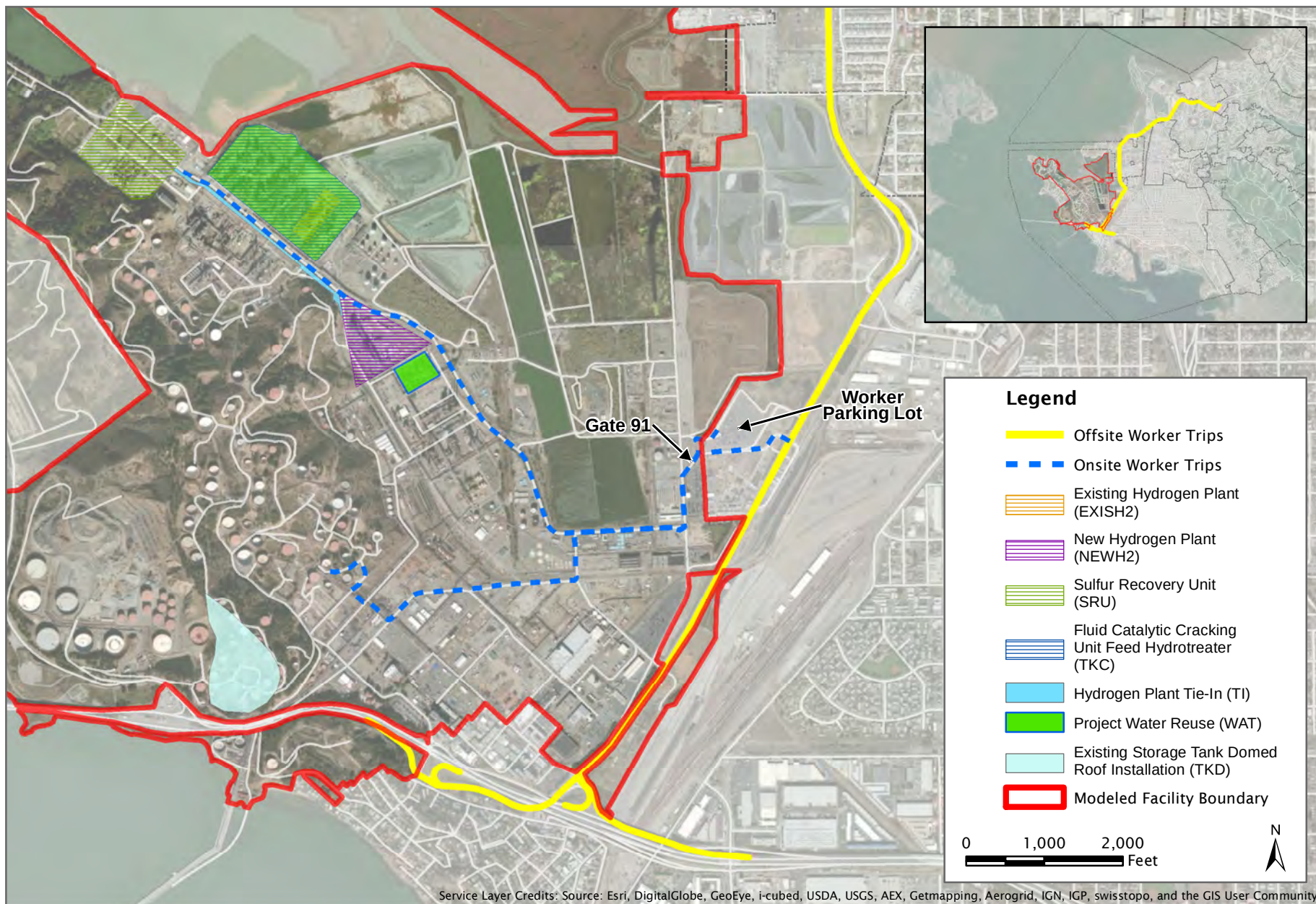
Figure A4.3-CHRA-2
Chevron Refinery Modernization Project EIR
Construction Phases and Areas (1)



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_3_Construction Phases and Areas (2).mxd

Source: Chevron Transmittals

Figure A4.3-CHRA-3
Chevron Refinery Modernization Project EIR
Construction Phases and Areas (2) - Project Design Features



02_20_2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_4_Construction Worker Trips.mxd

Source: Chevron Transmittals

Figure A4.3-CHRA-4
Chevron Refinery Modernization Project EIR
Construction Worker Trips

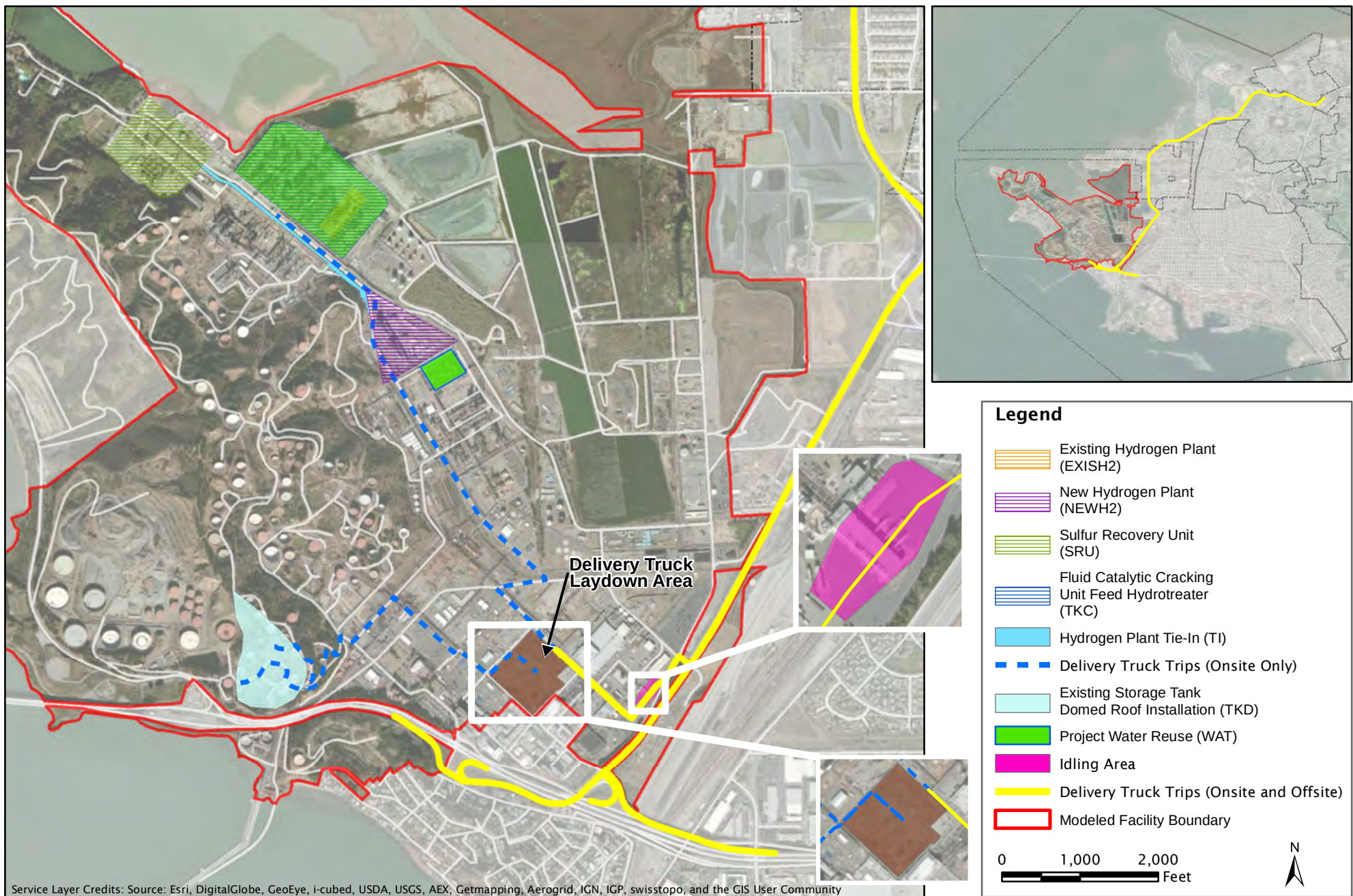


Figure A4.3-CHRA-5
Chevron Refinery Modernization Project EIR
Construction Delivery Truck Trips

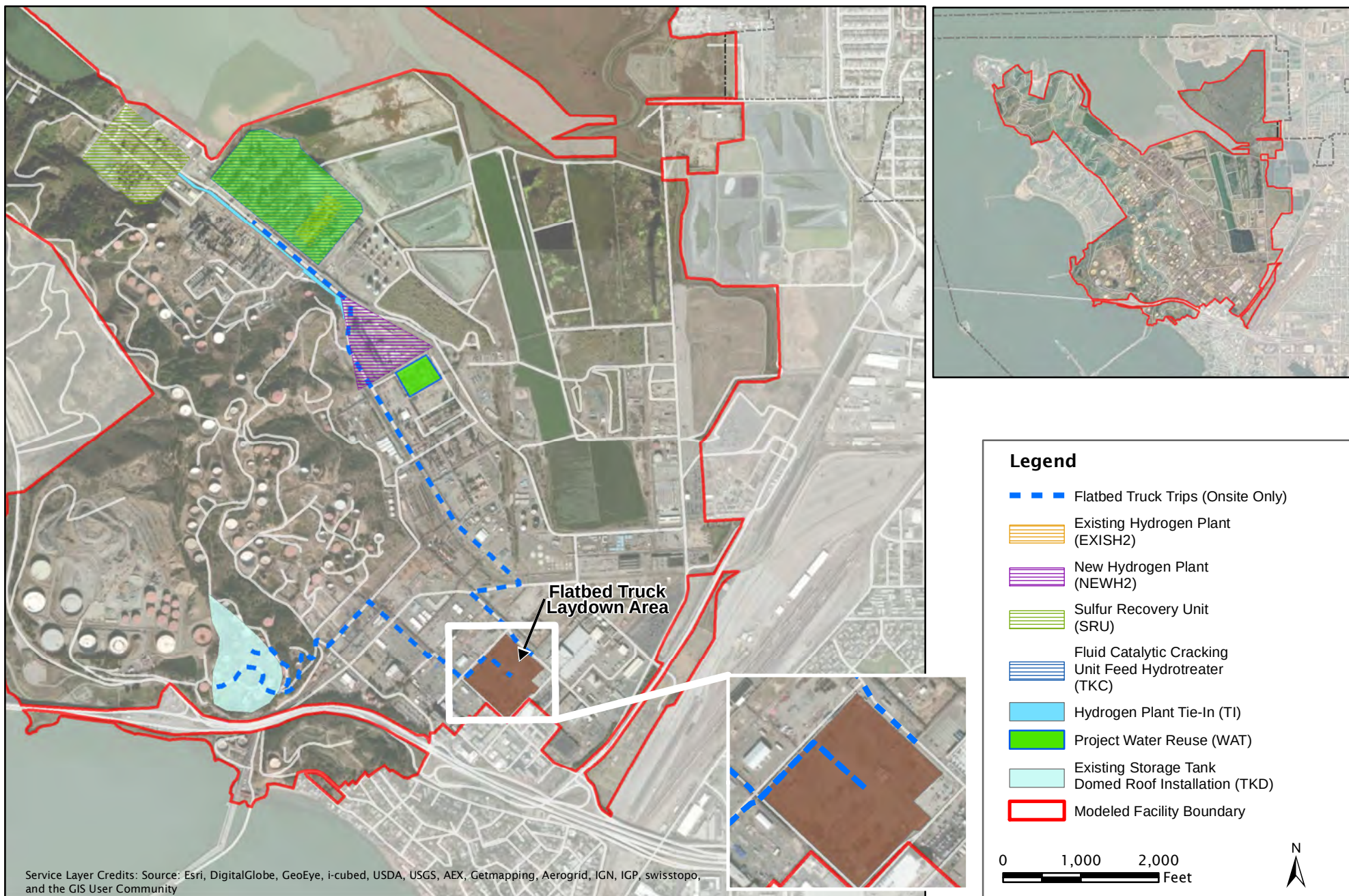
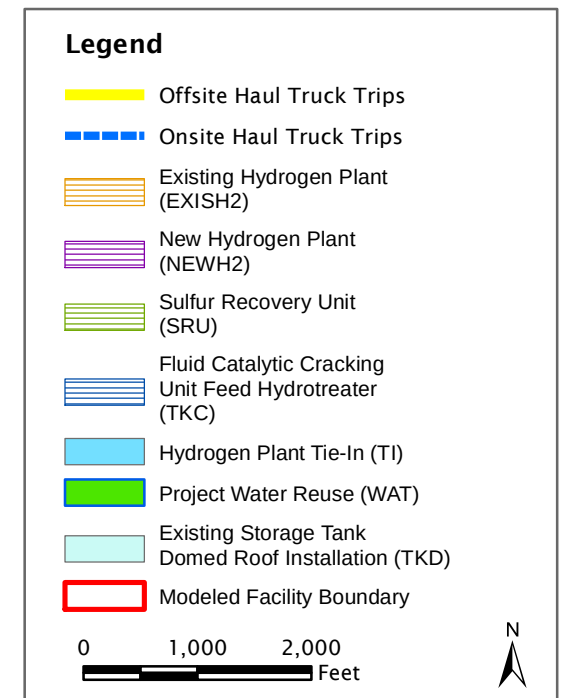
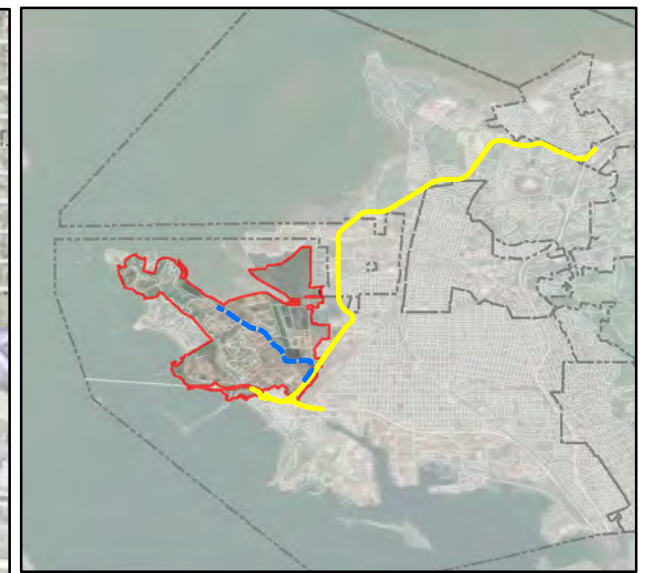


Figure A4.3-CHRA-6
Chevron Refinery Modernization Project EIR
Construction Flatbed Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_7_Construction Haul Truck Trips.mxd
Source: Chevron Transmittals

Figure A4.3-CHRA-7
Chevron Refinery Modernization Project EIR
Construction Haul Truck Trips

Facility laydown area and unload materials and equipment.⁶ Then, the on-site delivery trucks and flatbeds pick up these materials and equipment, and delivery them to the eight construction areas mentioned above. Construction delivery trucks leave the Facility laydown area and travel back to the highways using the same routes. According to Chevron, 80% of the construction delivery trucks use highway I-80 via Richmond Parkway to arrive at and depart from the Facility, while the remaining 20% use highway I-580 via Castro Street (Chevron Data Transmittal #36O (Rev #3), 2014).

Construction worker commuting vehicles also travel from highways I-580 or I-80 to Facility Gate 91 via Castro Street or Richmond Parkway; however, they will park in a worker parking lot north of Facility Gate 91. Then, workers will be transported to the eight construction areas described above by Facility vehicles including buses, pickups, and cars (collectively called worker transport vehicles in Appendix 4.3-CST and this Appendix 4.3-CHRA). Construction workers leave the Facility and travel back to the highways using the same routes; 50% of the worker commuting trips use highway I-80 via Richmond Parkway, while the other 50% use Highway I-580 via Castro Street (Chevron Data Transmittal #36O (Rev #3), 2014).

Construction emission sources included in the air toxics dispersion model include off-road construction equipment, diesel- and gasoline-fueled on-road vehicles such as construction trucks and worker commuting vehicles. The lists below describe how each Modernization Project source was represented as either a volume or area source in the air dispersion model.

- On-site sources
 - Off-road Construction Equipment – Volume Sources
 - On-road Vehicles (Running and Startup Emissions) – Volume Sources along travel routes
 - On-road Vehicles (Idling Emissions) – Area Sources at discrete locations
- Off-site sources
 - On-road Vehicles (Running Emissions) – Volume Sources

Each source type is discussed in detail below.

⁶ Modeled travel path for the delivery trucks between facility boundary and the laydown area is different from the actual path. In addition, the modeled path is slightly shorter than the actual path. Therefore the TAC emissions were slightly underestimated due to this discrepancy. However, the modeled travel path is much closer to the maximally exposed individual sensitive receptor location than the actual path. Therefore, the impact of this discrepancy is minimal.

1.2.4.1.1 On-Site Sources

1.2.4.1.1.1 Off-Road Equipment

During Modernization Project construction, there may be multiple pieces of diesel off-road equipment operating at different locations within a construction zone at any given time; because of this, emissions were modeled assuming equal distribution of emissions across the construction zone. The eight construction zones were each modeled as series of adjacent volume sources with the sizes and locations shown in Figures A4.3-CHRA-8 and A4.3-CHRA-9. A release height of 5 meters was used, with an initial vertical dimension of 1.4 meters and an initial lateral dimension calculated by dividing the width of the volume source by 4.3.⁷ The widths of the volume sources were 10 meters for the construction Tie-in zone, and 20 meters for the other seven construction zones, based on the recommendation of the South Coast Air Quality Management District Localized Significant Thresholds Methodology.⁸ Emissions were distributed uniformly amongst all volume sources within a given construction zone. Details of the source parameters used are presented in Table A4.3-CHRA-4.

1.2.4.1.1.2 On-Road Vehicles-Running Emissions

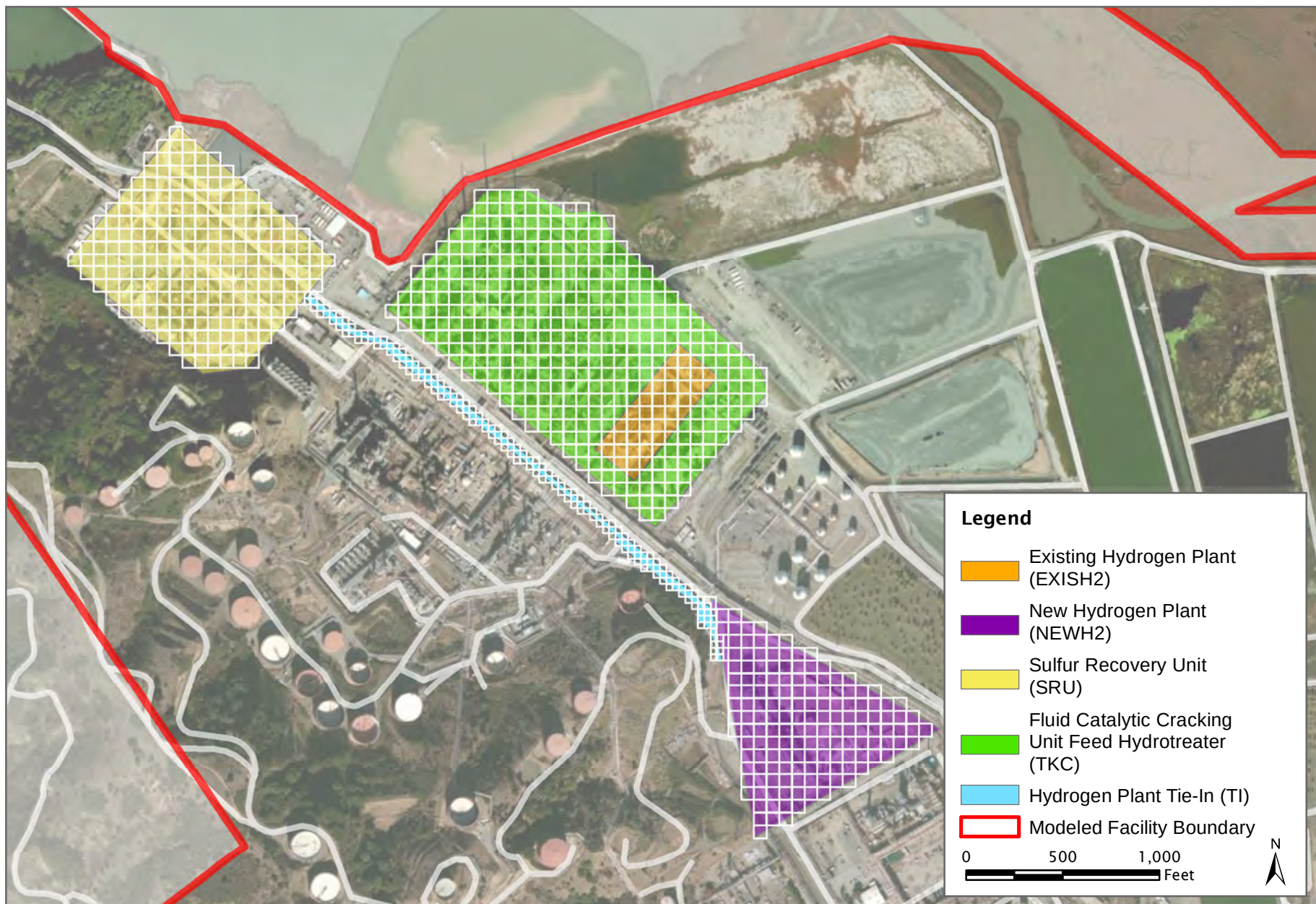
On-road vehicle movement was modeled using a set of consecutive volume sources. The sizing of volume sources varies between road segments such that volume sources visually fit the widths of the roads. All volumes were spaced 50 meters apart. The size and location of the sources are shown in Figures A4.3-CHRA-10a to A4.3-CHRA-24b.⁹ Release heights were 4.57 m for construction delivery trucks, flatbeds, and haul trucks, consistent with BAAQMD recommendations for Health Risk Assessments & Land Use (BAAQMD, 2010b). Release heights were 0.6 m for all other construction-related on-road vehicles including cars, pickups, buses, and worker commuting vehicles.¹⁰ The initial vertical dimensions are calculated based on the release height following EPA

⁷ This choice of modeling parameters was made in accordance with guidance provided in Localized Significance Threshold Methodology (SCAQMD, 2008) because the BAAQMD has no similar guidance for Bay Area projects.

⁸ According to the Localized Significance Threshold Methodology, dimension of the volume source was determined based on the size of the construction zone.

⁹ In general, the figures with names ended with an “a” shows the vehicle travel paths and source groups; the figures with names ended with a “b” or a “c” shows the actual modeled volume sources. These volume sources are shown as small squares in the figures. The size of the squares represents the width of the roadway segment while the spacing between the squares represents the spacing between the volume sources.

¹⁰ Consistent with CARB approved methodology (Yuan, 2006), release height of the modeled volume sources representing non-truck on-road vehicles was set to 0.6 meter.

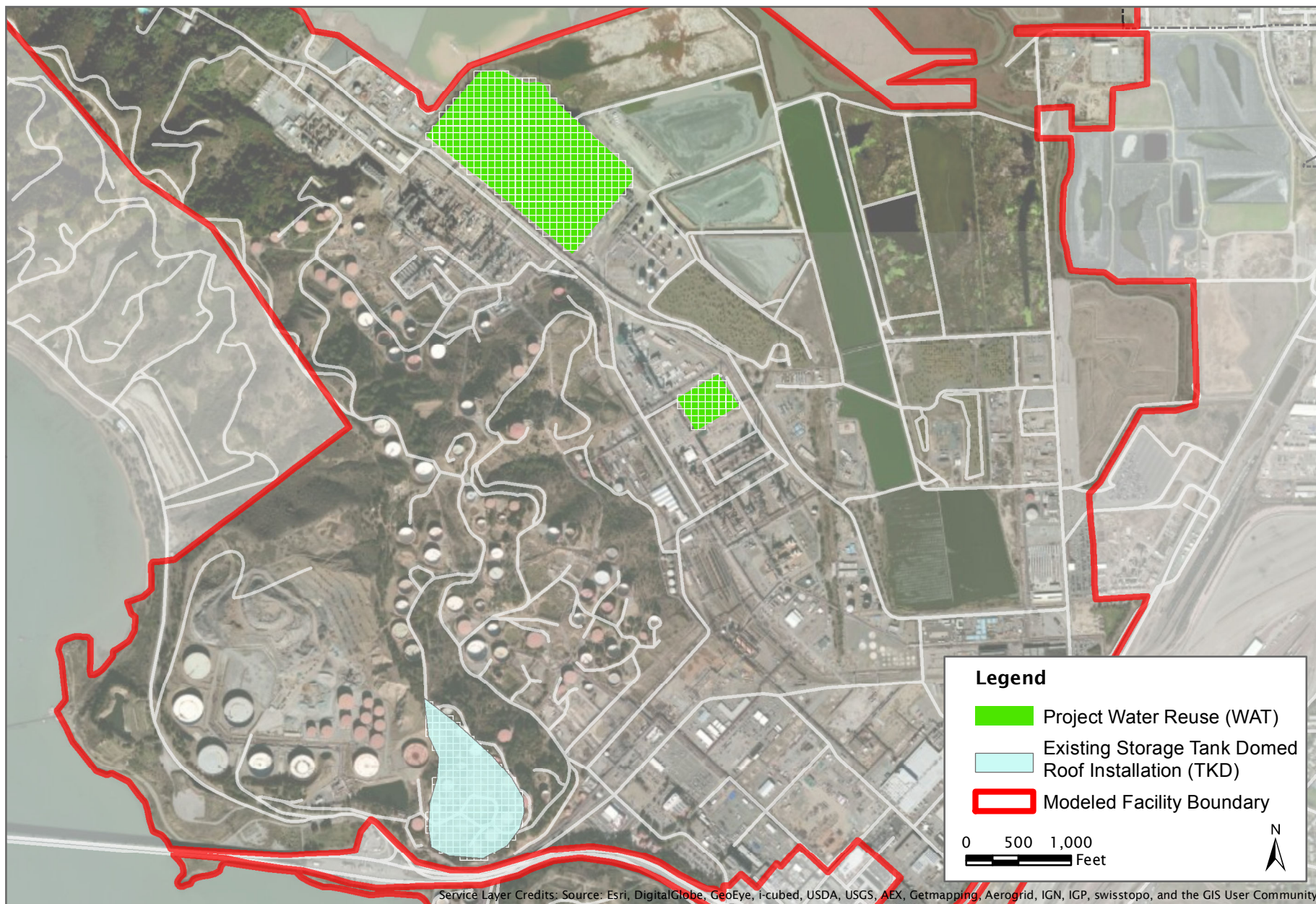


02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_8_Modeled Construction Phases and Areas (1).mxd

Source: Chevron Transmittals

NOTE: The modeled TKC construction area does not include the existing hydrogen plant area.

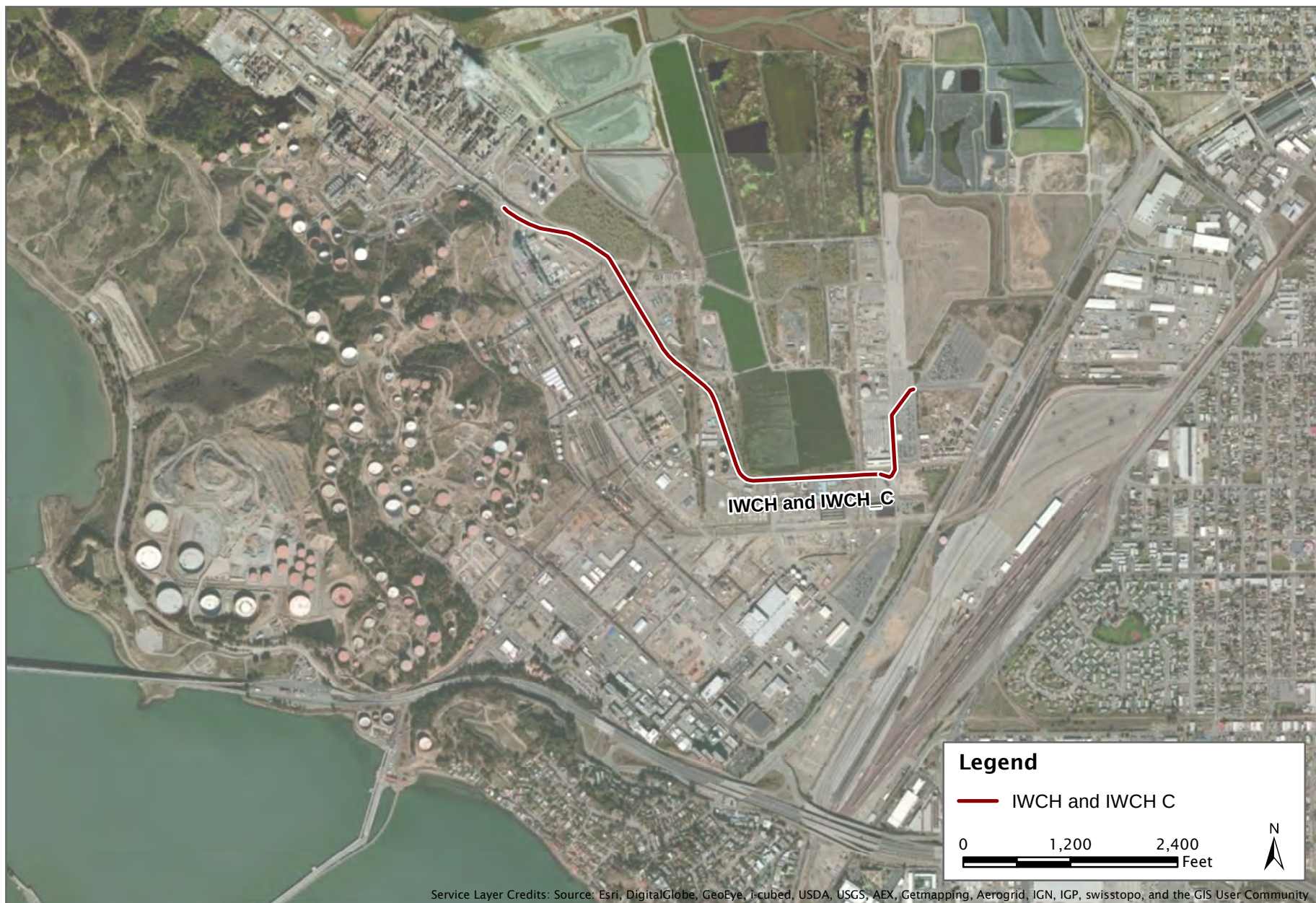
Figure A4.3-CHRA-8
Chevron Refinery Modernization Project EIR
Modeled Construction Areas (1) - Volume Sources



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\v4\CFig_9.Modeled Construction Phases and Areas (2).mxd

Source: Chevron Transmittals

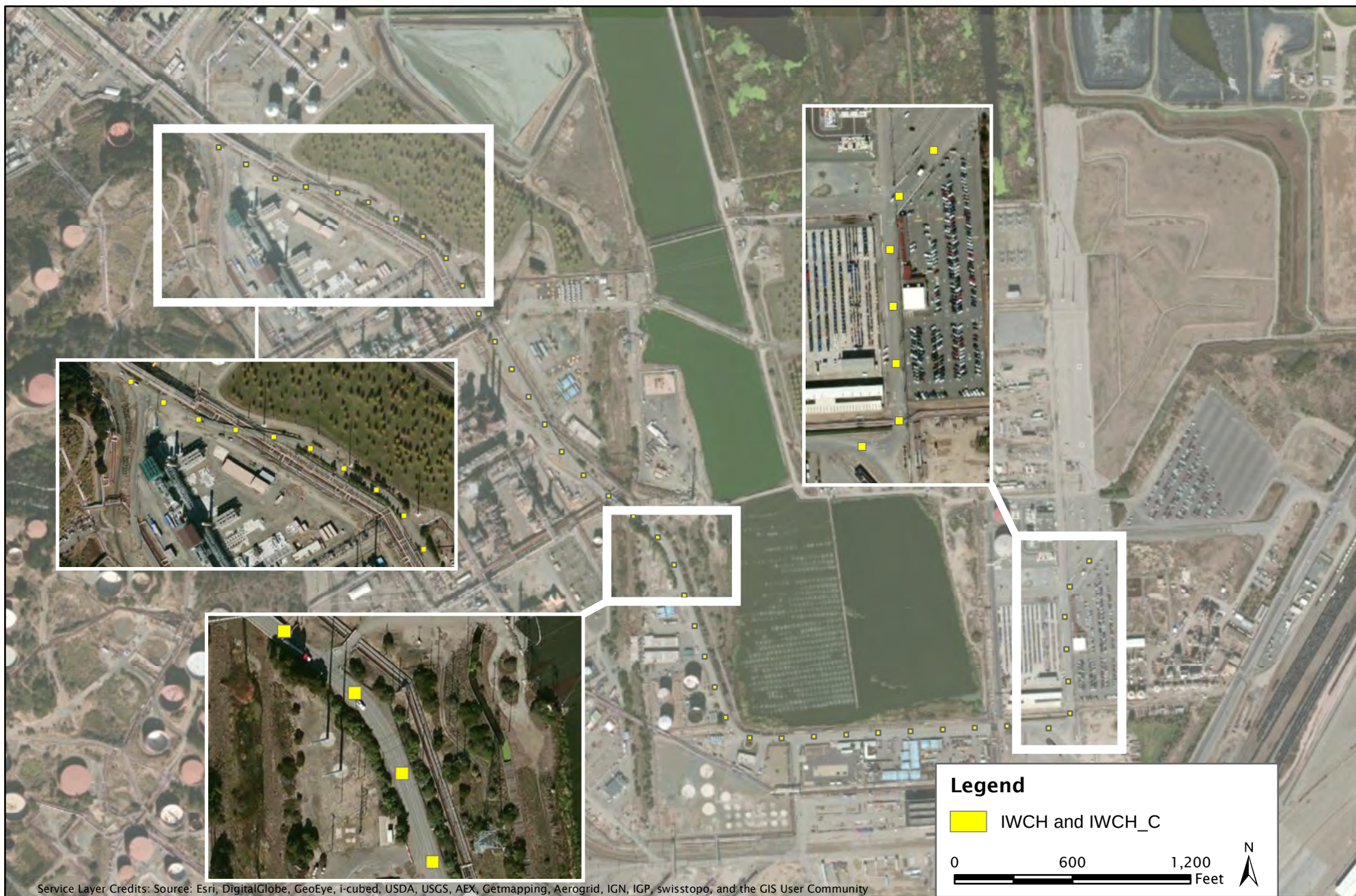
Figure A4.3-CHRA-9
Chevron Refinery Modernization Project EIR
Modeled Construction Areas (2) - Volume Sources for Project Design Features



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_10a_Construction Worker Trips IWCH.mxd

Source: Chevron Transmittals

Figure A4.3-CHRA-10a
Chevron Refinery Modernization Project EIR
Construction Worker Trips IWCH and IWCH_C: Internal buses, Pickups and Cars from Parking Lot to New Dydrogen Plant

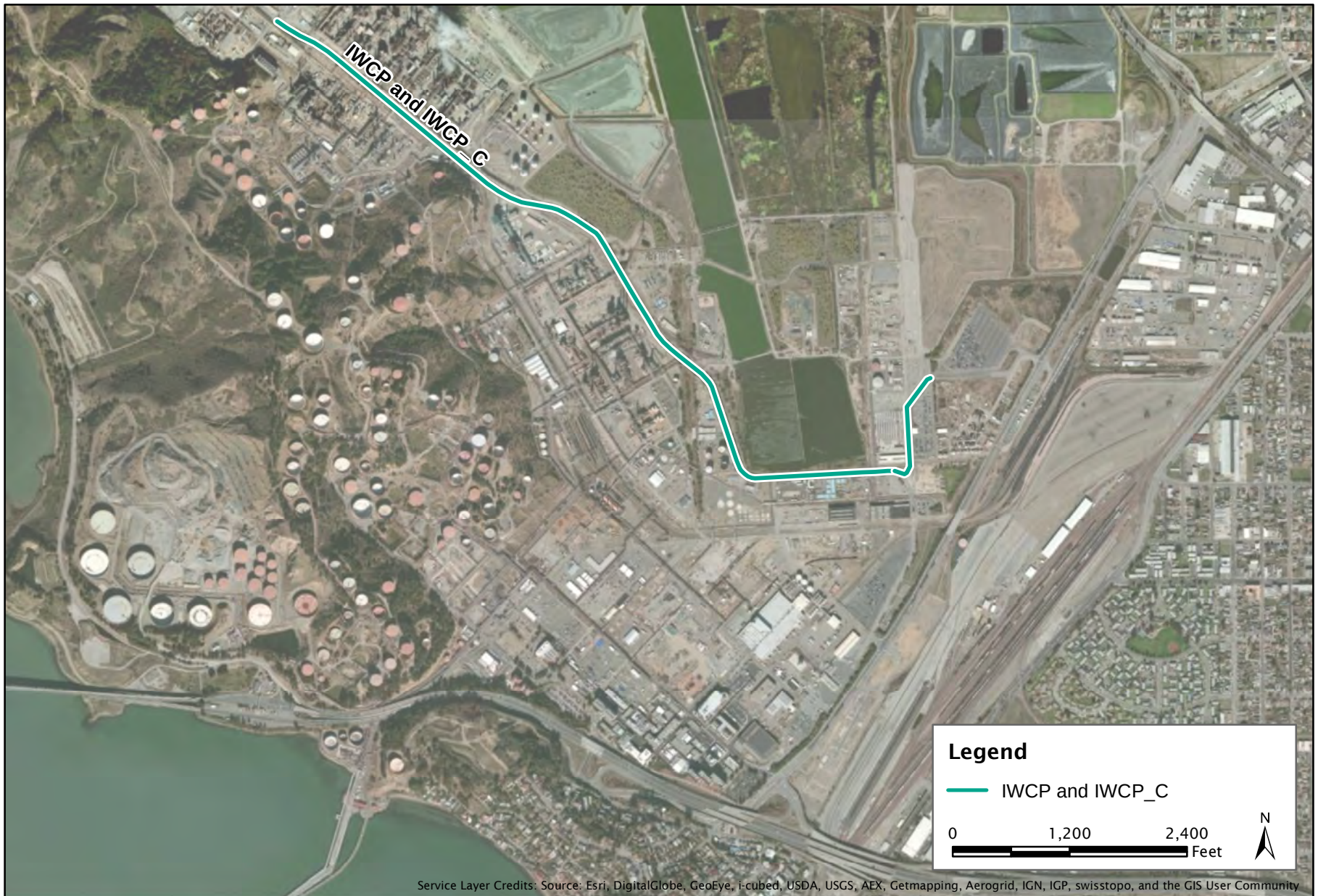


02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_10b_Modeled Construction Worker Trips IWCH.mxd

Source: Chevron Transmittals

NOTE: This figure shows the construction worker trip route from the worker parking lot to the new hydrogen plant. Source groups are IWCH and IWCH_C as shown in Figure AQ-CHRA-10a

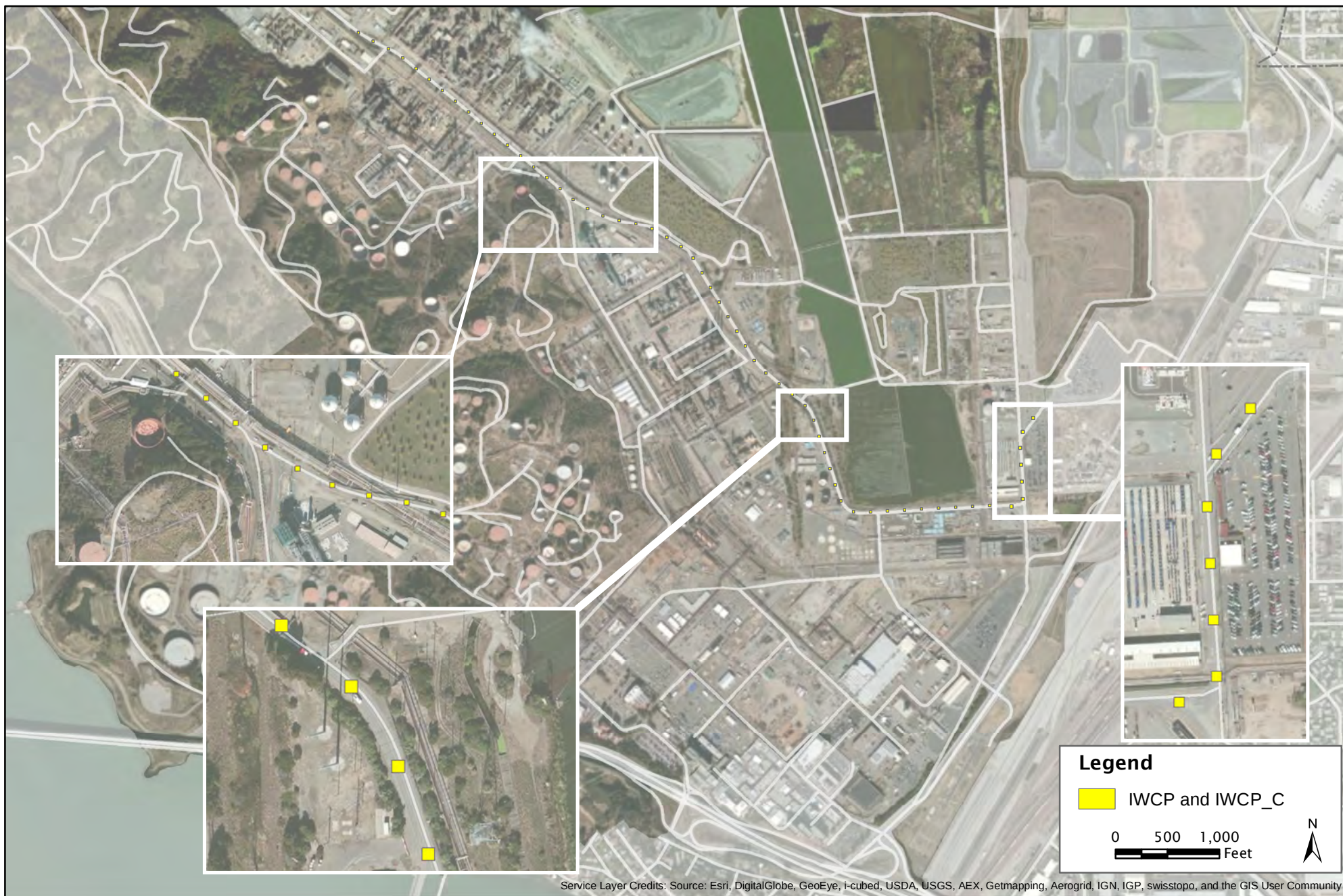
Figure A4.3-CHRA-10b
Chevron Refinery Modernization Project EIR
Modeled Construction Worker Trips IWCH and IWCH_C



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_11a_Construction Worker Trips IWCP.mxd

Source: Chevron Transmittals

Figure A4.3-CHRA-11a
Chevron Refinery Modernization Project EIR
Construction Worker Trips IWCP and IWCP_C: Internal Buses, Pickups and Cars from Parking Lot to SRU Area



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_11b_Modeled Construction Worker Trips IWCP.mxd

Source: Chevron Transmittals

NOTE: This figure shows the construction worker trip route from the worker parking lot to the SRU area. Source groups are IWCP and IWCP_C. as shown in Figure AQ-CHRA-11a.

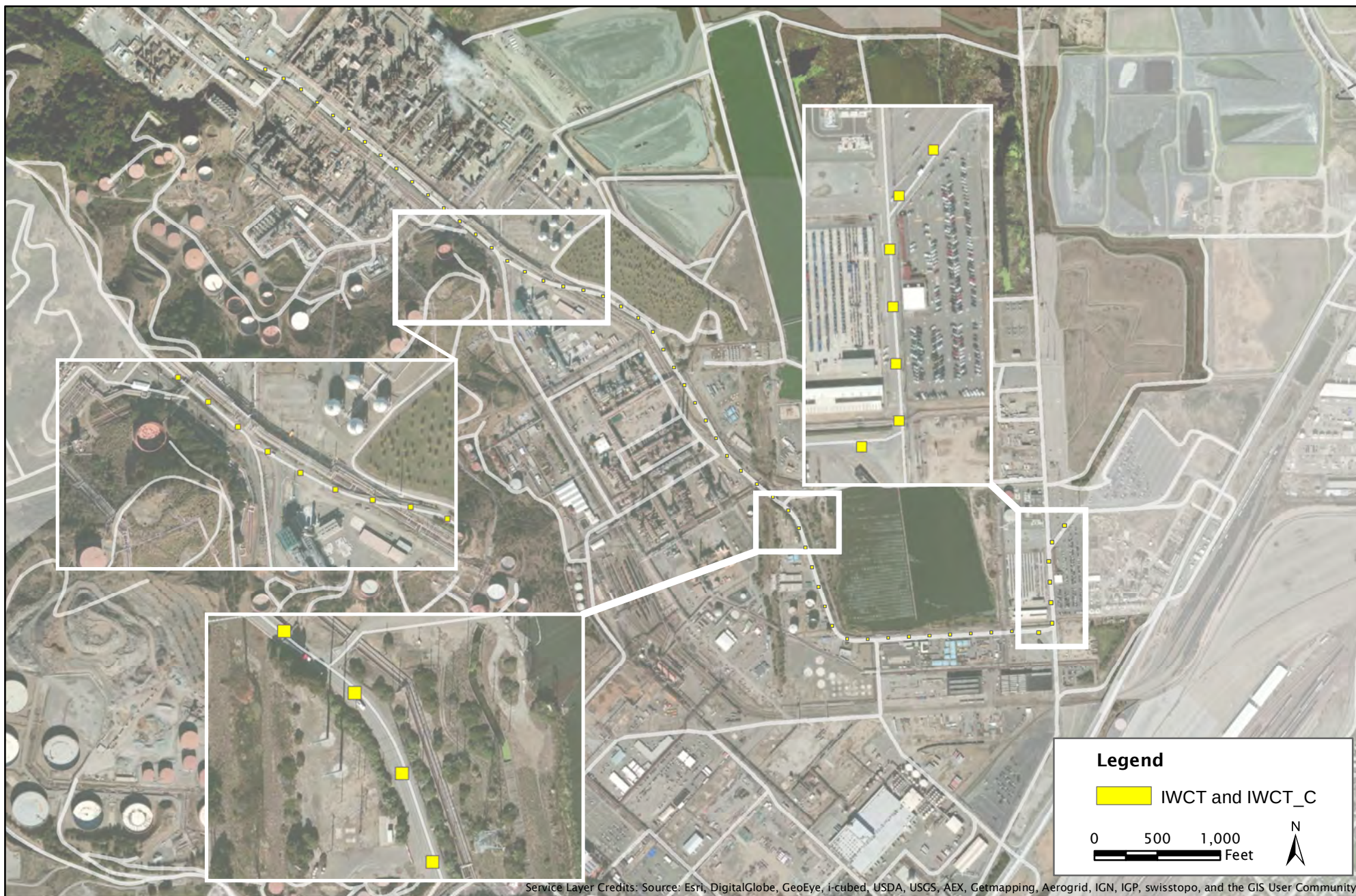
Figure A4.3-CHRA-11b
Chevron Refinery Modernization Project EIR
Modeled Construction Worker Trips IWCP and IWCP_C



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_12a_Construction Worker Trips IWCT.mxd

Source: Chevron Transmittals

Figure A4.3-CHRA-12a
Chevron Refinery Modernization Project EIR
Construction Worker Trips IWCT and IWCT_C: Internal Buses, Pickups and Cars from Parking Lot to Tie-in and TKC areas



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_12b_Modeled Construction Worker Trips IWCT.mxd

Source: Chevron Transmittals

NOTE: This figure shows the construction worker trip route from the worker parking lot to the Tie-In and TKC areas. Source groups are IWCT and IWCT_C as shown in Figure AQ-CHRA-12a. Note the construction worker trip route for the Project Water Reuse was assumed to use the same route as shown here.

Figure A4.3-CHRA-12b
Chevron Refinery Modernization Project EIR
Modeled Construction Worker Trips IWCT and IWCT_C

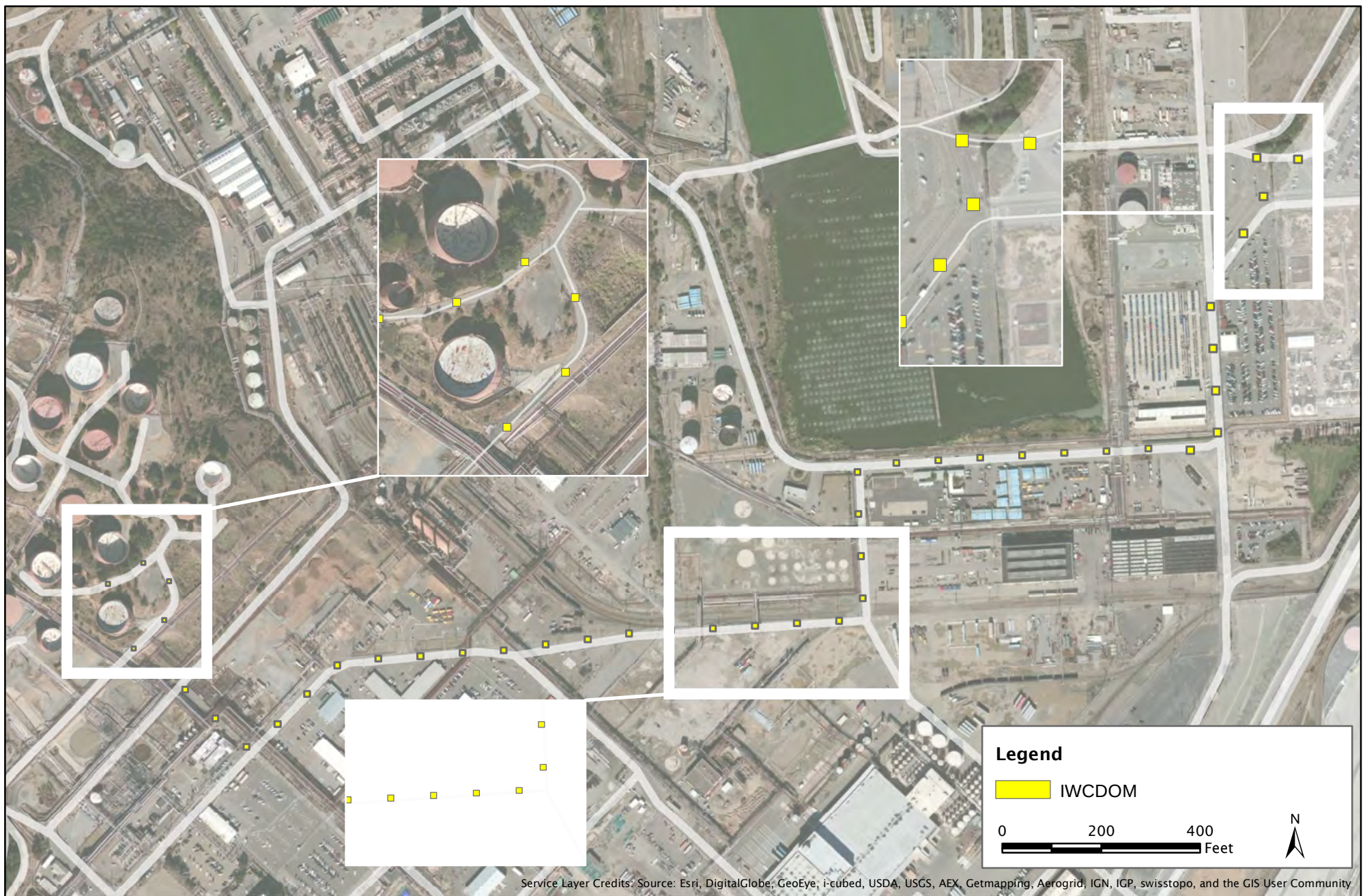


02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_13a_Construction Worker Trips IWCDOM.mxd

Source: Chevron Transmittals

NOTE: This figure shows the construction worker trip route from the worker parking lot to the existing Storage tank domed roof installation area. Source group is IWCDOM.

Figure A4.3-CHRA-13a
Chevron Refinery Modernization Project EIR
Construction Worker Trips IWCDOM: Worker Trip from Worker
Parking Lot to Existing Storage Tank Domed Roof Installation Area



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\v4\Fig_13b_Modeled Construction Worker Trips IWCDOM.mxd

Source: Chevron Transmittals

NOTE: This figure shows the construction worker trip route from the worker parking lot to the existing storage tank domed roof installation area. Source group is IWCDOM as shown in Figure A4.3- HRA-13a.

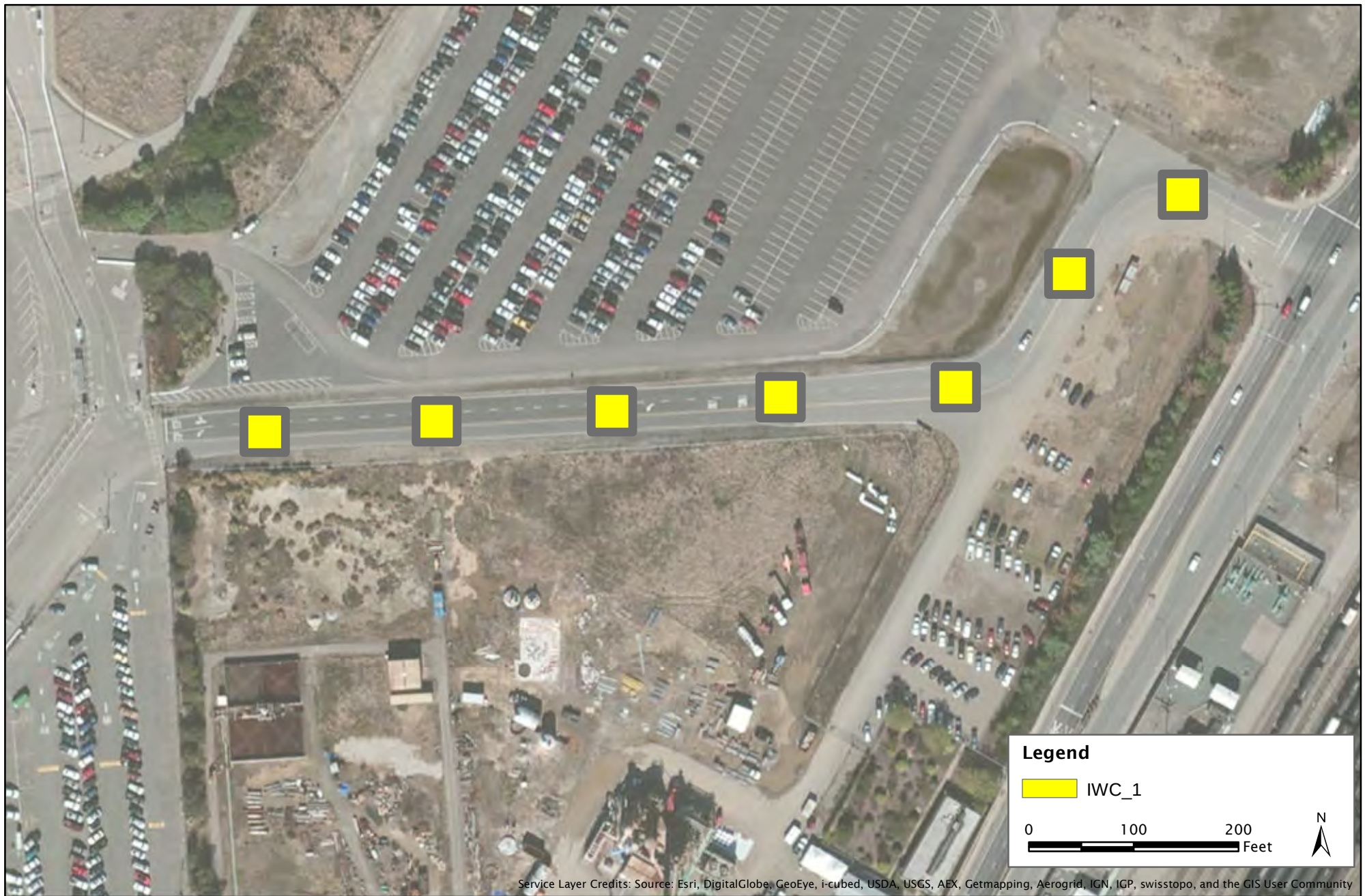
Figure A4.3-CHRA-13b
Chevron Refinery Modernization Project EIR
Modeled Construction Worker Trips IWCGOM



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\v4\CFig_14a_Construction Worker Trips IWC_1.mxd

Source: Chevron Transmittals

Figure A4.3-CHRA-14a
Chevron Refinery Modernization Project EIR
Construction Worker Trips IWC_1: worker vehicle
from Castro St. to parking lot



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_14b_Modeled Construction Worker Trips IWC_1.mxd

NOTE: This figure shows the construction worker trip route from Castro St. to worker parking lot.
Source group is IWC_1 as shown in Figure AQ-CHRA-14a.

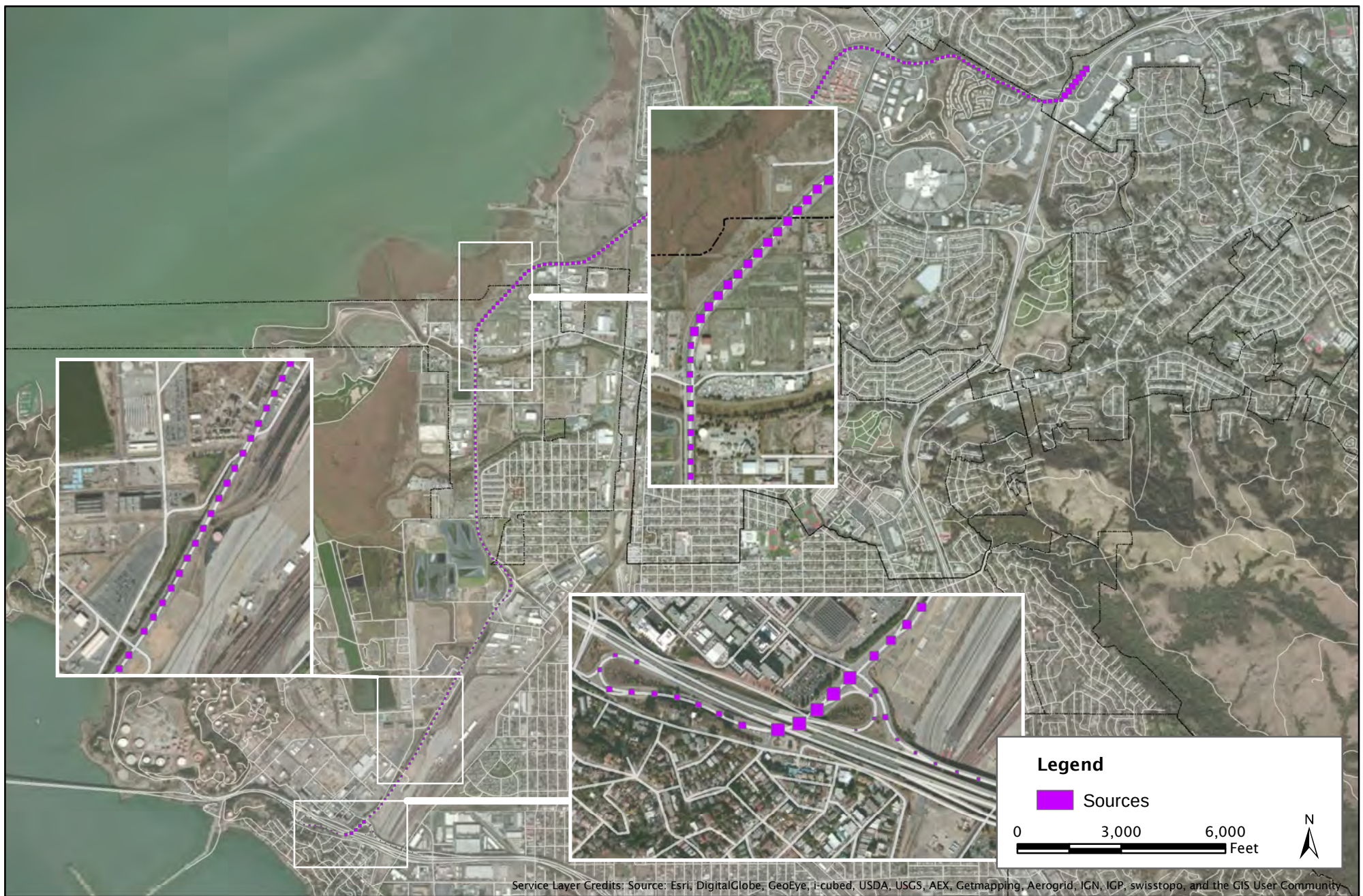
Figure A4.3-CHRA-14b
Chevron Refinery Modernization Project EIR
Modeled Construction Worker Trips IWC_1



02.20.2014 P:\GIS\11-005_CVRN\Data\ENVIRON\CFig_15a_Construction Worker Trips EWC.mxd

Source: Chevron Transmittals

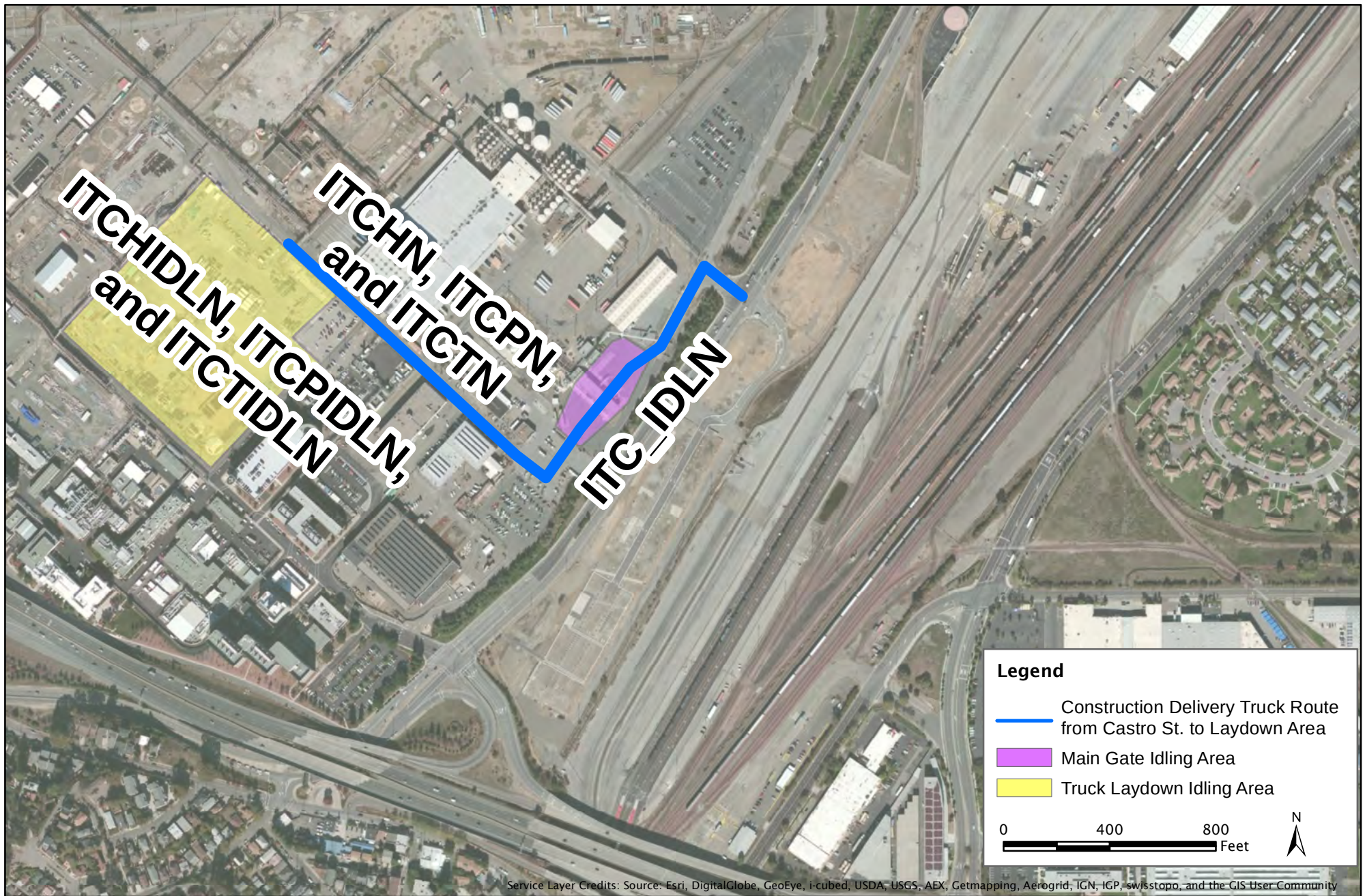
Figure A4.3-CHRA-15a
Chevron Refinery Modernization Project EIR
Construction Worker Trips: trips from highways through
Richmond Parkway and through Castro St.



02_20_2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_15b_Modeled Construction Worker Trips EWC.mxd

NOTE: This figure shows the offsite construction worker trip route from the I-80 ramp through Richmond Parkway to Gate 91, and from the I-580 ramp through Castro St. to Gate 91. Source groups include EWC_6, EWC_7, EWC_8, EWC_9, RAMPSW, CAS_G31W, and G31_G91W, as shown in Figure AQ-CHRA-15a.

Figure A4.3-CHRA-15b
Chevron Refinery Modernization Project EIR
Modeled Construction Worker Trips: trips from highways through
Richmond Parkway and through Castro St.

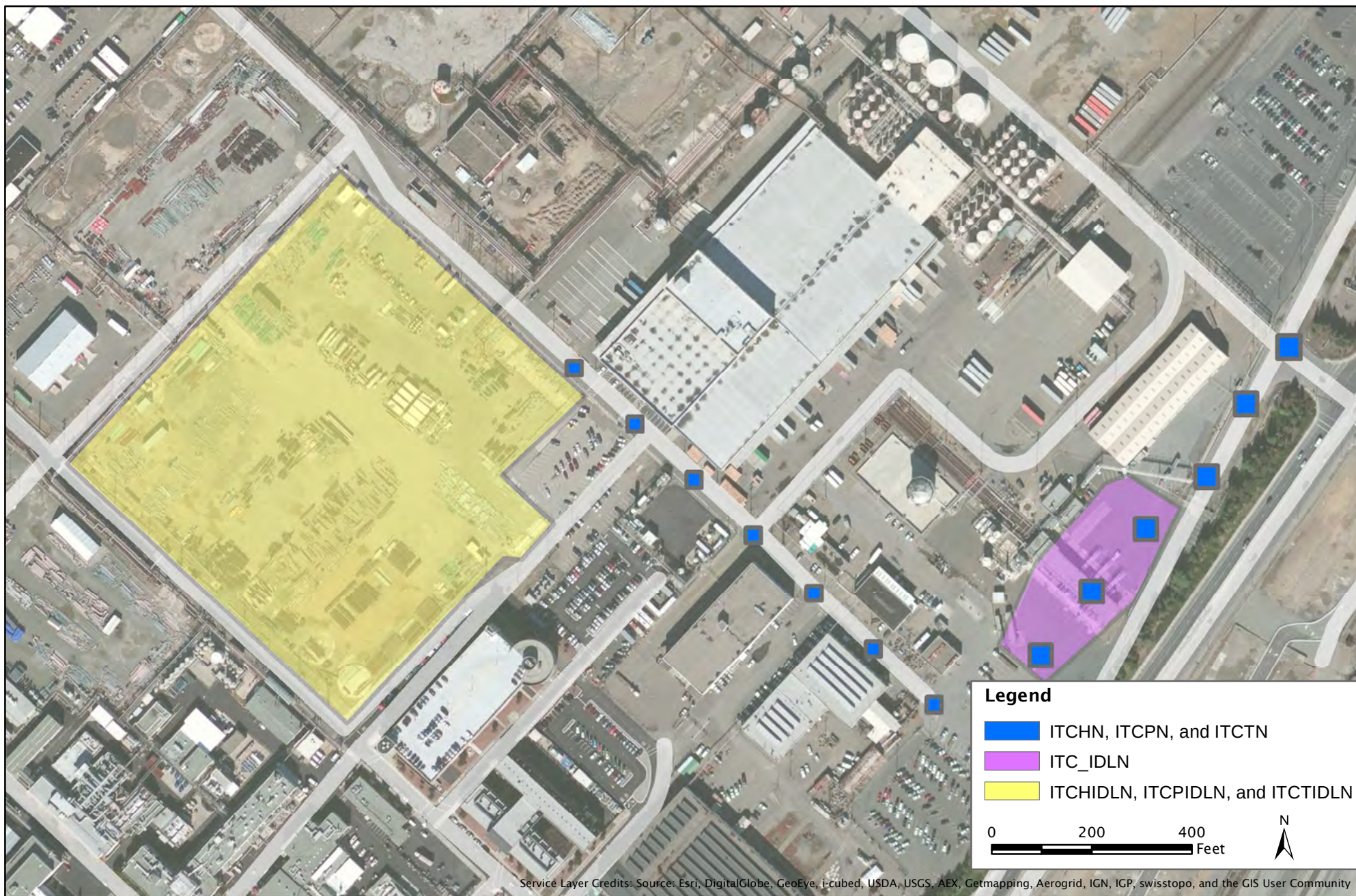


02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_16a_Construction Delivery Truck Trips ITC.mxd

Source: Chevron Transmittals

NOTE: This figure shows the construction delivery truck trip route from Castro St. to the laydown area. Source groups are ITCHN, ITCPN, and ITCTN. These source groups overlap with each other but represent delivery trucks serving the various construction areas. ITCHN - Hydrogen Plant Replacement, and Project Water Reuse; ITCPN - SRU; ITCTN - TKC and Tie-in. The two idling areas were modeled as area sources. Similarly, the source groups ITCHIDLN, ITCPIDLN, and ITCTIDLN overlap but represent delivery trucks serving various construction areas.

Figure A4.3-CHRA-16a
Chevron Refinery Modernization Project EIR
Construction Delivery Truck Trips: trucks from
Castro St. to Laydown Area and Idling Areas



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_16b_Modeld Construction Delivery Truck Trips ITC.mxd

Source: Chevron Transmittals

NOTE: This figure shows the construction delivery truck trip route from Castro St. to the laydown area. The two idling areas were modeled as area sources. Source groups are shown in Figure AQ-CHRA-16a.

Figure A4.3-CHRA-16b
Chevron Refinery Modernization Project EIR
Modeled Construction Delivery Truck Trips: trucks from
Castro St. to Laydown Area and Idling Areas

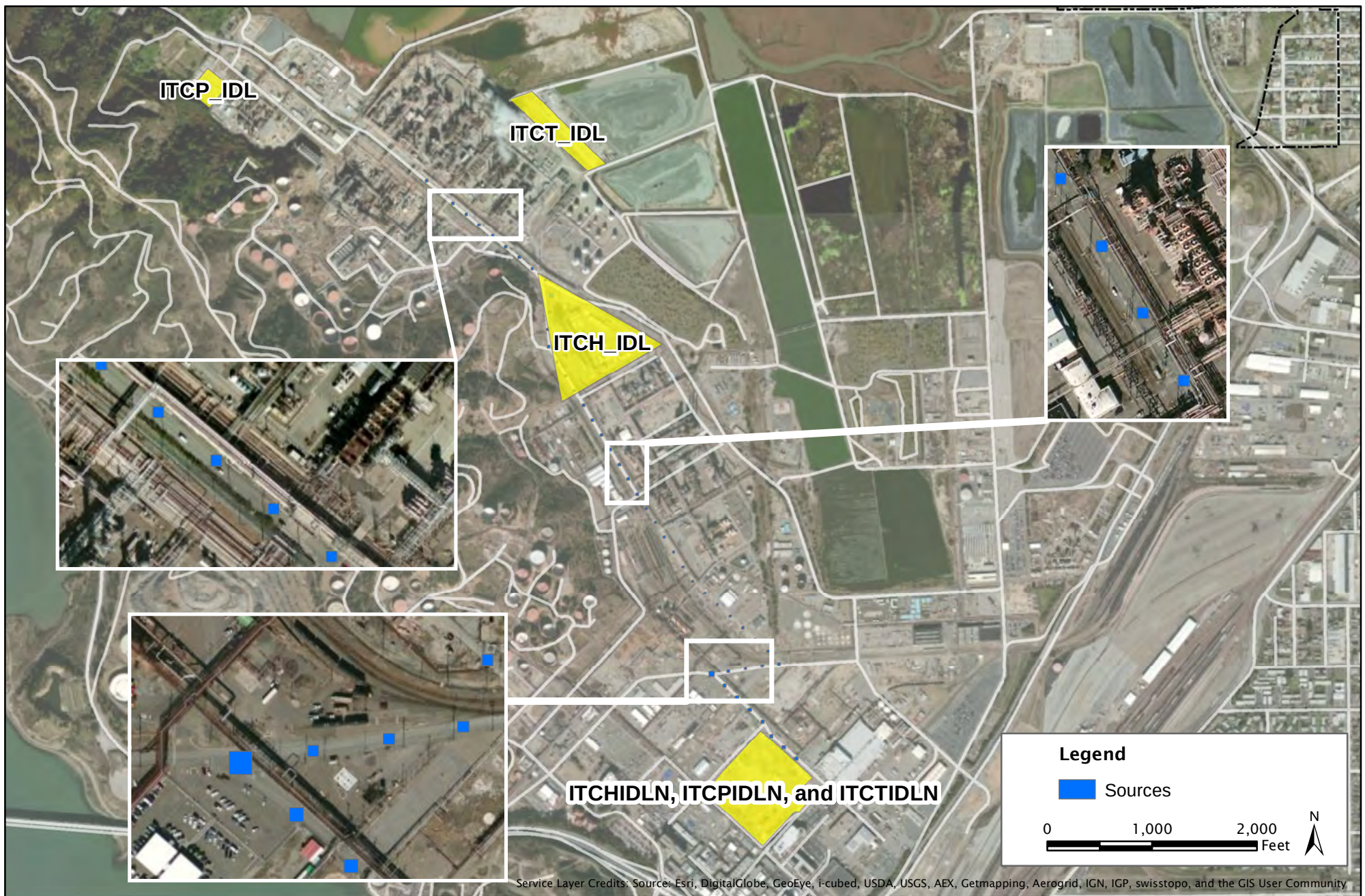


02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_17a_Construction Delivery Truck Trips Project.mxd

Source: Chevron Transmittals

NOTE: This figure shows the construction delivery truck trip route from the laydown area to the Hydrogen Plant Replacement, SRU, TKC, Tie-in, and Project Water Reuse areas. Source group is ITCW. The four idling areas were modeled as area sources.

Figure A4.3-CHRA-17a
Chevron Refinery Modernization Project EIR
Construction Delivery Truck Trips: Trucks from Laydown
Area to Project Construction Area and Idling Areas

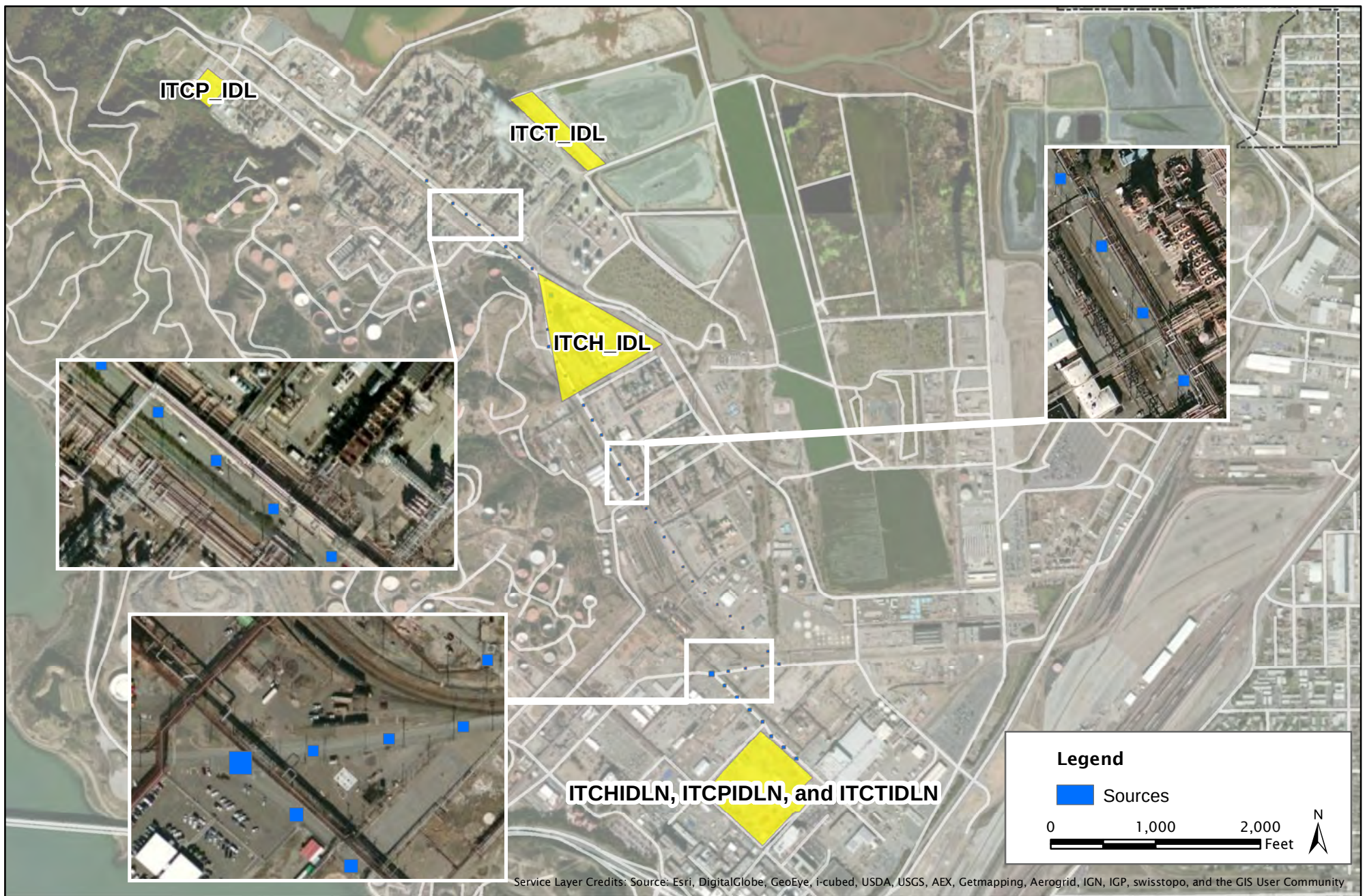


02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_17b_Modeled Construction Delivery Truck Trips Project.mxd

Source: Chevron Transmittals

NOTE: This figure shows the construction delivery truck trip route from the laydown area to the Hydrogen Plant Replacement, SRU, TKC, Tie-in and Project Water Reuse areas. Source group is ITCW. The four idling areas were modeled as area sources. Source groups are shown in Figure AQ-CHRA-17a.

Figure A4.3-CHRA-17b
Chevron Refinery Modernization Project EIR
Modeled Construction Delivery Truck Trips: Trucks from Laydown
Area to Project Construction Area and Idling Areas



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_17c_Modeled Construction Flatbed Truck Trips Project.mxd

NOTE: This figure shows the construction flatbed truck trip route from the laydown area to the Hydrogen Plant Replacement, SRU, TKC, Tie-in and Project Water Reuse areas. Source group is ITCW. The four idling areas were modeled as area sources. Source groups are shown in Figure AQ-CHRA-17a.

Figure A4.3-CHRA-17c
Chevron Refinery Modernization Project EIR
Modeled Construction Flatbed Truck Trips: Trucks from Laydown
Area to Project Construction Area and Idling Areas

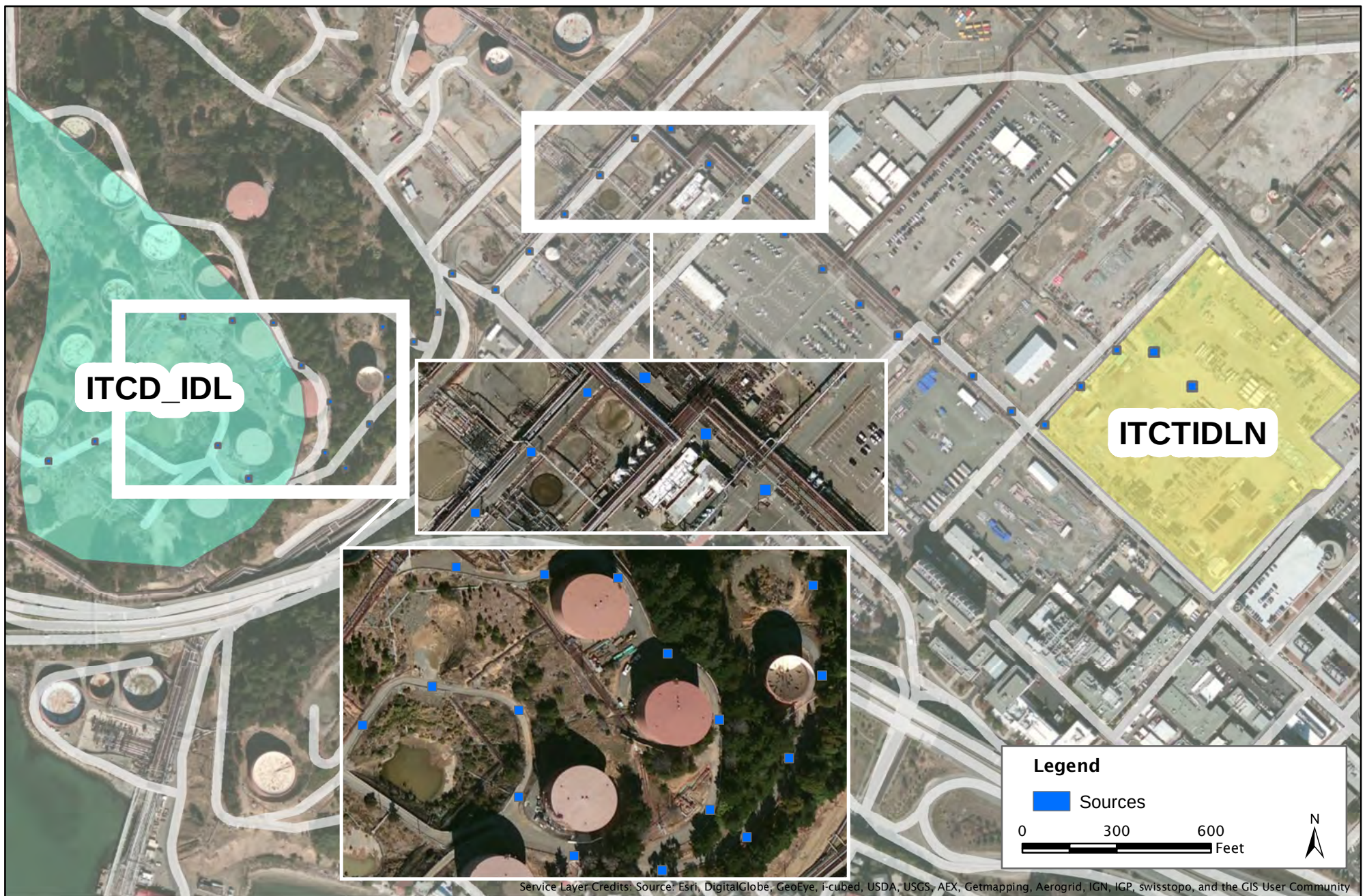


02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_18a_Construction Delivery Truck Trips ITCDOM.mxd

Source: Chevron Transmittals

NOTE: This figure shows the construction delivery truck trip route from the laydown area to the existing storage tank domed roof installation area. Source group is ITCD. The two idling areas were modeled as area sources.

Figure A4.3-CHRA-18a
Chevron Refinery Modernization Project EIR
Construction Delivery Truck Trips: Trucks from Laydown
Area to Existing Storage Tank Domed Roof Installation Area

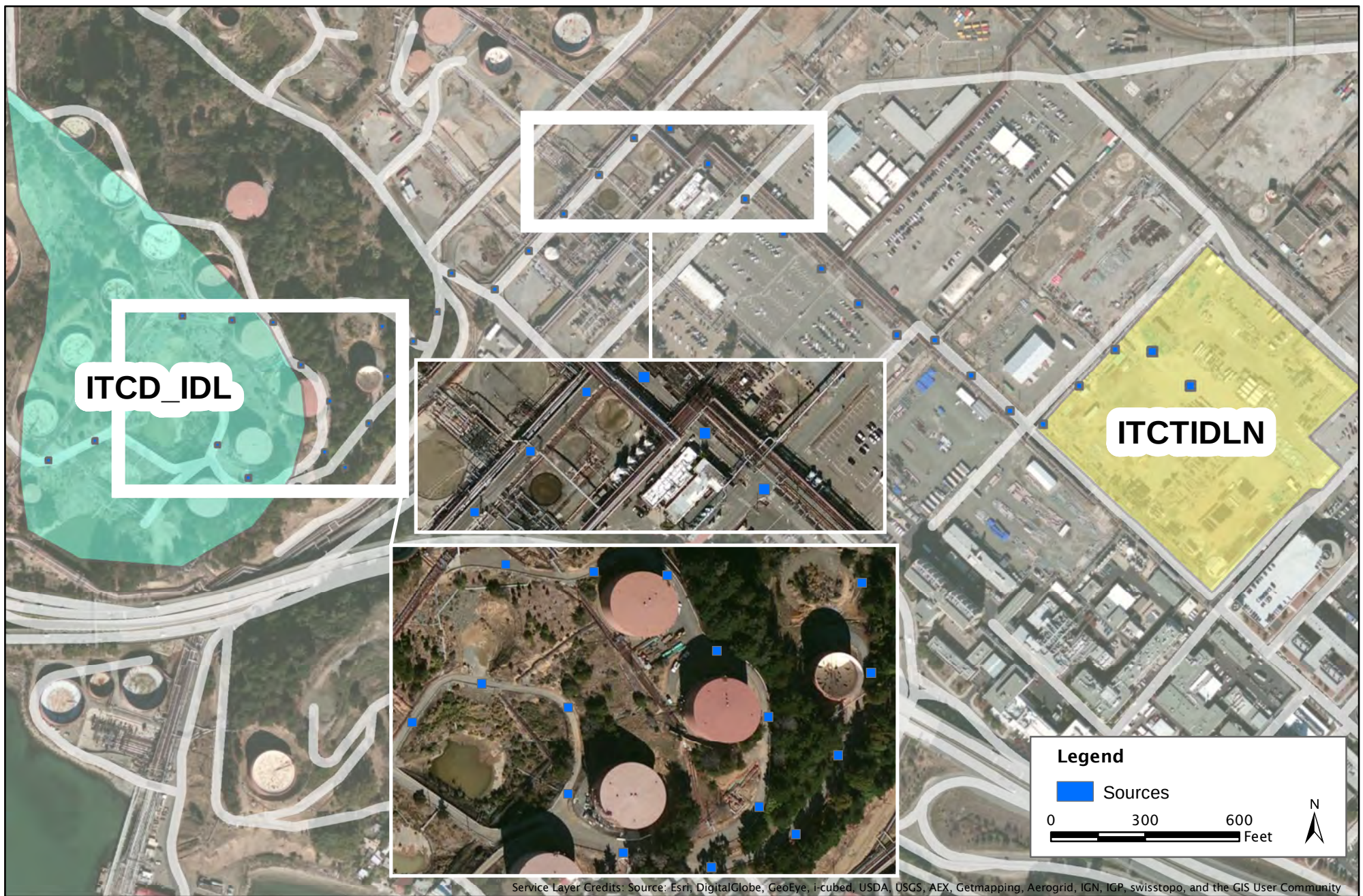


02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_18b_Modelled Construction Delivery Truck Trips ITCDOM.mxd

Source: Chevron Transmittals

NOTE: This figure shows the construction delivery truck trip route from the laydown area to the existing storage tank domed roof installation area. Source group is ITCD. The two idling areas were modeled as area sources. Source groups are shown in Figure AQ-CHRA-18a.

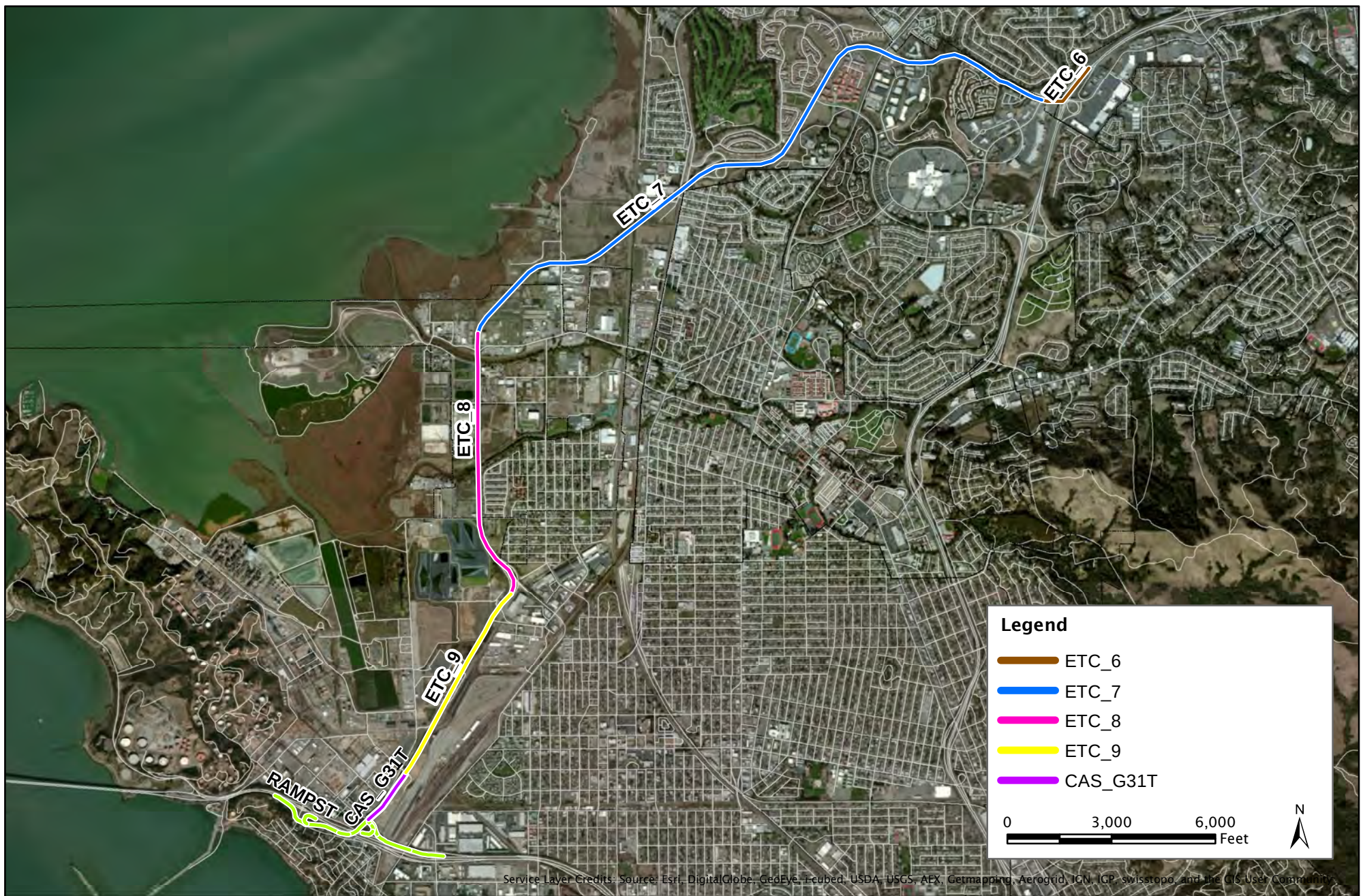
Figure A4.3-CHRA-18b
Chevron Refinery Modernization Project EIR
Modeled Construction Delivery Truck Trips: Trucks from Laydown
Area to Existing Storage Tank Domed Roof Installation Area



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_18c_Modeled Construction Flatbed Truck Trips ITCDOM.mxd

NOTE: This figure shows the construction flatbed truck trip route from the laydown area to the existing storage tank domed roof installation area. Source group is ITCD. The two idling areas were modeled as area sources. Source groups are shown in Figure AQ-CHRA-18a.

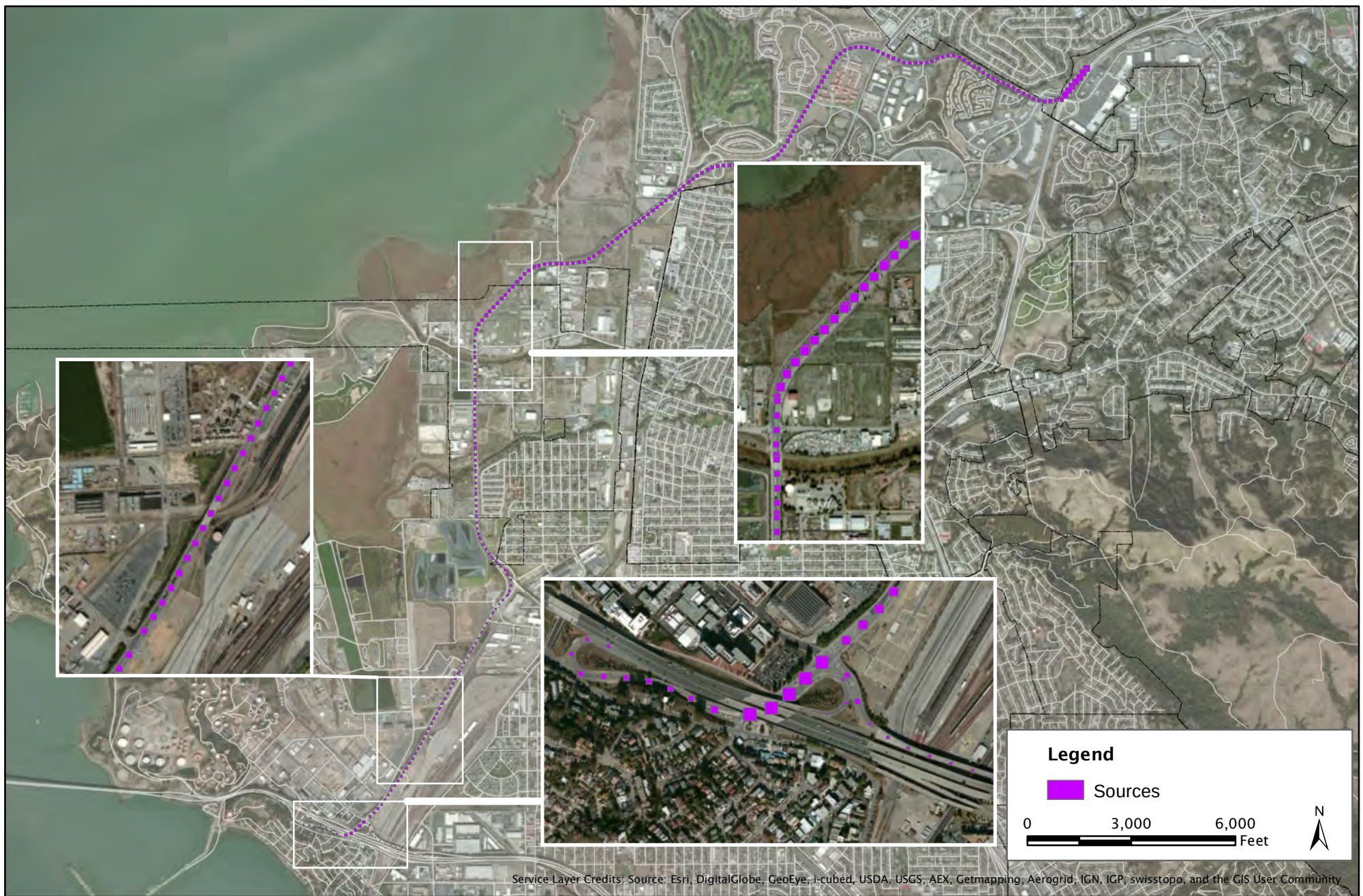
Figure A4.3-CHRA-18c
Chevron Refinery Modernization Project EIR
Modeled Construction Flatbed Truck Trips: Trucks from Laydown
Area to Existing Storage Tank Domed Roof Installation Area



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_19a_Construction Delivery Truck Trips ETC.mxd

Source: Chevron Transmittals

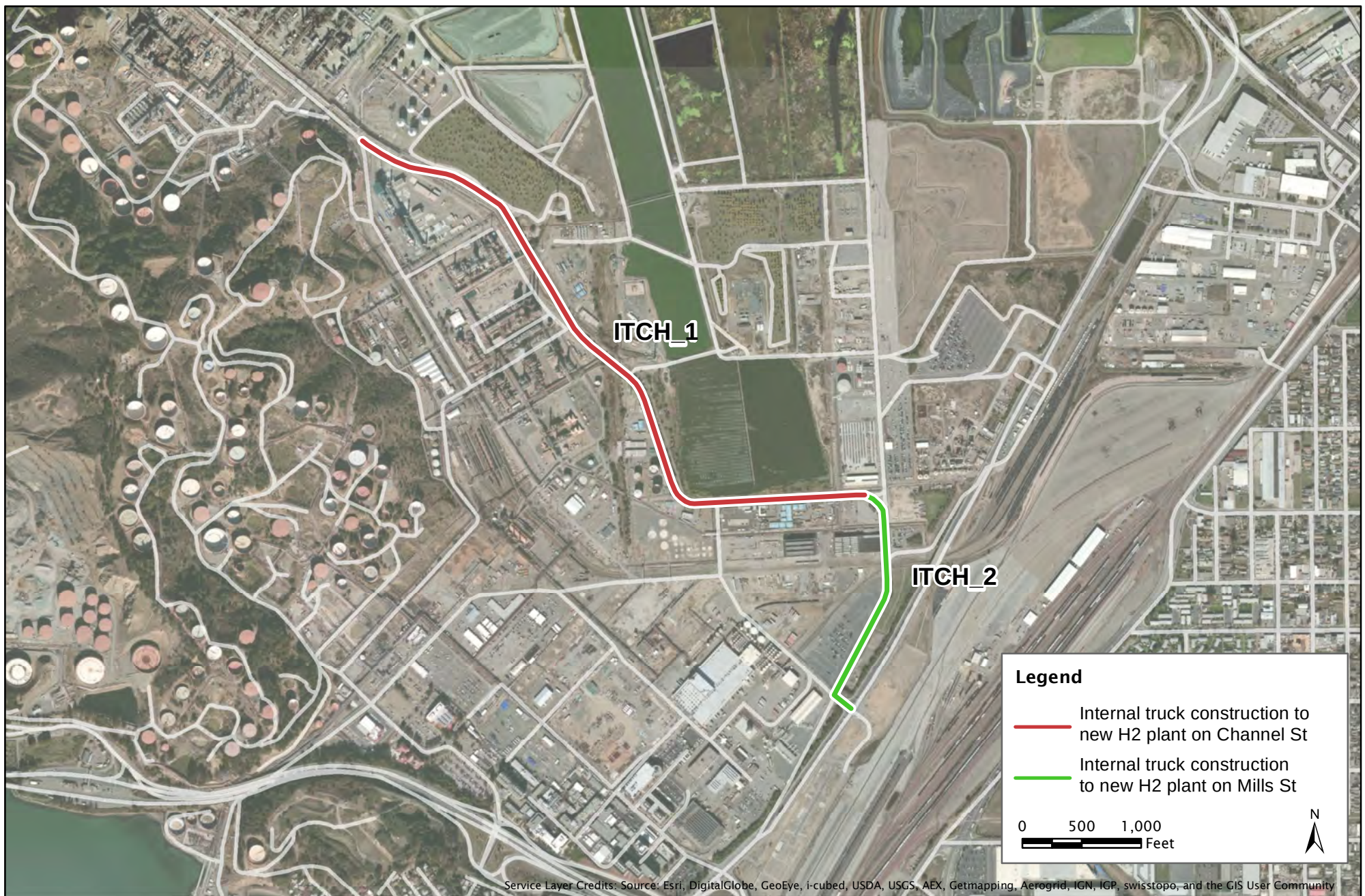
Figure A4.3-HRA-19a
Chevron Refinery Modernization Project EIR
Construction Delivery Truck Trips: trips from highways through
Richmond Parkway and through Castro St.



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_19b_Modeled Construction Delivery Truck Trips ETC.mxd

NOTE: This figure shows the offsite construction delivery truck trip route from the I-80 ramp through Richmond Parkway to Gate 31, and from the I-580 ramp through Castro St. to Gate 31. Source groups include ETC_6, ETC_7, ETC_8, ETC_9, RAMPST, and CAS_G31T, as shown in Figure AQ-CHRA-19a.

Figure A4.3-CHRA-19b
Chevron Refinery Modernization Project EIR
Modeled Construction Delivery Truck Trips: trips from highways
through Richmond Parkway and through Castro St.



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_20a_Construction Haul Truck Trips ITCH.mxd
 Source: Chevron Transmittals

Figure A4.3-CHRA-20a
 Chevron Refinery Modernization Project EIR
 Construction Haul Truck Trips ITCH_1 and ITCH_2:
 from Facility entrance to new hydrogen plant



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_20b_Modeled Construction Haul Truck Trips ITCH.mxd

NOTE: This figure shows the construction haul truck trip route from the Castro St. to the new hydrogen plant. Source groups are ITCH_1 and ITCH_2 as shown in Figure AQ-CHRA-20a.

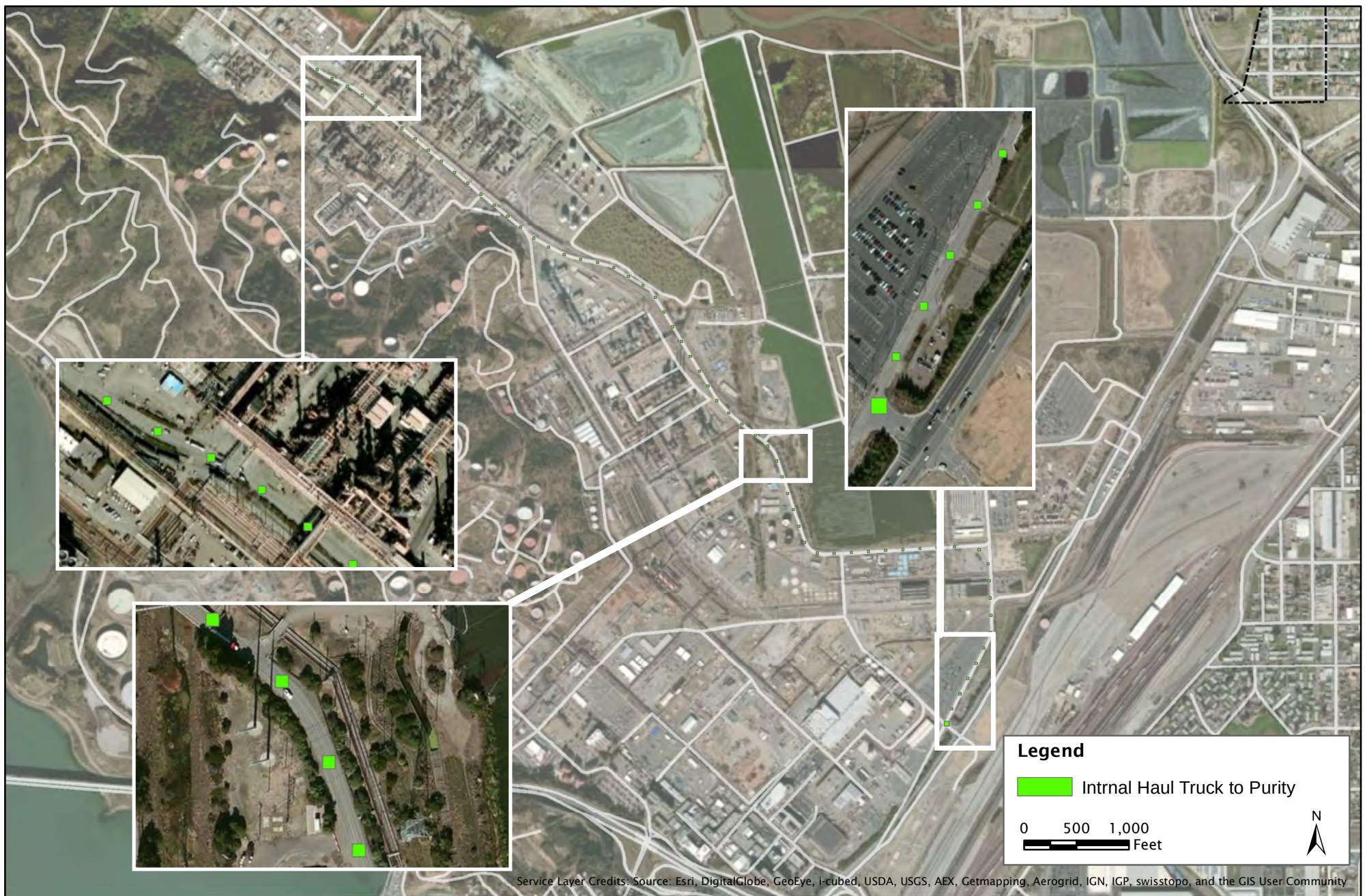
Figure A4.3-CHRA-20b
Chevron Refinery Modernization Project EIR
Modeled Construction Haul Truck Trips ITCH_1 and ITCH_2:
from Facility entrance to new hydrogen plant



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_21a_Construction Haul Truck Trips ITCP.mxd

Source: Chevron Transmittals

Figure A4.3-CHRA-21a
Chevron Refinery Modernization Project EIR
Construction Haul Truck Trips ITCP_1 and ITCP_2:
from Facility entrance to SRU area

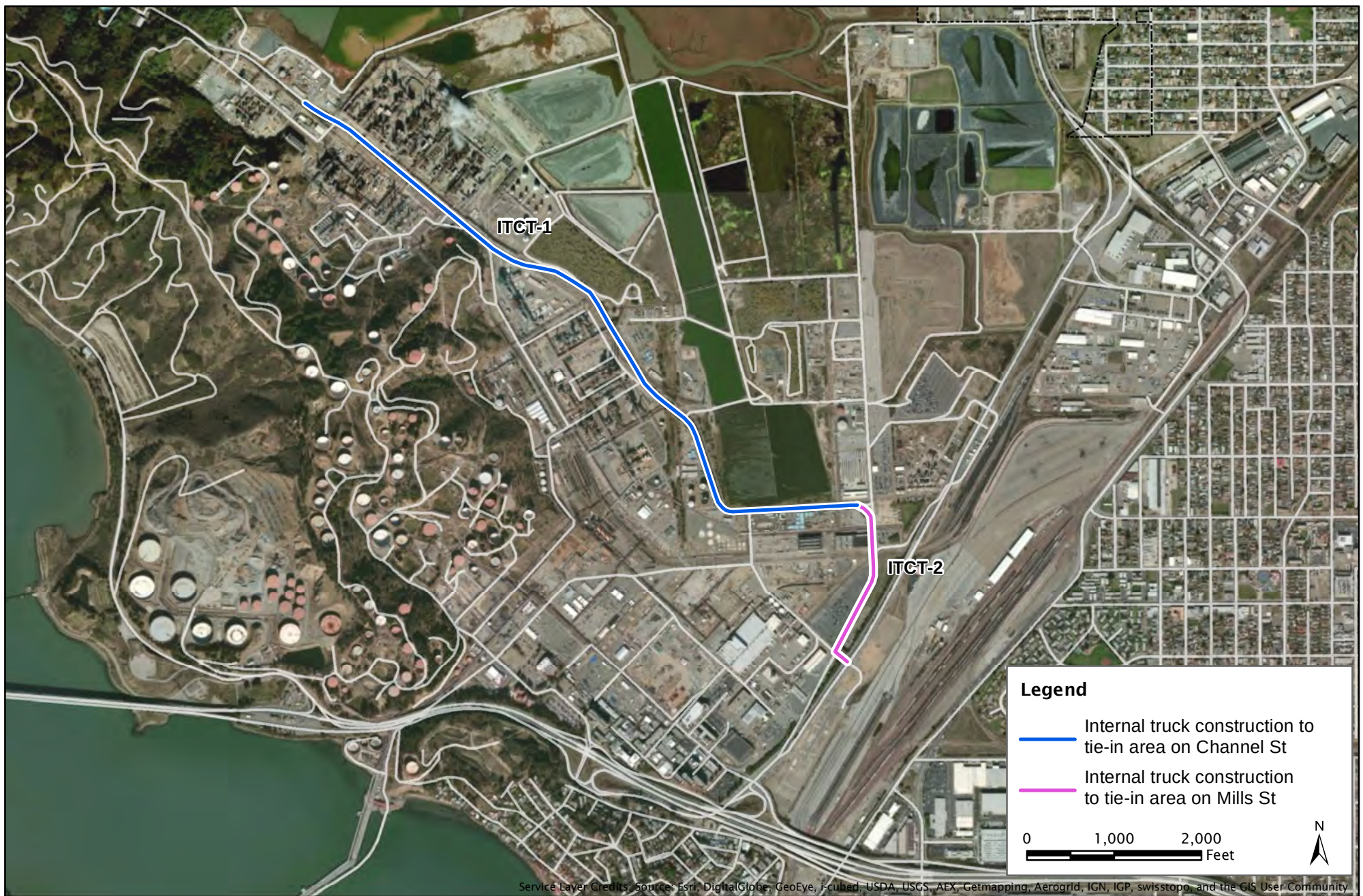


02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_21b_Modeled Construction Haul Truck Trips ITCP.mxd

Source: Chevron Transmittals

NOTE: This figure shows the construction haul truck trip route from the Castro St. to the SRU area. Source groups are ITCP_1 and ITCP_2 as shown in Figure AQ-CHRA-21a.

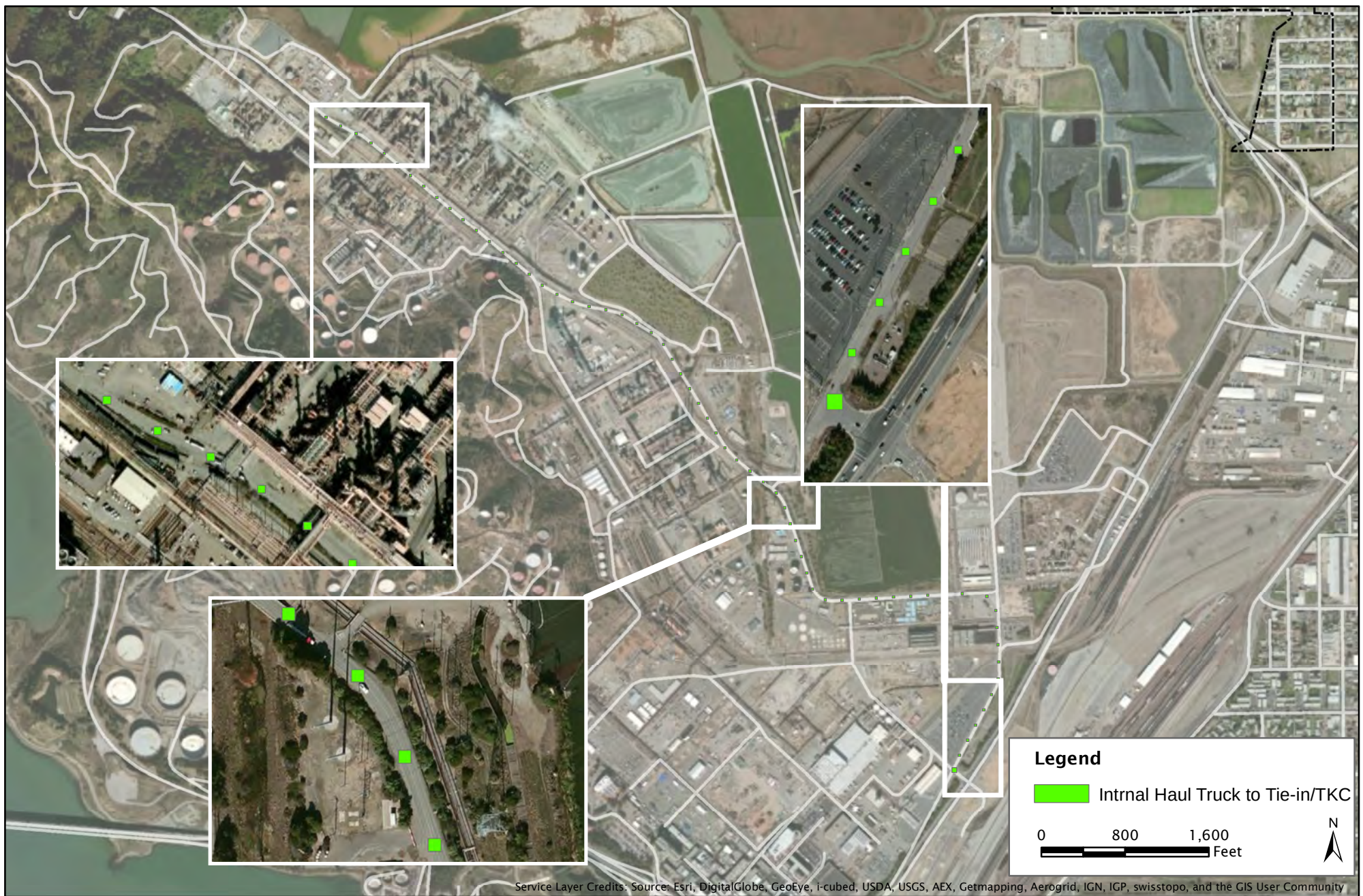
Figure A4.3-CHRA-21b
Chevron Refinery Modernization Project EIR
Modeled Construction Haul Truck Trips ITCP_1 and ITCP_2:
from Facility entrance to SRU area



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_22a_Construction Haul Truck Trips ITCT.mxd

Source: Chevron Transmittals

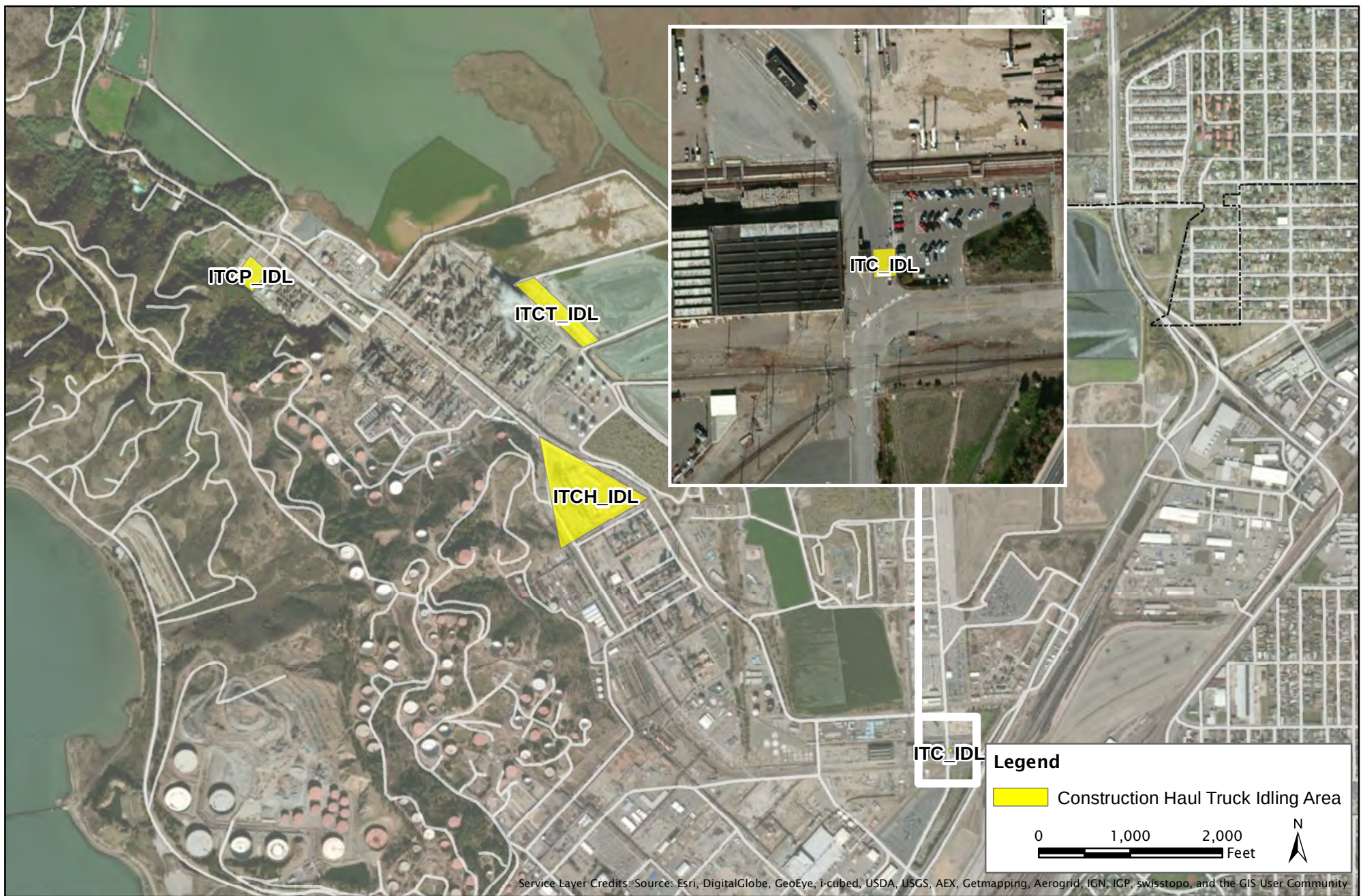
Figure A4.3-CHRA-22a
Chevron Refinery Modernization Project EIR
Construction Haul Truck trips ITCT_1 and ITCT_2:
from Facility entrance to tie-in and TKC areas



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\Fig_22b_Modeled Construction Haul Truck Trips ITCT.mxd

NOTE: This figure shows the construction haul truck trip route from the Castro St. to the Tie-in and TKC areas. Source groups are ITCT_1 and ITCT_2 as shown in Figure AQ-CHRA-22a.

Figure A4.3-CHRA-22b
Chevron Refinery Modernization Project EIR
Modeled Construction Haul Truck Trips ITCT_1 and ITCT_2:
from Facility entrance to tie-in and TKC areas



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\Fig_23_Modelled Construction Haul Truck Idling Area.mxd

NOTE: The figure shows the construction haul truck idling areas at the Facility entrance, Hydrogen Plant Replacement, SRU, TKC, and Tie-in areas. Source groups are ITC_IDL, ITCH_IDL, ITCP_IDL, and ITCT_IDL. These idling sources are modeled as area sources.

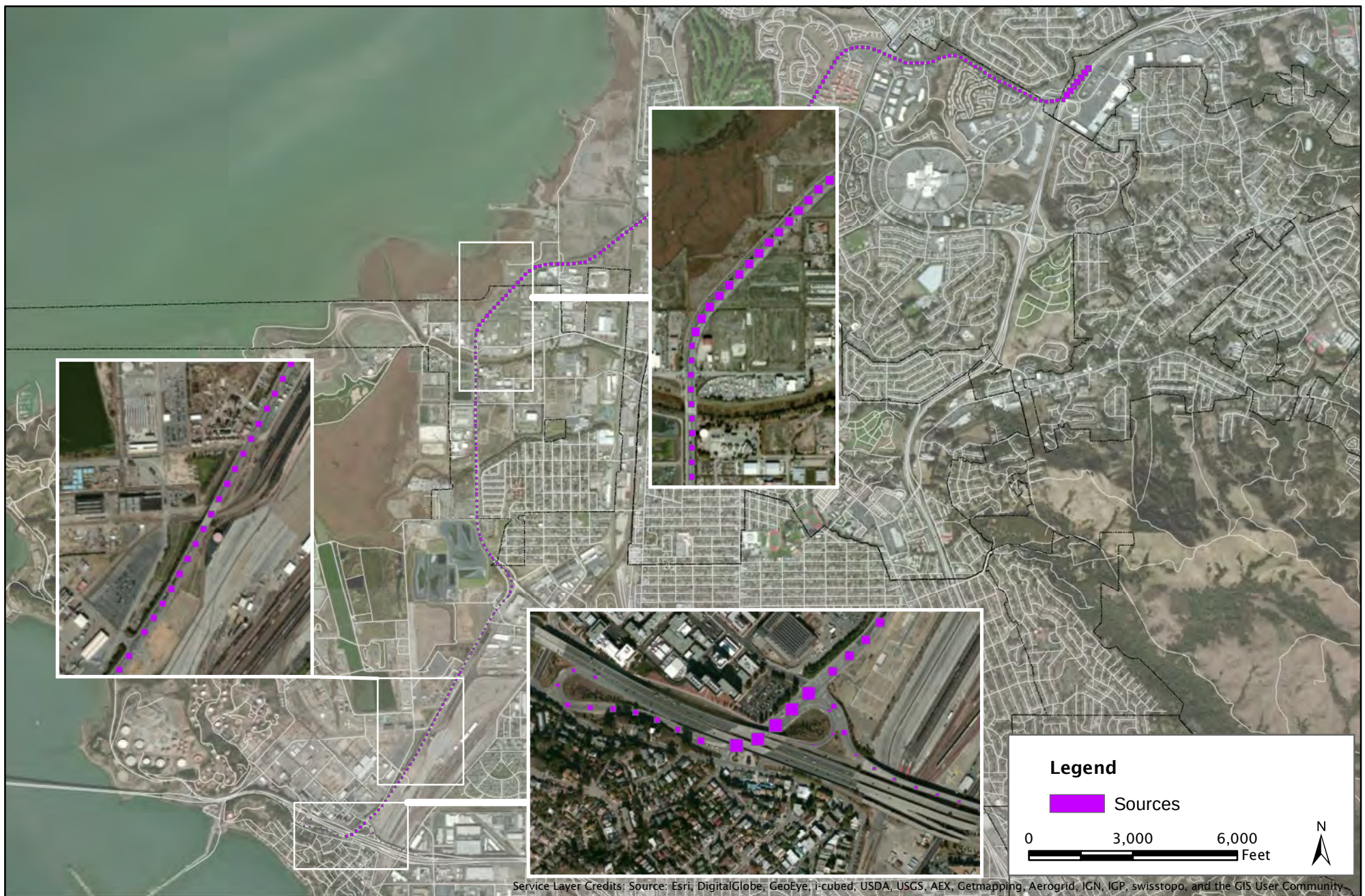
Figure A4.3-CHRA-23
Chevron Refinery Modernization Project EIR
Modeled Construction Haul Truck Trips: Idling Areas



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_24a_Construction Haul Truck Trips ETC.mxd

Source: Chevron Transmittals

Figure A4.3-HRA-24a
Chevron Refinery Modernization Project EIR
Construction Haul Truck Trips: trips from highways through
Richmond Parkway and through Castro St.



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\Fig_24b_Modeled Construction Haul Truck Trips ETC.mxd

NOTE: This figure shows the offsite construction haul truck trip route from the I-80 ramp through Richmond Parkway to Facility entrance and from the I-580 ramp through Castro St. to Facility entrance. Source groups include ETC_6, ETC_7, ETC_8, ETC_9, RAMPST, and CAS_G31T, as shown in Figure AQ-CHRA-24a.

Figure A4.3-CHRA-24b
Chevron Refinery Modernization Project EIR
Modeled Construction Haul Truck Trips: trips from highways
through Richmond Parkway and through Castro St.

guidance for an elevated source not on or adjacent to a building (EPA, 1995).¹¹ Initial lateral dimensions are also calculated based on volume size divided by 4.3 following EPA guidance for a single volume source (EPA, 1995).¹² Details of the source parameters used are presented in Table A4.3-CHRA-5.

1.2.4.1.1.3 On-Road Vehicles-Idling Emissions

Area sources were used to represent the haul truck, delivery truck, and flatbeds idling areas on the Modernization Project site. As described above, the idling areas are at the Facility gates (i.e., Gate 31), the Facility laydown area, and the designated laydown areas for each construction zone. The size and location of the sources are shown in Figures A4.3-CHRA-16a, 16b, 17a, 17b, 17c, 18a, 18b, 18c, and 23. The release height and initial vertical dimensions are consistent with that used for the construction haul truck movement sources described above. Details of the source parameters used are presented in Table A4.3-CHRA-5.

1.2.4.1.2 Off-Site Sources

1.2.4.1.2.1 On-Road Vehicles-Running Emissions

The source parameters for running emissions from construction-related off-site on-road vehicles are identical to the parameters used for on-site, on-road vehicles. Details of the source parameters used are presented in Table A4.3-CHRA-5.

Construction emissions allocated among source groups for TACs and $PM_{2.5}$ are included in Tables 4.3-CHRA 2a, 2b, and 2c.

1.2.5 Temporal Variation in Emission Rates

To reflect the meteorological conditions (which vary throughout the day) when construction activity is likely to occur, emitting activities from all construction sources were modeled between 6:00 a.m. and 5:00 p.m. Construction emissions were assumed to be emitted continuously during this 11-hour period; however, the intensity of construction activities (and hence emissions) was not assumed to be constant during this period, due to the staggering of worker shifts. According to Chevron, half of the construction workers arrive at 6:00 a.m. for a 10-hour shift ending at 4:00 p.m., and the other half arrive at 7:00 a.m. for a shift ending at 5:00 p.m. Therefore, the intensity of emitting activities between 6:00–7:00 a.m. and 4:00–5:00 p.m. were assumed to be 50% of the activity intensity during

¹¹ Initial vertical dimension of elevated volume sources not on or adjacent to a building is release height divided by 4.3.

¹² Initial lateral dimension of single volume sources is length of side divided by 4.3.

the 7:00 a.m.–4:00 p.m. period. The same temporal profile described above was applied for the off-road equipment and on-road vehicles that operate less than 10 hours a day, because it was not possible to determine when the equipment and vehicles would operate.

1.2.6 Meteorological Data

AERMOD requires a meteorological input file to characterize the transport and dispersion of pollutants in the atmosphere. In order to create this input file, surface and upper air meteorological data inputs, along with surface parameter data describing the land use and surface characteristics near the Facility, are first processed using AERMET, the meteorological preprocessor to AERMOD. The output file generated by AERMET is the meteorological input file required by AERMOD. Details of AERMET and AERMOD meteorological data needs are described in EPA guidance documents (EPA, 2012a; EPA, 2012b). Details of the methodology used for the meteorological data processing for the Modernization Project as well as inputs and outputs of the AERMET runs for both stations can be found in Attachment 2 of *Appendix 4.3-HRA*.

Two surface meteorological stations were found in the vicinity of the Facility: one station is maintained by Chevron and is located just south of the western end of the W. Gertrude Avenue (“Gertrude station”). The other station is a National Climate Data Center station (AWS ID 994036), located on the Refinery Pier just south of Highway 580 (“Wharf station”). Between these two stations lies a mountain ridge that extends in the southeast direction from Point San Pablo. Based on an evaluation of the wind patterns from these two stations, conditions at the Gertrude station are more representative of the majority of the Facility area (north and east of the mountain ridge), while conditions at the Wharf station are more representative of the Facility area to the south and west of the mountain ridge.

Therefore, both datasets were processed using AERMET version 12345. The data from October 1, 2009 to September 30, 2010 for each station were processed to ensure the 90% completeness criteria required by the EPA is met (EPA, 2005).¹³ The two on-site surface air stations, together with the surface pressure and cloud cover data from Oakland International Airport surface station, and upper air data from the Oakland International Airport upper air station, were used in the processing.

¹³ More information on meteorological data processing performed for this analysis is presented in Attachment 2 of Appendix 4.3-CHRA.

Most of the construction activities and related traffic, with a few exceptions, occur to the north of the mountain ridge, and therefore AERMOD-ready meteorological data processed for the Gertrude station was used for the air dispersion modeling of these construction emissions. The exceptions are the existing storage tank domed roof installation project, which occurs to the south of the mountain ridge.¹⁴ As a result, the off-road equipment activities associated with this construction project were modeled using the AERMOD-ready meteorological data processed for the Wharf station. Other activities modeled using the Wharf station data are the on-site delivery truck and flatbed idling activities of the existing storage tank doomed roof installation. Note that although the existing storage tank domed roof installation project occurs to the south of the mountain ridge, the majority of the travel path of the on-site delivery truck and flatbed running from the Facility laydown area to the construction area is to the north of the mountain ridge. As a result, the on-site delivery truck and flatbed running activities of the tank roof installation project was modeled using the Gertrude station data. Similarly, the on-site worker trips associated with the roof installation project was also modeled using the Gertrude station data.

1.2.7 Terrain

AERMOD uses a terrain preprocessor, AERMAP version 11103,¹⁵ to determine elevations of the surrounding landscape. Data from the National Elevation Data (NED) set, available from the United States Geological Survey,¹⁶ was utilized to import the elevation information for sources and receptors. AERMAP was used to extract elevations from the NED dataset. NED 1/3 arc-second data do not provide sufficient resolution in elevations for the mountain ridge area near the Modernization Project site, where some of the modeled worker receptors are located. Although the higher resolution NED 1/9 arc-second data set does provide sufficient resolution for these receptors, it does not have elevation information over water. To ensure sufficient resolution and coverage for receptor elevations for the AERMAP run, NED 1/9 arc-second data were used, supplemented by the 1/3 arc-second data for water areas.

¹⁴ According to Chevron Data Transmittal #31 (Rev #3), 2012, the tank dome installation can occur within a big area. The smaller area close to the Facility boundary and off-site residential receptors as shown in Figure A4.3-CHRA-3 was conservatively selected to represent the dome installation area.

¹⁵ More information on the model and the executable can be found at: http://www.epa.gov/ttn/scram/dispersion_related.htm.

¹⁶ NED data available at: <http://seamless.usgs.gov/website/seamless/viewer.htm>

1.2.7.1 Rural or Urban Boundary Layer Options

An important consideration in an air dispersion modeling analysis is the selection of rural or urban dispersion coefficients, which are influenced by the level of development (i.e., height of buildings and urban heat island effect) in the vicinity of the Modernization Project. Due to the proximity of the project to open water (which has no buildings or any heat generating sources), the models use rural dispersion coefficients, which is consistent with EPA guidance (EPA, 2009).

1.2.8 Model Averaging Periods and Unit Emissions Dispersion Factor Method

Calculation of chemical concentrations for use in exposure analysis requires the selection of appropriate concentration averaging times. In accordance with OEHHA guidance (OEHHA, 2003), annual average concentrations were estimated and used to evaluate cancer risk, chronic non-cancer and $PM_{2.5}$ impacts. Acute non-cancer impacts were estimated using the maximum 1-hour concentration.

Construction emissions were modeled using the unit emissions dispersion factor method, such that emission source groups are input to the model with unit average annual emission rates (i.e., 1 gram per second [g/s]), and the model estimates 1-hour maximum or annual average dispersion factors (with units of micrograms per square meter [$\mu\text{g}/\text{m}^3$]/[g/s]). To calculate annual average ambient air concentrations, the annual average dispersion factors were multiplied by the annual emission rates. Details on the steps taken in the database are also described in Attachment 3 of *Appendix 4.3-HRA*.

For acute non-cancer hazard analyses, the estimated 1-hour maximum dispersion factors for each source group were used. These dispersion factors were multiplied by the maximum 1-hour emission rate to determine the maximum 1-hour concentration for a given source group. Note that because the maximum emissions for each group are not expected to occur during the same hour of the year, summing the maximum 1-hour concentrations across all source groups yields conservative (i.e., overestimates of) total air concentrations. Attachment 3 of the *Appendix 4.3-HRA* contains the database inputs that were used to combine 1-hour maximum dispersion factors and actual emission rates to yield 1-hour air concentrations and to conduct further acute non-cancer hazard calculation.

The dispersion factors by source group for the maximum exposed individuals are presented in Attachment 2.

1.2.9 Model Adjustment Factors

Cal/EPA recommends applying a model adjustment factor (MAF) to air concentrations based on a continuous averaging period (i.e., 24 hours per day, 365 days per year) when the following three things are true: (1) the actual exposure occurs for less than 24 hours per day and/or less than 1 year; (2) emission activities occur for less than 24 hours per day and/or less than 1 year; and (3) exposures are entirely or partially concurrent with emitting activities (OEHHA, 2003). The model averages the emissions over 24 hour per day over a year. The modeling adjustment factor is applied to the modeled annual average concentrations to reflect the fact that the actual exposure concentration the receptor is exposed to is higher than the average annual concentration. The MAFs are presented in Table A4.3-CHRA-6 and discussed below.

For the Modernization Project, actual construction is expected to occur for 11 hours per day between 6:00 a.m. and 5:00 p.m. Therefore, an MAF must be applied to certain populations, as discussed below.

Residents have an exposure time 24 hours per day, 7 days a week. This assumption is consistent with the modeled annual average air concentration (which is averaged over 24 hours per day). Thus, the annual average concentration need not be adjusted for residents.

However, a MAF was applied to populations that are present during the construction activity, but that are not present 24 hours per day, 7 days per week. As stated above, actual Modernization Project construction is expected to occur for 11 hours per day, 5 days per week. As recommended by OEHHA (2003), a MAF of 3.36 was applied to the annual average concentration for the daycare child and school child to account for the differences between construction schedule and the exposure schedule ($([24 \text{ hours}/10 \text{ hours}]^{17} \times [7 \text{ days}/5 \text{ days}]) = 3.36$). These adjusted concentrations represent the theoretical maximum 10-hour concentrations over the operating period to which the off-site daycare children might be exposed.

The exposure point concentrations for the daycare child and school child receptors were calculated using the following equation:

¹⁷ Ten hours was used instead of 11 hours to determine a conservative (overestimated) exposure concentration. Using 11 hours would result in a lower exposure concentration.

$$C_i = C_{i,annual} \times MAF$$

Where:

- C_i = Exposure Point Concentration of Chemical_i (µg/m³)
 $C_{i,annual}$ = Annual Average Concentration of Chemical_i (µg/m³)
 MAF = Modeling adjustment factor (unitless)

1.3 HEALTH EFFECT CHARACTERIZATION METHODS

The following sections discuss the various components required for conducting this risk assessment in detail. Attachment 3 of the *Appendix 4.3-HRA* contains a description of the Microsoft Access databases that were used to calculate air concentrations and to conduct further health risk estimations based on the methodology described below. These databases mimic the calculation method used in the CARB Hotspots Analysis Reporting Program and its On-Ramp extension. Attachment 3 of the *Appendix 4.3-HRA* describes in detail on how these databases works and equivalency tests conducted to prove that these databases and Hotspots Analysis Reporting Program will generate same risk values when using the same inputs.

1.3.1 Exposure Assessment

1.3.1.1 Exposed Populations

As described earlier, the potentially exposed populations¹⁸ evaluated in this assessment are:

- Residents (children and adults);
- School children;
- Daycare children;
- Community center children and adults;
- Patient children and adults;
- Recreational facility children and adults;
- Adult workers.

A maximum exposed individual sensitive receptor (MEISR) is identified as the sensitive receptor (among all of the potential exposed sensitive populations) with the highest estimated cancer risk, chronic non-cancer impact, or acute non-

¹⁸ Although neither recreational adult or children nor workers are sensitive receptors under BAAQMD guidance, these receptors were included for completeness.

cancer health impact. In addition, a MEISR is also identified for the $PM_{2.5}$ concentration. In order to identify the MEISR for each health impact, the impacts were calculated for all receptors in the modeling domain.

In addition, a set of boundary receptors was also included in the model. Note that because no sensitive populations will reside at the boundary receptor locations for long periods, they would not experience chronic exposure; therefore, these boundary receptors were included for acute health impact analysis only.

The exposure parameters used for estimating excess lifetime cancer risks for all potentially exposed populations were obtained using risk assessment guidelines from OEHHA (2003) and BAAQMD (2010a), unless otherwise noted, and are presented in Tables A4.3-CHRA-7a and 7b.

As mentioned above, some Modernization Project construction was completed in 2008-2009. In order to capture the most conservative estimates of cancer risk impacts, two scenarios based on different exposure periods were evaluated: one scenario assumed that the evaluated receptor was present at the start of the completed construction in 2008, and would remain through the end of future construction; and the other scenario assumed the receptor would be present for future construction only.¹⁹ Take residential receptor as an example, the first scenario assumes that a residential child reached third trimester as a fetus in utero at the start of the completed construction, and was exposed to the entire completed construction emissions until the construction ceased. This residential child will continue grow to about 6 years old until the future construction begins and will be exposed to the entire future construction emissions. The second scenario assumes that a residential child reaches third trimester as a fetus in utero at the start of the future construction and will be exposed to the entire future construction, only. The exposure parameters used for estimating excess lifetime cancer risks for all potentially exposed populations under these two scenarios are presented in Tables A4.3-CHRA-7a and A4.3-CHRA-7b, respectively.

¹⁹ The child resident reflects the most conservative exposure among all populations evaluated. To capture the worst case cancer risk estimate, for a resident child, one scenario assumes that the fetus reached its third trimester when the existing construction started in 2008. Therefore the baby will be exposed to both the completed and future construction emissions. The second scenario assumes that the fetus reaches its third trimester when the future construction starts in 2014. Therefore the baby will be exposed to the future construction only. Similarly, other sensitive child receptors such as a daycare child and school child were also evaluated under these two scenarios.

1.3.1.2 Calculation of Intake

The dose estimated for each exposure pathway is a function of the concentration of a chemical and the intake of that chemical.

The intake factor for inhalation, IF_{inh} , can be calculated as follows:

$$IF_{inh} = \frac{DBR * ET * EF * ED * CF}{AT}$$

Where:

IF_{inh}	=	Intake Factor for Inhalation (m ³ /kg-day)
DBR	=	Daily Breathing Rate (L/kg-day)
ET	=	Exposure Time (hours/24 hours)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
AT	=	Averaging Time (days)
CF	=	Conversion Factor, 0.001 (m ³ /L)

The chemical intake or dose is estimated by multiplying the inhalation intake factor, IF_{inh} , by the chemical concentration in the air, C_i . This calculation is based on the dose algorithm given in OEHHA Hot Spots guidance (OEHHA, 2003).

1.3.2 Toxicity Assessment

The toxicity assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories – cancer and non-cancer endpoints. Toxicity values used to estimate the likelihood of adverse effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of a risk assessment.

All chemicals emitted from operations that were identified in the BAAQMD Regulation 2 Rule 5, and for which OEHHA provides quantitative toxicity information were included in this analysis. Diesel exhaust, a complex mixture that includes hundreds of individual constituents, is identified by the State of California as a known carcinogen. Under California regulatory guidelines, DPM is used as a surrogate measure of carcinogen exposure for the mixture of chemicals that make up diesel exhaust as a whole. There is currently no acute non-cancer toxicity value available for DPM. Thus, no acute health impacts were

calculated for diesel equipment operations in this evaluation. Besides DPM, 14 other TACs were also evaluated in this HRA. The chemicals and the toxicity values for the chemicals evaluated in this analysis are summarized in Table A4.3-CHRA-1 and described below.

1.3.3 Construction

Cancer risk and chronic non-cancer hazard associated with construction are based on DPM concentrations from the off-road construction equipment and diesel on-road vehicles, and on speciated gasoline exhaust and evaporative TOGs from the gasoline on-road vehicles.

As discussed in *Appendix 4.3-CST*, off-road equipment emissions were evaluated assuming that all off-road equipment use diesel fuel, even though Chevron has indicated that some off-road equipment may use gasoline or other alternative fuel. This approach is conservative from a health risk analysis standpoint because diesel equipment usually contributes higher health risks for exposed populations than equipment using gasoline or other alternative fuel.

As also discussed in *Appendix 4.3-CST*, on-road delivery truck, flatbeds, and haul truck emissions were evaluated assuming that these trucks are diesel fueled. However, some portion of the on-road cars, buses, and pickups for construction worker commuting and transporting are gasoline fueled. The gasoline exhaust and evaporative TOGs were speciated for cancer risk and chronic non-cancer hazard calculation (BAAQMD, 2012).

The acute non-cancer hazard is based on speciated gasoline exhaust and evaporative TOGs (BAAQMD, 2010a).

1.4 CANCER RISK ADJUSTMENT FACTOR

The BAAQMD recommends estimation of cancer risk using methods from OEHHA's Technical Support Document for Cancer Potency Factors: Methodologies for Derivation, Listing of Available Values, and Adjustment to Allow for Early Life Stage Exposures (Cal/EPA, 2009). The OEHHA Technical Support Document proposes the use of age-specific sensitivity factors to account for an "anticipated sensitivity to carcinogens" of infants and children. Under the revised approach, cancer risk estimates are weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to 2 years of age and by a factor of 3 for exposures that occur from 2 years to 16 years of age. The cancer risk adjustment factor (CRAF) is the weighted factor over the entire exposure duration.

Cancer risks associated with construction were adjusted using CRAFs for all child receptor types: resident child, daycare child, community center child, school child, patient child, and recreational child. All adult populations were assumed to be over 16 years old; therefore, no weighting factor was applied in the cancer risks estimations for these populations.

As mentioned above, for sensitive child receptors, two exposure scenarios were evaluated. CRAFs were applied accordingly based on the assumed birth year and exposure duration for each receptor population in each scenario. Tables A4.3-CHRA-8a and b shows the CRAFs used for each receptor type in each scenario.

1.5 HEALTH EFFECTS

1.5.1 Estimation of Cancer Risks

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF).

The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$$\text{Risk}_{\text{inh}} = \sum C_i \times CF \times \text{IF}_{\text{inh}} \times \text{CPF}_i \times \text{CRAF}$$

Where:

Risk_{inh}	=	Cancer Risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)
C_i ($\mu\text{g}/\text{m}^3$)	=	Annual Average Air Concentration for Chemical _i
CF	=	Conversion Factor (mg/ μg)
IF_{inh}	=	Intake Factor for Inhalation ($\text{m}^3/\text{kg}\cdot\text{day}$)
CPF_i	=	Cancer Potency Factor for Chemical _i (mg chemical/kg body weight-day) ⁻¹
CRAF	=	Cancer Risk Adjustment Factor (unitless)

1.5.2 Estimation of Chronic Non-Cancer Hazard Quotients/Indices

The potential for exposure to result in chronic non-cancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the chemical-specific non-cancer chronic reference exposure levels (RELs). When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient (HQ). To evaluate the potential for adverse chronic non-cancer health effects from simultaneous exposure to multiple chemicals, the HQs for all chemicals are summed, yielding an HI.

The equations used to calculate the chemical-specific HQs and the overall HI are:

$$\text{Chronic HQ}_i = C_i / \text{cREL}_i$$

$$\text{Chronic HI} = \sum \text{HQ}_i$$

Where:

Chronic HQ_i = Chronic Hazard Quotient for Chemical_i
(unitless)

Chronic HI = Hazard Index (unitless)

C_i = Annual Average Air Concentration for
Chemical_i (µg/m³)

cREL_i = Chronic Non-cancer Reference Exposure
Level for Chemical_i (µg/m³)

1.5.3 Estimation of Acute Non-Cancer Hazard Quotients/Indices

The potential for exposure to result in acute non-cancer effects is evaluated by comparing the estimated one-hour maximum air concentration to the chemical-specific non-cancer acute RELs. The estimation method for determining the 1-hr maximum concentration was described in the “Air Dispersion Modeling” section. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient or HQ. To evaluate the potential for adverse acute non-cancer health effects from simultaneous exposure to multiple chemicals, the HQs for all chemicals are summed, yielding an HI.

The equations used to calculate the chemical-specific HQs and the overall HI are:

$$\text{Acute HQ}_i = C_i / \text{aREL}_i$$

$$\text{Acute HI} = \sum \text{HQ}_i$$

Where:

Acute HQ _i	=	Acute Hazard Quotient for Chemical _i (unitless)
Acute HI	=	Hazard Index (unitless)
C _i	=	1-hour Maximum Air Concentration for Chemical _i (µg/m ³)
aREL _i	=	Acute Non-cancer Reference Exposure Level for Chemical _i (µg/m ³)

1.6 SUMMARY OF RESULTS

1.6.1 Construction

Table A4.3-CHRA-9a summarizes the cancer risk, chronic HI, PM_{2.5} concentration, and acute HI at the off-site MEISR for: (1) completed and future construction together; and (2) future construction only. Figure A4.3-CHRA-25a-d shows the cancer risk, chronic HI, acute HI and PM_{2.5} related to future construction activities. All health impacts are below the CEQA significance thresholds, and the acute and chronic noncancer health impacts are far below CEQA significance thresholds. Table A4.3-CHRA-9b shows the chemical breakdown that result in the health impacts. As can be seen from Table A4.3-CHRA-9b, the bulk of the cancer risks results from diesel particulate matter were emitted by offroad construction equipment.

1.7 HEALTH IMPACT FROM CONSTRUCTION OF THE MODERNIZATION PROJECT MITIGATION MEASURES

Chevron May construct a 2-megawatt (MW) ground-mounted photovoltaic solar facility on approximately 13 acres of Chevron property, located adjacent to Castro St. as a GHG mitigation measure (Chevron Data Transmittal #43, 2013). In addition, Chevron may install up to 14 tank domes to offset any potential Modernization Project ROG emissions increases. The section below discusses the methodology used to quantify health impact from the construction of these mitigation measures.

1.7.1 Health Impact from Construction of the 2-MW Solar Facility

Emissions used to evaluate impact from construction of the 2-MW solar facility was presented in *Appendix 4.3-CST*. It was conservatively assumed that the construction of the solar facility starts in January of 2014. The health impact was then quantified using the methodology described in Sections 1.1 and 1.2, The

emissions associated with the construction of the 2-MW solar facility are described in Table 4.3-CST-19. Table A4.3-CHRA-10 presents the health impact from construction of the 2-MW solar facility.

1.7.2 Health Impact from Construction of 14 Tank Domes

Emissions used to evaluate impact from construction of the 14 tank domes was presented in *Appendix 4.3-CST*. The exposure assumption was that the residential child reaches third trimester as a fetus in uterus in January 2014, when the one tank dome is constructed as one of the project design features. The first of the 14 tanks will be constructed in 2016 when the residential child is almost 2 years old, and the construction schedule of the tank domes is one at a time and two per year (Chevron Data Transmittal #36O (Rev #3), 2014). Therefore, it will take approximately 7 years to construct all 14 tank domes. The emissions associated with the construction of the 14 tank domes are described in Table 4.3-CST-21. The locations of sources for the 14 tank domes are shown in Figure A4.3-CHRA-3.²⁰ Table A4.3-CHRA-11a presents the calculated intake factor for this residential child. Table A4.3-CHRA-11b presents the health impact from construction of the 14 tank domes.

²⁰ According to Chevron Data Transmittal #31 (Rev #3, 2012), the tank dome installation can occur within a big area. The smaller area close to the Facility boundary and off-site residential receptors as shown in Figure A4.3-CHRA-3 was conservatively selected to represent the dome installation area.

Table A4.3-CHRA-1
Carcinogenic and Chronic Noncarcinogenic Toxicity Values
Chevron Modernization Project
Richmond, California

Chemical	Cancer Potency Factor ^a	Chronic Reference Exposure Level ^a	Acute Reference Exposure Level ^a
	([mg/kg-day] ⁻¹)	(µg/m ³)	(µg/m ³)
DPM	1.1	5	--
1,3-Butadiene	0.6	2.0	660
Acetaldehyde	0.01	140	470
Acrolein	--	0.35	2.5
Benzene	0.1	60	1300
Ethylbenzene	0.0087	2,000	--
Formaldehyde	0.021	9	55
Hexane	--	7,000	--
Methanol	--	4,000	28,000
Methyl Ethyl Ketone	--	--	13,000
Naphthalene	0.12	9	--
Propylene	--	3,000.0	--
Styrene	--	900	21000
Toluene	--	300	37,000
Xylenes	--	700	22,000

Note:

1. Values presented in this table reflect values used in this analysis. A dash "--" implies that this chemical does not have an associated potency factor or reference exposure level.

Abbreviations:

[mg/kg-day]-1: per milligram per kilogram-day

µg/m³: micrograms per cubic meter

ARB: Air Resources Board

DPM: Diesel Particulate Matter

HI: Hazard Index

OEHHA: Office of Environmental Health Hazard Assessment

References:

^a California Environmental Protection Agency (Cal/EPA). 2013. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. August.

Table A4.3-CHRA-2a
Construction TAC Emissions Summary by Source Group - Offroad Construction Equipment
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Fuel	Pollutant	Source Group ¹	Year
Annual	5.79E-02	g/s	Diesel	PM2.5	NEWH2	2008
Annual	1.96E-02	g/s	Diesel	PM2.5	TI	2008
Annual	1.63E-02	g/s	Diesel	PM2.5	TKC	2008
Annual	7.99E-02	g/s	Diesel	PM2.5	NEWH2	2009
Annual	6.78E-02	g/s	Diesel	PM2.5	TI	2009
Annual	2.77E-02	g/s	Diesel	PM2.5	TKC	2009
Annual	1.63E-02	g/s	Diesel	PM2.5	SRU	2008
Annual	2.77E-02	g/s	Diesel	PM2.5	SRU	2009
Annual	1.82E-02	g/s	Diesel	PM2.5	EXISH2	2016
Annual	6.51E-02	g/s	Diesel	PM2.5	NEWH2	2014
Annual	1.12E-02	g/s	Diesel	PM2.5	NEWH2	2015
Annual	1.80E-02	g/s	Diesel	PM2.5	SRU	2014
Annual	2.14E-02	g/s	Diesel	PM2.5	SRU	2015
Annual	3.52E-02	g/s	Diesel	PM2.5	TI	2014
Annual	2.35E-02	g/s	Diesel	PM2.5	TKC	2014
Annual	8.54E-03	g/s	Diesel	PM2.5	TKC	2015
Annual	7.67E-04	g/s	Diesel	PM2.5	WAT	2014
Annual	5.79E-02	g/s	Diesel	DPM	NEWH2	2008
Annual	1.96E-02	g/s	Diesel	DPM	TI	2008
Annual	1.63E-02	g/s	Diesel	DPM	TKC	2008
Annual	7.99E-02	g/s	Diesel	DPM	NEWH2	2009
Annual	6.78E-02	g/s	Diesel	DPM	TI	2009
Annual	2.77E-02	g/s	Diesel	DPM	TKC	2009
Annual	1.63E-02	g/s	Diesel	DPM	SRU	2008
Annual	2.77E-02	g/s	Diesel	DPM	SRU	2009
Annual	1.82E-02	g/s	Diesel	DPM	EXISH2	2016
Annual	6.51E-02	g/s	Diesel	DPM	NEWH2	2014
Annual	1.12E-02	g/s	Diesel	DPM	NEWH2	2015
Annual	1.80E-02	g/s	Diesel	DPM	SRU	2014
Annual	2.14E-02	g/s	Diesel	DPM	SRU	2015
Annual	3.52E-02	g/s	Diesel	DPM	TI	2014
Annual	2.35E-02	g/s	Diesel	DPM	TKC	2014
Annual	8.54E-03	g/s	Diesel	DPM	TKC	2015
Annual	7.67E-04	g/s	Diesel	DPM	WAT	2014

Note:

1. The source groups names are used in the air dispersion modeling to represent one or a series of emissions sources.

Abbreviations:

g: gram
s: second

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	6.6484E-07	g/s	1,3-Butadiene	CAS_G31W	2008
Annual	6.9642E-07	g/s	1,3-Butadiene	EWC_6	2008
Annual	7.7315E-06	g/s	1,3-Butadiene	EWC_7	2008
Annual	2.9939E-06	g/s	1,3-Butadiene	EWC_8	2008
Annual	1.0213E-06	g/s	1,3-Butadiene	EWC_9	2008
Annual	1.2607E-06	g/s	1,3-Butadiene	G31_G91W	2008
Annual	8.7215E-06	g/s	1,3-Butadiene	IWC_1	2008
Annual	2.6595E-05	g/s	1,3-Butadiene	IWCH	2008
Annual	3.8591E-06	g/s	1,3-Butadiene	IWCH_C	2008
Annual	2.1472E-05	g/s	1,3-Butadiene	IWCP	2008
Annual	4.8577E-06	g/s	1,3-Butadiene	IWCP_C	2008
Annual	8.5889E-06	g/s	1,3-Butadiene	IWCT	2008
Annual	1.8216E-06	g/s	1,3-Butadiene	IWCT_C	2008
Annual	2.7251E-06	g/s	1,3-Butadiene	RAMPSW	2008
Annual	1.2175E-06	g/s	1,3-Butadiene	CAS_G31W	2009
Annual	1.2753E-06	g/s	1,3-Butadiene	EWC_6	2009
Annual	1.4159E-05	g/s	1,3-Butadiene	EWC_7	2009
Annual	5.4826E-06	g/s	1,3-Butadiene	EWC_8	2009
Annual	1.8703E-06	g/s	1,3-Butadiene	EWC_9	2009
Annual	2.3087E-06	g/s	1,3-Butadiene	G31_G91W	2009
Annual	1.5926E-05	g/s	1,3-Butadiene	IWC_1	2009
Annual	8.4441E-05	g/s	1,3-Butadiene	IWCH	2009
Annual	9.3434E-06	g/s	1,3-Butadiene	IWCH_C	2009
Annual	2.3148E-05	g/s	1,3-Butadiene	IWCP	2009
Annual	4.3956E-06	g/s	1,3-Butadiene	IWCP_C	2009
Annual	2.0695E-05	g/s	1,3-Butadiene	IWCT	2009
Annual	4.4211E-06	g/s	1,3-Butadiene	IWCT_C	2009
Annual	4.9905E-06	g/s	1,3-Butadiene	RAMPSW	2009
Annual	1.0152E-06	g/s	1,3-Butadiene	CAS_G31W	2014
Annual	1.0634E-06	g/s	1,3-Butadiene	EWC_6	2014
Annual	1.1806E-05	g/s	1,3-Butadiene	EWC_7	2014
Annual	4.5717E-06	g/s	1,3-Butadiene	EWC_8	2014
Annual	1.5595E-06	g/s	1,3-Butadiene	EWC_9	2014
Annual	1.9251E-06	g/s	1,3-Butadiene	G31_G91W	2014
Annual	1.4905E-05	g/s	1,3-Butadiene	IWC_1	2014
Annual	2.2031E-05	g/s	1,3-Butadiene	IWCH	2014
Annual	3.1546E-06	g/s	1,3-Butadiene	IWCH_C	2014
Annual	2.0164E-05	g/s	1,3-Butadiene	IWCP	2014
Annual	3.8328E-06	g/s	1,3-Butadiene	IWCP_C	2014
Annual	6.8773E-06	g/s	1,3-Butadiene	IWCT	2014
Annual	1.9319E-06	g/s	1,3-Butadiene	IWCT_C	2014
Annual	4.1614E-06	g/s	1,3-Butadiene	RAMPSW	2014
Annual	2.4356E-07	g/s	1,3-Butadiene	CAS_G31W	2015
Annual	2.5512E-07	g/s	1,3-Butadiene	EWC_6	2015
Annual	2.8323E-06	g/s	1,3-Butadiene	EWC_7	2015
Annual	1.0968E-06	g/s	1,3-Butadiene	EWC_8	2015
Annual	3.7413E-07	g/s	1,3-Butadiene	EWC_9	2015
Annual	4.6184E-07	g/s	1,3-Butadiene	G31_G91W	2015
Annual	3.6781E-06	g/s	1,3-Butadiene	IWC_1	2015
Annual	4.8264E-06	g/s	1,3-Butadiene	IWCH	2015
Annual	6.5307E-07	g/s	1,3-Butadiene	IWCH_C	2015
Annual	1.3602E-05	g/s	1,3-Butadiene	IWCP	2015
Annual	2.0891E-06	g/s	1,3-Butadiene	IWCP_C	2015
Annual	9.9832E-07	g/s	1,3-Butadiene	RAMPSW	2015
Annual	9.5895E-09	g/s	1,3-Butadiene	CAS_G31W	2016
Annual	1.0045E-08	g/s	1,3-Butadiene	EWC_6	2016
Annual	1.1152E-07	g/s	1,3-Butadiene	EWC_7	2016
Annual	4.3183E-08	g/s	1,3-Butadiene	EWC_8	2016
Annual	1.4731E-08	g/s	1,3-Butadiene	EWC_9	2016
Annual	1.8184E-08	g/s	1,3-Butadiene	G31_G91W	2016
Annual	1.4844E-07	g/s	1,3-Butadiene	IWC_1	2016
Annual	1.0406E-05	g/s	1,3-Butadiene	IWCT	2016
Annual	3.9307E-08	g/s	1,3-Butadiene	RAMPSW	2016
Annual	3.3846E-07	g/s	Acetaldehyde	CAS_G31W	2008
Annual	3.5454E-07	g/s	Acetaldehyde	EWC_6	2008
Annual	3.9360E-06	g/s	Acetaldehyde	EWC_7	2008
Annual	1.5242E-06	g/s	Acetaldehyde	EWC_8	2008
Annual	5.1992E-07	g/s	Acetaldehyde	EWC_9	2008
Annual	6.4181E-07	g/s	Acetaldehyde	G31_G91W	2008
Annual	4.4400E-06	g/s	Acetaldehyde	IWC_1	2008
Annual	1.3539E-05	g/s	Acetaldehyde	IWCH	2008

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	1.9646E-06	g/s	Acetaldehyde	IWCH_C	2008
Annual	1.0931E-05	g/s	Acetaldehyde	IWCP	2008
Annual	2.4730E-06	g/s	Acetaldehyde	IWCP_C	2008
Annual	4.3725E-06	g/s	Acetaldehyde	IWCT	2008
Annual	9.2738E-07	g/s	Acetaldehyde	IWCT_C	2008
Annual	1.3873E-06	g/s	Acetaldehyde	RAMPSW	2008
Annual	6.1982E-07	g/s	Acetaldehyde	CAS_G31W	2009
Annual	6.4926E-07	g/s	Acetaldehyde	EWC_6	2009
Annual	7.2080E-06	g/s	Acetaldehyde	EWC_7	2009
Annual	2.7912E-06	g/s	Acetaldehyde	EWC_8	2009
Annual	9.5213E-07	g/s	Acetaldehyde	EWC_9	2009
Annual	1.1753E-06	g/s	Acetaldehyde	G31_G91W	2009
Annual	8.1079E-06	g/s	Acetaldehyde	IWC_1	2009
Annual	4.2988E-05	g/s	Acetaldehyde	IWCH	2009
Annual	4.7566E-06	g/s	Acetaldehyde	IWCH_C	2009
Annual	1.1784E-05	g/s	Acetaldehyde	IWCP	2009
Annual	2.2377E-06	g/s	Acetaldehyde	IWCP_C	2009
Annual	1.0536E-05	g/s	Acetaldehyde	IWCT	2009
Annual	2.2507E-06	g/s	Acetaldehyde	IWCT_C	2009
Annual	2.5406E-06	g/s	Acetaldehyde	RAMPSW	2009
Annual	5.1684E-07	g/s	Acetaldehyde	CAS_G31W	2014
Annual	5.4139E-07	g/s	Acetaldehyde	EWC_6	2014
Annual	6.0105E-06	g/s	Acetaldehyde	EWC_7	2014
Annual	2.3274E-06	g/s	Acetaldehyde	EWC_8	2014
Annual	7.9394E-07	g/s	Acetaldehyde	EWC_9	2014
Annual	9.8007E-07	g/s	Acetaldehyde	G31_G91W	2014
Annual	7.5878E-06	g/s	Acetaldehyde	IWC_1	2014
Annual	1.1216E-05	g/s	Acetaldehyde	IWCH	2014
Annual	1.6060E-06	g/s	Acetaldehyde	IWCH_C	2014
Annual	1.0265E-05	g/s	Acetaldehyde	IWCP	2014
Annual	1.9513E-06	g/s	Acetaldehyde	IWCP_C	2014
Annual	3.5012E-06	g/s	Acetaldehyde	IWCT	2014
Annual	9.8353E-07	g/s	Acetaldehyde	IWCT_C	2014
Annual	2.1185E-06	g/s	Acetaldehyde	RAMPSW	2014
Annual	1.2399E-07	g/s	Acetaldehyde	CAS_G31W	2015
Annual	1.2988E-07	g/s	Acetaldehyde	EWC_6	2015
Annual	1.4419E-06	g/s	Acetaldehyde	EWC_7	2015
Annual	5.5835E-07	g/s	Acetaldehyde	EWC_8	2015
Annual	1.9047E-07	g/s	Acetaldehyde	EWC_9	2015
Annual	2.3512E-07	g/s	Acetaldehyde	G31_G91W	2015
Annual	1.8725E-06	g/s	Acetaldehyde	IWC_1	2015
Annual	2.4571E-06	g/s	Acetaldehyde	IWCH	2015
Annual	3.3247E-07	g/s	Acetaldehyde	IWCH_C	2015
Annual	6.9247E-06	g/s	Acetaldehyde	IWCP	2015
Annual	1.0636E-06	g/s	Acetaldehyde	IWCP_C	2015
Annual	5.0824E-07	g/s	Acetaldehyde	RAMPSW	2015
Annual	4.8819E-09	g/s	Acetaldehyde	CAS_G31W	2016
Annual	5.1138E-09	g/s	Acetaldehyde	EWC_6	2016
Annual	5.6773E-08	g/s	Acetaldehyde	EWC_7	2016
Annual	2.1984E-08	g/s	Acetaldehyde	EWC_8	2016
Annual	7.4993E-09	g/s	Acetaldehyde	EWC_9	2016
Annual	9.2573E-09	g/s	Acetaldehyde	G31_G91W	2016
Annual	7.5568E-08	g/s	Acetaldehyde	IWC_1	2016
Annual	5.2977E-06	g/s	Acetaldehyde	IWCT	2016
Annual	2.0011E-08	g/s	Acetaldehyde	RAMPSW	2016
Annual	1.5714E-07	g/s	Acrolein	CAS_G31W	2008
Annual	1.6461E-07	g/s	Acrolein	EWC_6	2008
Annual	1.8274E-06	g/s	Acrolein	EWC_7	2008
Annual	7.0764E-07	g/s	Acrolein	EWC_8	2008
Annual	2.4139E-07	g/s	Acrolein	EWC_9	2008
Annual	2.9798E-07	g/s	Acrolein	G31_G91W	2008
Annual	2.0614E-06	g/s	Acrolein	IWC_1	2008
Annual	6.2861E-06	g/s	Acrolein	IWCH	2008
Annual	9.1214E-07	g/s	Acrolein	IWCH_C	2008
Annual	5.0753E-06	g/s	Acrolein	IWCP	2008
Annual	1.1482E-06	g/s	Acrolein	IWCP_C	2008
Annual	2.0301E-06	g/s	Acrolein	IWCT	2008
Annual	4.3057E-07	g/s	Acrolein	IWCT_C	2008
Annual	6.4413E-07	g/s	Acrolein	RAMPSW	2008
Annual	2.8778E-07	g/s	Acrolein	CAS_G31W	2009
Annual	3.0144E-07	g/s	Acrolein	EWC_6	2009

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	3.3466E-06	g/s	Acrolein	EWC_7	2009
Annual	1.2959E-06	g/s	Acrolein	EWC_8	2009
Annual	4.4206E-07	g/s	Acrolein	EWC_9	2009
Annual	5.4570E-07	g/s	Acrolein	G31_G91W	2009
Annual	3.7644E-06	g/s	Acrolein	IWC_1	2009
Annual	1.9959E-05	g/s	Acrolein	IWCH	2009
Annual	2.2084E-06	g/s	Acrolein	IWCH_C	2009
Annual	5.4713E-06	g/s	Acrolein	IWCP	2009
Annual	1.0389E-06	g/s	Acrolein	IWCP_C	2009
Annual	4.8916E-06	g/s	Acrolein	IWCT	2009
Annual	1.0450E-06	g/s	Acrolein	IWCT_C	2009
Annual	1.1796E-06	g/s	Acrolein	RAMPSW	2009
Annual	2.3996E-07	g/s	Acrolein	CAS_G31W	2014
Annual	2.5136E-07	g/s	Acrolein	EWC_6	2014
Annual	2.7906E-06	g/s	Acrolein	EWC_7	2014
Annual	1.0806E-06	g/s	Acrolein	EWC_8	2014
Annual	3.6862E-07	g/s	Acrolein	EWC_9	2014
Annual	4.5503E-07	g/s	Acrolein	G31_G91W	2014
Annual	3.5229E-06	g/s	Acrolein	IWC_1	2014
Annual	5.2072E-06	g/s	Acrolein	IWCH	2014
Annual	7.4563E-07	g/s	Acrolein	IWCH_C	2014
Annual	4.7660E-06	g/s	Acrolein	IWCP	2014
Annual	9.0595E-07	g/s	Acrolein	IWCP_C	2014
Annual	1.6255E-06	g/s	Acrolein	IWCT	2014
Annual	4.5664E-07	g/s	Acrolein	IWCT_C	2014
Annual	9.8360E-07	g/s	Acrolein	RAMPSW	2014
Annual	5.7568E-08	g/s	Acrolein	CAS_G31W	2015
Annual	6.0302E-08	g/s	Acrolein	EWC_6	2015
Annual	6.6946E-07	g/s	Acrolein	EWC_7	2015
Annual	2.5924E-07	g/s	Acrolein	EWC_8	2015
Annual	8.8432E-08	g/s	Acrolein	EWC_9	2015
Annual	1.0916E-07	g/s	Acrolein	G31_G91W	2015
Annual	8.6936E-07	g/s	Acrolein	IWC_1	2015
Annual	1.1408E-06	g/s	Acrolein	IWCH	2015
Annual	1.5436E-07	g/s	Acrolein	IWCH_C	2015
Annual	3.2151E-06	g/s	Acrolein	IWCP	2015
Annual	4.9380E-07	g/s	Acrolein	IWCP_C	2015
Annual	2.3597E-07	g/s	Acrolein	RAMPSW	2015
Annual	2.2666E-09	g/s	Acrolein	CAS_G31W	2016
Annual	2.3743E-09	g/s	Acrolein	EWC_6	2016
Annual	2.6359E-08	g/s	Acrolein	EWC_7	2016
Annual	1.0207E-08	g/s	Acrolein	EWC_8	2016
Annual	3.4818E-09	g/s	Acrolein	EWC_9	2016
Annual	4.2981E-09	g/s	Acrolein	G31_G91W	2016
Annual	3.5085E-08	g/s	Acrolein	IWC_1	2016
Annual	2.4596E-06	g/s	Acrolein	IWCT	2016
Annual	9.2907E-09	g/s	Acrolein	RAMPSW	2016
Annual	8.9097E-06	g/s	Benzene	CAS_G31W	2008
Annual	9.3329E-06	g/s	Benzene	EWC_6	2008
Annual	1.0361E-04	g/s	Benzene	EWC_7	2008
Annual	4.0122E-05	g/s	Benzene	EWC_8	2008
Annual	1.3687E-05	g/s	Benzene	EWC_9	2008
Annual	1.6895E-05	g/s	Benzene	G31_G91W	2008
Annual	4.7734E-05	g/s	Benzene	IWC_1	2008
Annual	2.1751E-04	g/s	Benzene	IWCH	2008
Annual	1.7843E-05	g/s	Benzene	IWCH_C	2008
Annual	1.9450E-04	g/s	Benzene	IWCP	2008
Annual	2.2636E-05	g/s	Benzene	IWCP_C	2008
Annual	7.7800E-05	g/s	Benzene	IWCT	2008
Annual	8.4884E-06	g/s	Benzene	IWCT_C	2008
Annual	3.6521E-05	g/s	Benzene	RAMPSW	2008
Annual	1.6358E-05	g/s	Benzene	CAS_G31W	2009
Annual	1.7135E-05	g/s	Benzene	EWC_6	2009
Annual	1.9023E-04	g/s	Benzene	EWC_7	2009
Annual	7.3661E-05	g/s	Benzene	EWC_8	2009
Annual	2.5128E-05	g/s	Benzene	EWC_9	2009
Annual	3.1018E-05	g/s	Benzene	G31_G91W	2009
Annual	8.7271E-05	g/s	Benzene	IWC_1	2009
Annual	6.9277E-04	g/s	Benzene	IWCH	2009
Annual	4.3260E-05	g/s	Benzene	IWCH_C	2009
Annual	2.1063E-04	g/s	Benzene	IWCP	2009

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	2.0515E-05	g/s	Benzene	IWCP_C	2009
Annual	1.8832E-04	g/s	Benzene	IWCT	2009
Annual	2.0635E-05	g/s	Benzene	IWCT_C	2009
Annual	6.7050E-05	g/s	Benzene	RAMPSW	2009
Annual	1.6061E-05	g/s	Benzene	CAS_G31W	2014
Annual	1.6824E-05	g/s	Benzene	EWC_6	2014
Annual	1.8678E-04	g/s	Benzene	EWC_7	2014
Annual	7.2325E-05	g/s	Benzene	EWC_8	2014
Annual	2.4672E-05	g/s	Benzene	EWC_9	2014
Annual	3.0456E-05	g/s	Benzene	G31_G91W	2014
Annual	8.3568E-05	g/s	Benzene	IWC_1	2014
Annual	1.8636E-04	g/s	Benzene	IWCH	2014
Annual	1.4668E-05	g/s	Benzene	IWCH_C	2014
Annual	1.9154E-04	g/s	Benzene	IWCP	2014
Annual	1.7988E-05	g/s	Benzene	IWCP_C	2014
Annual	6.5329E-05	g/s	Benzene	IWCT	2014
Annual	9.0667E-06	g/s	Benzene	IWCT_C	2014
Annual	6.5833E-05	g/s	Benzene	RAMPSW	2014
Annual	3.9971E-06	g/s	Benzene	CAS_G31W	2015
Annual	4.1869E-06	g/s	Benzene	EWC_6	2015
Annual	4.6482E-05	g/s	Benzene	EWC_7	2015
Annual	1.7999E-05	g/s	Benzene	EWC_8	2015
Annual	6.1400E-06	g/s	Benzene	EWC_9	2015
Annual	7.5794E-06	g/s	Benzene	G31_G91W	2015
Annual	2.0716E-05	g/s	Benzene	IWC_1	2015
Annual	4.1042E-05	g/s	Benzene	IWCH	2015
Annual	3.0421E-06	g/s	Benzene	IWCH_C	2015
Annual	1.3019E-04	g/s	Benzene	IWCP	2015
Annual	9.8276E-06	g/s	Benzene	IWCP_C	2015
Annual	1.6384E-05	g/s	Benzene	RAMPSW	2015
Annual	1.6249E-07	g/s	Benzene	CAS_G31W	2016
Annual	1.7021E-07	g/s	Benzene	EWC_6	2016
Annual	1.8897E-06	g/s	Benzene	EWC_7	2016
Annual	7.3173E-07	g/s	Benzene	EWC_8	2016
Annual	2.4961E-07	g/s	Benzene	EWC_9	2016
Annual	3.0813E-07	g/s	Benzene	G31_G91W	2016
Annual	8.3932E-07	g/s	Benzene	IWC_1	2016
Annual	1.0030E-04	g/s	Benzene	IWCT	2016
Annual	6.6605E-07	g/s	Benzene	RAMPSW	2016
Annual	8.5222E-06	g/s	Diesel PM	CAS_G31T	2008
Annual	4.2631E-08	g/s	Diesel PM	CAS_G31W	2008
Annual	3.5708E-05	g/s	Diesel PM	ETC_6	2008
Annual	3.9642E-04	g/s	Diesel PM	ETC_7	2008
Annual	1.5351E-04	g/s	Diesel PM	ETC_8	2008
Annual	1.1701E-04	g/s	Diesel PM	ETC_9	2008
Annual	4.4656E-08	g/s	Diesel PM	EWC_6	2008
Annual	4.9576E-07	g/s	Diesel PM	EWC_7	2008
Annual	1.9197E-07	g/s	Diesel PM	EWC_8	2008
Annual	6.5487E-08	g/s	Diesel PM	EWC_9	2008
Annual	8.0839E-08	g/s	Diesel PM	G31_G91W	2008
Annual	1.8109E-05	g/s	Diesel PM	ITC_IDL	2008
Annual	2.2821E-05	g/s	Diesel PM	ITC_IDLN	2008
Annual	3.2943E-05	g/s	Diesel PM	ITCH_1	2008
Annual	1.1647E-05	g/s	Diesel PM	ITCH_2	2008
Annual	2.7488E-04	g/s	Diesel PM	ITCH_IDL	2008
Annual	1.5975E-05	g/s	Diesel PM	ITCHIDLN	2008
Annual	3.2412E-05	g/s	Diesel PM	ITCHN	2008
Annual	2.1738E-05	g/s	Diesel PM	ITCP_1	2008
Annual	5.2424E-06	g/s	Diesel PM	ITCP_2	2008
Annual	3.3755E-04	g/s	Diesel PM	ITCP_IDL	2008
Annual	2.2821E-06	g/s	Diesel PM	ITCPIDLN	2008
Annual	4.6302E-06	g/s	Diesel PM	ITCPN	2008
Annual	5.3125E-07	g/s	Diesel PM	ITCT_1	2008
Annual	1.2812E-07	g/s	Diesel PM	ITCT_2	2008
Annual	8.5060E-05	g/s	Diesel PM	ITCT_IDL	2008
Annual	6.8395E-04	g/s	Diesel PM	ITCTIDLN	2008
Annual	9.2605E-06	g/s	Diesel PM	ITCTN	2008
Annual	3.7367E-03	g/s	Diesel PM	ITCW	2008
Annual	6.1648E-08	g/s	Diesel PM	IWC_1	2008
Annual	1.6490E-04	g/s	Diesel PM	IWCH	2008
Annual	2.1957E-04	g/s	Diesel PM	IWCP	2008

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	5.5024E-05	g/s	Diesel PM	IWCT	2008
Annual	3.4932E-05	g/s	Diesel PM	RAMPST	2008
Annual	1.7474E-07	g/s	Diesel PM	RAMPSW	2008
Annual	4.5872E-06	g/s	Diesel PM	CAS_G31T	2009
Annual	8.4152E-08	g/s	Diesel PM	CAS_G31W	2009
Annual	1.9220E-05	g/s	Diesel PM	ETC_6	2009
Annual	2.1338E-04	g/s	Diesel PM	ETC_7	2009
Annual	8.2627E-05	g/s	Diesel PM	ETC_8	2009
Annual	6.2980E-05	g/s	Diesel PM	ETC_9	2009
Annual	8.8149E-08	g/s	Diesel PM	EWC_6	2009
Annual	9.7862E-07	g/s	Diesel PM	EWC_7	2009
Annual	3.7895E-07	g/s	Diesel PM	EWC_8	2009
Annual	1.2927E-07	g/s	Diesel PM	EWC_9	2009
Annual	1.5957E-07	g/s	Diesel PM	G31_G91W	2009
Annual	1.7659E-05	g/s	Diesel PM	ITC_IDLN	2009
Annual	6.3108E-04	g/s	Diesel PM	ITCH_IDL	2009
Annual	1.1037E-05	g/s	Diesel PM	ITCHIDLN	2009
Annual	2.3615E-05	g/s	Diesel PM	ITCHN	2009
Annual	2.9757E-04	g/s	Diesel PM	ITCP_IDL	2009
Annual	4.4148E-06	g/s	Diesel PM	ITCPIDLN	2009
Annual	9.4461E-06	g/s	Diesel PM	ITCPN	2009
Annual	2.0417E-04	g/s	Diesel PM	ITCT_IDL	2009
Annual	1.1350E-03	g/s	Diesel PM	ITCTIDLN	2009
Annual	4.7231E-06	g/s	Diesel PM	ITCTN	2009
Annual	6.5709E-03	g/s	Diesel PM	ITCW	2009
Annual	1.2169E-07	g/s	Diesel PM	IWC_1	2009
Annual	5.8185E-04	g/s	Diesel PM	IWCH	2009
Annual	2.0366E-04	g/s	Diesel PM	IWCP	2009
Annual	1.3679E-04	g/s	Diesel PM	IWCT	2009
Annual	1.8803E-05	g/s	Diesel PM	RAMPST	2009
Annual	3.4494E-07	g/s	Diesel PM	RAMPSW	2009
Annual	1.3863E-06	g/s	Diesel PM	CAS_G31T	2014
Annual	7.0028E-08	g/s	Diesel PM	CAS_G31W	2014
Annual	5.8087E-06	g/s	Diesel PM	ETC_6	2014
Annual	6.4487E-05	g/s	Diesel PM	ETC_7	2014
Annual	2.4971E-05	g/s	Diesel PM	ETC_8	2014
Annual	1.9034E-05	g/s	Diesel PM	ETC_9	2014
Annual	7.3354E-08	g/s	Diesel PM	EWC_6	2014
Annual	8.1436E-07	g/s	Diesel PM	EWC_7	2014
Annual	3.1535E-07	g/s	Diesel PM	EWC_8	2014
Annual	1.0757E-07	g/s	Diesel PM	EWC_9	2014
Annual	1.3279E-07	g/s	Diesel PM	G31_G91W	2014
Annual	2.0313E-07	g/s	Diesel PM	ITC_IDL	2014
Annual	1.1114E-06	g/s	Diesel PM	ITC_IDLN	2014
Annual	5.6076E-07	g/s	Diesel PM	ITCH_1	2014
Annual	1.9826E-07	g/s	Diesel PM	ITCH_2	2014
Annual	5.4450E-05	g/s	Diesel PM	ITCH_IDL	2014
Annual	1.3060E-06	g/s	Diesel PM	ITCHIDLN	2014
Annual	6.6691E-06	g/s	Diesel PM	ITCHN	2014
Annual	3.9471E-05	g/s	Diesel PM	ITCP_IDL	2014
Annual	4.9982E-07	g/s	Diesel PM	ITCPIDLN	2014
Annual	4.4718E-06	g/s	Diesel PM	ITCPN	2014
Annual	2.1704E-05	g/s	Diesel PM	ITCT_IDL	2014
Annual	1.1542E-04	g/s	Diesel PM	ITCTIDLN	2014
Annual	0.0000E+00	g/s	Diesel PM	ITCTN	2014
Annual	2.8065E-03	g/s	Diesel PM	ITCW	2014
Annual	1.0127E-07	g/s	Diesel PM	IWC_1	2014
Annual	4.2224E-04	g/s	Diesel PM	IWCH	2014
Annual	3.7971E-04	g/s	Diesel PM	IWCP	2014
Annual	1.8235E-04	g/s	Diesel PM	IWCT	2014
Annual	5.6825E-06	g/s	Diesel PM	RAMPST	2014
Annual	2.8704E-07	g/s	Diesel PM	RAMPSW	2014
Annual	1.9104E-07	g/s	Diesel PM	CAS_G31T	2015
Annual	1.7393E-08	g/s	Diesel PM	CAS_G31W	2015
Annual	8.0046E-07	g/s	Diesel PM	ETC_6	2015
Annual	8.8865E-06	g/s	Diesel PM	ETC_7	2015
Annual	3.4411E-06	g/s	Diesel PM	ETC_8	2015
Annual	2.6229E-06	g/s	Diesel PM	ETC_9	2015
Annual	1.8220E-08	g/s	Diesel PM	EWC_6	2015
Annual	2.0227E-07	g/s	Diesel PM	EWC_7	2015
Annual	7.8326E-08	g/s	Diesel PM	EWC_8	2015

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	2.6719E-08	g/s	Diesel PM	EW_C_9	2015
Annual	3.2982E-08	g/s	Diesel PM	G31_G91W	2015
Annual	1.7549E-07	g/s	Diesel PM	ITC_IDLN	2015
Annual	4.7312E-06	g/s	Diesel PM	ITCH_IDL	2015
Annual	0.0000E+00	g/s	Diesel PM	ITCHIDLN	2015
Annual	0.0000E+00	g/s	Diesel PM	ITCHN	2015
Annual	1.4953E-05	g/s	Diesel PM	ITCP_IDL	2015
Annual	1.7549E-07	g/s	Diesel PM	ITCPIDLN	2015
Annual	1.5736E-06	g/s	Diesel PM	ITCPN	2015
Annual	1.9684E-05	g/s	Diesel PM	ITCTIDLN	2015
Annual	0.0000E+00	g/s	Diesel PM	ITCTN	2015
Annual	4.7848E-04	g/s	Diesel PM	ITCW	2015
Annual	2.5153E-08	g/s	Diesel PM	IWC_1	2015
Annual	5.4806E-05	g/s	Diesel PM	IWCH	2015
Annual	1.7885E-04	g/s	Diesel PM	IWCP	2015
Annual	7.8307E-07	g/s	Diesel PM	RAMPST	2015
Annual	7.1295E-08	g/s	Diesel PM	RAMPSW	2015
Annual	1.1100E-07	g/s	Diesel PM	CAS_G31T	2016
Annual	6.6576E-10	g/s	Diesel PM	CAS_G31W	2016
Annual	4.6509E-07	g/s	Diesel PM	ETC_6	2016
Annual	5.1634E-06	g/s	Diesel PM	ETC_7	2016
Annual	1.9994E-06	g/s	Diesel PM	ETC_8	2016
Annual	1.5240E-06	g/s	Diesel PM	ETC_9	2016
Annual	6.9738E-10	g/s	Diesel PM	EW_C_6	2016
Annual	7.7422E-09	g/s	Diesel PM	EW_C_7	2016
Annual	2.9980E-09	g/s	Diesel PM	EW_C_8	2016
Annual	1.0227E-09	g/s	Diesel PM	EW_C_9	2016
Annual	1.2624E-09	g/s	Diesel PM	G31_G91W	2016
Annual	5.1250E-07	g/s	Diesel PM	ITC_IDL	2016
Annual	1.8418E-06	g/s	Diesel PM	ITCH_1	2016
Annual	6.5116E-07	g/s	Diesel PM	ITCH_2	2016
Annual	5.1250E-07	g/s	Diesel PM	ITCH_IDL	2016
Annual	9.6274E-10	g/s	Diesel PM	IWC_1	2016
Annual	3.9753E-07	g/s	Diesel PM	IWCT	2016
Annual	4.5499E-07	g/s	Diesel PM	RAMPST	2016
Annual	2.7289E-09	g/s	Diesel PM	RAMPSW	2016
Annual	3.2439E-06	g/s	Ethylbenzene	CAS_G31W	2008
Annual	3.3980E-06	g/s	Ethylbenzene	EW_C_6	2008
Annual	3.7724E-05	g/s	Ethylbenzene	EW_C_7	2008
Annual	1.4608E-05	g/s	Ethylbenzene	EW_C_8	2008
Annual	4.9831E-06	g/s	Ethylbenzene	EW_C_9	2008
Annual	6.1513E-06	g/s	Ethylbenzene	G31_G91W	2008
Annual	1.9506E-05	g/s	Ethylbenzene	IWC_1	2008
Annual	8.3463E-05	g/s	Ethylbenzene	IWCH	2008
Annual	7.5382E-06	g/s	Ethylbenzene	IWCH_C	2008
Annual	7.3683E-05	g/s	Ethylbenzene	IWCP	2008
Annual	9.5472E-06	g/s	Ethylbenzene	IWCP_C	2008
Annual	2.9473E-05	g/s	Ethylbenzene	IWCT	2008
Annual	3.5802E-06	g/s	Ethylbenzene	IWCT_C	2008
Annual	1.3297E-05	g/s	Ethylbenzene	RAMPSW	2008
Annual	5.9543E-06	g/s	Ethylbenzene	CAS_G31W	2009
Annual	6.2371E-06	g/s	Ethylbenzene	EW_C_6	2009
Annual	6.9244E-05	g/s	Ethylbenzene	EW_C_7	2009
Annual	2.6813E-05	g/s	Ethylbenzene	EW_C_8	2009
Annual	9.1466E-06	g/s	Ethylbenzene	EW_C_9	2009
Annual	1.1291E-05	g/s	Ethylbenzene	G31_G91W	2009
Annual	3.5654E-05	g/s	Ethylbenzene	IWC_1	2009
Annual	2.6572E-04	g/s	Ethylbenzene	IWCH	2009
Annual	1.8271E-05	g/s	Ethylbenzene	IWCH_C	2009
Annual	7.9750E-05	g/s	Ethylbenzene	IWCP	2009
Annual	8.6499E-06	g/s	Ethylbenzene	IWCP_C	2009
Annual	7.1301E-05	g/s	Ethylbenzene	IWCT	2009
Annual	8.7002E-06	g/s	Ethylbenzene	IWCT_C	2009
Annual	2.4407E-05	g/s	Ethylbenzene	RAMPSW	2009
Annual	5.7720E-06	g/s	Ethylbenzene	CAS_G31W	2014
Annual	6.0462E-06	g/s	Ethylbenzene	EW_C_6	2014
Annual	6.7124E-05	g/s	Ethylbenzene	EW_C_7	2014
Annual	2.5992E-05	g/s	Ethylbenzene	EW_C_8	2014
Annual	8.8666E-06	g/s	Ethylbenzene	EW_C_9	2014
Annual	1.0945E-05	g/s	Ethylbenzene	G31_G91W	2014
Annual	3.3998E-05	g/s	Ethylbenzene	IWC_1	2014

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	7.1199E-05	g/s	Ethylbenzene	IWCH	2014
Annual	6.1893E-06	g/s	Ethylbenzene	IWCH_C	2014
Annual	7.2156E-05	g/s	Ethylbenzene	IWCP	2014
Annual	7.5755E-06	g/s	Ethylbenzene	IWCP_C	2014
Annual	2.4611E-05	g/s	Ethylbenzene	IWCT	2014
Annual	3.8184E-06	g/s	Ethylbenzene	IWCT_C	2014
Annual	2.3659E-05	g/s	Ethylbenzene	RAMPSW	2014
Annual	1.4327E-06	g/s	Ethylbenzene	CAS_G31W	2015
Annual	1.5008E-06	g/s	Ethylbenzene	EWC_6	2015
Annual	1.6661E-05	g/s	Ethylbenzene	EWC_7	2015
Annual	6.4518E-06	g/s	Ethylbenzene	EWC_8	2015
Annual	2.2009E-06	g/s	Ethylbenzene	EWC_9	2015
Annual	2.7168E-06	g/s	Ethylbenzene	G31_G91W	2015
Annual	8.4212E-06	g/s	Ethylbenzene	IWC_1	2015
Annual	1.5670E-05	g/s	Ethylbenzene	IWCH	2015
Annual	1.2832E-06	g/s	Ethylbenzene	IWCH_C	2015
Annual	4.9003E-05	g/s	Ethylbenzene	IWCP	2015
Annual	4.1368E-06	g/s	Ethylbenzene	IWCP_C	2015
Annual	5.8727E-06	g/s	Ethylbenzene	RAMPSW	2015
Annual	5.8116E-08	g/s	Ethylbenzene	CAS_G31W	2016
Annual	6.0877E-08	g/s	Ethylbenzene	EWC_6	2016
Annual	6.7584E-07	g/s	Ethylbenzene	EWC_7	2016
Annual	2.6171E-07	g/s	Ethylbenzene	EWC_8	2016
Annual	8.9274E-08	g/s	Ethylbenzene	EWC_9	2016
Annual	1.1020E-07	g/s	Ethylbenzene	G31_G91W	2016
Annual	3.4095E-07	g/s	Ethylbenzene	IWC_1	2016
Annual	3.7723E-05	g/s	Ethylbenzene	IWCT	2016
Annual	2.3822E-07	g/s	Ethylbenzene	RAMPSW	2016
Annual	1.9099E-06	g/s	Formaldehyde	CAS_G31W	2008
Annual	2.0006E-06	g/s	Formaldehyde	EWC_6	2008
Annual	2.2211E-05	g/s	Formaldehyde	EWC_7	2008
Annual	8.6006E-06	g/s	Formaldehyde	EWC_8	2008
Annual	2.9339E-06	g/s	Formaldehyde	EWC_9	2008
Annual	3.6217E-06	g/s	Formaldehyde	G31_G91W	2008
Annual	2.5054E-05	g/s	Formaldehyde	IWC_1	2008
Annual	7.6401E-05	g/s	Formaldehyde	IWCH	2008
Annual	1.1086E-05	g/s	Formaldehyde	IWCH_C	2008
Annual	6.1684E-05	g/s	Formaldehyde	IWCP	2008
Annual	1.3955E-05	g/s	Formaldehyde	IWCP_C	2008
Annual	2.4674E-05	g/s	Formaldehyde	IWCT	2008
Annual	5.2331E-06	g/s	Formaldehyde	IWCT_C	2008
Annual	7.8286E-06	g/s	Formaldehyde	RAMPSW	2008
Annual	3.4976E-06	g/s	Formaldehyde	CAS_G31W	2009
Annual	3.6637E-06	g/s	Formaldehyde	EWC_6	2009
Annual	4.0674E-05	g/s	Formaldehyde	EWC_7	2009
Annual	1.5750E-05	g/s	Formaldehyde	EWC_8	2009
Annual	5.3727E-06	g/s	Formaldehyde	EWC_9	2009
Annual	6.6323E-06	g/s	Formaldehyde	G31_G91W	2009
Annual	4.5752E-05	g/s	Formaldehyde	IWC_1	2009
Annual	2.4257E-04	g/s	Formaldehyde	IWCH	2009
Annual	2.6841E-05	g/s	Formaldehyde	IWCH_C	2009
Annual	6.6497E-05	g/s	Formaldehyde	IWCP	2009
Annual	1.2627E-05	g/s	Formaldehyde	IWCP_C	2009
Annual	5.9452E-05	g/s	Formaldehyde	IWCT	2009
Annual	1.2701E-05	g/s	Formaldehyde	IWCT_C	2009
Annual	1.4336E-05	g/s	Formaldehyde	RAMPSW	2009
Annual	2.9165E-06	g/s	Formaldehyde	CAS_G31W	2014
Annual	3.0550E-06	g/s	Formaldehyde	EWC_6	2014
Annual	3.3916E-05	g/s	Formaldehyde	EWC_7	2014
Annual	1.3133E-05	g/s	Formaldehyde	EWC_8	2014
Annual	4.4801E-06	g/s	Formaldehyde	EWC_9	2014
Annual	5.5304E-06	g/s	Formaldehyde	G31_G91W	2014
Annual	4.2817E-05	g/s	Formaldehyde	IWC_1	2014
Annual	6.3288E-05	g/s	Formaldehyde	IWCH	2014
Annual	9.0623E-06	g/s	Formaldehyde	IWCH_C	2014
Annual	5.7925E-05	g/s	Formaldehyde	IWCP	2014
Annual	1.1011E-05	g/s	Formaldehyde	IWCP_C	2014
Annual	1.9757E-05	g/s	Formaldehyde	IWCT	2014
Annual	5.5499E-06	g/s	Formaldehyde	IWCT_C	2014
Annual	1.1955E-05	g/s	Formaldehyde	RAMPSW	2014
Annual	6.9967E-07	g/s	Formaldehyde	CAS_G31W	2015

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	7.3290E-07	g/s	Formaldehyde	EWC_6	2015
Annual	8.1366E-06	g/s	Formaldehyde	EWC_7	2015
Annual	3.1507E-06	g/s	Formaldehyde	EWC_8	2015
Annual	1.0748E-06	g/s	Formaldehyde	EWC_9	2015
Annual	1.3267E-06	g/s	Formaldehyde	G31_G91W	2015
Annual	1.0566E-05	g/s	Formaldehyde	IWC_1	2015
Annual	1.3865E-05	g/s	Formaldehyde	IWCH	2015
Annual	1.8761E-06	g/s	Formaldehyde	IWCH_C	2015
Annual	3.9075E-05	g/s	Formaldehyde	IWCP	2015
Annual	6.0015E-06	g/s	Formaldehyde	IWCP_C	2015
Annual	2.8679E-06	g/s	Formaldehyde	RAMPSW	2015
Annual	2.7548E-08	g/s	Formaldehyde	CAS_G31W	2016
Annual	2.8856E-08	g/s	Formaldehyde	EWC_6	2016
Annual	3.2036E-07	g/s	Formaldehyde	EWC_7	2016
Annual	1.2405E-07	g/s	Formaldehyde	EWC_8	2016
Annual	4.2317E-08	g/s	Formaldehyde	EWC_9	2016
Annual	5.2238E-08	g/s	Formaldehyde	G31_G91W	2016
Annual	4.2642E-07	g/s	Formaldehyde	IWC_1	2016
Annual	2.9894E-05	g/s	Formaldehyde	IWCT	2016
Annual	1.1292E-07	g/s	Formaldehyde	RAMPSW	2016
Annual	2.7276E-05	g/s	Hexane	CAS_G31W	2008
Annual	2.8571E-05	g/s	Hexane	EWC_6	2008
Annual	3.1719E-04	g/s	Hexane	EWC_7	2008
Annual	1.2283E-04	g/s	Hexane	EWC_8	2008
Annual	4.1899E-05	g/s	Hexane	EWC_9	2008
Annual	5.1722E-05	g/s	Hexane	G31_G91W	2008
Annual	6.2018E-05	g/s	Hexane	IWC_1	2008
Annual	4.9689E-04	g/s	Hexane	IWCH	2008
Annual	1.3420E-05	g/s	Hexane	IWCH_C	2008
Annual	4.8199E-04	g/s	Hexane	IWCP	2008
Annual	1.7641E-05	g/s	Hexane	IWCP_C	2008
Annual	1.9280E-04	g/s	Hexane	IWCT	2008
Annual	6.6153E-06	g/s	Hexane	IWCT_C	2008
Annual	1.1180E-04	g/s	Hexane	RAMPSW	2008
Annual	5.0127E-05	g/s	Hexane	CAS_G31W	2009
Annual	5.2508E-05	g/s	Hexane	EWC_6	2009
Annual	5.8293E-04	g/s	Hexane	EWC_7	2009
Annual	2.2573E-04	g/s	Hexane	EWC_8	2009
Annual	7.7001E-05	g/s	Hexane	EWC_9	2009
Annual	9.5053E-05	g/s	Hexane	G31_G91W	2009
Annual	1.1370E-04	g/s	Hexane	IWC_1	2009
Annual	1.5870E-03	g/s	Hexane	IWCH	2009
Annual	3.2740E-05	g/s	Hexane	IWCH_C	2009
Annual	5.2368E-04	g/s	Hexane	IWCP	2009
Annual	1.6103E-05	g/s	Hexane	IWCP_C	2009
Annual	4.6820E-04	g/s	Hexane	IWCT	2009
Annual	1.6197E-05	g/s	Hexane	IWCT_C	2009
Annual	2.0547E-04	g/s	Hexane	RAMPSW	2009
Annual	5.2155E-05	g/s	Hexane	CAS_G31W	2014
Annual	5.4632E-05	g/s	Hexane	EWC_6	2014
Annual	6.0652E-04	g/s	Hexane	EWC_7	2014
Annual	2.3486E-04	g/s	Hexane	EWC_8	2014
Annual	8.0117E-05	g/s	Hexane	EWC_9	2014
Annual	9.8899E-05	g/s	Hexane	G31_G91W	2014
Annual	1.1451E-04	g/s	Hexane	IWC_1	2014
Annual	4.3806E-04	g/s	Hexane	IWCH	2014
Annual	1.1319E-05	g/s	Hexane	IWCH_C	2014
Annual	4.9065E-04	g/s	Hexane	IWCP	2014
Annual	1.4465E-05	g/s	Hexane	IWCP_C	2014
Annual	1.6735E-04	g/s	Hexane	IWCT	2014
Annual	7.2909E-06	g/s	Hexane	IWCT_C	2014
Annual	2.1378E-04	g/s	Hexane	RAMPSW	2014
Annual	1.3128E-05	g/s	Hexane	CAS_G31W	2015
Annual	1.3752E-05	g/s	Hexane	EWC_6	2015
Annual	1.5267E-04	g/s	Hexane	EWC_7	2015
Annual	5.9118E-05	g/s	Hexane	EWC_8	2015
Annual	2.0167E-05	g/s	Hexane	EWC_9	2015
Annual	2.4894E-05	g/s	Hexane	G31_G91W	2015
Annual	2.8660E-05	g/s	Hexane	IWC_1	2015
Annual	9.6887E-05	g/s	Hexane	IWCH	2015
Annual	2.3671E-06	g/s	Hexane	IWCH_C	2015

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	3.3519E-04	g/s	Hexane	IWCP	2015
Annual	7.9829E-06	g/s	Hexane	IWCP_C	2015
Annual	5.3812E-05	g/s	Hexane	RAMPSW	2015
Annual	5.3878E-07	g/s	Hexane	CAS_G31W	2016
Annual	5.6437E-07	g/s	Hexane	EWC_6	2016
Annual	6.2656E-06	g/s	Hexane	EWC_7	2016
Annual	2.4262E-06	g/s	Hexane	EWC_8	2016
Annual	8.2764E-07	g/s	Hexane	EWC_9	2016
Annual	1.0217E-06	g/s	Hexane	G31_G91W	2016
Annual	1.1706E-06	g/s	Hexane	IWC_1	2016
Annual	2.5943E-04	g/s	Hexane	IWCT	2016
Annual	2.2084E-06	g/s	Hexane	RAMPSW	2016
Annual	1.4506E-07	g/s	Methanol	CAS_G31W	2008
Annual	1.5195E-07	g/s	Methanol	EWC_6	2008
Annual	1.6869E-06	g/s	Methanol	EWC_7	2008
Annual	6.5321E-07	g/s	Methanol	EWC_8	2008
Annual	2.2282E-07	g/s	Methanol	EWC_9	2008
Annual	2.7506E-07	g/s	Methanol	G31_G91W	2008
Annual	1.9029E-06	g/s	Methanol	IWC_1	2008
Annual	5.8026E-06	g/s	Methanol	IWCH	2008
Annual	8.4198E-07	g/s	Methanol	IWCH_C	2008
Annual	4.6849E-06	g/s	Methanol	IWCP	2008
Annual	1.0599E-06	g/s	Methanol	IWCP_C	2008
Annual	1.8739E-06	g/s	Methanol	IWCT	2008
Annual	3.9745E-07	g/s	Methanol	IWCT_C	2008
Annual	5.9458E-07	g/s	Methanol	RAMPSW	2008
Annual	2.6564E-07	g/s	Methanol	CAS_G31W	2009
Annual	2.7826E-07	g/s	Methanol	EWC_6	2009
Annual	3.0892E-06	g/s	Methanol	EWC_7	2009
Annual	1.1962E-06	g/s	Methanol	EWC_8	2009
Annual	4.0806E-07	g/s	Methanol	EWC_9	2009
Annual	5.0372E-07	g/s	Methanol	G31_G91W	2009
Annual	3.4748E-06	g/s	Methanol	IWC_1	2009
Annual	1.8423E-05	g/s	Methanol	IWCH	2009
Annual	2.0386E-06	g/s	Methanol	IWCH_C	2009
Annual	5.0504E-06	g/s	Methanol	IWCP	2009
Annual	9.5903E-07	g/s	Methanol	IWCP_C	2009
Annual	4.5154E-06	g/s	Methanol	IWCT	2009
Annual	9.6461E-07	g/s	Methanol	IWCT_C	2009
Annual	1.0888E-06	g/s	Methanol	RAMPSW	2009
Annual	2.2150E-07	g/s	Methanol	CAS_G31W	2014
Annual	2.3203E-07	g/s	Methanol	EWC_6	2014
Annual	2.5759E-06	g/s	Methanol	EWC_7	2014
Annual	9.9747E-07	g/s	Methanol	EWC_8	2014
Annual	3.4026E-07	g/s	Methanol	EWC_9	2014
Annual	4.2003E-07	g/s	Methanol	G31_G91W	2014
Annual	3.2519E-06	g/s	Methanol	IWC_1	2014
Annual	4.8067E-06	g/s	Methanol	IWCH	2014
Annual	6.8827E-07	g/s	Methanol	IWCH_C	2014
Annual	4.3994E-06	g/s	Methanol	IWCP	2014
Annual	8.3626E-07	g/s	Methanol	IWCP_C	2014
Annual	1.5005E-06	g/s	Methanol	IWCT	2014
Annual	4.2151E-07	g/s	Methanol	IWCT_C	2014
Annual	9.0794E-07	g/s	Methanol	RAMPSW	2014
Annual	5.3139E-08	g/s	Methanol	CAS_G31W	2015
Annual	5.5663E-08	g/s	Methanol	EWC_6	2015
Annual	6.1797E-07	g/s	Methanol	EWC_7	2015
Annual	2.3929E-07	g/s	Methanol	EWC_8	2015
Annual	8.1629E-08	g/s	Methanol	EWC_9	2015
Annual	1.0077E-07	g/s	Methanol	G31_G91W	2015
Annual	8.0248E-07	g/s	Methanol	IWC_1	2015
Annual	1.0530E-06	g/s	Methanol	IWCH	2015
Annual	1.4249E-07	g/s	Methanol	IWCH_C	2015
Annual	2.9677E-06	g/s	Methanol	IWCP	2015
Annual	4.5581E-07	g/s	Methanol	IWCP_C	2015
Annual	2.1782E-07	g/s	Methanol	RAMPSW	2015
Annual	2.0922E-09	g/s	Methanol	CAS_G31W	2016
Annual	2.1916E-09	g/s	Methanol	EWC_6	2016
Annual	2.4331E-08	g/s	Methanol	EWC_7	2016
Annual	9.4217E-09	g/s	Methanol	EWC_8	2016
Annual	3.2140E-09	g/s	Methanol	EWC_9	2016

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	3.9674E-09	g/s	Methanol	G31_G91W	2016
Annual	3.2386E-08	g/s	Methanol	IWC_1	2016
Annual	2.2704E-06	g/s	Methanol	IWCT	2016
Annual	8.5760E-09	g/s	Methanol	RAMPSW	2016
Annual	2.4176E-08	g/s	Methyl Ethyl Ketone	CAS_G31W	2008
Annual	2.5324E-08	g/s	Methyl Ethyl Ketone	EW_C_6	2008
Annual	2.8115E-07	g/s	Methyl Ethyl Ketone	EW_C_7	2008
Annual	1.0887E-07	g/s	Methyl Ethyl Ketone	EW_C_8	2008
Annual	3.7137E-08	g/s	Methyl Ethyl Ketone	EW_C_9	2008
Annual	4.5844E-08	g/s	Methyl Ethyl Ketone	G31_G91W	2008
Annual	3.1714E-07	g/s	Methyl Ethyl Ketone	IWC_1	2008
Annual	9.6710E-07	g/s	Methyl Ethyl Ketone	IWCH	2008
Annual	1.4033E-07	g/s	Methyl Ethyl Ketone	IWCH_C	2008
Annual	7.8081E-07	g/s	Methyl Ethyl Ketone	IWCP	2008
Annual	1.7664E-07	g/s	Methyl Ethyl Ketone	IWCP_C	2008
Annual	3.1232E-07	g/s	Methyl Ethyl Ketone	IWCT	2008
Annual	6.6241E-08	g/s	Methyl Ethyl Ketone	IWCT_C	2008
Annual	9.9096E-08	g/s	Methyl Ethyl Ketone	RAMPSW	2008
Annual	4.4273E-08	g/s	Methyl Ethyl Ketone	CAS_G31W	2009
Annual	4.6376E-08	g/s	Methyl Ethyl Ketone	EW_C_6	2009
Annual	5.1486E-07	g/s	Methyl Ethyl Ketone	EW_C_7	2009
Annual	1.9937E-07	g/s	Methyl Ethyl Ketone	EW_C_8	2009
Annual	6.8009E-08	g/s	Methyl Ethyl Ketone	EW_C_9	2009
Annual	8.3953E-08	g/s	Methyl Ethyl Ketone	G31_G91W	2009
Annual	5.7913E-07	g/s	Methyl Ethyl Ketone	IWC_1	2009
Annual	3.0706E-06	g/s	Methyl Ethyl Ketone	IWCH	2009
Annual	3.3976E-07	g/s	Methyl Ethyl Ketone	IWCH_C	2009
Annual	8.4174E-07	g/s	Methyl Ethyl Ketone	IWCP	2009
Annual	1.5984E-07	g/s	Methyl Ethyl Ketone	IWCP_C	2009
Annual	7.5256E-07	g/s	Methyl Ethyl Ketone	IWCT	2009
Annual	1.6077E-07	g/s	Methyl Ethyl Ketone	IWCT_C	2009
Annual	1.8147E-07	g/s	Methyl Ethyl Ketone	RAMPSW	2009
Annual	3.6917E-08	g/s	Methyl Ethyl Ketone	CAS_G31W	2014
Annual	3.8671E-08	g/s	Methyl Ethyl Ketone	EW_C_6	2014
Annual	4.2932E-07	g/s	Methyl Ethyl Ketone	EW_C_7	2014
Annual	1.6624E-07	g/s	Methyl Ethyl Ketone	EW_C_8	2014
Annual	5.6710E-08	g/s	Methyl Ethyl Ketone	EW_C_9	2014
Annual	7.0005E-08	g/s	Methyl Ethyl Ketone	G31_G91W	2014
Annual	5.4199E-07	g/s	Methyl Ethyl Ketone	IWC_1	2014
Annual	8.0111E-07	g/s	Methyl Ethyl Ketone	IWCH	2014
Annual	1.1471E-07	g/s	Methyl Ethyl Ketone	IWCH_C	2014
Annual	7.3323E-07	g/s	Methyl Ethyl Ketone	IWCP	2014
Annual	1.3938E-07	g/s	Methyl Ethyl Ketone	IWCP_C	2014
Annual	2.5008E-07	g/s	Methyl Ethyl Ketone	IWCT	2014
Annual	7.0252E-08	g/s	Methyl Ethyl Ketone	IWCT_C	2014
Annual	1.5132E-07	g/s	Methyl Ethyl Ketone	RAMPSW	2014
Annual	8.8566E-09	g/s	Methyl Ethyl Ketone	CAS_G31W	2015
Annual	9.2772E-09	g/s	Methyl Ethyl Ketone	EW_C_6	2015
Annual	1.0299E-07	g/s	Methyl Ethyl Ketone	EW_C_7	2015
Annual	3.9882E-08	g/s	Methyl Ethyl Ketone	EW_C_8	2015
Annual	1.3605E-08	g/s	Methyl Ethyl Ketone	EW_C_9	2015
Annual	1.6794E-08	g/s	Methyl Ethyl Ketone	G31_G91W	2015
Annual	1.3375E-07	g/s	Methyl Ethyl Ketone	IWC_1	2015
Annual	1.7551E-07	g/s	Methyl Ethyl Ketone	IWCH	2015
Annual	2.3748E-08	g/s	Methyl Ethyl Ketone	IWCH_C	2015
Annual	4.9462E-07	g/s	Methyl Ethyl Ketone	IWCP	2015
Annual	7.5969E-08	g/s	Methyl Ethyl Ketone	IWCP_C	2015
Annual	3.6303E-08	g/s	Methyl Ethyl Ketone	RAMPSW	2015
Annual	3.4871E-10	g/s	Methyl Ethyl Ketone	CAS_G31W	2016
Annual	3.6527E-10	g/s	Methyl Ethyl Ketone	EW_C_6	2016
Annual	4.0552E-09	g/s	Methyl Ethyl Ketone	EW_C_7	2016
Annual	1.5703E-09	g/s	Methyl Ethyl Ketone	EW_C_8	2016
Annual	5.3566E-10	g/s	Methyl Ethyl Ketone	EW_C_9	2016
Annual	6.6124E-10	g/s	Methyl Ethyl Ketone	G31_G91W	2016
Annual	5.3977E-09	g/s	Methyl Ethyl Ketone	IWC_1	2016
Annual	3.7841E-07	g/s	Methyl Ethyl Ketone	IWCT	2016
Annual	1.4293E-09	g/s	Methyl Ethyl Ketone	RAMPSW	2016
Annual	6.0440E-08	g/s	Naphthalene	CAS_G31W	2008
Annual	6.3311E-08	g/s	Naphthalene	EW_C_6	2008
Annual	7.0286E-07	g/s	Naphthalene	EW_C_7	2008
Annual	2.7217E-07	g/s	Naphthalene	EW_C_8	2008

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	9.2844E-08	g/s	Naphthalene	EW_C_9	2008
Annual	1.1461E-07	g/s	Naphthalene	G31_G91W	2008
Annual	7.9286E-07	g/s	Naphthalene	IWC_1	2008
Annual	2.4177E-06	g/s	Naphthalene	IWCH	2008
Annual	3.5082E-07	g/s	Naphthalene	IWCH_C	2008
Annual	1.9520E-06	g/s	Naphthalene	IWCP	2008
Annual	4.4161E-07	g/s	Naphthalene	IWCP_C	2008
Annual	7.8081E-07	g/s	Naphthalene	IWCT	2008
Annual	1.6560E-07	g/s	Naphthalene	IWCT_C	2008
Annual	2.4774E-07	g/s	Naphthalene	RAMPSW	2008
Annual	1.1068E-07	g/s	Naphthalene	CAS_G31W	2009
Annual	1.1594E-07	g/s	Naphthalene	EW_C_6	2009
Annual	1.2871E-06	g/s	Naphthalene	EW_C_7	2009
Annual	4.9842E-07	g/s	Naphthalene	EW_C_8	2009
Annual	1.7002E-07	g/s	Naphthalene	EW_C_9	2009
Annual	2.0988E-07	g/s	Naphthalene	G31_G91W	2009
Annual	1.4478E-06	g/s	Naphthalene	IWC_1	2009
Annual	7.6764E-06	g/s	Naphthalene	IWCH	2009
Annual	8.4940E-07	g/s	Naphthalene	IWCH_C	2009
Annual	2.1043E-06	g/s	Naphthalene	IWCP	2009
Annual	3.9960E-07	g/s	Naphthalene	IWCP_C	2009
Annual	1.8814E-06	g/s	Naphthalene	IWCT	2009
Annual	4.0192E-07	g/s	Naphthalene	IWCT_C	2009
Annual	4.5368E-07	g/s	Naphthalene	RAMPSW	2009
Annual	9.2294E-08	g/s	Naphthalene	CAS_G31W	2014
Annual	9.6677E-08	g/s	Naphthalene	EW_C_6	2014
Annual	1.0733E-06	g/s	Naphthalene	EW_C_7	2014
Annual	4.1561E-07	g/s	Naphthalene	EW_C_8	2014
Annual	1.4178E-07	g/s	Naphthalene	EW_C_9	2014
Annual	1.7501E-07	g/s	Naphthalene	G31_G91W	2014
Annual	1.3550E-06	g/s	Naphthalene	IWC_1	2014
Annual	2.0028E-06	g/s	Naphthalene	IWCH	2014
Annual	2.8678E-07	g/s	Naphthalene	IWCH_C	2014
Annual	1.8331E-06	g/s	Naphthalene	IWCP	2014
Annual	3.4844E-07	g/s	Naphthalene	IWCP_C	2014
Annual	6.2521E-07	g/s	Naphthalene	IWCT	2014
Annual	1.7563E-07	g/s	Naphthalene	IWCT_C	2014
Annual	3.7831E-07	g/s	Naphthalene	RAMPSW	2014
Annual	2.2141E-08	g/s	Naphthalene	CAS_G31W	2015
Annual	2.3193E-08	g/s	Naphthalene	EW_C_6	2015
Annual	2.5749E-07	g/s	Naphthalene	EW_C_7	2015
Annual	9.9706E-08	g/s	Naphthalene	EW_C_8	2015
Annual	3.4012E-08	g/s	Naphthalene	EW_C_9	2015
Annual	4.1986E-08	g/s	Naphthalene	G31_G91W	2015
Annual	3.3437E-07	g/s	Naphthalene	IWC_1	2015
Annual	4.3876E-07	g/s	Naphthalene	IWCH	2015
Annual	5.9370E-08	g/s	Naphthalene	IWCH_C	2015
Annual	1.2366E-06	g/s	Naphthalene	IWCP	2015
Annual	1.8992E-07	g/s	Naphthalene	IWCP_C	2015
Annual	9.0757E-08	g/s	Naphthalene	RAMPSW	2015
Annual	8.7177E-10	g/s	Naphthalene	CAS_G31W	2016
Annual	9.1318E-10	g/s	Naphthalene	EW_C_6	2016
Annual	1.0138E-08	g/s	Naphthalene	EW_C_7	2016
Annual	3.9257E-09	g/s	Naphthalene	EW_C_8	2016
Annual	1.3392E-09	g/s	Naphthalene	EW_C_9	2016
Annual	1.6531E-09	g/s	Naphthalene	G31_G91W	2016
Annual	1.3494E-08	g/s	Naphthalene	IWC_1	2016
Annual	9.4602E-07	g/s	Naphthalene	IWCT	2016
Annual	3.5734E-09	g/s	Naphthalene	RAMPSW	2016
Annual	8.6492E-06	g/s	PM25	CAS_G31T	2008
Annual	1.3768E-05	g/s	PM25	CAS_G31W	2008
Annual	3.6240E-05	g/s	PM25	ETC_6	2008
Annual	4.0233E-04	g/s	PM25	ETC_7	2008
Annual	1.5580E-04	g/s	PM25	ETC_8	2008
Annual	1.1875E-04	g/s	PM25	ETC_9	2008
Annual	1.4422E-05	g/s	PM25	EW_C_6	2008
Annual	1.6011E-04	g/s	PM25	EW_C_7	2008
Annual	6.2000E-05	g/s	PM25	EW_C_8	2008
Annual	2.1150E-05	g/s	PM25	EW_C_9	2008
Annual	2.6108E-05	g/s	PM25	G31_G91W	2008
Annual	1.6660E-05	g/s	PM25	ITC_IDL	2008

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	2.0996E-05	g/s	PM25	ITC_IDLN	2008
Annual	3.2481E-05	g/s	PM25	ITCH_1	2008
Annual	1.1484E-05	g/s	PM25	ITCH_2	2008
Annual	2.5289E-04	g/s	PM25	ITCH_IDL	2008
Annual	1.4697E-05	g/s	PM25	ITCHIDLN	2008
Annual	3.3379E-05	g/s	PM25	ITCHN	2008
Annual	2.1434E-05	g/s	PM25	ITCP_1	2008
Annual	5.1689E-06	g/s	PM25	ITCP_2	2008
Annual	3.1055E-04	g/s	PM25	ITCP_IDL	2008
Annual	2.0996E-06	g/s	PM25	ITCPIDLN	2008
Annual	4.7684E-06	g/s	PM25	ITCPN	2008
Annual	5.2380E-07	g/s	PM25	ITCT_1	2008
Annual	1.2632E-07	g/s	PM25	ITCT_2	2008
Annual	7.8255E-05	g/s	PM25	ITCT_IDL	2008
Annual	6.2923E-04	g/s	PM25	ITCTIDLN	2008
Annual	9.5368E-06	g/s	PM25	ITCTN	2008
Annual	3.8482E-03	g/s	PM25	ITCW	2008
Annual	1.9910E-05	g/s	PM25	IWC_1	2008
Annual	2.7654E-04	g/s	PM25	IWCH	2008
Annual	2.2985E-05	g/s	PM25	IWCH_C	2008
Annual	3.3300E-04	g/s	PM25	IWCP	2008
Annual	3.6776E-05	g/s	PM25	IWCP_C	2008
Annual	9.9325E-05	g/s	PM25	IWCT	2008
Annual	1.3791E-05	g/s	PM25	IWCT_C	2008
Annual	3.5453E-05	g/s	PM25	RAMPST	2008
Annual	5.6435E-05	g/s	PM25	RAMPSW	2008
Annual	4.7410E-06	g/s	PM25	CAS_G31T	2009
Annual	2.6732E-05	g/s	PM25	CAS_G31W	2009
Annual	1.9865E-05	g/s	PM25	ETC_6	2009
Annual	2.2054E-04	g/s	PM25	ETC_7	2009
Annual	8.5398E-05	g/s	PM25	ETC_8	2009
Annual	6.5092E-05	g/s	PM25	ETC_9	2009
Annual	2.8002E-05	g/s	PM25	EWC_6	2009
Annual	3.1087E-04	g/s	PM25	EWC_7	2009
Annual	1.2038E-04	g/s	PM25	EWC_8	2009
Annual	4.1064E-05	g/s	PM25	EWC_9	2009
Annual	5.0691E-05	g/s	PM25	G31_G91W	2009
Annual	1.6246E-05	g/s	PM25	ITC_IDLN	2009
Annual	5.8060E-04	g/s	PM25	ITCH_IDL	2009
Annual	1.0154E-05	g/s	PM25	ITCHIDLN	2009
Annual	2.4407E-05	g/s	PM25	ITCHN	2009
Annual	2.7377E-04	g/s	PM25	ITCP_IDL	2009
Annual	4.0616E-06	g/s	PM25	ITCPIDLN	2009
Annual	9.7629E-06	g/s	PM25	ITCPN	2009
Annual	1.8784E-04	g/s	PM25	ITCT_IDL	2009
Annual	1.0442E-03	g/s	PM25	ITCTIDLN	2009
Annual	4.8815E-06	g/s	PM25	ITCTN	2009
Annual	6.7912E-03	g/s	PM25	ITCW	2009
Annual	3.8657E-05	g/s	PM25	IWC_1	2009
Annual	9.6242E-04	g/s	PM25	IWCH	2009
Annual	5.9232E-05	g/s	PM25	IWCH_C	2009
Annual	3.3336E-04	g/s	PM25	IWCP	2009
Annual	3.5334E-05	g/s	PM25	IWCP_C	2009
Annual	2.5100E-04	g/s	PM25	IWCT	2009
Annual	3.5539E-05	g/s	PM25	IWCT_C	2009
Annual	1.9433E-05	g/s	PM25	RAMPST	2009
Annual	1.0957E-04	g/s	PM25	RAMPSW	2009
Annual	1.8132E-06	g/s	PM25	CAS_G31T	2014
Annual	4.2872E-05	g/s	PM25	CAS_G31W	2014
Annual	7.5975E-06	g/s	PM25	ETC_6	2014
Annual	8.4346E-05	g/s	PM25	ETC_7	2014
Annual	3.2661E-05	g/s	PM25	ETC_8	2014
Annual	2.4895E-05	g/s	PM25	ETC_9	2014
Annual	4.4909E-05	g/s	PM25	EWC_6	2014
Annual	4.9857E-04	g/s	PM25	EWC_7	2014
Annual	1.9306E-04	g/s	PM25	EWC_8	2014
Annual	6.5857E-05	g/s	PM25	EWC_9	2014
Annual	8.1297E-05	g/s	PM25	G31_G91W	2014
Annual	1.8688E-07	g/s	PM25	ITC_IDL	2014
Annual	1.0225E-06	g/s	PM25	ITC_IDLN	2014
Annual	6.3661E-07	g/s	PM25	ITCH_1	2014

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	2.2508E-07	g/s	PM25	ITCH_2	2014
Annual	5.0094E-05	g/s	PM25	ITCH_IDL	2014
Annual	1.2015E-06	g/s	PM25	ITCHIDLN	2014
Annual	8.6714E-06	g/s	PM25	ITCHN	2014
Annual	3.6314E-05	g/s	PM25	ITCP_IDL	2014
Annual	4.5983E-07	g/s	PM25	ITCPIDLN	2014
Annual	5.9483E-06	g/s	PM25	ITCPN	2014
Annual	1.9968E-05	g/s	PM25	ITCT_IDL	2014
Annual	1.0619E-04	g/s	PM25	ITCTIDLN	2014
Annual	0.0000E+00	g/s	PM25	ITCTN	2014
Annual	3.7333E-03	g/s	PM25	ITCW	2014
Annual	6.1997E-05	g/s	PM25	IWC_1	2014
Annual	6.5608E-04	g/s	PM25	IWCH	2014
Annual	4.0533E-05	g/s	PM25	IWCH_C	2014
Annual	6.2727E-04	g/s	PM25	IWCP	2014
Annual	6.2709E-05	g/s	PM25	IWCP_C	2014
Annual	2.7782E-04	g/s	PM25	IWCT	2014
Annual	3.1608E-05	g/s	PM25	IWCT_C	2014
Annual	7.4324E-06	g/s	PM25	RAMPST	2014
Annual	1.7573E-04	g/s	PM25	RAMPSW	2014
Annual	2.7536E-07	g/s	PM25	CAS_G31T	2015
Annual	1.1970E-05	g/s	PM25	CAS_G31W	2015
Annual	1.1538E-06	g/s	PM25	ETC_6	2015
Annual	1.2809E-05	g/s	PM25	ETC_7	2015
Annual	4.9600E-06	g/s	PM25	ETC_8	2015
Annual	3.7806E-06	g/s	PM25	ETC_9	2015
Annual	1.2538E-05	g/s	PM25	EWC_6	2015
Annual	1.3920E-04	g/s	PM25	EWC_7	2015
Annual	5.3901E-05	g/s	PM25	EWC_8	2015
Annual	1.8387E-05	g/s	PM25	EWC_9	2015
Annual	2.2697E-05	g/s	PM25	G31_G91W	2015
Annual	1.6145E-07	g/s	PM25	ITC_IDLN	2015
Annual	4.3527E-06	g/s	PM25	ITCH_IDL	2015
Annual	0.0000E+00	g/s	PM25	ITCHIDLN	2015
Annual	0.0000E+00	g/s	PM25	ITCHN	2015
Annual	1.3757E-05	g/s	PM25	ITCP_IDL	2015
Annual	1.6145E-07	g/s	PM25	ITCPIDLN	2015
Annual	2.2682E-06	g/s	PM25	ITCPN	2015
Annual	1.8109E-05	g/s	PM25	ITCTIDLN	2015
Annual	0.0000E+00	g/s	PM25	ITCTN	2015
Annual	6.8968E-04	g/s	PM25	ITCW	2015
Annual	1.7309E-05	g/s	PM25	IWC_1	2015
Annual	1.1553E-04	g/s	PM25	IWCH	2015
Annual	9.8678E-06	g/s	PM25	IWCH_C	2015
Annual	3.8775E-04	g/s	PM25	IWCP	2015
Annual	4.0242E-05	g/s	PM25	IWCP_C	2015
Annual	1.1287E-06	g/s	PM25	RAMPST	2015
Annual	4.9063E-05	g/s	PM25	RAMPSW	2015
Annual	1.4577E-07	g/s	PM25	CAS_G31T	2016
Annual	5.4552E-07	g/s	PM25	CAS_G31W	2016
Annual	6.1076E-07	g/s	PM25	ETC_6	2016
Annual	6.7805E-06	g/s	PM25	ETC_7	2016
Annual	2.6256E-06	g/s	PM25	ETC_8	2016
Annual	2.0013E-06	g/s	PM25	ETC_9	2016
Annual	5.7143E-07	g/s	PM25	EWC_6	2016
Annual	6.3439E-06	g/s	PM25	EWC_7	2016
Annual	2.4565E-06	g/s	PM25	EWC_8	2016
Annual	8.3799E-07	g/s	PM25	EWC_9	2016
Annual	1.0344E-06	g/s	PM25	G31_G91W	2016
Annual	4.7150E-07	g/s	PM25	ITC_IDL	2016
Annual	2.4186E-06	g/s	PM25	ITCH_1	2016
Annual	8.5510E-07	g/s	PM25	ITCH_2	2016
Annual	4.7150E-07	g/s	PM25	ITCH_IDL	2016
Annual	7.8887E-07	g/s	PM25	IWC_1	2016
Annual	1.0689E-04	g/s	PM25	IWCT	2016
Annual	5.9749E-07	g/s	PM25	RAMPST	2016
Annual	2.2360E-06	g/s	PM25	RAMPSW	2016
Annual	3.6989E-06	g/s	Propylene	CAS_G31W	2008
Annual	3.8746E-06	g/s	Propylene	EWC_6	2008
Annual	4.3015E-05	g/s	Propylene	EWC_7	2008
Annual	1.6657E-05	g/s	Propylene	EWC_8	2008

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	5.6820E-06	g/s	Propylene	EW_C_9	2008
Annual	7.0141E-06	g/s	Propylene	G31_G91W	2008
Annual	4.8523E-05	g/s	Propylene	IWC_1	2008
Annual	1.4797E-04	g/s	Propylene	IWCH	2008
Annual	2.1470E-05	g/s	Propylene	IWCH_C	2008
Annual	1.1946E-04	g/s	Propylene	IWCP	2008
Annual	2.7026E-05	g/s	Propylene	IWCP_C	2008
Annual	4.7786E-05	g/s	Propylene	IWCT	2008
Annual	1.0135E-05	g/s	Propylene	IWCT_C	2008
Annual	1.5162E-05	g/s	Propylene	RAMPSW	2008
Annual	6.7738E-06	g/s	Propylene	CAS_G31W	2009
Annual	7.0955E-06	g/s	Propylene	EW_C_6	2009
Annual	7.8773E-05	g/s	Propylene	EW_C_7	2009
Annual	3.0503E-05	g/s	Propylene	EW_C_8	2009
Annual	1.0405E-05	g/s	Propylene	EW_C_9	2009
Annual	1.2845E-05	g/s	Propylene	G31_G91W	2009
Annual	8.8608E-05	g/s	Propylene	IWC_1	2009
Annual	4.6980E-04	g/s	Propylene	IWCH	2009
Annual	5.1983E-05	g/s	Propylene	IWCH_C	2009
Annual	1.2879E-04	g/s	Propylene	IWCP	2009
Annual	2.4455E-05	g/s	Propylene	IWCP_C	2009
Annual	1.1514E-04	g/s	Propylene	IWCT	2009
Annual	2.4597E-05	g/s	Propylene	IWCT_C	2009
Annual	2.7765E-05	g/s	Propylene	RAMPSW	2009
Annual	5.6484E-06	g/s	Propylene	CAS_G31W	2014
Annual	5.9166E-06	g/s	Propylene	EW_C_6	2014
Annual	6.5686E-05	g/s	Propylene	EW_C_7	2014
Annual	2.5435E-05	g/s	Propylene	EW_C_8	2014
Annual	8.6766E-06	g/s	Propylene	EW_C_9	2014
Annual	1.0711E-05	g/s	Propylene	G31_G91W	2014
Annual	8.2924E-05	g/s	Propylene	IWC_1	2014
Annual	1.2257E-04	g/s	Propylene	IWCH	2014
Annual	1.7551E-05	g/s	Propylene	IWCH_C	2014
Annual	1.1218E-04	g/s	Propylene	IWCP	2014
Annual	2.1325E-05	g/s	Propylene	IWCP_C	2014
Annual	3.8263E-05	g/s	Propylene	IWCT	2014
Annual	1.0749E-05	g/s	Propylene	IWCT_C	2014
Annual	2.3152E-05	g/s	Propylene	RAMPSW	2014
Annual	1.3551E-06	g/s	Propylene	CAS_G31W	2015
Annual	1.4194E-06	g/s	Propylene	EW_C_6	2015
Annual	1.5758E-05	g/s	Propylene	EW_C_7	2015
Annual	6.1020E-06	g/s	Propylene	EW_C_8	2015
Annual	2.0815E-06	g/s	Propylene	EW_C_9	2015
Annual	2.5695E-06	g/s	Propylene	G31_G91W	2015
Annual	2.0463E-05	g/s	Propylene	IWC_1	2015
Annual	2.6852E-05	g/s	Propylene	IWCH	2015
Annual	3.6334E-06	g/s	Propylene	IWCH_C	2015
Annual	7.5677E-05	g/s	Propylene	IWCP	2015
Annual	1.1623E-05	g/s	Propylene	IWCP_C	2015
Annual	5.5543E-06	g/s	Propylene	RAMPSW	2015
Annual	5.3352E-08	g/s	Propylene	CAS_G31W	2016
Annual	5.5886E-08	g/s	Propylene	EW_C_6	2016
Annual	6.2044E-07	g/s	Propylene	EW_C_7	2016
Annual	2.4025E-07	g/s	Propylene	EW_C_8	2016
Annual	8.1956E-08	g/s	Propylene	EW_C_9	2016
Annual	1.0117E-07	g/s	Propylene	G31_G91W	2016
Annual	8.2585E-07	g/s	Propylene	IWC_1	2016
Annual	5.7896E-05	g/s	Propylene	IWCT	2016
Annual	2.1869E-07	g/s	Propylene	RAMPSW	2016
Annual	1.4506E-07	g/s	Styrene	CAS_G31W	2008
Annual	1.5195E-07	g/s	Styrene	EW_C_6	2008
Annual	1.6869E-06	g/s	Styrene	EW_C_7	2008
Annual	6.5321E-07	g/s	Styrene	EW_C_8	2008
Annual	2.2282E-07	g/s	Styrene	EW_C_9	2008
Annual	2.7506E-07	g/s	Styrene	G31_G91W	2008
Annual	1.9029E-06	g/s	Styrene	IWC_1	2008
Annual	5.8026E-06	g/s	Styrene	IWCH	2008
Annual	8.4198E-07	g/s	Styrene	IWCH_C	2008
Annual	4.6849E-06	g/s	Styrene	IWCP	2008
Annual	1.0599E-06	g/s	Styrene	IWCP_C	2008
Annual	1.8739E-06	g/s	Styrene	IWCT	2008

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	3.9745E-07	g/s	Styrene	IWCT_C	2008
Annual	5.9458E-07	g/s	Styrene	RAMPSW	2008
Annual	2.6564E-07	g/s	Styrene	CAS_G31W	2009
Annual	2.7826E-07	g/s	Styrene	EWC_6	2009
Annual	3.0892E-06	g/s	Styrene	EWC_7	2009
Annual	1.1962E-06	g/s	Styrene	EWC_8	2009
Annual	4.0806E-07	g/s	Styrene	EWC_9	2009
Annual	5.0372E-07	g/s	Styrene	G31_G91W	2009
Annual	3.4748E-06	g/s	Styrene	IWC_1	2009
Annual	1.8423E-05	g/s	Styrene	IWCH	2009
Annual	2.0386E-06	g/s	Styrene	IWCH_C	2009
Annual	5.0504E-06	g/s	Styrene	IWCP	2009
Annual	9.5903E-07	g/s	Styrene	IWCP_C	2009
Annual	4.5154E-06	g/s	Styrene	IWCT	2009
Annual	9.6461E-07	g/s	Styrene	IWCT_C	2009
Annual	1.0888E-06	g/s	Styrene	RAMPSW	2009
Annual	2.2150E-07	g/s	Styrene	CAS_G31W	2014
Annual	2.3203E-07	g/s	Styrene	EWC_6	2014
Annual	2.5759E-06	g/s	Styrene	EWC_7	2014
Annual	9.9747E-07	g/s	Styrene	EWC_8	2014
Annual	3.4026E-07	g/s	Styrene	EWC_9	2014
Annual	4.2003E-07	g/s	Styrene	G31_G91W	2014
Annual	3.2519E-06	g/s	Styrene	IWC_1	2014
Annual	4.8067E-06	g/s	Styrene	IWCH	2014
Annual	6.8827E-07	g/s	Styrene	IWCH_C	2014
Annual	4.3994E-06	g/s	Styrene	IWCP	2014
Annual	8.3626E-07	g/s	Styrene	IWCP_C	2014
Annual	1.5005E-06	g/s	Styrene	IWCT	2014
Annual	4.2151E-07	g/s	Styrene	IWCT_C	2014
Annual	9.0794E-07	g/s	Styrene	RAMPSW	2014
Annual	5.3139E-08	g/s	Styrene	CAS_G31W	2015
Annual	5.5663E-08	g/s	Styrene	EWC_6	2015
Annual	6.1797E-07	g/s	Styrene	EWC_7	2015
Annual	2.3929E-07	g/s	Styrene	EWC_8	2015
Annual	8.1629E-08	g/s	Styrene	EWC_9	2015
Annual	1.0077E-07	g/s	Styrene	G31_G91W	2015
Annual	8.0248E-07	g/s	Styrene	IWC_1	2015
Annual	1.0530E-06	g/s	Styrene	IWCH	2015
Annual	1.4249E-07	g/s	Styrene	IWCH_C	2015
Annual	2.9677E-06	g/s	Styrene	IWCP	2015
Annual	4.5581E-07	g/s	Styrene	IWCP_C	2015
Annual	2.1782E-07	g/s	Styrene	RAMPSW	2015
Annual	2.0922E-09	g/s	Styrene	CAS_G31W	2016
Annual	2.1916E-09	g/s	Styrene	EWC_6	2016
Annual	2.4331E-08	g/s	Styrene	EWC_7	2016
Annual	9.4217E-09	g/s	Styrene	EWC_8	2016
Annual	3.2140E-09	g/s	Styrene	EWC_9	2016
Annual	3.9674E-09	g/s	Styrene	G31_G91W	2016
Annual	3.2386E-08	g/s	Styrene	IWC_1	2016
Annual	2.2704E-06	g/s	Styrene	IWCT	2016
Annual	8.5760E-09	g/s	Styrene	RAMPSW	2016
Annual	3.4937E-05	g/s	Toluene	CAS_G31W	2008
Annual	3.6597E-05	g/s	Toluene	EWC_6	2008
Annual	4.0629E-04	g/s	Toluene	EWC_7	2008
Annual	1.5733E-04	g/s	Toluene	EWC_8	2008
Annual	5.3668E-05	g/s	Toluene	EWC_9	2008
Annual	6.6250E-05	g/s	Toluene	G31_G91W	2008
Annual	1.3179E-04	g/s	Toluene	IWC_1	2008
Annual	7.4164E-04	g/s	Toluene	IWCH	2008
Annual	4.2836E-05	g/s	Toluene	IWCH_C	2008
Annual	6.8799E-04	g/s	Toluene	IWCP	2008
Annual	5.4747E-05	g/s	Toluene	IWCP_C	2008
Annual	2.7519E-04	g/s	Toluene	IWCT	2008
Annual	2.0530E-05	g/s	Toluene	IWCT_C	2008
Annual	1.4321E-04	g/s	Toluene	RAMPSW	2008
Annual	6.4176E-05	g/s	Toluene	CAS_G31W	2009
Annual	6.7224E-05	g/s	Toluene	EWC_6	2009
Annual	7.4631E-04	g/s	Toluene	EWC_7	2009
Annual	2.8899E-04	g/s	Toluene	EWC_8	2009
Annual	9.8582E-05	g/s	Toluene	EWC_9	2009
Annual	1.2169E-04	g/s	Toluene	G31_G91W	2009

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	2.4116E-04	g/s	Toluene	IWC_1	2009
Annual	2.3650E-03	g/s	Toluene	IWCH	2009
Annual	1.0399E-04	g/s	Toluene	IWCH_C	2009
Annual	7.4617E-04	g/s	Toluene	IWCP	2009
Annual	4.9694E-05	g/s	Toluene	IWCP_C	2009
Annual	6.6712E-04	g/s	Toluene	IWCT	2009
Annual	4.9983E-05	g/s	Toluene	IWCT_C	2009
Annual	2.6305E-04	g/s	Toluene	RAMPSW	2009
Annual	6.4946E-05	g/s	Toluene	CAS_G31W	2014
Annual	6.8030E-05	g/s	Toluene	EW_C_6	2014
Annual	7.5526E-04	g/s	Toluene	EW_C_7	2014
Annual	2.9246E-04	g/s	Toluene	EW_C_8	2014
Annual	9.9765E-05	g/s	Toluene	EW_C_9	2014
Annual	1.2315E-04	g/s	Toluene	G31_G91W	2014
Annual	2.3463E-04	g/s	Toluene	IWC_1	2014
Annual	6.4354E-04	g/s	Toluene	IWCH	2014
Annual	3.5402E-05	g/s	Toluene	IWCH_C	2014
Annual	6.8805E-04	g/s	Toluene	IWCP	2014
Annual	4.3799E-05	g/s	Toluene	IWCP_C	2014
Annual	2.3467E-04	g/s	Toluene	IWCT	2014
Annual	2.2077E-05	g/s	Toluene	IWCT_C	2014
Annual	2.6621E-04	g/s	Toluene	RAMPSW	2014
Annual	1.6261E-05	g/s	Toluene	CAS_G31W	2015
Annual	1.7033E-05	g/s	Toluene	EW_C_6	2015
Annual	1.8910E-04	g/s	Toluene	EW_C_7	2015
Annual	7.3224E-05	g/s	Toluene	EW_C_8	2015
Annual	2.4978E-05	g/s	Toluene	EW_C_9	2015
Annual	3.0834E-05	g/s	Toluene	G31_G91W	2015
Annual	5.8345E-05	g/s	Toluene	IWC_1	2015
Annual	1.4200E-04	g/s	Toluene	IWCH	2015
Annual	7.3552E-06	g/s	Toluene	IWCH_C	2015
Annual	4.6879E-04	g/s	Toluene	IWCP	2015
Annual	2.3982E-05	g/s	Toluene	IWCP_C	2015
Annual	6.6652E-05	g/s	Toluene	RAMPSW	2015
Annual	6.6439E-07	g/s	Toluene	CAS_G31W	2016
Annual	6.9595E-07	g/s	Toluene	EW_C_6	2016
Annual	7.7263E-06	g/s	Toluene	EW_C_7	2016
Annual	2.9918E-06	g/s	Toluene	EW_C_8	2016
Annual	1.0206E-06	g/s	Toluene	EW_C_9	2016
Annual	1.2599E-06	g/s	Toluene	G31_G91W	2016
Annual	2.3701E-06	g/s	Toluene	IWC_1	2016
Annual	3.6195E-04	g/s	Toluene	IWCT	2016
Annual	2.7233E-06	g/s	Toluene	RAMPSW	2016
Annual	1.5314E-05	g/s	Xylenes	CAS_G31W	2008
Annual	1.6041E-05	g/s	Xylenes	EW_C_6	2008
Annual	1.7808E-04	g/s	Xylenes	EW_C_7	2008
Annual	6.8959E-05	g/s	Xylenes	EW_C_8	2008
Annual	2.3524E-05	g/s	Xylenes	EW_C_9	2008
Annual	2.9038E-05	g/s	Xylenes	G31_G91W	2008
Annual	8.9869E-05	g/s	Xylenes	IWC_1	2008
Annual	3.8956E-04	g/s	Xylenes	IWCH	2008
Annual	3.4502E-05	g/s	Xylenes	IWCH_C	2008
Annual	3.4485E-04	g/s	Xylenes	IWCP	2008
Annual	4.3712E-05	g/s	Xylenes	IWCP_C	2008
Annual	1.3794E-04	g/s	Xylenes	IWCT	2008
Annual	1.6392E-05	g/s	Xylenes	IWCT_C	2008
Annual	6.2770E-05	g/s	Xylenes	RAMPSW	2008
Annual	2.8110E-05	g/s	Xylenes	CAS_G31W	2009
Annual	2.9445E-05	g/s	Xylenes	EW_C_6	2009
Annual	3.2690E-04	g/s	Xylenes	EW_C_7	2009
Annual	1.2658E-04	g/s	Xylenes	EW_C_8	2009
Annual	4.3181E-05	g/s	Xylenes	EW_C_9	2009
Annual	5.3304E-05	g/s	Xylenes	G31_G91W	2009
Annual	1.6428E-04	g/s	Xylenes	IWC_1	2009
Annual	1.2404E-03	g/s	Xylenes	IWCH	2009
Annual	8.3629E-05	g/s	Xylenes	IWCH_C	2009
Annual	3.7329E-04	g/s	Xylenes	IWCP	2009
Annual	3.9606E-05	g/s	Xylenes	IWCP_C	2009
Annual	3.3375E-04	g/s	Xylenes	IWCT	2009
Annual	3.9836E-05	g/s	Xylenes	IWCT_C	2009
Annual	1.1522E-04	g/s	Xylenes	RAMPSW	2009

Table A4.3-CHRA-2b
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Emission Rate	Unit	Pollutant	Source Group ¹	Year
Annual	2.7327E-05	g/s	Xylenes	CAS_G31W	2014
Annual	2.8625E-05	g/s	Xylenes	EWC_6	2014
Annual	3.1779E-04	g/s	Xylenes	EWC_7	2014
Annual	1.2306E-04	g/s	Xylenes	EWC_8	2014
Annual	4.1977E-05	g/s	Xylenes	EWC_9	2014
Annual	5.1818E-05	g/s	Xylenes	G31_G91W	2014
Annual	1.5678E-04	g/s	Xylenes	IWC_1	2014
Annual	3.3263E-04	g/s	Xylenes	IWCH	2014
Annual	2.8335E-05	g/s	Xylenes	IWCH_C	2014
Annual	3.3811E-04	g/s	Xylenes	IWCP	2014
Annual	3.4694E-05	g/s	Xylenes	IWCP_C	2014
Annual	1.1532E-04	g/s	Xylenes	IWCT	2014
Annual	1.7488E-05	g/s	Xylenes	IWCT_C	2014
Annual	1.1201E-04	g/s	Xylenes	RAMPSW	2014
Annual	6.7869E-06	g/s	Xylenes	CAS_G31W	2015
Annual	7.1093E-06	g/s	Xylenes	EWC_6	2015
Annual	7.8926E-05	g/s	Xylenes	EWC_7	2015
Annual	3.0563E-05	g/s	Xylenes	EWC_8	2015
Annual	1.0426E-05	g/s	Xylenes	EWC_9	2015
Annual	1.2870E-05	g/s	Xylenes	G31_G91W	2015
Annual	3.8840E-05	g/s	Xylenes	IWC_1	2015
Annual	7.3216E-05	g/s	Xylenes	IWCH	2015
Annual	5.8749E-06	g/s	Xylenes	IWCH_C	2015
Annual	2.2966E-04	g/s	Xylenes	IWCP	2015
Annual	1.8948E-05	g/s	Xylenes	IWCP_C	2015
Annual	2.7819E-05	g/s	Xylenes	RAMPSW	2015
Annual	2.7544E-07	g/s	Xylenes	CAS_G31W	2016
Annual	2.8852E-07	g/s	Xylenes	EWC_6	2016
Annual	3.2031E-06	g/s	Xylenes	EWC_7	2016
Annual	1.2403E-06	g/s	Xylenes	EWC_8	2016
Annual	4.2311E-07	g/s	Xylenes	EWC_9	2016
Annual	5.2230E-07	g/s	Xylenes	G31_G91W	2016
Annual	1.5727E-06	g/s	Xylenes	IWC_1	2016
Annual	1.7683E-04	g/s	Xylenes	IWCT	2016
Annual	1.1290E-06	g/s	Xylenes	RAMPSW	2016

Note:
1. The source groups names are used in the air dispersion modeling to represent one or a series of emissions sources.

Abbreviations:
g: gram
s: second

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2009	1	0.000367836	g/s	Xylenes	IWC_1
Maximum Hourly	2009	1	0.000135476	g/s	1,3-Butadiene	IWCH
Maximum Hourly	2009	1	6.89697E-05	g/s	Acetaldehyde	IWCH
Maximum Hourly	2009	1	3.20217E-05	g/s	Acrolein	IWCH
Maximum Hourly	2009	1	0.001111476	g/s	Benzene	IWCH
Maximum Hourly	2009	1	0.000426325	g/s	Ethylbenzene	IWCH
Maximum Hourly	2009	1	0.000389186	g/s	Formaldehyde	IWCH
Maximum Hourly	2009	1	0.002546113	g/s	Hexane	IWCH
Maximum Hourly	2009	1	2.95584E-05	g/s	Methanol	IWCH
Maximum Hourly	2009	1	4.92641E-06	g/s	Methyl Ethyl Ketone	IWCH
Maximum Hourly	2009	1	1.2316E-05	g/s	Naphthalene	IWCH
Maximum Hourly	2009	1	0.00075374	g/s	Propylene	IWCH
Maximum Hourly	2009	1	2.95584E-05	g/s	Styrene	IWCH
Maximum Hourly	2009	1	0.00379439	g/s	Toluene	IWCH
Maximum Hourly	2009	1	0.001990037	g/s	Xylenes	IWCH
Maximum Hourly	2009	1	1.9713E-05	g/s	1,3-Butadiene	IWCH_C
Maximum Hourly	2009	1	1.00357E-05	g/s	Acetaldehyde	IWCH_C
Maximum Hourly	2009	1	4.65943E-06	g/s	Acrolein	IWCH_C
Maximum Hourly	2009	1	9.1271E-05	g/s	Benzene	IWCH_C
Maximum Hourly	2009	1	3.85478E-05	g/s	Ethylbenzene	IWCH_C
Maximum Hourly	2009	1	5.663E-05	g/s	Formaldehyde	IWCH_C
Maximum Hourly	2009	1	6.90759E-05	g/s	Hexane	IWCH_C
Maximum Hourly	2009	1	4.30101E-06	g/s	Methanol	IWCH_C
Maximum Hourly	2009	1	7.16836E-07	g/s	Methyl Ethyl Ketone	IWCH_C
Maximum Hourly	2009	1	1.79209E-06	g/s	Naphthalene	IWCH_C
Maximum Hourly	2009	1	0.000109676	g/s	Propylene	IWCH_C
Maximum Hourly	2009	1	4.30101E-06	g/s	Styrene	IWCH_C
Maximum Hourly	2009	1	0.000219396	g/s	Toluene	IWCH_C
Maximum Hourly	2009	1	0.000176443	g/s	Xylenes	IWCH_C
Maximum Hourly	2009	1	6.54955E-05	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2009	1	3.33432E-05	g/s	Acetaldehyde	IWCP
Maximum Hourly	2009	1	1.54808E-05	g/s	Acrolein	IWCP
Maximum Hourly	2009	1	0.000595973	g/s	Benzene	IWCP
Maximum Hourly	2009	1	0.00022565	g/s	Ethylbenzene	IWCP
Maximum Hourly	2009	1	0.000188151	g/s	Formaldehyde	IWCP
Maximum Hourly	2009	1	0.001481732	g/s	Hexane	IWCP
Maximum Hourly	2009	1	1.42899E-05	g/s	Methanol	IWCP
Maximum Hourly	2009	1	2.38165E-06	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2009	1	5.95414E-06	g/s	Naphthalene	IWCP
Maximum Hourly	2009	1	0.000364393	g/s	Propylene	IWCP
Maximum Hourly	2009	1	1.42899E-05	g/s	Styrene	IWCP
Maximum Hourly	2009	1	0.002111267	g/s	Toluene	IWCP
Maximum Hourly	2009	1	0.001056216	g/s	Xylenes	IWCP
Maximum Hourly	2009	1	1.2437E-05	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2009	1	6.33158E-06	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2009	1	2.93966E-06	g/s	Acrolein	IWCP_C
Maximum Hourly	2009	1	5.80471E-05	g/s	Benzene	IWCP_C
Maximum Hourly	2009	1	2.44746E-05	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2009	1	3.57282E-05	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2009	1	4.55637E-05	g/s	Hexane	IWCP_C
Maximum Hourly	2009	1	2.71354E-06	g/s	Methanol	IWCP_C
Maximum Hourly	2009	1	4.52256E-07	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2009	1	1.13064E-06	g/s	Naphthalene	IWCP_C
Maximum Hourly	2009	1	6.91952E-05	g/s	Propylene	IWCP_C
Maximum Hourly	2009	1	2.71354E-06	g/s	Styrene	IWCP_C
Maximum Hourly	2009	1	0.000140608	g/s	Toluene	IWCP_C
Maximum Hourly	2009	1	0.000112063	g/s	Xylenes	IWCP_C
Maximum Hourly	2009	1	4.36637E-05	g/s	1,3-Butadiene	IWCT
Maximum Hourly	2009	1	2.22288E-05	g/s	Acetaldehyde	IWCT
Maximum Hourly	2009	1	1.03205E-05	g/s	Acrolein	IWCT
Maximum Hourly	2009	1	0.000397316	g/s	Benzene	IWCT
Maximum Hourly	2009	1	0.000150433	g/s	Ethylbenzene	IWCT
Maximum Hourly	2009	1	0.000125434	g/s	Formaldehyde	IWCT
Maximum Hourly	2009	1	0.000987822	g/s	Hexane	IWCT
Maximum Hourly	2009	1	9.52662E-06	g/s	Methanol	IWCT
Maximum Hourly	2009	1	1.58777E-06	g/s	Methyl Ethyl Ketone	IWCT
Maximum Hourly	2009	1	3.96942E-06	g/s	Naphthalene	IWCT
Maximum Hourly	2009	1	0.000242929	g/s	Propylene	IWCT
Maximum Hourly	2009	1	9.52662E-06	g/s	Styrene	IWCT
Maximum Hourly	2009	1	0.001407511	g/s	Toluene	IWCT
Maximum Hourly	2009	1	0.000704144	g/s	Xylenes	IWCT
Maximum Hourly	2009	1	9.32778E-06	g/s	1,3-Butadiene	IWCT_C
Maximum Hourly	2009	1	4.74869E-06	g/s	Acetaldehyde	IWCT_C
Maximum Hourly	2009	1	2.20475E-06	g/s	Acrolein	IWCT_C
Maximum Hourly	2009	1	4.35353E-05	g/s	Benzene	IWCT_C
Maximum Hourly	2009	1	1.8356E-05	g/s	Ethylbenzene	IWCT_C
Maximum Hourly	2009	1	2.67962E-05	g/s	Formaldehyde	IWCT_C
Maximum Hourly	2009	1	3.41728E-05	g/s	Hexane	IWCT_C
Maximum Hourly	2009	1	2.03515E-06	g/s	Methanol	IWCT_C
Maximum Hourly	2009	1	3.39192E-07	g/s	Methyl Ethyl Ketone	IWCT_C
Maximum Hourly	2009	1	8.4798E-07	g/s	Naphthalene	IWCT_C
Maximum Hourly	2009	1	5.18964E-05	g/s	Propylene	IWCT_C
Maximum Hourly	2009	1	2.03515E-06	g/s	Styrene	IWCT_C
Maximum Hourly	2009	1	0.000105456	g/s	Toluene	IWCT_C
Maximum Hourly	2009	1	8.40474E-05	g/s	Xylenes	IWCT_C
Maximum Hourly	2009	1	1.11744E-05	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2009	1	5.6888E-06	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2009	1	2.64123E-06	g/s	Acrolein	RAMPSW
Maximum Hourly	2009	1	0.000150133	g/s	Benzene	RAMPSW
Maximum Hourly	2009	1	5.46494E-05	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2009	1	3.21011E-05	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2009	1	0.000460068	g/s	Hexane	RAMPSW
Maximum Hourly	2009	1	2.43806E-06	g/s	Methanol	RAMPSW
Maximum Hourly	2009	1	4.06343E-07	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2009	1	1.01586E-06	g/s	Naphthalene	RAMPSW
Maximum Hourly	2009	1	6.21705E-05	g/s	Propylene	RAMPSW
Maximum Hourly	2009	1	2.43806E-06	g/s	Styrene	RAMPSW

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2009	1	0.000589009	g/s	Toluene	RAMPSW
Maximum Hourly	2009	1	0.000257996	g/s	Xylenes	RAMPSW
Maximum Hourly	2014	1	1.82797E-06	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2014	1	9.30605E-07	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2014	1	4.32066E-07	g/s	Acrolein	CAS_G31W
Maximum Hourly	2014	1	2.89186E-05	g/s	Benzene	CAS_G31W
Maximum Hourly	2014	1	1.03929E-05	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2014	1	5.25127E-06	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2014	1	9.39075E-05	g/s	Hexane	CAS_G31W
Maximum Hourly	2014	1	3.98831E-07	g/s	Methanol	CAS_G31W
Maximum Hourly	2014	1	6.64718E-08	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2014	1	1.66179E-07	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2014	1	1.01702E-05	g/s	Propylene	CAS_G31W
Maximum Hourly	2014	1	3.98831E-07	g/s	Styrene	CAS_G31W
Maximum Hourly	2014	1	0.000116938	g/s	Toluene	CAS_G31W
Maximum Hourly	2014	1	4.92032E-05	g/s	Xylenes	CAS_G31W
Maximum Hourly	2014	1	1.9148E-06	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2014	1	9.74806E-07	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2014	1	4.52588E-07	g/s	Acrolein	EW_C_6
Maximum Hourly	2014	1	3.02921E-05	g/s	Benzene	EW_C_6
Maximum Hourly	2014	1	1.08865E-05	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2014	1	5.50069E-06	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2014	1	9.83679E-05	g/s	Hexane	EW_C_6
Maximum Hourly	2014	1	4.17774E-07	g/s	Methanol	EW_C_6
Maximum Hourly	2014	1	6.9629E-08	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2014	1	1.74072E-07	g/s	Naphthalene	EW_C_6
Maximum Hourly	2014	1	1.06532E-05	g/s	Propylene	EW_C_6
Maximum Hourly	2014	1	4.17774E-07	g/s	Styrene	EW_C_6
Maximum Hourly	2014	1	0.000122492	g/s	Toluene	EW_C_6
Maximum Hourly	2014	1	5.15402E-05	g/s	Xylenes	EW_C_6
Maximum Hourly	2014	1	2.12578E-05	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2014	1	1.08221E-05	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2014	1	5.02457E-06	g/s	Acrolein	EW_C_7
Maximum Hourly	2014	1	0.000336298	g/s	Benzene	EW_C_7
Maximum Hourly	2014	1	0.00012086	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2014	1	6.10678E-05	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2014	1	0.001092065	g/s	Hexane	EW_C_7
Maximum Hourly	2014	1	4.63806E-06	g/s	Methanol	EW_C_7
Maximum Hourly	2014	1	7.7301E-07	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2014	1	1.93253E-06	g/s	Naphthalene	EW_C_7
Maximum Hourly	2014	1	0.000118271	g/s	Propylene	EW_C_7
Maximum Hourly	2014	1	4.63806E-06	g/s	Styrene	EW_C_7
Maximum Hourly	2014	1	0.001359888	g/s	Toluene	EW_C_7
Maximum Hourly	2014	1	0.000572191	g/s	Xylenes	EW_C_7
Maximum Hourly	2014	1	8.23164E-06	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2014	1	4.19065E-06	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2014	1	1.94566E-06	g/s	Acrolein	EW_C_8
Maximum Hourly	2014	1	0.000130225	g/s	Benzene	EW_C_8
Maximum Hourly	2014	1	4.68007E-05	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2014	1	2.36473E-05	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2014	1	0.00042288	g/s	Hexane	EW_C_8
Maximum Hourly	2014	1	1.79599E-06	g/s	Methanol	EW_C_8
Maximum Hourly	2014	1	2.99332E-07	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2014	1	7.48331E-07	g/s	Naphthalene	EW_C_8
Maximum Hourly	2014	1	4.57979E-05	g/s	Propylene	EW_C_8
Maximum Hourly	2014	1	1.79599E-06	g/s	Styrene	EW_C_8
Maximum Hourly	2014	1	0.000526589	g/s	Toluene	EW_C_8
Maximum Hourly	2014	1	0.000221569	g/s	Xylenes	EW_C_8
Maximum Hourly	2014	1	2.80801E-06	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2014	1	1.42953E-06	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2014	1	6.63712E-07	g/s	Acrolein	EW_C_9
Maximum Hourly	2014	1	4.44228E-05	g/s	Benzene	EW_C_9
Maximum Hourly	2014	1	1.59648E-05	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2014	1	8.06665E-06	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2014	1	0.000144254	g/s	Hexane	EW_C_9
Maximum Hourly	2014	1	6.12657E-07	g/s	Methanol	EW_C_9
Maximum Hourly	2014	1	1.02109E-07	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2014	1	2.55274E-07	g/s	Naphthalene	EW_C_9
Maximum Hourly	2014	1	1.56228E-05	g/s	Propylene	EW_C_9
Maximum Hourly	2014	1	6.12657E-07	g/s	Styrene	EW_C_9
Maximum Hourly	2014	1	0.000179632	g/s	Toluene	EW_C_9
Maximum Hourly	2014	1	7.55826E-05	g/s	Xylenes	EW_C_9
Maximum Hourly	2014	1	3.4663E-06	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2014	1	1.76466E-06	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2014	1	8.19308E-07	g/s	Acrolein	G31_G91W
Maximum Hourly	2014	1	5.48369E-05	g/s	Benzene	G31_G91W
Maximum Hourly	2014	1	1.97075E-05	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2014	1	9.95774E-06	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2014	1	0.000178073	g/s	Hexane	G31_G91W
Maximum Hourly	2014	1	7.56284E-07	g/s	Methanol	G31_G91W
Maximum Hourly	2014	1	1.26047E-07	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2014	1	3.15118E-07	g/s	Naphthalene	G31_G91W
Maximum Hourly	2014	1	1.92852E-05	g/s	Propylene	G31_G91W
Maximum Hourly	2014	1	7.56284E-07	g/s	Styrene	G31_G91W
Maximum Hourly	2014	1	0.000221744	g/s	Toluene	G31_G91W
Maximum Hourly	2014	1	9.33017E-05	g/s	Xylenes	G31_G91W
Maximum Hourly	2014	1	2.68365E-05	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2014	1	1.36622E-05	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2014	1	6.34317E-06	g/s	Acrolein	IWC_1
Maximum Hourly	2014	1	0.000150468	g/s	Benzene	IWC_1
Maximum Hourly	2014	1	6.12158E-05	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2014	1	7.7094E-05	g/s	Formaldehyde	IWC_1
Maximum Hourly	2014	1	0.000206179	g/s	Hexane	IWC_1
Maximum Hourly	2014	1	5.85524E-06	g/s	Methanol	IWC_1
Maximum Hourly	2014	1	9.75873E-07	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2014	1	2.43968E-06	g/s	Naphthalene	IWC_1
Maximum Hourly	2014	1	0.000149309	g/s	Propylene	IWC_1

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2014	1	5.85524E-06	g/s	Styrene	IWC_1
Maximum Hourly	2014	1	0.00042247	g/s	Toluene	IWC_1
Maximum Hourly	2014	1	0.000282292	g/s	Xylenes	IWC_1
Maximum Hourly	2014	1	3.08091E-05	g/s	1,3-Butadiene	IWCH
Maximum Hourly	2014	1	1.56846E-05	g/s	Acetaldehyde	IWCH
Maximum Hourly	2014	1	7.28215E-06	g/s	Acrolein	IWCH
Maximum Hourly	2014	1	0.000260616	g/s	Benzene	IWCH
Maximum Hourly	2014	1	9.9569E-05	g/s	Ethylbenzene	IWCH
Maximum Hourly	2014	1	8.85061E-05	g/s	Formaldehyde	IWCH
Maximum Hourly	2014	1	0.000612606	g/s	Hexane	IWCH
Maximum Hourly	2014	1	6.72198E-06	g/s	Methanol	IWCH
Maximum Hourly	2014	1	1.12033E-06	g/s	Methyl Ethyl Ketone	IWCH
Maximum Hourly	2014	1	2.80083E-06	g/s	Naphthalene	IWCH
Maximum Hourly	2014	1	0.00017141	g/s	Propylene	IWCH
Maximum Hourly	2014	1	6.72198E-06	g/s	Styrene	IWCH
Maximum Hourly	2014	1	0.000899971	g/s	Toluene	IWCH
Maximum Hourly	2014	1	0.000465167	g/s	Xylenes	IWCH
Maximum Hourly	2014	1	4.41159E-06	g/s	1,3-Butadiene	IWCH_C
Maximum Hourly	2014	1	2.2459E-06	g/s	Acetaldehyde	IWCH_C
Maximum Hourly	2014	1	1.04274E-06	g/s	Acrolein	IWCH_C
Maximum Hourly	2014	1	2.05125E-05	g/s	Benzene	IWCH_C
Maximum Hourly	2014	1	8.6556E-06	g/s	Ethylbenzene	IWCH_C
Maximum Hourly	2014	1	1.26733E-05	g/s	Formaldehyde	IWCH_C
Maximum Hourly	2014	1	1.58299E-05	g/s	Hexane	IWCH_C
Maximum Hourly	2014	1	9.62529E-07	g/s	Methanol	IWCH_C
Maximum Hourly	2014	1	1.60421E-07	g/s	Methyl Ethyl Ketone	IWCH_C
Maximum Hourly	2014	1	4.01054E-07	g/s	Naphthalene	IWCH_C
Maximum Hourly	2014	1	2.45445E-05	g/s	Propylene	IWCH_C
Maximum Hourly	2014	1	9.62529E-07	g/s	Styrene	IWCH_C
Maximum Hourly	2014	1	4.95089E-05	g/s	Toluene	IWCH_C
Maximum Hourly	2014	1	3.96257E-05	g/s	Xylenes	IWCH_C
Maximum Hourly	2014	1	3.05131E-05	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2014	1	1.55339E-05	g/s	Acetaldehyde	IWCP
Maximum Hourly	2014	1	7.21218E-06	g/s	Acrolein	IWCP
Maximum Hourly	2014	1	0.00028985	g/s	Benzene	IWCP
Maximum Hourly	2014	1	0.000109192	g/s	Ethylbenzene	IWCP
Maximum Hourly	2014	1	8.76558E-05	g/s	Formaldehyde	IWCP
Maximum Hourly	2014	1	0.00074249	g/s	Hexane	IWCP
Maximum Hourly	2014	1	6.6574E-06	g/s	Methanol	IWCP
Maximum Hourly	2014	1	1.10957E-06	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2014	1	2.77392E-06	g/s	Naphthalene	IWCP
Maximum Hourly	2014	1	0.000169764	g/s	Propylene	IWCP
Maximum Hourly	2014	1	6.6574E-06	g/s	Styrene	IWCP
Maximum Hourly	2014	1	0.0010412	g/s	Toluene	IWCP
Maximum Hourly	2014	1	0.000511655	g/s	Xylenes	IWCP
Maximum Hourly	2014	1	6.2362E-06	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2014	1	3.17479E-06	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2014	1	1.47401E-06	g/s	Acrolein	IWCP_C
Maximum Hourly	2014	1	2.9267E-05	g/s	Benzene	IWCP_C
Maximum Hourly	2014	1	1.23257E-05	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2014	1	1.79149E-05	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2014	1	2.35348E-05	g/s	Hexane	IWCP_C
Maximum Hourly	2014	1	1.36063E-06	g/s	Methanol	IWCP_C
Maximum Hourly	2014	1	2.26771E-07	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2014	1	5.66928E-07	g/s	Naphthalene	IWCP_C
Maximum Hourly	2014	1	3.4696E-05	g/s	Propylene	IWCP_C
Maximum Hourly	2014	1	1.36063E-06	g/s	Styrene	IWCP_C
Maximum Hourly	2014	1	7.12635E-05	g/s	Toluene	IWCP_C
Maximum Hourly	2014	1	5.64492E-05	g/s	Xylenes	IWCP_C
Maximum Hourly	2014	1	1.42394E-05	g/s	1,3-Butadiene	IWCT
Maximum Hourly	2014	1	7.24917E-06	g/s	Acetaldehyde	IWCT
Maximum Hourly	2014	1	3.36569E-06	g/s	Acrolein	IWCT
Maximum Hourly	2014	1	0.000135263	g/s	Benzene	IWCT
Maximum Hourly	2014	1	5.09562E-05	g/s	Ethylbenzene	IWCT
Maximum Hourly	2014	1	4.0906E-05	g/s	Formaldehyde	IWCT
Maximum Hourly	2014	1	0.000346496	g/s	Hexane	IWCT
Maximum Hourly	2014	1	3.10679E-06	g/s	Methanol	IWCT
Maximum Hourly	2014	1	5.17798E-07	g/s	Methyl Ethyl Ketone	IWCT
Maximum Hourly	2014	1	1.29449E-06	g/s	Naphthalene	IWCT
Maximum Hourly	2014	1	7.92231E-05	g/s	Propylene	IWCT
Maximum Hourly	2014	1	3.10679E-06	g/s	Styrene	IWCT
Maximum Hourly	2014	1	0.000485893	g/s	Toluene	IWCT
Maximum Hourly	2014	1	0.000238772	g/s	Xylenes	IWCT
Maximum Hourly	2014	1	3.9265E-06	g/s	1,3-Butadiene	IWCT_C
Maximum Hourly	2014	1	1.99894E-06	g/s	Acetaldehyde	IWCT_C
Maximum Hourly	2014	1	9.28081E-07	g/s	Acrolein	IWCT_C
Maximum Hourly	2014	1	1.84273E-05	g/s	Benzene	IWCT_C
Maximum Hourly	2014	1	7.76064E-06	g/s	Ethylbenzene	IWCT_C
Maximum Hourly	2014	1	1.12798E-05	g/s	Formaldehyde	IWCT_C
Maximum Hourly	2014	1	1.48182E-05	g/s	Hexane	IWCT_C
Maximum Hourly	2014	1	8.56691E-07	g/s	Methanol	IWCT_C
Maximum Hourly	2014	1	1.42782E-07	g/s	Methyl Ethyl Ketone	IWCT_C
Maximum Hourly	2014	1	3.56954E-07	g/s	Naphthalene	IWCT_C
Maximum Hourly	2014	1	2.18456E-05	g/s	Propylene	IWCT_C
Maximum Hourly	2014	1	8.56691E-07	g/s	Styrene	IWCT_C
Maximum Hourly	2014	1	4.48696E-05	g/s	Toluene	IWCT_C
Maximum Hourly	2014	1	3.55421E-05	g/s	Xylenes	IWCT_C
Maximum Hourly	2014	1	7.49279E-06	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2014	1	3.81451E-06	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2014	1	1.77102E-06	g/s	Acrolein	RAMPSW
Maximum Hourly	2014	1	0.000118536	g/s	Benzene	RAMPSW
Maximum Hourly	2014	1	4.25999E-05	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2014	1	2.15247E-05	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2014	1	0.000384923	g/s	Hexane	RAMPSW
Maximum Hourly	2014	1	1.63479E-06	g/s	Methanol	RAMPSW
Maximum Hourly	2014	1	2.72465E-07	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2014	1	6.81163E-07	g/s	Naphthalene	RAMPSW

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2014	1	4.16871E-05	g/s	Propylene	RAMPSW
Maximum Hourly	2014	1	1.63479E-06	g/s	Styrene	RAMPSW
Maximum Hourly	2014	1	0.000479323	g/s	Toluene	RAMPSW
Maximum Hourly	2014	1	0.000201682	g/s	Xylenes	RAMPSW
Maximum Hourly	2015	1	5.23388E-07	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2015	1	2.66452E-07	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2015	1	1.2371E-07	g/s	Acrolein	CAS_G31W
Maximum Hourly	2015	1	8.58947E-06	g/s	Benzene	CAS_G31W
Maximum Hourly	2015	1	3.07886E-06	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2015	1	1.50355E-06	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2015	1	2.82116E-05	g/s	Hexane	CAS_G31W
Maximum Hourly	2015	1	1.14194E-07	g/s	Methanol	CAS_G31W
Maximum Hourly	2015	1	1.90323E-08	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2015	1	4.75807E-08	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2015	1	2.91194E-06	g/s	Propylene	CAS_G31W
Maximum Hourly	2015	1	1.14194E-07	g/s	Styrene	CAS_G31W
Maximum Hourly	2015	1	3.49432E-05	g/s	Toluene	CAS_G31W
Maximum Hourly	2015	1	1.45848E-05	g/s	Xylenes	CAS_G31W
Maximum Hourly	2015	1	5.48247E-07	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2015	1	2.79108E-07	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2015	1	1.29586E-07	g/s	Acrolein	EW_C_6
Maximum Hourly	2015	1	8.99745E-06	g/s	Benzene	EW_C_6
Maximum Hourly	2015	1	3.22509E-06	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2015	1	1.57496E-06	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2015	1	2.95515E-05	g/s	Hexane	EW_C_6
Maximum Hourly	2015	1	1.19618E-07	g/s	Methanol	EW_C_6
Maximum Hourly	2015	1	1.99363E-08	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2015	1	4.98406E-08	g/s	Naphthalene	EW_C_6
Maximum Hourly	2015	1	3.05025E-06	g/s	Propylene	EW_C_6
Maximum Hourly	2015	1	1.19618E-07	g/s	Styrene	EW_C_6
Maximum Hourly	2015	1	3.66029E-05	g/s	Toluene	EW_C_6
Maximum Hourly	2015	1	1.52775E-05	g/s	Xylenes	EW_C_6
Maximum Hourly	2015	1	6.08655E-06	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2015	1	3.09861E-06	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2015	1	1.43864E-06	g/s	Acrolein	EW_C_7
Maximum Hourly	2015	1	9.98883E-05	g/s	Benzene	EW_C_7
Maximum Hourly	2015	1	3.58045E-05	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2015	1	1.7485E-05	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2015	1	0.000328077	g/s	Hexane	EW_C_7
Maximum Hourly	2015	1	1.32798E-06	g/s	Methanol	EW_C_7
Maximum Hourly	2015	1	2.21329E-07	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2015	1	5.53323E-07	g/s	Naphthalene	EW_C_7
Maximum Hourly	2015	1	3.38634E-05	g/s	Propylene	EW_C_7
Maximum Hourly	2015	1	1.32798E-06	g/s	Styrene	EW_C_7
Maximum Hourly	2015	1	0.00040636	g/s	Toluene	EW_C_7
Maximum Hourly	2015	1	0.000169609	g/s	Xylenes	EW_C_7
Maximum Hourly	2015	1	2.35689E-06	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2015	1	1.19987E-06	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2015	1	5.57084E-07	g/s	Acrolein	EW_C_8
Maximum Hourly	2015	1	3.86797E-05	g/s	Benzene	EW_C_8
Maximum Hourly	2015	1	1.38646E-05	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2015	1	6.77071E-06	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2015	1	0.000127041	g/s	Hexane	EW_C_8
Maximum Hourly	2015	1	5.14231E-07	g/s	Methanol	EW_C_8
Maximum Hourly	2015	1	8.57052E-08	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2015	1	2.14263E-07	g/s	Naphthalene	EW_C_8
Maximum Hourly	2015	1	1.31129E-05	g/s	Propylene	EW_C_8
Maximum Hourly	2015	1	5.14231E-07	g/s	Styrene	EW_C_8
Maximum Hourly	2015	1	0.000157354	g/s	Toluene	EW_C_8
Maximum Hourly	2015	1	6.56775E-05	g/s	Xylenes	EW_C_8
Maximum Hourly	2015	1	8.03993E-07	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2015	1	4.09306E-07	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2015	1	1.90035E-07	g/s	Acrolein	EW_C_9
Maximum Hourly	2015	1	1.31946E-05	g/s	Benzene	EW_C_9
Maximum Hourly	2015	1	4.72953E-06	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2015	1	2.30965E-06	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2015	1	4.33367E-05	g/s	Hexane	EW_C_9
Maximum Hourly	2015	1	1.75417E-07	g/s	Methanol	EW_C_9
Maximum Hourly	2015	1	2.92361E-08	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2015	1	7.30903E-08	g/s	Naphthalene	EW_C_9
Maximum Hourly	2015	1	4.47312E-06	g/s	Propylene	EW_C_9
Maximum Hourly	2015	1	1.75417E-07	g/s	Styrene	EW_C_9
Maximum Hourly	2015	1	5.36774E-05	g/s	Toluene	EW_C_9
Maximum Hourly	2015	1	2.24042E-05	g/s	Xylenes	EW_C_9
Maximum Hourly	2015	1	9.92476E-07	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2015	1	5.0526E-07	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2015	1	2.34585E-07	g/s	Acrolein	G31_G91W
Maximum Hourly	2015	1	1.62878E-05	g/s	Benzene	G31_G91W
Maximum Hourly	2015	1	5.83829E-06	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2015	1	2.85111E-06	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2015	1	5.34963E-05	g/s	Hexane	G31_G91W
Maximum Hourly	2015	1	2.1654E-07	g/s	Methanol	G31_G91W
Maximum Hourly	2015	1	3.609E-08	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2015	1	9.02251E-08	g/s	Naphthalene	G31_G91W
Maximum Hourly	2015	1	5.52177E-06	g/s	Propylene	G31_G91W
Maximum Hourly	2015	1	2.1654E-07	g/s	Styrene	G31_G91W
Maximum Hourly	2015	1	6.62611E-05	g/s	Toluene	G31_G91W
Maximum Hourly	2015	1	2.76565E-05	g/s	Xylenes	G31_G91W
Maximum Hourly	2015	1	7.90394E-06	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2015	1	4.02382E-06	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2015	1	1.8682E-06	g/s	Acrolein	IWC_1
Maximum Hourly	2015	1	4.4518E-05	g/s	Benzene	IWC_1
Maximum Hourly	2015	1	1.80967E-05	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2015	1	2.27059E-05	g/s	Formaldehyde	IWC_1
Maximum Hourly	2015	1	6.15879E-05	g/s	Hexane	IWC_1
Maximum Hourly	2015	1	1.7245E-06	g/s	Methanol	IWC_1
Maximum Hourly	2015	1	2.87416E-07	g/s	Methyl Ethyl Ketone	IWC_1

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2015	1	7.1854E-07	g/s	Naphthalene	IWC_1
Maximum Hourly	2015	1	4.39746E-05	g/s	Propylene	IWC_1
Maximum Hourly	2015	1	1.7245E-06	g/s	Styrene	IWC_1
Maximum Hourly	2015	1	0.00012538	g/s	Toluene	IWC_1
Maximum Hourly	2015	1	8.34653E-05	g/s	Xylenes	IWC_1
Maximum Hourly	2015	1	2.75256E-05	g/s	1,3-Butadiene	IWCH
Maximum Hourly	2015	1	1.40131E-05	g/s	Acetaldehyde	IWCH
Maximum Hourly	2015	1	6.50606E-06	g/s	Acrolein	IWCH
Maximum Hourly	2015	1	0.000234065	g/s	Benzene	IWCH
Maximum Hourly	2015	1	8.93657E-05	g/s	Ethylbenzene	IWCH
Maximum Hourly	2015	1	7.90737E-05	g/s	Formaldehyde	IWCH
Maximum Hourly	2015	1	0.000552556	g/s	Hexane	IWCH
Maximum Hourly	2015	1	6.00559E-06	g/s	Methanol	IWCH
Maximum Hourly	2015	1	1.00093E-06	g/s	Methyl Ethyl Ketone	IWCH
Maximum Hourly	2015	1	2.50233E-06	g/s	Naphthalene	IWCH
Maximum Hourly	2015	1	0.000153143	g/s	Propylene	IWCH
Maximum Hourly	2015	1	6.00559E-06	g/s	Styrene	IWCH
Maximum Hourly	2015	1	0.000809839	g/s	Toluene	IWCH
Maximum Hourly	2015	1	0.000417558	g/s	Xylenes	IWCH
Maximum Hourly	2015	1	3.72454E-06	g/s	1,3-Butadiene	IWCH_C
Maximum Hourly	2015	1	1.89613E-06	g/s	Acetaldehyde	IWCH_C
Maximum Hourly	2015	1	8.80346E-07	g/s	Acrolein	IWCH_C
Maximum Hourly	2015	1	1.73495E-05	g/s	Benzene	IWCH_C
Maximum Hourly	2015	1	7.31812E-06	g/s	Ethylbenzene	IWCH_C
Maximum Hourly	2015	1	1.06996E-05	g/s	Formaldehyde	IWCH_C
Maximum Hourly	2015	1	1.34996E-05	g/s	Hexane	IWCH_C
Maximum Hourly	2015	1	8.12627E-07	g/s	Methanol	IWCH_C
Maximum Hourly	2015	1	1.35438E-07	g/s	Methyl Ethyl Ketone	IWCH_C
Maximum Hourly	2015	1	3.38595E-07	g/s	Naphthalene	IWCH_C
Maximum Hourly	2015	1	2.0722E-05	g/s	Propylene	IWCH_C
Maximum Hourly	2015	1	8.12627E-07	g/s	Styrene	IWCH_C
Maximum Hourly	2015	1	4.19475E-05	g/s	Toluene	IWCH_C
Maximum Hourly	2015	1	3.35052E-05	g/s	Xylenes	IWCH_C
Maximum Hourly	2015	1	1.90222E-05	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2015	1	9.68401E-06	g/s	Acetaldehyde	IWCP
Maximum Hourly	2015	1	4.49615E-06	g/s	Acrolein	IWCP
Maximum Hourly	2015	1	0.000182071	g/s	Benzene	IWCP
Maximum Hourly	2015	1	6.85297E-05	g/s	Ethylbenzene	IWCP
Maximum Hourly	2015	1	5.46455E-05	g/s	Formaldehyde	IWCP
Maximum Hourly	2015	1	0.000468758	g/s	Hexane	IWCP
Maximum Hourly	2015	1	4.15029E-06	g/s	Methanol	IWCP
Maximum Hourly	2015	1	6.91715E-07	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2015	1	1.72929E-06	g/s	Naphthalene	IWCP
Maximum Hourly	2015	1	0.000105832	g/s	Propylene	IWCP
Maximum Hourly	2015	1	4.15029E-06	g/s	Styrene	IWCP
Maximum Hourly	2015	1	0.000655588	g/s	Toluene	IWCP
Maximum Hourly	2015	1	0.000321179	g/s	Xylenes	IWCP
Maximum Hourly	2015	1	2.9216E-06	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2015	1	1.48736E-06	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2015	1	6.9056E-07	g/s	Acrolein	IWCP_C
Maximum Hourly	2015	1	1.37435E-05	g/s	Benzene	IWCP_C
Maximum Hourly	2015	1	5.78523E-06	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2015	1	8.39296E-06	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2015	1	1.11638E-05	g/s	Hexane	IWCP_C
Maximum Hourly	2015	1	6.3744E-07	g/s	Methanol	IWCP_C
Maximum Hourly	2015	1	1.0624E-07	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2015	1	2.656E-07	g/s	Naphthalene	IWCP_C
Maximum Hourly	2015	1	1.62547E-05	g/s	Propylene	IWCP_C
Maximum Hourly	2015	1	6.3744E-07	g/s	Styrene	IWCP_C
Maximum Hourly	2015	1	3.35385E-05	g/s	Toluene	IWCP_C
Maximum Hourly	2015	1	2.64977E-05	g/s	Xylenes	IWCP_C
Maximum Hourly	2015	1	2.14534E-06	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2015	1	1.09218E-06	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2015	1	5.07081E-07	g/s	Acrolein	RAMPSW
Maximum Hourly	2015	1	3.52079E-05	g/s	Benzene	RAMPSW
Maximum Hourly	2015	1	1.26201E-05	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2015	1	6.16299E-06	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2015	1	0.000115638	g/s	Hexane	RAMPSW
Maximum Hourly	2015	1	4.68075E-07	g/s	Methanol	RAMPSW
Maximum Hourly	2015	1	7.80125E-08	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2015	1	1.95031E-07	g/s	Naphthalene	RAMPSW
Maximum Hourly	2015	1	1.19359E-05	g/s	Propylene	RAMPSW
Maximum Hourly	2015	1	4.68075E-07	g/s	Styrene	RAMPSW
Maximum Hourly	2015	1	0.000143231	g/s	Toluene	RAMPSW
Maximum Hourly	2015	1	5.97824E-05	g/s	Xylenes	RAMPSW
Maximum Hourly	2016	1	1.34106E-08	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2016	1	6.8272E-09	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2016	1	3.16977E-09	g/s	Acrolein	CAS_G31W
Maximum Hourly	2016	1	2.27241E-07	g/s	Benzene	CAS_G31W
Maximum Hourly	2016	1	8.12737E-08	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2016	1	3.85249E-08	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2016	1	7.53466E-07	g/s	Hexane	CAS_G31W
Maximum Hourly	2016	1	2.92594E-09	g/s	Methanol	CAS_G31W
Maximum Hourly	2016	1	4.87657E-10	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2016	1	1.21914E-09	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2016	1	7.46115E-08	g/s	Propylene	CAS_G31W
Maximum Hourly	2016	1	2.92594E-09	g/s	Styrene	CAS_G31W
Maximum Hourly	2016	1	9.29128E-07	g/s	Toluene	CAS_G31W
Maximum Hourly	2016	1	3.8519E-07	g/s	Xylenes	CAS_G31W
Maximum Hourly	2016	1	1.40475E-08	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2016	1	7.15147E-09	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2016	1	3.32032E-09	g/s	Acrolein	EW_C_6
Maximum Hourly	2016	1	2.38034E-07	g/s	Benzene	EW_C_6
Maximum Hourly	2016	1	8.5134E-08	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2016	1	4.03547E-08	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2016	1	7.89254E-07	g/s	Hexane	EW_C_6
Maximum Hourly	2016	1	3.06492E-09	g/s	Methanol	EW_C_6

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2016	1	5.10819E-10	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2016	1	1.27705E-09	g/s	Naphthalene	EW_C_6
Maximum Hourly	2016	1	7.81553E-08	g/s	Propylene	EW_C_6
Maximum Hourly	2016	1	3.06492E-09	g/s	Styrene	EW_C_6
Maximum Hourly	2016	1	9.73259E-07	g/s	Toluene	EW_C_6
Maximum Hourly	2016	1	4.03485E-07	g/s	Xylenes	EW_C_6
Maximum Hourly	2016	1	1.55954E-07	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2016	1	7.93945E-08	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2016	1	3.68617E-08	g/s	Acrolein	EW_C_7
Maximum Hourly	2016	1	2.64262E-06	g/s	Benzene	EW_C_7
Maximum Hourly	2016	1	9.45144E-07	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2016	1	4.48012E-07	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2016	1	8.76218E-06	g/s	Hexane	EW_C_7
Maximum Hourly	2016	1	3.40262E-08	g/s	Methanol	EW_C_7
Maximum Hourly	2016	1	5.67104E-09	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2016	1	1.41776E-08	g/s	Naphthalene	EW_C_7
Maximum Hourly	2016	1	8.67669E-07	g/s	Propylene	EW_C_7
Maximum Hourly	2016	1	3.40262E-08	g/s	Styrene	EW_C_7
Maximum Hourly	2016	1	1.0805E-05	g/s	Toluene	EW_C_7
Maximum Hourly	2016	1	4.47943E-06	g/s	Xylenes	EW_C_7
Maximum Hourly	2016	1	6.03898E-08	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2016	1	3.07439E-08	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2016	1	1.4274E-08	g/s	Acrolein	EW_C_8
Maximum Hourly	2016	1	1.0233E-06	g/s	Benzene	EW_C_8
Maximum Hourly	2016	1	3.65988E-07	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2016	1	1.73483E-07	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2016	1	3.39297E-06	g/s	Hexane	EW_C_8
Maximum Hourly	2016	1	1.3176E-08	g/s	Methanol	EW_C_8
Maximum Hourly	2016	1	2.19599E-09	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2016	1	5.48998E-09	g/s	Naphthalene	EW_C_8
Maximum Hourly	2016	1	3.35987E-07	g/s	Propylene	EW_C_8
Maximum Hourly	2016	1	1.3176E-08	g/s	Styrene	EW_C_8
Maximum Hourly	2016	1	4.184E-06	g/s	Toluene	EW_C_8
Maximum Hourly	2016	1	1.73457E-06	g/s	Xylenes	EW_C_8
Maximum Hourly	2016	1	2.06004E-08	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2016	1	1.04875E-08	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2016	1	4.86919E-09	g/s	Acrolein	EW_C_9
Maximum Hourly	2016	1	3.49072E-07	g/s	Benzene	EW_C_9
Maximum Hourly	2016	1	1.24847E-07	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2016	1	5.91794E-08	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2016	1	1.15742E-06	g/s	Hexane	EW_C_9
Maximum Hourly	2016	1	4.49464E-09	g/s	Methanol	EW_C_9
Maximum Hourly	2016	1	7.49106E-10	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2016	1	1.87277E-09	g/s	Naphthalene	EW_C_9
Maximum Hourly	2016	1	1.14613E-07	g/s	Propylene	EW_C_9
Maximum Hourly	2016	1	4.49464E-09	g/s	Styrene	EW_C_9
Maximum Hourly	2016	1	1.42726E-06	g/s	Toluene	EW_C_9
Maximum Hourly	2016	1	5.91703E-07	g/s	Xylenes	EW_C_9
Maximum Hourly	2016	1	2.54298E-08	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2016	1	1.29461E-08	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2016	1	6.01069E-09	g/s	Acrolein	G31_G91W
Maximum Hourly	2016	1	4.30906E-07	g/s	Benzene	G31_G91W
Maximum Hourly	2016	1	1.54116E-07	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2016	1	7.3053E-08	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2016	1	1.42876E-06	g/s	Hexane	G31_G91W
Maximum Hourly	2016	1	5.54833E-09	g/s	Methanol	G31_G91W
Maximum Hourly	2016	1	9.24721E-10	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2016	1	2.3118E-09	g/s	Naphthalene	G31_G91W
Maximum Hourly	2016	1	1.41482E-07	g/s	Propylene	G31_G91W
Maximum Hourly	2016	1	5.54833E-09	g/s	Styrene	G31_G91W
Maximum Hourly	2016	1	1.76186E-06	g/s	Toluene	G31_G91W
Maximum Hourly	2016	1	7.30418E-07	g/s	Xylenes	G31_G91W
Maximum Hourly	2016	1	2.07585E-07	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2016	1	1.0568E-07	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2016	1	4.90656E-08	g/s	Acrolein	IWC_1
Maximum Hourly	2016	1	1.17376E-06	g/s	Benzene	IWC_1
Maximum Hourly	2016	1	4.76805E-07	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2016	1	5.96335E-07	g/s	Formaldehyde	IWC_1
Maximum Hourly	2016	1	1.63705E-06	g/s	Hexane	IWC_1
Maximum Hourly	2016	1	4.52913E-08	g/s	Methanol	IWC_1
Maximum Hourly	2016	1	7.54855E-09	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2016	1	1.88714E-08	g/s	Naphthalene	IWC_1
Maximum Hourly	2016	1	1.15493E-06	g/s	Propylene	IWC_1
Maximum Hourly	2016	1	4.52913E-08	g/s	Styrene	IWC_1
Maximum Hourly	2016	1	3.31449E-06	g/s	Toluene	IWC_1
Maximum Hourly	2016	1	2.19942E-06	g/s	Xylenes	IWC_1
Maximum Hourly	2016	1	1.45527E-05	g/s	1,3-Butadiene	IWCT
Maximum Hourly	2016	1	7.40865E-06	g/s	Acetaldehyde	IWCT
Maximum Hourly	2016	1	3.43973E-06	g/s	Acrolein	IWCT
Maximum Hourly	2016	1	0.000140271	g/s	Benzene	IWCT
Maximum Hourly	2016	1	5.27544E-05	g/s	Ethylbenzene	IWCT
Maximum Hourly	2016	1	4.18059E-05	g/s	Formaldehyde	IWCT
Maximum Hourly	2016	1	0.000362809	g/s	Hexane	IWCT
Maximum Hourly	2016	1	3.17513E-06	g/s	Methanol	IWCT
Maximum Hourly	2016	1	5.29189E-07	g/s	Methyl Ethyl Ketone	IWCT
Maximum Hourly	2016	1	1.32297E-06	g/s	Naphthalene	IWCT
Maximum Hourly	2016	1	8.09659E-05	g/s	Propylene	IWCT
Maximum Hourly	2016	1	3.17513E-06	g/s	Styrene	IWCT
Maximum Hourly	2016	1	0.000506176	g/s	Toluene	IWCT
Maximum Hourly	2016	1	0.000247287	g/s	Xylenes	IWCT
Maximum Hourly	2016	1	5.49694E-08	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2016	1	2.79844E-08	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2016	1	1.29928E-08	g/s	Acrolein	RAMPSW
Maximum Hourly	2016	1	9.31451E-07	g/s	Benzene	RAMPSW
Maximum Hourly	2016	1	3.33138E-07	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2016	1	1.57912E-07	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2016	1	3.08843E-06	g/s	Hexane	RAMPSW

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2016	1	1.19933E-08	g/s	Methanol	RAMPSW
Maximum Hourly	2016	1	1.99889E-09	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2016	1	4.99721E-09	g/s	Naphthalene	RAMPSW
Maximum Hourly	2016	1	3.0583E-07	g/s	Propylene	RAMPSW
Maximum Hourly	2016	1	1.19933E-08	g/s	Styrene	RAMPSW
Maximum Hourly	2016	1	3.80846E-06	g/s	Toluene	RAMPSW
Maximum Hourly	2016	1	1.57888E-06	g/s	Xylenes	RAMPSW
Maximum Hourly	2009	2	2.58248E-06	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2009	2	1.31472E-06	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2009	2	6.10403E-07	g/s	Acrolein	CAS_G31W
Maximum Hourly	2009	2	3.46965E-05	g/s	Benzene	CAS_G31W
Maximum Hourly	2009	2	1.26298E-05	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2009	2	7.41875E-06	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2009	2	0.000106324	g/s	Hexane	CAS_G31W
Maximum Hourly	2009	2	5.63449E-07	g/s	Methanol	CAS_G31W
Maximum Hourly	2009	2	9.39082E-08	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2009	2	2.34771E-07	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2009	2	1.4368E-05	g/s	Propylene	CAS_G31W
Maximum Hourly	2009	2	5.63449E-07	g/s	Styrene	CAS_G31W
Maximum Hourly	2009	2	0.000136123	g/s	Toluene	CAS_G31W
Maximum Hourly	2009	2	5.96244E-05	g/s	Xylenes	CAS_G31W
Maximum Hourly	2009	2	2.70514E-06	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2009	2	1.37716E-06	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2009	2	6.39396E-07	g/s	Acrolein	EW_C_6
Maximum Hourly	2009	2	3.63445E-05	g/s	Benzene	EW_C_6
Maximum Hourly	2009	2	1.32297E-05	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2009	2	7.77112E-06	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2009	2	0.000111374	g/s	Hexane	EW_C_6
Maximum Hourly	2009	2	5.90212E-07	g/s	Methanol	EW_C_6
Maximum Hourly	2009	2	9.83686E-08	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2009	2	2.45921E-07	g/s	Naphthalene	EW_C_6
Maximum Hourly	2009	2	1.50504E-05	g/s	Propylene	EW_C_6
Maximum Hourly	2009	2	5.90212E-07	g/s	Styrene	EW_C_6
Maximum Hourly	2009	2	0.000142589	g/s	Toluene	EW_C_6
Maximum Hourly	2009	2	6.24564E-05	g/s	Xylenes	EW_C_6
Maximum Hourly	2009	2	3.0032E-05	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2009	2	1.5289E-05	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2009	2	7.09848E-06	g/s	Acrolein	EW_C_7
Maximum Hourly	2009	2	0.000403491	g/s	Benzene	EW_C_7
Maximum Hourly	2009	2	0.000146874	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2009	2	8.62738E-05	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2009	2	0.001236462	g/s	Hexane	EW_C_7
Maximum Hourly	2009	2	6.55244E-06	g/s	Methanol	EW_C_7
Maximum Hourly	2009	2	1.09207E-06	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2009	2	2.73018E-06	g/s	Naphthalene	EW_C_7
Maximum Hourly	2009	2	0.000167087	g/s	Propylene	EW_C_7
Maximum Hourly	2009	2	6.55244E-06	g/s	Styrene	EW_C_7
Maximum Hourly	2009	2	0.001583	g/s	Toluene	EW_C_7
Maximum Hourly	2009	2	0.000693382	g/s	Xylenes	EW_C_7
Maximum Hourly	2009	2	1.16293E-05	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2009	2	5.92036E-06	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2009	2	2.74874E-06	g/s	Acrolein	EW_C_8
Maximum Hourly	2009	2	0.000156244	g/s	Benzene	EW_C_8
Maximum Hourly	2009	2	5.68739E-05	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2009	2	3.34078E-05	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2009	2	0.000478795	g/s	Hexane	EW_C_8
Maximum Hourly	2009	2	2.5373E-06	g/s	Methanol	EW_C_8
Maximum Hourly	2009	2	4.22883E-07	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2009	2	1.05721E-06	g/s	Naphthalene	EW_C_8
Maximum Hourly	2009	2	6.47011E-05	g/s	Propylene	EW_C_8
Maximum Hourly	2009	2	2.5373E-06	g/s	Styrene	EW_C_8
Maximum Hourly	2009	2	0.000612984	g/s	Toluene	EW_C_8
Maximum Hourly	2009	2	0.000268498	g/s	Xylenes	EW_C_8
Maximum Hourly	2009	2	3.96703E-06	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2009	2	2.01958E-06	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2009	2	9.37661E-07	g/s	Acrolein	EW_C_9
Maximum Hourly	2009	2	5.32984E-05	g/s	Benzene	EW_C_9
Maximum Hourly	2009	2	1.9401E-05	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2009	2	1.13962E-05	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2009	2	0.000163328	g/s	Hexane	EW_C_9
Maximum Hourly	2009	2	8.65533E-07	g/s	Methanol	EW_C_9
Maximum Hourly	2009	2	1.44256E-07	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2009	2	3.60639E-07	g/s	Naphthalene	EW_C_9
Maximum Hourly	2009	2	2.20711E-05	g/s	Propylene	EW_C_9
Maximum Hourly	2009	2	8.65533E-07	g/s	Styrene	EW_C_9
Maximum Hourly	2009	2	0.000209104	g/s	Toluene	EW_C_9
Maximum Hourly	2009	2	9.15911E-05	g/s	Xylenes	EW_C_9
Maximum Hourly	2009	2	4.89703E-06	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2009	2	2.49303E-06	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2009	2	1.15748E-06	g/s	Acrolein	G31_G91W
Maximum Hourly	2009	2	6.57934E-05	g/s	Benzene	G31_G91W
Maximum Hourly	2009	2	2.39493E-05	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2009	2	1.40678E-05	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2009	2	0.000201618	g/s	Hexane	G31_G91W
Maximum Hourly	2009	2	1.06844E-06	g/s	Methanol	G31_G91W
Maximum Hourly	2009	2	1.78074E-07	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2009	2	4.45185E-07	g/s	Naphthalene	G31_G91W
Maximum Hourly	2009	2	2.72453E-05	g/s	Propylene	G31_G91W
Maximum Hourly	2009	2	1.06844E-06	g/s	Styrene	G31_G91W
Maximum Hourly	2009	2	0.000258125	g/s	Toluene	G31_G91W
Maximum Hourly	2009	2	0.000113063	g/s	Xylenes	G31_G91W
Maximum Hourly	2009	2	3.37812E-05	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2009	2	1.71977E-05	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2009	2	7.98465E-06	g/s	Acrolein	IWC_1
Maximum Hourly	2009	2	0.000185111	g/s	Benzene	IWC_1
Maximum Hourly	2009	2	7.56257E-05	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2009	2	9.70442E-05	g/s	Formaldehyde	IWC_1

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2009	2	0.000241163	g/s	Hexane	IWC_1
Maximum Hourly	2009	2	7.37045E-06	g/s	Methanol	IWC_1
Maximum Hourly	2009	2	1.22841E-06	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2009	2	3.07102E-06	g/s	Naphthalene	IWC_1
Maximum Hourly	2009	2	0.000187946	g/s	Propylene	IWC_1
Maximum Hourly	2009	2	7.37045E-06	g/s	Styrene	IWC_1
Maximum Hourly	2009	2	0.000511518	g/s	Toluene	IWC_1
Maximum Hourly	2009	2	0.000348448	g/s	Xylenes	IWC_1
Maximum Hourly	2009	2	0.000203214	g/s	1,3-Butadiene	IWCH
Maximum Hourly	2009	2	0.000103455	g/s	Acetaldehyde	IWCH
Maximum Hourly	2009	2	4.80325E-05	g/s	Acrolein	IWCH
Maximum Hourly	2009	2	0.001667214	g/s	Benzene	IWCH
Maximum Hourly	2009	2	0.000639487	g/s	Ethylbenzene	IWCH
Maximum Hourly	2009	2	0.000583779	g/s	Formaldehyde	IWCH
Maximum Hourly	2009	2	0.003819169	g/s	Hexane	IWCH
Maximum Hourly	2009	2	4.43377E-05	g/s	Methanol	IWCH
Maximum Hourly	2009	2	7.38961E-06	g/s	Methyl Ethyl Ketone	IWCH
Maximum Hourly	2009	2	1.8474E-05	g/s	Naphthalene	IWCH
Maximum Hourly	2009	2	0.001130611	g/s	Propylene	IWCH
Maximum Hourly	2009	2	4.43377E-05	g/s	Styrene	IWCH
Maximum Hourly	2009	2	0.005691585	g/s	Toluene	IWCH
Maximum Hourly	2009	2	0.002985055	g/s	Xylenes	IWCH
Maximum Hourly	2009	2	1.9713E-05	g/s	1,3-Butadiene	IWCH_C
Maximum Hourly	2009	2	1.00357E-05	g/s	Acetaldehyde	IWCH_C
Maximum Hourly	2009	2	4.65943E-06	g/s	Acrolein	IWCH_C
Maximum Hourly	2009	2	9.1271E-05	g/s	Benzene	IWCH_C
Maximum Hourly	2009	2	3.85478E-05	g/s	Ethylbenzene	IWCH_C
Maximum Hourly	2009	2	5.663E-05	g/s	Formaldehyde	IWCH_C
Maximum Hourly	2009	2	6.90759E-05	g/s	Hexane	IWCH_C
Maximum Hourly	2009	2	4.30101E-06	g/s	Methanol	IWCH_C
Maximum Hourly	2009	2	7.16836E-07	g/s	Methyl Ethyl Ketone	IWCH_C
Maximum Hourly	2009	2	1.79209E-06	g/s	Naphthalene	IWCH_C
Maximum Hourly	2009	2	0.000109676	g/s	Propylene	IWCH_C
Maximum Hourly	2009	2	4.30101E-06	g/s	Styrene	IWCH_C
Maximum Hourly	2009	2	0.000219396	g/s	Toluene	IWCH_C
Maximum Hourly	2009	2	0.000176443	g/s	Xylenes	IWCH_C
Maximum Hourly	2009	2	6.54955E-05	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2009	2	3.33432E-05	g/s	Acetaldehyde	IWCP
Maximum Hourly	2009	2	1.54808E-05	g/s	Acrolein	IWCP
Maximum Hourly	2009	2	0.000595973	g/s	Benzene	IWCP
Maximum Hourly	2009	2	0.00022565	g/s	Ethylbenzene	IWCP
Maximum Hourly	2009	2	0.000188151	g/s	Formaldehyde	IWCP
Maximum Hourly	2009	2	0.001481732	g/s	Hexane	IWCP
Maximum Hourly	2009	2	1.42899E-05	g/s	Methanol	IWCP
Maximum Hourly	2009	2	2.38165E-06	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2009	2	5.95414E-06	g/s	Naphthalene	IWCP
Maximum Hourly	2009	2	0.000364393	g/s	Propylene	IWCP
Maximum Hourly	2009	2	1.42899E-05	g/s	Styrene	IWCP
Maximum Hourly	2009	2	0.002111267	g/s	Toluene	IWCP
Maximum Hourly	2009	2	0.001056216	g/s	Xylenes	IWCP
Maximum Hourly	2009	2	1.2437E-05	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2009	2	6.33158E-06	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2009	2	2.93966E-06	g/s	Acrolein	IWCP_C
Maximum Hourly	2009	2	5.80471E-05	g/s	Benzene	IWCP_C
Maximum Hourly	2009	2	2.44746E-05	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2009	2	3.57282E-05	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2009	2	4.55637E-05	g/s	Hexane	IWCP_C
Maximum Hourly	2009	2	2.71354E-06	g/s	Methanol	IWCP_C
Maximum Hourly	2009	2	4.52256E-07	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2009	2	1.13064E-06	g/s	Naphthalene	IWCP_C
Maximum Hourly	2009	2	6.91952E-05	g/s	Propylene	IWCP_C
Maximum Hourly	2009	2	2.71354E-06	g/s	Styrene	IWCP_C
Maximum Hourly	2009	2	0.000140608	g/s	Toluene	IWCP_C
Maximum Hourly	2009	2	0.000112063	g/s	Xylenes	IWCP_C
Maximum Hourly	2009	2	4.36637E-05	g/s	1,3-Butadiene	IWCT
Maximum Hourly	2009	2	2.22288E-05	g/s	Acetaldehyde	IWCT
Maximum Hourly	2009	2	1.03205E-05	g/s	Acrolein	IWCT
Maximum Hourly	2009	2	0.000397316	g/s	Benzene	IWCT
Maximum Hourly	2009	2	0.000150433	g/s	Ethylbenzene	IWCT
Maximum Hourly	2009	2	0.000125434	g/s	Formaldehyde	IWCT
Maximum Hourly	2009	2	0.000987822	g/s	Hexane	IWCT
Maximum Hourly	2009	2	9.52662E-06	g/s	Methanol	IWCT
Maximum Hourly	2009	2	1.58777E-06	g/s	Methyl Ethyl Ketone	IWCT
Maximum Hourly	2009	2	3.96942E-06	g/s	Naphthalene	IWCT
Maximum Hourly	2009	2	0.000242929	g/s	Propylene	IWCT
Maximum Hourly	2009	2	9.52662E-06	g/s	Styrene	IWCT
Maximum Hourly	2009	2	0.001407511	g/s	Toluene	IWCT
Maximum Hourly	2009	2	0.000704144	g/s	Xylenes	IWCT
Maximum Hourly	2009	2	9.32778E-06	g/s	1,3-Butadiene	IWCT_C
Maximum Hourly	2009	2	4.74869E-06	g/s	Acetaldehyde	IWCT_C
Maximum Hourly	2009	2	2.20475E-06	g/s	Acrolein	IWCT_C
Maximum Hourly	2009	2	4.35353E-05	g/s	Benzene	IWCT_C
Maximum Hourly	2009	2	1.8356E-05	g/s	Ethylbenzene	IWCT_C
Maximum Hourly	2009	2	2.67962E-05	g/s	Formaldehyde	IWCT_C
Maximum Hourly	2009	2	3.41728E-05	g/s	Hexane	IWCT_C
Maximum Hourly	2009	2	2.03515E-06	g/s	Methanol	IWCT_C
Maximum Hourly	2009	2	3.39192E-07	g/s	Methyl Ethyl Ketone	IWCT_C
Maximum Hourly	2009	2	8.4798E-07	g/s	Naphthalene	IWCT_C
Maximum Hourly	2009	2	5.18964E-05	g/s	Propylene	IWCT_C
Maximum Hourly	2009	2	2.03515E-06	g/s	Styrene	IWCT_C
Maximum Hourly	2009	2	0.000105456	g/s	Toluene	IWCT_C
Maximum Hourly	2009	2	8.40474E-05	g/s	Xylenes	IWCT_C
Maximum Hourly	2009	2	1.05855E-05	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2009	2	5.38896E-06	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2009	2	2.50202E-06	g/s	Acrolein	RAMPSW
Maximum Hourly	2009	2	0.00014222	g/s	Benzene	RAMPSW
Maximum Hourly	2009	2	5.1769E-05	g/s	Ethylbenzene	RAMPSW

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2009	2	3.04091E-05	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2009	2	0.000435819	g/s	Hexane	RAMPSW
Maximum Hourly	2009	2	2.30956E-06	g/s	Methanol	RAMPSW
Maximum Hourly	2009	2	3.84926E-07	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2009	2	9.62315E-07	g/s	Naphthalene	RAMPSW
Maximum Hourly	2009	2	5.88937E-05	g/s	Propylene	RAMPSW
Maximum Hourly	2009	2	2.30956E-06	g/s	Styrene	RAMPSW
Maximum Hourly	2009	2	0.000557964	g/s	Toluene	RAMPSW
Maximum Hourly	2009	2	0.000244398	g/s	Xylenes	RAMPSW
Maximum Hourly	2014	2	1.81085E-06	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2014	2	9.21887E-07	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2014	2	4.28019E-07	g/s	Acrolein	CAS_G31W
Maximum Hourly	2014	2	2.86477E-05	g/s	Benzene	CAS_G31W
Maximum Hourly	2014	2	1.02955E-05	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2014	2	5.20208E-06	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2014	2	9.30279E-05	g/s	Hexane	CAS_G31W
Maximum Hourly	2014	2	3.95094E-07	g/s	Methanol	CAS_G31W
Maximum Hourly	2014	2	6.58491E-08	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2014	2	1.64623E-07	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2014	2	1.00749E-05	g/s	Propylene	CAS_G31W
Maximum Hourly	2014	2	3.95094E-07	g/s	Styrene	CAS_G31W
Maximum Hourly	2014	2	0.000115842	g/s	Toluene	CAS_G31W
Maximum Hourly	2014	2	4.87422E-05	g/s	Xylenes	CAS_G31W
Maximum Hourly	2014	2	1.89686E-06	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2014	2	9.65674E-07	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2014	2	4.48349E-07	g/s	Acrolein	EW_C_6
Maximum Hourly	2014	2	3.00083E-05	g/s	Benzene	EW_C_6
Maximum Hourly	2014	2	1.07845E-05	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2014	2	5.44916E-06	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2014	2	9.74464E-05	g/s	Hexane	EW_C_6
Maximum Hourly	2014	2	4.1386E-07	g/s	Methanol	EW_C_6
Maximum Hourly	2014	2	6.89767E-08	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2014	2	1.72442E-07	g/s	Naphthalene	EW_C_6
Maximum Hourly	2014	2	1.05534E-05	g/s	Propylene	EW_C_6
Maximum Hourly	2014	2	4.1386E-07	g/s	Styrene	EW_C_6
Maximum Hourly	2014	2	0.000121345	g/s	Toluene	EW_C_6
Maximum Hourly	2014	2	5.10574E-05	g/s	Xylenes	EW_C_6
Maximum Hourly	2014	2	2.10586E-05	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2014	2	1.07208E-05	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2014	2	4.9775E-06	g/s	Acrolein	EW_C_7
Maximum Hourly	2014	2	0.000333148	g/s	Benzene	EW_C_7
Maximum Hourly	2014	2	0.000119728	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2014	2	6.04958E-05	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2014	2	0.001081835	g/s	Hexane	EW_C_7
Maximum Hourly	2014	2	4.59461E-06	g/s	Methanol	EW_C_7
Maximum Hourly	2014	2	7.65769E-07	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2014	2	1.91442E-06	g/s	Naphthalene	EW_C_7
Maximum Hourly	2014	2	0.000117163	g/s	Propylene	EW_C_7
Maximum Hourly	2014	2	4.59461E-06	g/s	Styrene	EW_C_7
Maximum Hourly	2014	2	0.001347149	g/s	Toluene	EW_C_7
Maximum Hourly	2014	2	0.000566831	g/s	Xylenes	EW_C_7
Maximum Hourly	2014	2	8.15453E-06	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2014	2	4.1514E-06	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2014	2	1.92743E-06	g/s	Acrolein	EW_C_8
Maximum Hourly	2014	2	0.000129005	g/s	Benzene	EW_C_8
Maximum Hourly	2014	2	4.63623E-05	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2014	2	2.34257E-05	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2014	2	0.000418919	g/s	Hexane	EW_C_8
Maximum Hourly	2014	2	1.77917E-06	g/s	Methanol	EW_C_8
Maximum Hourly	2014	2	2.96528E-07	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2014	2	7.41321E-07	g/s	Naphthalene	EW_C_8
Maximum Hourly	2014	2	4.53688E-05	g/s	Propylene	EW_C_8
Maximum Hourly	2014	2	1.77917E-06	g/s	Styrene	EW_C_8
Maximum Hourly	2014	2	0.000521656	g/s	Toluene	EW_C_8
Maximum Hourly	2014	2	0.000219494	g/s	Xylenes	EW_C_8
Maximum Hourly	2014	2	2.78171E-06	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2014	2	1.41614E-06	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2014	2	6.57494E-07	g/s	Acrolein	EW_C_9
Maximum Hourly	2014	2	4.40066E-05	g/s	Benzene	EW_C_9
Maximum Hourly	2014	2	1.58153E-05	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2014	2	7.99108E-06	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2014	2	0.000142903	g/s	Hexane	EW_C_9
Maximum Hourly	2014	2	6.06918E-07	g/s	Methanol	EW_C_9
Maximum Hourly	2014	2	1.01153E-07	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2014	2	2.52882E-07	g/s	Naphthalene	EW_C_9
Maximum Hourly	2014	2	1.54764E-05	g/s	Propylene	EW_C_9
Maximum Hourly	2014	2	6.06918E-07	g/s	Styrene	EW_C_9
Maximum Hourly	2014	2	0.000177949	g/s	Toluene	EW_C_9
Maximum Hourly	2014	2	7.48746E-05	g/s	Xylenes	EW_C_9
Maximum Hourly	2014	2	3.43383E-06	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2014	2	1.74813E-06	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2014	2	8.11633E-07	g/s	Acrolein	G31_G91W
Maximum Hourly	2014	2	5.43233E-05	g/s	Benzene	G31_G91W
Maximum Hourly	2014	2	1.95229E-05	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2014	2	9.86446E-06	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2014	2	0.000176404	g/s	Hexane	G31_G91W
Maximum Hourly	2014	2	7.49199E-07	g/s	Methanol	G31_G91W
Maximum Hourly	2014	2	1.24867E-07	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2014	2	3.12166E-07	g/s	Naphthalene	G31_G91W
Maximum Hourly	2014	2	1.91046E-05	g/s	Propylene	G31_G91W
Maximum Hourly	2014	2	7.49199E-07	g/s	Styrene	G31_G91W
Maximum Hourly	2014	2	0.000219667	g/s	Toluene	G31_G91W
Maximum Hourly	2014	2	9.24277E-05	g/s	Xylenes	G31_G91W
Maximum Hourly	2014	2	2.65851E-05	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2014	2	1.35342E-05	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2014	2	6.28375E-06	g/s	Acrolein	IWC_1
Maximum Hourly	2014	2	0.000149058	g/s	Benzene	IWC_1

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2014	2	6.06424E-05	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2014	2	7.63718E-05	g/s	Formaldehyde	IWC_1
Maximum Hourly	2014	2	0.000204247	g/s	Hexane	IWC_1
Maximum Hourly	2014	2	5.80039E-06	g/s	Methanol	IWC_1
Maximum Hourly	2014	2	9.66731E-07	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2014	2	2.41683E-06	g/s	Naphthalene	IWC_1
Maximum Hourly	2014	2	0.00014791	g/s	Propylene	IWC_1
Maximum Hourly	2014	2	5.80039E-06	g/s	Styrene	IWC_1
Maximum Hourly	2014	2	0.000418513	g/s	Toluene	IWC_1
Maximum Hourly	2014	2	0.000279647	g/s	Xylenes	IWC_1
Maximum Hourly	2014	2	3.08091E-05	g/s	1,3-Butadiene	IWCH
Maximum Hourly	2014	2	1.56846E-05	g/s	Acetaldehyde	IWCH
Maximum Hourly	2014	2	7.28215E-06	g/s	Acrolein	IWCH
Maximum Hourly	2014	2	0.000260616	g/s	Benzene	IWCH
Maximum Hourly	2014	2	9.9569E-05	g/s	Ethylbenzene	IWCH
Maximum Hourly	2014	2	8.85061E-05	g/s	Formaldehyde	IWCH
Maximum Hourly	2014	2	0.000612606	g/s	Hexane	IWCH
Maximum Hourly	2014	2	6.72198E-06	g/s	Methanol	IWCH
Maximum Hourly	2014	2	1.12033E-06	g/s	Methyl Ethyl Ketone	IWCH
Maximum Hourly	2014	2	2.80083E-06	g/s	Naphthalene	IWCH
Maximum Hourly	2014	2	0.00017141	g/s	Propylene	IWCH
Maximum Hourly	2014	2	6.72198E-06	g/s	Styrene	IWCH
Maximum Hourly	2014	2	0.000899971	g/s	Toluene	IWCH
Maximum Hourly	2014	2	0.000465167	g/s	Xylenes	IWCH
Maximum Hourly	2014	2	4.41159E-06	g/s	1,3-Butadiene	IWCH_C
Maximum Hourly	2014	2	2.2459E-06	g/s	Acetaldehyde	IWCH_C
Maximum Hourly	2014	2	1.04274E-06	g/s	Acrolein	IWCH_C
Maximum Hourly	2014	2	2.05125E-05	g/s	Benzene	IWCH_C
Maximum Hourly	2014	2	8.6556E-06	g/s	Ethylbenzene	IWCH_C
Maximum Hourly	2014	2	1.26733E-05	g/s	Formaldehyde	IWCH_C
Maximum Hourly	2014	2	1.58299E-05	g/s	Hexane	IWCH_C
Maximum Hourly	2014	2	9.62529E-07	g/s	Methanol	IWCH_C
Maximum Hourly	2014	2	1.60421E-07	g/s	Methyl Ethyl Ketone	IWCH_C
Maximum Hourly	2014	2	4.01054E-07	g/s	Naphthalene	IWCH_C
Maximum Hourly	2014	2	2.45445E-05	g/s	Propylene	IWCH_C
Maximum Hourly	2014	2	9.62529E-07	g/s	Styrene	IWCH_C
Maximum Hourly	2014	2	4.95089E-05	g/s	Toluene	IWCH_C
Maximum Hourly	2014	2	3.96257E-05	g/s	Xylenes	IWCH_C
Maximum Hourly	2014	2	3.05131E-05	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2014	2	1.55339E-05	g/s	Acetaldehyde	IWCP
Maximum Hourly	2014	2	7.21218E-06	g/s	Acrolein	IWCP
Maximum Hourly	2014	2	0.00028985	g/s	Benzene	IWCP
Maximum Hourly	2014	2	0.000109192	g/s	Ethylbenzene	IWCP
Maximum Hourly	2014	2	8.76558E-05	g/s	Formaldehyde	IWCP
Maximum Hourly	2014	2	0.00074249	g/s	Hexane	IWCP
Maximum Hourly	2014	2	6.6574E-06	g/s	Methanol	IWCP
Maximum Hourly	2014	2	1.10957E-06	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2014	2	2.77392E-06	g/s	Naphthalene	IWCP
Maximum Hourly	2014	2	0.000169764	g/s	Propylene	IWCP
Maximum Hourly	2014	2	6.6574E-06	g/s	Styrene	IWCP
Maximum Hourly	2014	2	0.0010412	g/s	Toluene	IWCP
Maximum Hourly	2014	2	0.000511655	g/s	Xylenes	IWCP
Maximum Hourly	2014	2	6.2362E-06	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2014	2	3.17479E-06	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2014	2	1.47401E-06	g/s	Acrolein	IWCP_C
Maximum Hourly	2014	2	2.9267E-05	g/s	Benzene	IWCP_C
Maximum Hourly	2014	2	1.23257E-05	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2014	2	1.79149E-05	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2014	2	2.35348E-05	g/s	Hexane	IWCP_C
Maximum Hourly	2014	2	1.36063E-06	g/s	Methanol	IWCP_C
Maximum Hourly	2014	2	2.26771E-07	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2014	2	5.66928E-07	g/s	Naphthalene	IWCP_C
Maximum Hourly	2014	2	3.4696E-05	g/s	Propylene	IWCP_C
Maximum Hourly	2014	2	1.36063E-06	g/s	Styrene	IWCP_C
Maximum Hourly	2014	2	7.12635E-05	g/s	Toluene	IWCP_C
Maximum Hourly	2014	2	5.64492E-05	g/s	Xylenes	IWCP_C
Maximum Hourly	2014	2	1.22052E-05	g/s	1,3-Butadiene	IWCT
Maximum Hourly	2014	2	6.21357E-06	g/s	Acetaldehyde	IWCT
Maximum Hourly	2014	2	2.88487E-06	g/s	Acrolein	IWCT
Maximum Hourly	2014	2	0.00011594	g/s	Benzene	IWCT
Maximum Hourly	2014	2	4.36768E-05	g/s	Ethylbenzene	IWCT
Maximum Hourly	2014	2	3.50623E-05	g/s	Formaldehyde	IWCT
Maximum Hourly	2014	2	0.000296996	g/s	Hexane	IWCT
Maximum Hourly	2014	2	2.66296E-06	g/s	Methanol	IWCT
Maximum Hourly	2014	2	4.43827E-07	g/s	Methyl Ethyl Ketone	IWCT
Maximum Hourly	2014	2	1.10957E-06	g/s	Naphthalene	IWCT
Maximum Hourly	2014	2	6.79055E-05	g/s	Propylene	IWCT
Maximum Hourly	2014	2	2.66296E-06	g/s	Styrene	IWCT
Maximum Hourly	2014	2	0.00041648	g/s	Toluene	IWCT
Maximum Hourly	2014	2	0.000204662	g/s	Xylenes	IWCT
Maximum Hourly	2014	2	3.46456E-06	g/s	1,3-Butadiene	IWCT_C
Maximum Hourly	2014	2	1.76377E-06	g/s	Acetaldehyde	IWCT_C
Maximum Hourly	2014	2	8.18895E-07	g/s	Acrolein	IWCT_C
Maximum Hourly	2014	2	1.62594E-05	g/s	Benzene	IWCT_C
Maximum Hourly	2014	2	6.84762E-06	g/s	Ethylbenzene	IWCT_C
Maximum Hourly	2014	2	9.95273E-06	g/s	Formaldehyde	IWCT_C
Maximum Hourly	2014	2	1.30749E-05	g/s	Hexane	IWCT_C
Maximum Hourly	2014	2	7.55903E-07	g/s	Methanol	IWCT_C
Maximum Hourly	2014	2	1.25984E-07	g/s	Methyl Ethyl Ketone	IWCT_C
Maximum Hourly	2014	2	3.1496E-07	g/s	Naphthalene	IWCT_C
Maximum Hourly	2014	2	1.92755E-05	g/s	Propylene	IWCT_C
Maximum Hourly	2014	2	7.55903E-07	g/s	Styrene	IWCT_C
Maximum Hourly	2014	2	3.95909E-05	g/s	Toluene	IWCT_C
Maximum Hourly	2014	2	3.13607E-05	g/s	Xylenes	IWCT_C
Maximum Hourly	2014	2	7.4226E-06	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2014	2	3.77878E-06	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2014	2	1.75443E-06	g/s	Acrolein	RAMPSW

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2014	2	0.000117426	g/s	Benzene	RAMPSW
Maximum Hourly	2014	2	4.22009E-05	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2014	2	2.13231E-05	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2014	2	0.000381317	g/s	Hexane	RAMPSW
Maximum Hourly	2014	2	1.61948E-06	g/s	Methanol	RAMPSW
Maximum Hourly	2014	2	2.69913E-07	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2014	2	6.74782E-07	g/s	Naphthalene	RAMPSW
Maximum Hourly	2014	2	4.12966E-05	g/s	Propylene	RAMPSW
Maximum Hourly	2014	2	1.61948E-06	g/s	Styrene	RAMPSW
Maximum Hourly	2014	2	0.000474833	g/s	Toluene	RAMPSW
Maximum Hourly	2014	2	0.000199792	g/s	Xylenes	RAMPSW
Maximum Hourly	2015	2	2.81223E-07	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2015	2	1.43168E-07	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2015	2	6.64709E-08	g/s	Acrolein	CAS_G31W
Maximum Hourly	2015	2	4.61524E-06	g/s	Benzene	CAS_G31W
Maximum Hourly	2015	2	1.65431E-06	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2015	2	8.07878E-07	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2015	2	1.51585E-05	g/s	Hexane	CAS_G31W
Maximum Hourly	2015	2	6.13578E-08	g/s	Methanol	CAS_G31W
Maximum Hourly	2015	2	1.02263E-08	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2015	2	2.55657E-08	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2015	2	1.56462E-06	g/s	Propylene	CAS_G31W
Maximum Hourly	2015	2	6.13578E-08	g/s	Styrene	CAS_G31W
Maximum Hourly	2015	2	1.87754E-05	g/s	Toluene	CAS_G31W
Maximum Hourly	2015	2	7.8366E-06	g/s	Xylenes	CAS_G31W
Maximum Hourly	2015	2	2.9458E-07	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2015	2	1.49968E-07	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2015	2	6.96281E-08	g/s	Acrolein	EW_C_6
Maximum Hourly	2015	2	4.83445E-06	g/s	Benzene	EW_C_6
Maximum Hourly	2015	2	1.73289E-06	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2015	2	8.46249E-07	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2015	2	1.58784E-05	g/s	Hexane	EW_C_6
Maximum Hourly	2015	2	6.42721E-08	g/s	Methanol	EW_C_6
Maximum Hourly	2015	2	1.0712E-08	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2015	2	2.678E-08	g/s	Naphthalene	EW_C_6
Maximum Hourly	2015	2	1.63894E-06	g/s	Propylene	EW_C_6
Maximum Hourly	2015	2	6.42721E-08	g/s	Styrene	EW_C_6
Maximum Hourly	2015	2	1.96672E-05	g/s	Toluene	EW_C_6
Maximum Hourly	2015	2	8.20882E-06	g/s	Xylenes	EW_C_6
Maximum Hourly	2015	2	3.27039E-06	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2015	2	1.66492E-06	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2015	2	7.73001E-07	g/s	Acrolein	EW_C_7
Maximum Hourly	2015	2	5.36713E-05	g/s	Benzene	EW_C_7
Maximum Hourly	2015	2	1.92382E-05	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2015	2	9.39493E-06	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2015	2	0.00017628	g/s	Hexane	EW_C_7
Maximum Hourly	2015	2	7.13539E-07	g/s	Methanol	EW_C_7
Maximum Hourly	2015	2	1.18923E-07	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2015	2	2.97308E-07	g/s	Naphthalene	EW_C_7
Maximum Hourly	2015	2	1.81952E-05	g/s	Propylene	EW_C_7
Maximum Hourly	2015	2	7.13539E-07	g/s	Styrene	EW_C_7
Maximum Hourly	2015	2	0.000218342	g/s	Toluene	EW_C_7
Maximum Hourly	2015	2	9.1133E-05	g/s	Xylenes	EW_C_7
Maximum Hourly	2015	2	1.26639E-06	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2015	2	6.44708E-07	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2015	2	2.99329E-07	g/s	Acrolein	EW_C_8
Maximum Hourly	2015	2	2.07831E-05	g/s	Benzene	EW_C_8
Maximum Hourly	2015	2	7.44961E-06	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2015	2	3.63799E-06	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2015	2	6.82608E-05	g/s	Hexane	EW_C_8
Maximum Hourly	2015	2	2.76303E-07	g/s	Methanol	EW_C_8
Maximum Hourly	2015	2	4.60506E-08	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2015	2	1.15126E-07	g/s	Naphthalene	EW_C_8
Maximum Hourly	2015	2	7.04574E-06	g/s	Propylene	EW_C_8
Maximum Hourly	2015	2	2.76303E-07	g/s	Styrene	EW_C_8
Maximum Hourly	2015	2	8.45486E-05	g/s	Toluene	EW_C_8
Maximum Hourly	2015	2	3.52894E-05	g/s	Xylenes	EW_C_8
Maximum Hourly	2015	2	4.31996E-07	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2015	2	2.19925E-07	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2015	2	1.02108E-07	g/s	Acrolein	EW_C_9
Maximum Hourly	2015	2	7.08962E-06	g/s	Benzene	EW_C_9
Maximum Hourly	2015	2	2.54124E-06	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2015	2	1.24101E-06	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2015	2	2.32854E-05	g/s	Hexane	EW_C_9
Maximum Hourly	2015	2	9.42537E-08	g/s	Methanol	EW_C_9
Maximum Hourly	2015	2	1.5709E-08	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2015	2	3.92724E-08	g/s	Naphthalene	EW_C_9
Maximum Hourly	2015	2	2.40347E-06	g/s	Propylene	EW_C_9
Maximum Hourly	2015	2	9.42537E-08	g/s	Styrene	EW_C_9
Maximum Hourly	2015	2	2.88416E-05	g/s	Toluene	EW_C_9
Maximum Hourly	2015	2	1.20381E-05	g/s	Xylenes	EW_C_9
Maximum Hourly	2015	2	5.33271E-07	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2015	2	2.71483E-07	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2015	2	1.26046E-07	g/s	Acrolein	G31_G91W
Maximum Hourly	2015	2	8.75166E-06	g/s	Benzene	G31_G91W
Maximum Hourly	2015	2	3.13699E-06	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2015	2	1.53194E-06	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2015	2	2.87443E-05	g/s	Hexane	G31_G91W
Maximum Hourly	2015	2	1.1635E-07	g/s	Methanol	G31_G91W
Maximum Hourly	2015	2	1.93917E-08	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2015	2	4.84791E-08	g/s	Naphthalene	G31_G91W
Maximum Hourly	2015	2	2.96692E-06	g/s	Propylene	G31_G91W
Maximum Hourly	2015	2	1.1635E-07	g/s	Styrene	G31_G91W
Maximum Hourly	2015	2	3.5603E-05	g/s	Toluene	G31_G91W
Maximum Hourly	2015	2	1.48602E-05	g/s	Xylenes	G31_G91W
Maximum Hourly	2015	2	4.24689E-06	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2015	2	2.16205E-06	g/s	Acetaldehyde	IWC_1

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2015	2	1.00381E-06	g/s	Acrolein	IWC_1
Maximum Hourly	2015	2	2.39201E-05	g/s	Benzene	IWC_1
Maximum Hourly	2015	2	9.7236E-06	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2015	2	1.22002E-05	g/s	Formaldehyde	IWC_1
Maximum Hourly	2015	2	3.3092E-05	g/s	Hexane	IWC_1
Maximum Hourly	2015	2	9.26594E-07	g/s	Methanol	IWC_1
Maximum Hourly	2015	2	1.54432E-07	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2015	2	3.86081E-07	g/s	Naphthalene	IWC_1
Maximum Hourly	2015	2	2.36282E-05	g/s	Propylene	IWC_1
Maximum Hourly	2015	2	9.26594E-07	g/s	Styrene	IWC_1
Maximum Hourly	2015	2	6.73685E-05	g/s	Toluene	IWC_1
Maximum Hourly	2015	2	4.4847E-05	g/s	Xylenes	IWC_1
Maximum Hourly	2015	2	1.90222E-05	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2015	2	9.68401E-06	g/s	Acetaldehyde	IWCP
Maximum Hourly	2015	2	4.49615E-06	g/s	Acrolein	IWCP
Maximum Hourly	2015	2	0.000182071	g/s	Benzene	IWCP
Maximum Hourly	2015	2	6.85297E-05	g/s	Ethylbenzene	IWCP
Maximum Hourly	2015	2	5.46455E-05	g/s	Formaldehyde	IWCP
Maximum Hourly	2015	2	0.000468758	g/s	Hexane	IWCP
Maximum Hourly	2015	2	4.15029E-06	g/s	Methanol	IWCP
Maximum Hourly	2015	2	6.91715E-07	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2015	2	1.72929E-06	g/s	Naphthalene	IWCP
Maximum Hourly	2015	2	0.000105832	g/s	Propylene	IWCP
Maximum Hourly	2015	2	4.15029E-06	g/s	Styrene	IWCP
Maximum Hourly	2015	2	0.000655588	g/s	Toluene	IWCP
Maximum Hourly	2015	2	0.000321179	g/s	Xylenes	IWCP
Maximum Hourly	2015	2	2.9216E-06	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2015	2	1.48736E-06	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2015	2	6.9056E-07	g/s	Acrolein	IWCP_C
Maximum Hourly	2015	2	1.37435E-05	g/s	Benzene	IWCP_C
Maximum Hourly	2015	2	5.78523E-06	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2015	2	8.39296E-06	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2015	2	1.11638E-05	g/s	Hexane	IWCP_C
Maximum Hourly	2015	2	6.3744E-07	g/s	Methanol	IWCP_C
Maximum Hourly	2015	2	1.0624E-07	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2015	2	2.656E-07	g/s	Naphthalene	IWCP_C
Maximum Hourly	2015	2	1.62547E-05	g/s	Propylene	IWCP_C
Maximum Hourly	2015	2	6.3744E-07	g/s	Styrene	IWCP_C
Maximum Hourly	2015	2	3.35385E-05	g/s	Toluene	IWCP_C
Maximum Hourly	2015	2	2.64977E-05	g/s	Xylenes	IWCP_C
Maximum Hourly	2015	2	1.15272E-06	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2015	2	5.8684E-07	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2015	2	2.72462E-07	g/s	Acrolein	RAMPSW
Maximum Hourly	2015	2	1.89177E-05	g/s	Benzene	RAMPSW
Maximum Hourly	2015	2	6.78095E-06	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2015	2	3.31146E-06	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2015	2	6.21339E-05	g/s	Hexane	RAMPSW
Maximum Hourly	2015	2	2.51503E-07	g/s	Methanol	RAMPSW
Maximum Hourly	2015	2	4.19172E-08	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2015	2	1.04793E-07	g/s	Naphthalene	RAMPSW
Maximum Hourly	2015	2	6.41333E-06	g/s	Propylene	RAMPSW
Maximum Hourly	2015	2	2.51503E-07	g/s	Styrene	RAMPSW
Maximum Hourly	2015	2	7.69597E-05	g/s	Toluene	RAMPSW
Maximum Hourly	2015	2	3.21219E-05	g/s	Xylenes	RAMPSW
Maximum Hourly	2016	2	1.34106E-08	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2016	2	6.8272E-09	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2016	2	3.16977E-09	g/s	Acrolein	CAS_G31W
Maximum Hourly	2016	2	2.27241E-07	g/s	Benzene	CAS_G31W
Maximum Hourly	2016	2	8.12737E-08	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2016	2	3.85249E-08	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2016	2	7.53466E-07	g/s	Hexane	CAS_G31W
Maximum Hourly	2016	2	2.92594E-09	g/s	Methanol	CAS_G31W
Maximum Hourly	2016	2	4.87657E-10	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2016	2	1.21914E-09	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2016	2	7.46115E-08	g/s	Propylene	CAS_G31W
Maximum Hourly	2016	2	2.92594E-09	g/s	Styrene	CAS_G31W
Maximum Hourly	2016	2	9.29128E-07	g/s	Toluene	CAS_G31W
Maximum Hourly	2016	2	3.8519E-07	g/s	Xylenes	CAS_G31W
Maximum Hourly	2016	2	1.40475E-08	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2016	2	7.15147E-09	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2016	2	3.32032E-09	g/s	Acrolein	EW_C_6
Maximum Hourly	2016	2	2.38034E-07	g/s	Benzene	EW_C_6
Maximum Hourly	2016	2	8.5134E-08	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2016	2	4.03547E-08	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2016	2	7.89254E-07	g/s	Hexane	EW_C_6
Maximum Hourly	2016	2	3.06492E-09	g/s	Methanol	EW_C_6
Maximum Hourly	2016	2	5.10819E-10	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2016	2	1.27705E-09	g/s	Naphthalene	EW_C_6
Maximum Hourly	2016	2	7.81553E-08	g/s	Propylene	EW_C_6
Maximum Hourly	2016	2	3.06492E-09	g/s	Styrene	EW_C_6
Maximum Hourly	2016	2	9.73259E-07	g/s	Toluene	EW_C_6
Maximum Hourly	2016	2	4.03485E-07	g/s	Xylenes	EW_C_6
Maximum Hourly	2016	2	1.55954E-07	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2016	2	7.93945E-08	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2016	2	3.68617E-08	g/s	Acrolein	EW_C_7
Maximum Hourly	2016	2	2.64262E-06	g/s	Benzene	EW_C_7
Maximum Hourly	2016	2	9.45144E-07	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2016	2	4.48012E-07	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2016	2	8.76218E-06	g/s	Hexane	EW_C_7
Maximum Hourly	2016	2	3.40262E-08	g/s	Methanol	EW_C_7
Maximum Hourly	2016	2	5.67104E-09	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2016	2	1.41776E-08	g/s	Naphthalene	EW_C_7
Maximum Hourly	2016	2	8.67669E-07	g/s	Propylene	EW_C_7
Maximum Hourly	2016	2	3.40262E-08	g/s	Styrene	EW_C_7
Maximum Hourly	2016	2	1.0805E-05	g/s	Toluene	EW_C_7
Maximum Hourly	2016	2	4.47943E-06	g/s	Xylenes	EW_C_7
Maximum Hourly	2016	2	6.03898E-08	g/s	1,3-Butadiene	EW_C_8

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2016	2	3.07439E-08	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2016	2	1.4274E-08	g/s	Acrolein	EW_C_8
Maximum Hourly	2016	2	1.0233E-06	g/s	Benzene	EW_C_8
Maximum Hourly	2016	2	3.65988E-07	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2016	2	1.73483E-07	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2016	2	3.39297E-06	g/s	Hexane	EW_C_8
Maximum Hourly	2016	2	1.3176E-08	g/s	Methanol	EW_C_8
Maximum Hourly	2016	2	2.19599E-09	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2016	2	5.48998E-09	g/s	Naphthalene	EW_C_8
Maximum Hourly	2016	2	3.35987E-07	g/s	Propylene	EW_C_8
Maximum Hourly	2016	2	1.3176E-08	g/s	Styrene	EW_C_8
Maximum Hourly	2016	2	4.184E-06	g/s	Toluene	EW_C_8
Maximum Hourly	2016	2	1.73457E-06	g/s	Xylenes	EW_C_8
Maximum Hourly	2016	2	2.06004E-08	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2016	2	1.04875E-08	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2016	2	4.86919E-09	g/s	Acrolein	EW_C_9
Maximum Hourly	2016	2	3.49072E-07	g/s	Benzene	EW_C_9
Maximum Hourly	2016	2	1.24847E-07	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2016	2	5.91794E-08	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2016	2	1.15742E-06	g/s	Hexane	EW_C_9
Maximum Hourly	2016	2	4.49464E-09	g/s	Methanol	EW_C_9
Maximum Hourly	2016	2	7.49106E-10	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2016	2	1.87277E-09	g/s	Naphthalene	EW_C_9
Maximum Hourly	2016	2	1.14613E-07	g/s	Propylene	EW_C_9
Maximum Hourly	2016	2	4.49464E-09	g/s	Styrene	EW_C_9
Maximum Hourly	2016	2	1.42726E-06	g/s	Toluene	EW_C_9
Maximum Hourly	2016	2	5.91703E-07	g/s	Xylenes	EW_C_9
Maximum Hourly	2016	2	2.54298E-08	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2016	2	1.29461E-08	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2016	2	6.01069E-09	g/s	Acrolein	G31_G91W
Maximum Hourly	2016	2	4.30906E-07	g/s	Benzene	G31_G91W
Maximum Hourly	2016	2	1.54116E-07	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2016	2	7.3053E-08	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2016	2	1.42876E-06	g/s	Hexane	G31_G91W
Maximum Hourly	2016	2	5.54833E-09	g/s	Methanol	G31_G91W
Maximum Hourly	2016	2	9.24721E-10	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2016	2	2.3118E-09	g/s	Naphthalene	G31_G91W
Maximum Hourly	2016	2	1.41482E-07	g/s	Propylene	G31_G91W
Maximum Hourly	2016	2	5.54833E-09	g/s	Styrene	G31_G91W
Maximum Hourly	2016	2	1.76186E-06	g/s	Toluene	G31_G91W
Maximum Hourly	2016	2	7.30418E-07	g/s	Xylenes	G31_G91W
Maximum Hourly	2016	2	2.07585E-07	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2016	2	1.0568E-07	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2016	2	4.90656E-08	g/s	Acrolein	IWC_1
Maximum Hourly	2016	2	1.17376E-06	g/s	Benzene	IWC_1
Maximum Hourly	2016	2	4.76805E-07	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2016	2	5.96335E-07	g/s	Formaldehyde	IWC_1
Maximum Hourly	2016	2	1.63705E-06	g/s	Hexane	IWC_1
Maximum Hourly	2016	2	4.52913E-08	g/s	Methanol	IWC_1
Maximum Hourly	2016	2	7.54855E-09	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2016	2	1.88714E-08	g/s	Naphthalene	IWC_1
Maximum Hourly	2016	2	1.15493E-06	g/s	Propylene	IWC_1
Maximum Hourly	2016	2	4.52913E-08	g/s	Styrene	IWC_1
Maximum Hourly	2016	2	3.31449E-06	g/s	Toluene	IWC_1
Maximum Hourly	2016	2	2.19942E-06	g/s	Xylenes	IWC_1
Maximum Hourly	2016	2	1.45527E-05	g/s	1,3-Butadiene	IWCT
Maximum Hourly	2016	2	7.40865E-06	g/s	Acetaldehyde	IWCT
Maximum Hourly	2016	2	3.43973E-06	g/s	Acrolein	IWCT
Maximum Hourly	2016	2	0.000140271	g/s	Benzene	IWCT
Maximum Hourly	2016	2	5.27544E-05	g/s	Ethylbenzene	IWCT
Maximum Hourly	2016	2	4.18059E-05	g/s	Formaldehyde	IWCT
Maximum Hourly	2016	2	0.000362809	g/s	Hexane	IWCT
Maximum Hourly	2016	2	3.17513E-06	g/s	Methanol	IWCT
Maximum Hourly	2016	2	5.29189E-07	g/s	Methyl Ethyl Ketone	IWCT
Maximum Hourly	2016	2	1.32297E-06	g/s	Naphthalene	IWCT
Maximum Hourly	2016	2	8.09659E-05	g/s	Propylene	IWCT
Maximum Hourly	2016	2	3.17513E-06	g/s	Styrene	IWCT
Maximum Hourly	2016	2	0.000506176	g/s	Toluene	IWCT
Maximum Hourly	2016	2	0.000247287	g/s	Xylenes	IWCT
Maximum Hourly	2016	2	5.49694E-08	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2016	2	2.79844E-08	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2016	2	1.29928E-08	g/s	Acrolein	RAMPSW
Maximum Hourly	2016	2	9.31451E-07	g/s	Benzene	RAMPSW
Maximum Hourly	2016	2	3.33138E-07	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2016	2	1.57912E-07	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2016	2	3.08843E-06	g/s	Hexane	RAMPSW
Maximum Hourly	2016	2	1.19933E-08	g/s	Methanol	RAMPSW
Maximum Hourly	2016	2	1.99889E-09	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2016	2	4.99721E-09	g/s	Naphthalene	RAMPSW
Maximum Hourly	2016	2	3.0583E-07	g/s	Propylene	RAMPSW
Maximum Hourly	2016	2	1.19933E-08	g/s	Styrene	RAMPSW
Maximum Hourly	2016	2	3.80846E-06	g/s	Toluene	RAMPSW
Maximum Hourly	2016	2	1.57888E-06	g/s	Xylenes	RAMPSW
Maximum Hourly	2008	3	7.37026E-07	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2008	3	3.75213E-07	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2008	3	1.74206E-07	g/s	Acrolein	CAS_G31W
Maximum Hourly	2008	3	9.87717E-06	g/s	Benzene	CAS_G31W
Maximum Hourly	2008	3	3.59613E-06	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2008	3	2.11728E-06	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2008	3	3.02373E-05	g/s	Hexane	CAS_G31W
Maximum Hourly	2008	3	1.60806E-07	g/s	Methanol	CAS_G31W
Maximum Hourly	2008	3	2.6801E-08	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2008	3	6.70024E-08	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2008	3	4.10055E-06	g/s	Propylene	CAS_G31W
Maximum Hourly	2008	3	1.60806E-07	g/s	Styrene	CAS_G31W
Maximum Hourly	2008	3	3.87307E-05	g/s	Toluene	CAS_G31W
Maximum Hourly	2008	3	1.69763E-05	g/s	Xylenes	CAS_G31W

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2008	3	7.72033E-07	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2008	3	3.93035E-07	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2008	3	1.82481E-07	g/s	Acrolein	EW_C_6
Maximum Hourly	2008	3	1.03463E-05	g/s	Benzene	EW_C_6
Maximum Hourly	2008	3	3.76694E-06	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2008	3	2.21784E-06	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2008	3	3.16735E-05	g/s	Hexane	EW_C_6
Maximum Hourly	2008	3	1.68444E-07	g/s	Methanol	EW_C_6
Maximum Hourly	2008	3	2.80739E-08	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2008	3	7.01848E-08	g/s	Naphthalene	EW_C_6
Maximum Hourly	2008	3	4.29531E-06	g/s	Propylene	EW_C_6
Maximum Hourly	2008	3	1.68444E-07	g/s	Styrene	EW_C_6
Maximum Hourly	2008	3	4.05703E-05	g/s	Toluene	EW_C_6
Maximum Hourly	2008	3	1.77826E-05	g/s	Xylenes	EW_C_6
Maximum Hourly	2008	3	8.57099E-06	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2008	3	4.36341E-06	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2008	3	2.02587E-06	g/s	Acrolein	EW_C_7
Maximum Hourly	2008	3	0.000114863	g/s	Benzene	EW_C_7
Maximum Hourly	2008	3	4.182E-05	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2008	3	2.46221E-05	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2008	3	0.000351634	g/s	Hexane	EW_C_7
Maximum Hourly	2008	3	1.87003E-06	g/s	Methanol	EW_C_7
Maximum Hourly	2008	3	3.11672E-07	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2008	3	7.79181E-07	g/s	Naphthalene	EW_C_7
Maximum Hourly	2008	3	4.76859E-05	g/s	Propylene	EW_C_7
Maximum Hourly	2008	3	1.87003E-06	g/s	Styrene	EW_C_7
Maximum Hourly	2008	3	0.000450405	g/s	Toluene	EW_C_7
Maximum Hourly	2008	3	0.00019742	g/s	Xylenes	EW_C_7
Maximum Hourly	2008	3	3.31894E-06	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2008	3	1.68964E-06	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2008	3	7.84477E-07	g/s	Acrolein	EW_C_8
Maximum Hourly	2008	3	4.44784E-05	g/s	Benzene	EW_C_8
Maximum Hourly	2008	3	1.61939E-05	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2008	3	9.53441E-06	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2008	3	0.000136163	g/s	Hexane	EW_C_8
Maximum Hourly	2008	3	7.24133E-07	g/s	Methanol	EW_C_8
Maximum Hourly	2008	3	1.20689E-07	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2008	3	3.01722E-07	g/s	Naphthalene	EW_C_8
Maximum Hourly	2008	3	1.84654E-05	g/s	Propylene	EW_C_8
Maximum Hourly	2008	3	7.24133E-07	g/s	Styrene	EW_C_8
Maximum Hourly	2008	3	0.00017441	g/s	Toluene	EW_C_8
Maximum Hourly	2008	3	7.64469E-05	g/s	Xylenes	EW_C_8
Maximum Hourly	2008	3	1.13217E-06	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2008	3	5.76378E-07	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2008	3	2.67604E-07	g/s	Acrolein	EW_C_9
Maximum Hourly	2008	3	1.51726E-05	g/s	Benzene	EW_C_9
Maximum Hourly	2008	3	5.52414E-06	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2008	3	3.25242E-06	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2008	3	4.64485E-05	g/s	Hexane	EW_C_9
Maximum Hourly	2008	3	2.47019E-07	g/s	Methanol	EW_C_9
Maximum Hourly	2008	3	4.11698E-08	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2008	3	1.02925E-07	g/s	Naphthalene	EW_C_9
Maximum Hourly	2008	3	6.29899E-06	g/s	Propylene	EW_C_9
Maximum Hourly	2008	3	2.47019E-07	g/s	Styrene	EW_C_9
Maximum Hourly	2008	3	5.94955E-05	g/s	Toluene	EW_C_9
Maximum Hourly	2008	3	2.60779E-05	g/s	Xylenes	EW_C_9
Maximum Hourly	2008	3	1.39759E-06	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2008	3	7.115E-07	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2008	3	3.30339E-07	g/s	Acrolein	G31_G91W
Maximum Hourly	2008	3	1.87296E-05	g/s	Benzene	G31_G91W
Maximum Hourly	2008	3	6.81918E-06	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2008	3	4.01489E-06	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2008	3	5.73376E-05	g/s	Hexane	G31_G91W
Maximum Hourly	2008	3	3.04929E-07	g/s	Methanol	G31_G91W
Maximum Hourly	2008	3	5.08214E-08	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2008	3	1.27054E-07	g/s	Naphthalene	G31_G91W
Maximum Hourly	2008	3	7.77568E-06	g/s	Propylene	G31_G91W
Maximum Hourly	2008	3	3.04929E-07	g/s	Styrene	G31_G91W
Maximum Hourly	2008	3	7.34432E-05	g/s	Toluene	G31_G91W
Maximum Hourly	2008	3	3.21914E-05	g/s	Xylenes	G31_G91W
Maximum Hourly	2008	3	9.66845E-06	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2008	3	4.92212E-06	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2008	3	2.28527E-06	g/s	Acrolein	IWC_1
Maximum Hourly	2008	3	5.2917E-05	g/s	Benzene	IWC_1
Maximum Hourly	2008	3	2.16236E-05	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2008	3	2.77748E-05	g/s	Formaldehyde	IWC_1
Maximum Hourly	2008	3	6.87517E-05	g/s	Hexane	IWC_1
Maximum Hourly	2008	3	2.10948E-06	g/s	Methanol	IWC_1
Maximum Hourly	2008	3	3.5158E-07	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2008	3	8.7895E-07	g/s	Naphthalene	IWC_1
Maximum Hourly	2008	3	5.37918E-05	g/s	Propylene	IWC_1
Maximum Hourly	2008	3	2.10948E-06	g/s	Styrene	IWC_1
Maximum Hourly	2008	3	0.000146101	g/s	Toluene	IWC_1
Maximum Hourly	2008	3	9.96269E-05	g/s	Xylenes	IWC_1
Maximum Hourly	2008	3	0	g/s	1,3-Butadiene	IWCH
Maximum Hourly	2008	3	0	g/s	Acetaldehyde	IWCH
Maximum Hourly	2008	3	0	g/s	Acrolein	IWCH
Maximum Hourly	2008	3	0	g/s	Benzene	IWCH
Maximum Hourly	2008	3	0	g/s	Ethylbenzene	IWCH
Maximum Hourly	2008	3	0	g/s	Formaldehyde	IWCH
Maximum Hourly	2008	3	0	g/s	Hexane	IWCH
Maximum Hourly	2008	3	0	g/s	Methanol	IWCH
Maximum Hourly	2008	3	0	g/s	Methyl Ethyl Ketone	IWCH
Maximum Hourly	2008	3	0	g/s	Naphthalene	IWCH
Maximum Hourly	2008	3	0	g/s	Propylene	IWCH
Maximum Hourly	2008	3	0	g/s	Styrene	IWCH
Maximum Hourly	2008	3	0	g/s	Toluene	IWCH

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2008	3	0	g/s	Xylenes	IWCH
Maximum Hourly	2008	3	0	g/s	1,3-Butadiene	IWCH_C
Maximum Hourly	2008	3	0	g/s	Acetaldehyde	IWCH_C
Maximum Hourly	2008	3	0	g/s	Acrolein	IWCH_C
Maximum Hourly	2008	3	0	g/s	Benzene	IWCH_C
Maximum Hourly	2008	3	0	g/s	Ethylbenzene	IWCH_C
Maximum Hourly	2008	3	0	g/s	Formaldehyde	IWCH_C
Maximum Hourly	2008	3	0	g/s	Hexane	IWCH_C
Maximum Hourly	2008	3	0	g/s	Methanol	IWCH_C
Maximum Hourly	2008	3	0	g/s	Methyl Ethyl Ketone	IWCH_C
Maximum Hourly	2008	3	0	g/s	Naphthalene	IWCH_C
Maximum Hourly	2008	3	0	g/s	Propylene	IWCH_C
Maximum Hourly	2008	3	0	g/s	Styrene	IWCH_C
Maximum Hourly	2008	3	0	g/s	Toluene	IWCH_C
Maximum Hourly	2008	3	0	g/s	Xylenes	IWCH_C
Maximum Hourly	2008	3	4.74993E-05	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2008	3	2.41814E-05	g/s	Acetaldehyde	IWCP
Maximum Hourly	2008	3	1.12271E-05	g/s	Acrolein	IWCP
Maximum Hourly	2008	3	0.00043026	g/s	Benzene	IWCP
Maximum Hourly	2008	3	0.000162995	g/s	Ethylbenzene	IWCP
Maximum Hourly	2008	3	0.000136452	g/s	Formaldehyde	IWCP
Maximum Hourly	2008	3	0.001066222	g/s	Hexane	IWCP
Maximum Hourly	2008	3	1.03635E-05	g/s	Methanol	IWCP
Maximum Hourly	2008	3	1.72725E-06	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2008	3	4.31812E-06	g/s	Naphthalene	IWCP
Maximum Hourly	2008	3	0.000264269	g/s	Propylene	IWCP
Maximum Hourly	2008	3	1.03635E-05	g/s	Styrene	IWCP
Maximum Hourly	2008	3	0.00152191	g/s	Toluene	IWCP
Maximum Hourly	2008	3	0.000762856	g/s	Xylenes	IWCP
Maximum Hourly	2008	3	1.34323E-05	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2008	3	6.83825E-06	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2008	3	3.1749E-06	g/s	Acrolein	IWCP_C
Maximum Hourly	2008	3	6.25915E-05	g/s	Benzene	IWCP_C
Maximum Hourly	2008	3	2.63996E-05	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2008	3	3.85873E-05	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2008	3	4.87793E-05	g/s	Hexane	IWCP_C
Maximum Hourly	2008	3	2.93068E-06	g/s	Methanol	IWCP_C
Maximum Hourly	2008	3	4.88446E-07	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2008	3	1.22112E-06	g/s	Naphthalene	IWCP_C
Maximum Hourly	2008	3	7.47323E-05	g/s	Propylene	IWCP_C
Maximum Hourly	2008	3	2.93068E-06	g/s	Styrene	IWCP_C
Maximum Hourly	2008	3	0.000151384	g/s	Toluene	IWCP_C
Maximum Hourly	2008	3	0.000120869	g/s	Xylenes	IWCP_C
Maximum Hourly	2008	3	0	g/s	1,3-Butadiene	IWCT
Maximum Hourly	2008	3	0	g/s	Acetaldehyde	IWCT
Maximum Hourly	2008	3	0	g/s	Acrolein	IWCT
Maximum Hourly	2008	3	0	g/s	Benzene	IWCT
Maximum Hourly	2008	3	0	g/s	Ethylbenzene	IWCT
Maximum Hourly	2008	3	0	g/s	Formaldehyde	IWCT
Maximum Hourly	2008	3	0	g/s	Hexane	IWCT
Maximum Hourly	2008	3	0	g/s	Methanol	IWCT
Maximum Hourly	2008	3	0	g/s	Methyl Ethyl Ketone	IWCT
Maximum Hourly	2008	3	0	g/s	Naphthalene	IWCT
Maximum Hourly	2008	3	0	g/s	Propylene	IWCT
Maximum Hourly	2008	3	0	g/s	Styrene	IWCT
Maximum Hourly	2008	3	0	g/s	Toluene	IWCT
Maximum Hourly	2008	3	0	g/s	Xylenes	IWCT
Maximum Hourly	2008	3	0	g/s	1,3-Butadiene	IWCT_C
Maximum Hourly	2008	3	0	g/s	Acetaldehyde	IWCT_C
Maximum Hourly	2008	3	0	g/s	Acrolein	IWCT_C
Maximum Hourly	2008	3	0	g/s	Benzene	IWCT_C
Maximum Hourly	2008	3	0	g/s	Ethylbenzene	IWCT_C
Maximum Hourly	2008	3	0	g/s	Formaldehyde	IWCT_C
Maximum Hourly	2008	3	0	g/s	Hexane	IWCT_C
Maximum Hourly	2008	3	0	g/s	Methanol	IWCT_C
Maximum Hourly	2008	3	0	g/s	Methyl Ethyl Ketone	IWCT_C
Maximum Hourly	2008	3	0	g/s	Naphthalene	IWCT_C
Maximum Hourly	2008	3	0	g/s	Propylene	IWCT_C
Maximum Hourly	2008	3	0	g/s	Styrene	IWCT_C
Maximum Hourly	2008	3	0	g/s	Toluene	IWCT_C
Maximum Hourly	2008	3	0	g/s	Xylenes	IWCT_C
Maximum Hourly	2008	3	3.02104E-06	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2008	3	1.53798E-06	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2008	3	7.14064E-07	g/s	Acrolein	RAMPSW
Maximum Hourly	2008	3	4.04861E-05	g/s	Benzene	RAMPSW
Maximum Hourly	2008	3	1.47404E-05	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2008	3	8.67863E-06	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2008	3	0.000123942	g/s	Hexane	RAMPSW
Maximum Hourly	2008	3	6.59136E-07	g/s	Methanol	RAMPSW
Maximum Hourly	2008	3	1.09856E-07	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2008	3	2.7464E-07	g/s	Naphthalene	RAMPSW
Maximum Hourly	2008	3	1.6808E-05	g/s	Propylene	RAMPSW
Maximum Hourly	2008	3	6.59136E-07	g/s	Styrene	RAMPSW
Maximum Hourly	2008	3	0.000158756	g/s	Toluene	RAMPSW
Maximum Hourly	2008	3	6.95852E-05	g/s	Xylenes	RAMPSW
Maximum Hourly	2009	3	2.26792E-06	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2009	3	1.15458E-06	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2009	3	5.36054E-07	g/s	Acrolein	CAS_G31W
Maximum Hourly	2009	3	3.04703E-05	g/s	Benzene	CAS_G31W
Maximum Hourly	2009	3	1.10914E-05	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2009	3	6.51511E-06	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2009	3	9.33736E-05	g/s	Hexane	CAS_G31W
Maximum Hourly	2009	3	4.94819E-07	g/s	Methanol	CAS_G31W
Maximum Hourly	2009	3	8.24698E-08	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2009	3	2.06174E-07	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2009	3	1.26179E-05	g/s	Propylene	CAS_G31W
Maximum Hourly	2009	3	4.94819E-07	g/s	Styrene	CAS_G31W

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2009	3	0.000119543	g/s	Toluene	CAS_G31W
Maximum Hourly	2009	3	5.23619E-05	g/s	Xylenes	CAS_G31W
Maximum Hourly	2009	3	2.37564E-06	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2009	3	1.20942E-06	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2009	3	5.61515E-07	g/s	Acrolein	EW_C_6
Maximum Hourly	2009	3	3.19176E-05	g/s	Benzene	EW_C_6
Maximum Hourly	2009	3	1.16182E-05	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2009	3	6.82456E-06	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2009	3	9.78085E-05	g/s	Hexane	EW_C_6
Maximum Hourly	2009	3	5.18321E-07	g/s	Methanol	EW_C_6
Maximum Hourly	2009	3	8.63868E-08	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2009	3	2.15967E-07	g/s	Naphthalene	EW_C_6
Maximum Hourly	2009	3	1.32172E-05	g/s	Propylene	EW_C_6
Maximum Hourly	2009	3	5.18321E-07	g/s	Styrene	EW_C_6
Maximum Hourly	2009	3	0.000125221	g/s	Toluene	EW_C_6
Maximum Hourly	2009	3	5.4849E-05	g/s	Xylenes	EW_C_6
Maximum Hourly	2009	3	2.6374E-05	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2009	3	1.34268E-05	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2009	3	6.23385E-06	g/s	Acrolein	EW_C_7
Maximum Hourly	2009	3	0.000354344	g/s	Benzene	EW_C_7
Maximum Hourly	2009	3	0.000128984	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2009	3	7.57652E-05	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2009	3	0.001085856	g/s	Hexane	EW_C_7
Maximum Hourly	2009	3	5.75432E-06	g/s	Methanol	EW_C_7
Maximum Hourly	2009	3	9.59054E-07	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2009	3	2.39763E-06	g/s	Naphthalene	EW_C_7
Maximum Hourly	2009	3	0.000146735	g/s	Propylene	EW_C_7
Maximum Hourly	2009	3	5.75432E-06	g/s	Styrene	EW_C_7
Maximum Hourly	2009	3	0.001390184	g/s	Toluene	EW_C_7
Maximum Hourly	2009	3	0.000608925	g/s	Xylenes	EW_C_7
Maximum Hourly	2009	3	1.02128E-05	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2009	3	5.19923E-06	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2009	3	2.41393E-06	g/s	Acrolein	EW_C_8
Maximum Hourly	2009	3	0.000137212	g/s	Benzene	EW_C_8
Maximum Hourly	2009	3	4.99464E-05	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2009	3	2.93385E-05	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2009	3	0.000420475	g/s	Hexane	EW_C_8
Maximum Hourly	2009	3	2.22824E-06	g/s	Methanol	EW_C_8
Maximum Hourly	2009	3	3.71374E-07	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2009	3	9.28435E-07	g/s	Naphthalene	EW_C_8
Maximum Hourly	2009	3	5.68202E-05	g/s	Propylene	EW_C_8
Maximum Hourly	2009	3	2.22824E-06	g/s	Styrene	EW_C_8
Maximum Hourly	2009	3	0.00053832	g/s	Toluene	EW_C_8
Maximum Hourly	2009	3	0.000235794	g/s	Xylenes	EW_C_8
Maximum Hourly	2009	3	3.48383E-06	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2009	3	1.77358E-06	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2009	3	8.2345E-07	g/s	Acrolein	EW_C_9
Maximum Hourly	2009	3	4.68065E-05	g/s	Benzene	EW_C_9
Maximum Hourly	2009	3	1.70379E-05	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2009	3	1.00081E-05	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2009	3	0.000143434	g/s	Hexane	EW_C_9
Maximum Hourly	2009	3	7.60107E-07	g/s	Methanol	EW_C_9
Maximum Hourly	2009	3	1.26685E-07	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2009	3	3.16711E-07	g/s	Naphthalene	EW_C_9
Maximum Hourly	2009	3	1.93827E-05	g/s	Propylene	EW_C_9
Maximum Hourly	2009	3	7.60107E-07	g/s	Styrene	EW_C_9
Maximum Hourly	2009	3	0.000183634	g/s	Toluene	EW_C_9
Maximum Hourly	2009	3	8.04349E-05	g/s	Xylenes	EW_C_9
Maximum Hourly	2009	3	4.30055E-06	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2009	3	2.18937E-06	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2009	3	1.01649E-06	g/s	Acrolein	G31_G91W
Maximum Hourly	2009	3	5.77794E-05	g/s	Benzene	G31_G91W
Maximum Hourly	2009	3	2.10322E-05	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2009	3	1.23543E-05	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2009	3	0.00017706	g/s	Hexane	G31_G91W
Maximum Hourly	2009	3	9.38302E-07	g/s	Methanol	G31_G91W
Maximum Hourly	2009	3	1.56384E-07	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2009	3	3.90959E-07	g/s	Naphthalene	G31_G91W
Maximum Hourly	2009	3	2.39267E-05	g/s	Propylene	G31_G91W
Maximum Hourly	2009	3	9.38302E-07	g/s	Styrene	G31_G91W
Maximum Hourly	2009	3	0.000226684	g/s	Toluene	G31_G91W
Maximum Hourly	2009	3	9.92915E-05	g/s	Xylenes	G31_G91W
Maximum Hourly	2009	3	2.96665E-05	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2009	3	1.51029E-05	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2009	3	7.01208E-06	g/s	Acrolein	IWC_1
Maximum Hourly	2009	3	0.000162564	g/s	Benzene	IWC_1
Maximum Hourly	2009	3	6.64142E-05	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2009	3	8.52238E-05	g/s	Formaldehyde	IWC_1
Maximum Hourly	2009	3	0.000211788	g/s	Hexane	IWC_1
Maximum Hourly	2009	3	6.47269E-06	g/s	Methanol	IWC_1
Maximum Hourly	2009	3	1.07878E-06	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2009	3	2.69696E-06	g/s	Naphthalene	IWC_1
Maximum Hourly	2009	3	0.000165054	g/s	Propylene	IWC_1
Maximum Hourly	2009	3	6.47269E-06	g/s	Styrene	IWC_1
Maximum Hourly	2009	3	0.000449213	g/s	Toluene	IWC_1
Maximum Hourly	2009	3	0.000306006	g/s	Xylenes	IWC_1
Maximum Hourly	2009	3	0.000203214	g/s	1,3-Butadiene	IWCH
Maximum Hourly	2009	3	0.000103455	g/s	Acetaldehyde	IWCH
Maximum Hourly	2009	3	4.80325E-05	g/s	Acrolein	IWCH
Maximum Hourly	2009	3	0.001667214	g/s	Benzene	IWCH
Maximum Hourly	2009	3	0.000639487	g/s	Ethylbenzene	IWCH
Maximum Hourly	2009	3	0.000583779	g/s	Formaldehyde	IWCH
Maximum Hourly	2009	3	0.003819169	g/s	Hexane	IWCH
Maximum Hourly	2009	3	4.43377E-05	g/s	Methanol	IWCH
Maximum Hourly	2009	3	7.38961E-06	g/s	Methyl Ethyl Ketone	IWCH
Maximum Hourly	2009	3	1.8474E-05	g/s	Naphthalene	IWCH
Maximum Hourly	2009	3	0.001130611	g/s	Propylene	IWCH

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2009	3	4.43377E-05	g/s	Styrene	IWCH
Maximum Hourly	2009	3	0.005691585	g/s	Toluene	IWCH
Maximum Hourly	2009	3	0.002985055	g/s	Xylenes	IWCH
Maximum Hourly	2009	3	1.9713E-05	g/s	1,3-Butadiene	IWCH_C
Maximum Hourly	2009	3	1.00357E-05	g/s	Acetaldehyde	IWCH_C
Maximum Hourly	2009	3	4.65943E-06	g/s	Acrolein	IWCH_C
Maximum Hourly	2009	3	9.1271E-05	g/s	Benzene	IWCH_C
Maximum Hourly	2009	3	3.85478E-05	g/s	Ethylbenzene	IWCH_C
Maximum Hourly	2009	3	5.663E-05	g/s	Formaldehyde	IWCH_C
Maximum Hourly	2009	3	6.90759E-05	g/s	Hexane	IWCH_C
Maximum Hourly	2009	3	4.30101E-06	g/s	Methanol	IWCH_C
Maximum Hourly	2009	3	7.16836E-07	g/s	Methyl Ethyl Ketone	IWCH_C
Maximum Hourly	2009	3	1.79209E-06	g/s	Naphthalene	IWCH_C
Maximum Hourly	2009	3	0.000109676	g/s	Propylene	IWCH_C
Maximum Hourly	2009	3	4.30101E-06	g/s	Styrene	IWCH_C
Maximum Hourly	2009	3	0.000219396	g/s	Toluene	IWCH_C
Maximum Hourly	2009	3	0.000176443	g/s	Xylenes	IWCH_C
Maximum Hourly	2009	3	0	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2009	3	0	g/s	Acetaldehyde	IWCP
Maximum Hourly	2009	3	0	g/s	Acrolein	IWCP
Maximum Hourly	2009	3	0	g/s	Benzene	IWCP
Maximum Hourly	2009	3	0	g/s	Ethylbenzene	IWCP
Maximum Hourly	2009	3	0	g/s	Formaldehyde	IWCP
Maximum Hourly	2009	3	0	g/s	Hexane	IWCP
Maximum Hourly	2009	3	0	g/s	Methanol	IWCP
Maximum Hourly	2009	3	0	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2009	3	0	g/s	Naphthalene	IWCP
Maximum Hourly	2009	3	0	g/s	Propylene	IWCP
Maximum Hourly	2009	3	0	g/s	Styrene	IWCP
Maximum Hourly	2009	3	0	g/s	Toluene	IWCP
Maximum Hourly	2009	3	0	g/s	Xylenes	IWCP
Maximum Hourly	2009	3	0	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2009	3	0	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2009	3	0	g/s	Acrolein	IWCP_C
Maximum Hourly	2009	3	0	g/s	Benzene	IWCP_C
Maximum Hourly	2009	3	0	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2009	3	0	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2009	3	0	g/s	Hexane	IWCP_C
Maximum Hourly	2009	3	0	g/s	Methanol	IWCP_C
Maximum Hourly	2009	3	0	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2009	3	0	g/s	Naphthalene	IWCP_C
Maximum Hourly	2009	3	0	g/s	Propylene	IWCP_C
Maximum Hourly	2009	3	0	g/s	Styrene	IWCP_C
Maximum Hourly	2009	3	0	g/s	Toluene	IWCP_C
Maximum Hourly	2009	3	0	g/s	Xylenes	IWCP_C
Maximum Hourly	2009	3	4.36637E-05	g/s	1,3-Butadiene	IWCT
Maximum Hourly	2009	3	2.22288E-05	g/s	Acetaldehyde	IWCT
Maximum Hourly	2009	3	1.03205E-05	g/s	Acrolein	IWCT
Maximum Hourly	2009	3	0.000397316	g/s	Benzene	IWCT
Maximum Hourly	2009	3	0.000150433	g/s	Ethylbenzene	IWCT
Maximum Hourly	2009	3	0.000125434	g/s	Formaldehyde	IWCT
Maximum Hourly	2009	3	0.000987822	g/s	Hexane	IWCT
Maximum Hourly	2009	3	9.52662E-06	g/s	Methanol	IWCT
Maximum Hourly	2009	3	1.58777E-06	g/s	Methyl Ethyl Ketone	IWCT
Maximum Hourly	2009	3	3.96942E-06	g/s	Naphthalene	IWCT
Maximum Hourly	2009	3	0.000242929	g/s	Propylene	IWCT
Maximum Hourly	2009	3	9.52662E-06	g/s	Styrene	IWCT
Maximum Hourly	2009	3	0.001407511	g/s	Toluene	IWCT
Maximum Hourly	2009	3	0.000704144	g/s	Xylenes	IWCT
Maximum Hourly	2009	3	9.32778E-06	g/s	1,3-Butadiene	IWCT_C
Maximum Hourly	2009	3	4.74869E-06	g/s	Acetaldehyde	IWCT_C
Maximum Hourly	2009	3	2.20475E-06	g/s	Acrolein	IWCT_C
Maximum Hourly	2009	3	4.35353E-05	g/s	Benzene	IWCT_C
Maximum Hourly	2009	3	1.8356E-05	g/s	Ethylbenzene	IWCT_C
Maximum Hourly	2009	3	2.67962E-05	g/s	Formaldehyde	IWCT_C
Maximum Hourly	2009	3	3.41728E-05	g/s	Hexane	IWCT_C
Maximum Hourly	2009	3	2.03515E-06	g/s	Methanol	IWCT_C
Maximum Hourly	2009	3	3.39192E-07	g/s	Methyl Ethyl Ketone	IWCT_C
Maximum Hourly	2009	3	8.4798E-07	g/s	Naphthalene	IWCT_C
Maximum Hourly	2009	3	5.18964E-05	g/s	Propylene	IWCT_C
Maximum Hourly	2009	3	2.03515E-06	g/s	Styrene	IWCT_C
Maximum Hourly	2009	3	0.000105456	g/s	Toluene	IWCT_C
Maximum Hourly	2009	3	8.40474E-05	g/s	Xylenes	IWCT_C
Maximum Hourly	2009	3	9.29611E-06	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2009	3	4.73256E-06	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2009	3	2.19726E-06	g/s	Acrolein	RAMPSW
Maximum Hourly	2009	3	0.000124897	g/s	Benzene	RAMPSW
Maximum Hourly	2009	3	4.54633E-05	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2009	3	2.67052E-05	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2009	3	0.000382734	g/s	Hexane	RAMPSW
Maximum Hourly	2009	3	2.02824E-06	g/s	Methanol	RAMPSW
Maximum Hourly	2009	3	3.3804E-07	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2009	3	8.45101E-07	g/s	Naphthalene	RAMPSW
Maximum Hourly	2009	3	5.17202E-05	g/s	Propylene	RAMPSW
Maximum Hourly	2009	3	2.02824E-06	g/s	Styrene	RAMPSW
Maximum Hourly	2009	3	0.000490002	g/s	Toluene	RAMPSW
Maximum Hourly	2009	3	0.000214629	g/s	Xylenes	RAMPSW
Maximum Hourly	2014	3	1.26044E-06	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2014	3	6.41678E-07	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2014	3	2.97922E-07	g/s	Acrolein	CAS_G31W
Maximum Hourly	2014	3	1.99402E-05	g/s	Benzene	CAS_G31W
Maximum Hourly	2014	3	7.16618E-06	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2014	3	3.6209E-06	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2014	3	6.47519E-05	g/s	Hexane	CAS_G31W
Maximum Hourly	2014	3	2.75005E-07	g/s	Methanol	CAS_G31W
Maximum Hourly	2014	3	4.58342E-08	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2014	3	1.14585E-07	g/s	Naphthalene	CAS_G31W

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2014	3	7.01263E-06	g/s	Propylene	CAS_G31W
Maximum Hourly	2014	3	2.75005E-07	g/s	Styrene	CAS_G31W
Maximum Hourly	2014	3	8.06319E-05	g/s	Toluene	CAS_G31W
Maximum Hourly	2014	3	3.3927E-05	g/s	Xylenes	CAS_G31W
Maximum Hourly	2014	3	1.32031E-06	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2014	3	6.72156E-07	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2014	3	3.12072E-07	g/s	Acrolein	EW_C_6
Maximum Hourly	2014	3	2.08873E-05	g/s	Benzene	EW_C_6
Maximum Hourly	2014	3	7.50655E-06	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2014	3	3.79288E-06	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2014	3	6.78274E-05	g/s	Hexane	EW_C_6
Maximum Hourly	2014	3	2.88067E-07	g/s	Methanol	EW_C_6
Maximum Hourly	2014	3	4.80111E-08	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2014	3	1.20028E-07	g/s	Naphthalene	EW_C_6
Maximum Hourly	2014	3	7.34571E-06	g/s	Propylene	EW_C_6
Maximum Hourly	2014	3	2.88067E-07	g/s	Styrene	EW_C_6
Maximum Hourly	2014	3	8.44617E-05	g/s	Toluene	EW_C_6
Maximum Hourly	2014	3	3.55384E-05	g/s	Xylenes	EW_C_6
Maximum Hourly	2014	3	1.46578E-05	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2014	3	7.46217E-06	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2014	3	3.46458E-06	g/s	Acrolein	EW_C_7
Maximum Hourly	2014	3	0.000231887	g/s	Benzene	EW_C_7
Maximum Hourly	2014	3	8.33366E-05	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2014	3	4.2108E-05	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2014	3	0.00075301	g/s	Hexane	EW_C_7
Maximum Hourly	2014	3	3.19807E-06	g/s	Methanol	EW_C_7
Maximum Hourly	2014	3	5.33012E-07	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2014	3	1.33253E-06	g/s	Naphthalene	EW_C_7
Maximum Hourly	2014	3	8.15509E-05	g/s	Propylene	EW_C_7
Maximum Hourly	2014	3	3.19807E-06	g/s	Styrene	EW_C_7
Maximum Hourly	2014	3	0.000937681	g/s	Toluene	EW_C_7
Maximum Hourly	2014	3	0.000394542	g/s	Xylenes	EW_C_7
Maximum Hourly	2014	3	5.67595E-06	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2014	3	2.88957E-06	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2014	3	1.34159E-06	g/s	Acrolein	EW_C_8
Maximum Hourly	2014	3	8.97936E-05	g/s	Benzene	EW_C_8
Maximum Hourly	2014	3	3.22704E-05	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2014	3	1.63055E-05	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2014	3	0.000291588	g/s	Hexane	EW_C_8
Maximum Hourly	2014	3	1.23839E-06	g/s	Methanol	EW_C_8
Maximum Hourly	2014	3	2.06398E-07	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2014	3	5.15995E-07	g/s	Naphthalene	EW_C_8
Maximum Hourly	2014	3	3.15789E-05	g/s	Propylene	EW_C_8
Maximum Hourly	2014	3	1.23839E-06	g/s	Styrene	EW_C_8
Maximum Hourly	2014	3	0.000363098	g/s	Toluene	EW_C_8
Maximum Hourly	2014	3	0.000152778	g/s	Xylenes	EW_C_8
Maximum Hourly	2014	3	1.9362E-06	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2014	3	9.85703E-07	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2014	3	4.57648E-07	g/s	Acrolein	EW_C_9
Maximum Hourly	2014	3	3.06308E-05	g/s	Benzene	EW_C_9
Maximum Hourly	2014	3	1.10082E-05	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2014	3	5.56218E-06	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2014	3	9.94676E-05	g/s	Hexane	EW_C_9
Maximum Hourly	2014	3	4.22444E-07	g/s	Methanol	EW_C_9
Maximum Hourly	2014	3	7.04074E-08	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2014	3	1.76018E-07	g/s	Naphthalene	EW_C_9
Maximum Hourly	2014	3	1.07723E-05	g/s	Propylene	EW_C_9
Maximum Hourly	2014	3	4.22444E-07	g/s	Styrene	EW_C_9
Maximum Hourly	2014	3	0.000123861	g/s	Toluene	EW_C_9
Maximum Hourly	2014	3	5.21163E-05	g/s	Xylenes	EW_C_9
Maximum Hourly	2014	3	2.39011E-06	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2014	3	1.21678E-06	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2014	3	5.64936E-07	g/s	Acrolein	G31_G91W
Maximum Hourly	2014	3	3.78116E-05	g/s	Benzene	G31_G91W
Maximum Hourly	2014	3	1.35889E-05	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2014	3	6.86614E-06	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2014	3	0.000122786	g/s	Hexane	G31_G91W
Maximum Hourly	2014	3	5.21479E-07	g/s	Methanol	G31_G91W
Maximum Hourly	2014	3	8.69132E-08	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2014	3	2.17283E-07	g/s	Naphthalene	G31_G91W
Maximum Hourly	2014	3	1.32977E-05	g/s	Propylene	G31_G91W
Maximum Hourly	2014	3	5.21479E-07	g/s	Styrene	G31_G91W
Maximum Hourly	2014	3	0.000152899	g/s	Toluene	G31_G91W
Maximum Hourly	2014	3	6.43342E-05	g/s	Xylenes	G31_G91W
Maximum Hourly	2014	3	1.85045E-05	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2014	3	9.42049E-06	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2014	3	4.3738E-06	g/s	Acrolein	IWC_1
Maximum Hourly	2014	3	0.000103752	g/s	Benzene	IWC_1
Maximum Hourly	2014	3	4.221E-05	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2014	3	5.31585E-05	g/s	Formaldehyde	IWC_1
Maximum Hourly	2014	3	0.000142166	g/s	Hexane	IWC_1
Maximum Hourly	2014	3	4.03735E-06	g/s	Methanol	IWC_1
Maximum Hourly	2014	3	6.72892E-07	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2014	3	1.68223E-06	g/s	Naphthalene	IWC_1
Maximum Hourly	2014	3	0.000102952	g/s	Propylene	IWC_1
Maximum Hourly	2014	3	4.03735E-06	g/s	Styrene	IWC_1
Maximum Hourly	2014	3	0.000291305	g/s	Toluene	IWC_1
Maximum Hourly	2014	3	0.000194648	g/s	Xylenes	IWC_1
Maximum Hourly	2014	3	3.08091E-05	g/s	1,3-Butadiene	IWCH
Maximum Hourly	2014	3	1.56846E-05	g/s	Acetaldehyde	IWCH
Maximum Hourly	2014	3	7.28215E-06	g/s	Acrolein	IWCH
Maximum Hourly	2014	3	0.000260616	g/s	Benzene	IWCH
Maximum Hourly	2014	3	9.9569E-05	g/s	Ethylbenzene	IWCH
Maximum Hourly	2014	3	8.85061E-05	g/s	Formaldehyde	IWCH
Maximum Hourly	2014	3	0.000612606	g/s	Hexane	IWCH
Maximum Hourly	2014	3	6.72198E-06	g/s	Methanol	IWCH
Maximum Hourly	2014	3	1.12033E-06	g/s	Methyl Ethyl Ketone	IWCH

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2014	3	2.80083E-06	g/s	Naphthalene	IWCH
Maximum Hourly	2014	3	0.00017141	g/s	Propylene	IWCH
Maximum Hourly	2014	3	6.72198E-06	g/s	Styrene	IWCH
Maximum Hourly	2014	3	0.000899971	g/s	Toluene	IWCH
Maximum Hourly	2014	3	0.000465167	g/s	Xylenes	IWCH
Maximum Hourly	2014	3	4.41159E-06	g/s	1,3-Butadiene	IWCH_C
Maximum Hourly	2014	3	2.2459E-06	g/s	Acetaldehyde	IWCH_C
Maximum Hourly	2014	3	1.04274E-06	g/s	Acrolein	IWCH_C
Maximum Hourly	2014	3	2.05125E-05	g/s	Benzene	IWCH_C
Maximum Hourly	2014	3	8.6556E-06	g/s	Ethylbenzene	IWCH_C
Maximum Hourly	2014	3	1.26733E-05	g/s	Formaldehyde	IWCH_C
Maximum Hourly	2014	3	1.58299E-05	g/s	Hexane	IWCH_C
Maximum Hourly	2014	3	9.62529E-07	g/s	Methanol	IWCH_C
Maximum Hourly	2014	3	1.60421E-07	g/s	Methyl Ethyl Ketone	IWCH_C
Maximum Hourly	2014	3	4.01054E-07	g/s	Naphthalene	IWCH_C
Maximum Hourly	2014	3	2.45445E-05	g/s	Propylene	IWCH_C
Maximum Hourly	2014	3	9.62529E-07	g/s	Styrene	IWCH_C
Maximum Hourly	2014	3	4.95089E-05	g/s	Toluene	IWCH_C
Maximum Hourly	2014	3	3.96257E-05	g/s	Xylenes	IWCH_C
Maximum Hourly	2014	3	3.05131E-05	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2014	3	1.55339E-05	g/s	Acetaldehyde	IWCP
Maximum Hourly	2014	3	7.21218E-06	g/s	Acrolein	IWCP
Maximum Hourly	2014	3	0.00028985	g/s	Benzene	IWCP
Maximum Hourly	2014	3	0.000109192	g/s	Ethylbenzene	IWCP
Maximum Hourly	2014	3	8.76558E-05	g/s	Formaldehyde	IWCP
Maximum Hourly	2014	3	0.00074249	g/s	Hexane	IWCP
Maximum Hourly	2014	3	6.6574E-06	g/s	Methanol	IWCP
Maximum Hourly	2014	3	1.10957E-06	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2014	3	2.77392E-06	g/s	Naphthalene	IWCP
Maximum Hourly	2014	3	0.000169764	g/s	Propylene	IWCP
Maximum Hourly	2014	3	6.6574E-06	g/s	Styrene	IWCP
Maximum Hourly	2014	3	0.0010412	g/s	Toluene	IWCP
Maximum Hourly	2014	3	0.000511655	g/s	Xylenes	IWCP
Maximum Hourly	2014	3	5.54329E-06	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2014	3	2.82204E-06	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2014	3	1.31023E-06	g/s	Acrolein	IWCP_C
Maximum Hourly	2014	3	2.60151E-05	g/s	Benzene	IWCP_C
Maximum Hourly	2014	3	1.09562E-05	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2014	3	1.59244E-05	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2014	3	2.09199E-05	g/s	Hexane	IWCP_C
Maximum Hourly	2014	3	1.20945E-06	g/s	Methanol	IWCP_C
Maximum Hourly	2014	3	2.01574E-07	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2014	3	5.03936E-07	g/s	Naphthalene	IWCP_C
Maximum Hourly	2014	3	3.08409E-05	g/s	Propylene	IWCP_C
Maximum Hourly	2014	3	1.20945E-06	g/s	Styrene	IWCP_C
Maximum Hourly	2014	3	6.33454E-05	g/s	Toluene	IWCP_C
Maximum Hourly	2014	3	5.01771E-05	g/s	Xylenes	IWCP_C
Maximum Hourly	2014	3	1.22052E-05	g/s	1,3-Butadiene	IWCT
Maximum Hourly	2014	3	6.21357E-06	g/s	Acetaldehyde	IWCT
Maximum Hourly	2014	3	2.88487E-06	g/s	Acrolein	IWCT
Maximum Hourly	2014	3	0.00011594	g/s	Benzene	IWCT
Maximum Hourly	2014	3	4.36768E-05	g/s	Ethylbenzene	IWCT
Maximum Hourly	2014	3	3.50623E-05	g/s	Formaldehyde	IWCT
Maximum Hourly	2014	3	0.000296996	g/s	Hexane	IWCT
Maximum Hourly	2014	3	2.66296E-06	g/s	Methanol	IWCT
Maximum Hourly	2014	3	4.43827E-07	g/s	Methyl Ethyl Ketone	IWCT
Maximum Hourly	2014	3	1.10957E-06	g/s	Naphthalene	IWCT
Maximum Hourly	2014	3	6.79055E-05	g/s	Propylene	IWCT
Maximum Hourly	2014	3	2.66296E-06	g/s	Styrene	IWCT
Maximum Hourly	2014	3	0.00041648	g/s	Toluene	IWCT
Maximum Hourly	2014	3	0.000204662	g/s	Xylenes	IWCT
Maximum Hourly	2014	3	3.46456E-06	g/s	1,3-Butadiene	IWCT_C
Maximum Hourly	2014	3	1.76377E-06	g/s	Acetaldehyde	IWCT_C
Maximum Hourly	2014	3	8.18895E-07	g/s	Acrolein	IWCT_C
Maximum Hourly	2014	3	1.62594E-05	g/s	Benzene	IWCT_C
Maximum Hourly	2014	3	6.84762E-06	g/s	Ethylbenzene	IWCT_C
Maximum Hourly	2014	3	9.95273E-06	g/s	Formaldehyde	IWCT_C
Maximum Hourly	2014	3	1.30749E-05	g/s	Hexane	IWCT_C
Maximum Hourly	2014	3	7.55903E-07	g/s	Methanol	IWCT_C
Maximum Hourly	2014	3	1.25984E-07	g/s	Methyl Ethyl Ketone	IWCT_C
Maximum Hourly	2014	3	3.1496E-07	g/s	Naphthalene	IWCT_C
Maximum Hourly	2014	3	1.92755E-05	g/s	Propylene	IWCT_C
Maximum Hourly	2014	3	7.55903E-07	g/s	Styrene	IWCT_C
Maximum Hourly	2014	3	3.95909E-05	g/s	Toluene	IWCT_C
Maximum Hourly	2014	3	3.13607E-05	g/s	Xylenes	IWCT_C
Maximum Hourly	2014	3	5.16649E-06	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2014	3	2.63021E-06	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2014	3	1.22117E-06	g/s	Acrolein	RAMPSW
Maximum Hourly	2014	3	8.17339E-05	g/s	Benzene	RAMPSW
Maximum Hourly	2014	3	2.93739E-05	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2014	3	1.48419E-05	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2014	3	0.000265415	g/s	Hexane	RAMPSW
Maximum Hourly	2014	3	1.12723E-06	g/s	Methanol	RAMPSW
Maximum Hourly	2014	3	1.87872E-07	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2014	3	4.69681E-07	g/s	Naphthalene	RAMPSW
Maximum Hourly	2014	3	2.87445E-05	g/s	Propylene	RAMPSW
Maximum Hourly	2014	3	1.12723E-06	g/s	Styrene	RAMPSW
Maximum Hourly	2014	3	0.000330507	g/s	Toluene	RAMPSW
Maximum Hourly	2014	3	0.000139065	g/s	Xylenes	RAMPSW
Maximum Hourly	2015	3	2.81223E-07	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2015	3	1.43168E-07	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2015	3	6.64709E-08	g/s	Acrolein	CAS_G31W
Maximum Hourly	2015	3	4.61524E-06	g/s	Benzene	CAS_G31W
Maximum Hourly	2015	3	1.65431E-06	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2015	3	8.07878E-07	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2015	3	1.51585E-05	g/s	Hexane	CAS_G31W
Maximum Hourly	2015	3	6.13578E-08	g/s	Methanol	CAS_G31W

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2015	3	1.02263E-08	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2015	3	2.55657E-08	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2015	3	1.56462E-06	g/s	Propylene	CAS_G31W
Maximum Hourly	2015	3	6.13578E-08	g/s	Styrene	CAS_G31W
Maximum Hourly	2015	3	1.87754E-05	g/s	Toluene	CAS_G31W
Maximum Hourly	2015	3	7.8366E-06	g/s	Xylenes	CAS_G31W
Maximum Hourly	2015	3	2.9458E-07	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2015	3	1.49968E-07	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2015	3	6.96281E-08	g/s	Acrolein	EW_C_6
Maximum Hourly	2015	3	4.83445E-06	g/s	Benzene	EW_C_6
Maximum Hourly	2015	3	1.73289E-06	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2015	3	8.46249E-07	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2015	3	1.58784E-05	g/s	Hexane	EW_C_6
Maximum Hourly	2015	3	6.42721E-08	g/s	Methanol	EW_C_6
Maximum Hourly	2015	3	1.0712E-08	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2015	3	2.678E-08	g/s	Naphthalene	EW_C_6
Maximum Hourly	2015	3	1.63894E-06	g/s	Propylene	EW_C_6
Maximum Hourly	2015	3	6.42721E-08	g/s	Styrene	EW_C_6
Maximum Hourly	2015	3	1.96672E-05	g/s	Toluene	EW_C_6
Maximum Hourly	2015	3	8.20882E-06	g/s	Xylenes	EW_C_6
Maximum Hourly	2015	3	3.27039E-06	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2015	3	1.66492E-06	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2015	3	7.73001E-07	g/s	Acrolein	EW_C_7
Maximum Hourly	2015	3	5.36713E-05	g/s	Benzene	EW_C_7
Maximum Hourly	2015	3	1.92382E-05	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2015	3	9.39493E-06	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2015	3	0.00017628	g/s	Hexane	EW_C_7
Maximum Hourly	2015	3	7.13539E-07	g/s	Methanol	EW_C_7
Maximum Hourly	2015	3	1.18923E-07	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2015	3	2.97308E-07	g/s	Naphthalene	EW_C_7
Maximum Hourly	2015	3	1.81952E-05	g/s	Propylene	EW_C_7
Maximum Hourly	2015	3	7.13539E-07	g/s	Styrene	EW_C_7
Maximum Hourly	2015	3	0.000218342	g/s	Toluene	EW_C_7
Maximum Hourly	2015	3	9.1133E-05	g/s	Xylenes	EW_C_7
Maximum Hourly	2015	3	1.26639E-06	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2015	3	6.44708E-07	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2015	3	2.99329E-07	g/s	Acrolein	EW_C_8
Maximum Hourly	2015	3	2.07831E-05	g/s	Benzene	EW_C_8
Maximum Hourly	2015	3	7.44961E-06	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2015	3	3.63799E-06	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2015	3	6.82608E-05	g/s	Hexane	EW_C_8
Maximum Hourly	2015	3	2.76303E-07	g/s	Methanol	EW_C_8
Maximum Hourly	2015	3	4.60506E-08	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2015	3	1.15126E-07	g/s	Naphthalene	EW_C_8
Maximum Hourly	2015	3	7.04574E-06	g/s	Propylene	EW_C_8
Maximum Hourly	2015	3	2.76303E-07	g/s	Styrene	EW_C_8
Maximum Hourly	2015	3	8.45486E-05	g/s	Toluene	EW_C_8
Maximum Hourly	2015	3	3.52894E-05	g/s	Xylenes	EW_C_8
Maximum Hourly	2015	3	4.31996E-07	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2015	3	2.19925E-07	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2015	3	1.02108E-07	g/s	Acrolein	EW_C_9
Maximum Hourly	2015	3	7.08962E-06	g/s	Benzene	EW_C_9
Maximum Hourly	2015	3	2.54124E-06	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2015	3	1.24101E-06	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2015	3	2.32854E-05	g/s	Hexane	EW_C_9
Maximum Hourly	2015	3	9.42537E-08	g/s	Methanol	EW_C_9
Maximum Hourly	2015	3	1.5709E-08	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2015	3	3.92724E-08	g/s	Naphthalene	EW_C_9
Maximum Hourly	2015	3	2.40347E-06	g/s	Propylene	EW_C_9
Maximum Hourly	2015	3	9.42537E-08	g/s	Styrene	EW_C_9
Maximum Hourly	2015	3	2.88416E-05	g/s	Toluene	EW_C_9
Maximum Hourly	2015	3	1.20381E-05	g/s	Xylenes	EW_C_9
Maximum Hourly	2015	3	5.33271E-07	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2015	3	2.71483E-07	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2015	3	1.26046E-07	g/s	Acrolein	G31_G91W
Maximum Hourly	2015	3	8.75166E-06	g/s	Benzene	G31_G91W
Maximum Hourly	2015	3	3.13699E-06	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2015	3	1.53194E-06	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2015	3	2.87443E-05	g/s	Hexane	G31_G91W
Maximum Hourly	2015	3	1.1635E-07	g/s	Methanol	G31_G91W
Maximum Hourly	2015	3	1.93917E-08	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2015	3	4.84791E-08	g/s	Naphthalene	G31_G91W
Maximum Hourly	2015	3	2.96692E-06	g/s	Propylene	G31_G91W
Maximum Hourly	2015	3	1.1635E-07	g/s	Styrene	G31_G91W
Maximum Hourly	2015	3	3.5603E-05	g/s	Toluene	G31_G91W
Maximum Hourly	2015	3	1.48602E-05	g/s	Xylenes	G31_G91W
Maximum Hourly	2015	3	4.24689E-06	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2015	3	2.16205E-06	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2015	3	1.00381E-06	g/s	Acrolein	IWC_1
Maximum Hourly	2015	3	2.39201E-05	g/s	Benzene	IWC_1
Maximum Hourly	2015	3	9.7236E-06	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2015	3	1.22002E-05	g/s	Formaldehyde	IWC_1
Maximum Hourly	2015	3	3.3092E-05	g/s	Hexane	IWC_1
Maximum Hourly	2015	3	9.26594E-07	g/s	Methanol	IWC_1
Maximum Hourly	2015	3	1.54432E-07	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2015	3	3.86081E-07	g/s	Naphthalene	IWC_1
Maximum Hourly	2015	3	2.36282E-05	g/s	Propylene	IWC_1
Maximum Hourly	2015	3	9.26594E-07	g/s	Styrene	IWC_1
Maximum Hourly	2015	3	6.73685E-05	g/s	Toluene	IWC_1
Maximum Hourly	2015	3	4.4847E-05	g/s	Xylenes	IWC_1
Maximum Hourly	2015	3	1.90222E-05	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2015	3	9.68401E-06	g/s	Acetaldehyde	IWCP
Maximum Hourly	2015	3	4.49615E-06	g/s	Acrolein	IWCP
Maximum Hourly	2015	3	0.000182071	g/s	Benzene	IWCP
Maximum Hourly	2015	3	6.85297E-05	g/s	Ethylbenzene	IWCP
Maximum Hourly	2015	3	5.46455E-05	g/s	Formaldehyde	IWCP
Maximum Hourly	2015	3	0.000468758	g/s	Hexane	IWCP

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2015	3	4.15029E-06	g/s	Methanol	IWCP
Maximum Hourly	2015	3	6.91715E-07	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2015	3	1.72929E-06	g/s	Naphthalene	IWCP
Maximum Hourly	2015	3	0.000105832	g/s	Propylene	IWCP
Maximum Hourly	2015	3	4.15029E-06	g/s	Styrene	IWCP
Maximum Hourly	2015	3	0.000655588	g/s	Toluene	IWCP
Maximum Hourly	2015	3	0.000321179	g/s	Xylenes	IWCP
Maximum Hourly	2015	3	2.9216E-06	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2015	3	1.48736E-06	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2015	3	6.9056E-07	g/s	Acrolein	IWCP_C
Maximum Hourly	2015	3	1.37435E-05	g/s	Benzene	IWCP_C
Maximum Hourly	2015	3	5.78523E-06	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2015	3	8.39296E-06	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2015	3	1.11638E-05	g/s	Hexane	IWCP_C
Maximum Hourly	2015	3	6.3744E-07	g/s	Methanol	IWCP_C
Maximum Hourly	2015	3	1.0624E-07	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2015	3	2.656E-07	g/s	Naphthalene	IWCP_C
Maximum Hourly	2015	3	1.62547E-05	g/s	Propylene	IWCP_C
Maximum Hourly	2015	3	6.3744E-07	g/s	Styrene	IWCP_C
Maximum Hourly	2015	3	3.35385E-05	g/s	Toluene	IWCP_C
Maximum Hourly	2015	3	2.64977E-05	g/s	Xylenes	IWCP_C
Maximum Hourly	2015	3	1.15272E-06	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2015	3	5.8684E-07	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2015	3	2.72462E-07	g/s	Acrolein	RAMPSW
Maximum Hourly	2015	3	1.89177E-05	g/s	Benzene	RAMPSW
Maximum Hourly	2015	3	6.78095E-06	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2015	3	3.31146E-06	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2015	3	6.21339E-05	g/s	Hexane	RAMPSW
Maximum Hourly	2015	3	2.51503E-07	g/s	Methanol	RAMPSW
Maximum Hourly	2015	3	4.19172E-08	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2015	3	1.04793E-07	g/s	Naphthalene	RAMPSW
Maximum Hourly	2015	3	6.41333E-06	g/s	Propylene	RAMPSW
Maximum Hourly	2015	3	2.51503E-07	g/s	Styrene	RAMPSW
Maximum Hourly	2015	3	7.69597E-05	g/s	Toluene	RAMPSW
Maximum Hourly	2015	3	3.21219E-05	g/s	Xylenes	RAMPSW
Maximum Hourly	2016	3	1.34106E-08	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2016	3	6.8272E-09	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2016	3	3.16977E-09	g/s	Acrolein	CAS_G31W
Maximum Hourly	2016	3	2.27241E-07	g/s	Benzene	CAS_G31W
Maximum Hourly	2016	3	8.12737E-08	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2016	3	3.85249E-08	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2016	3	7.53466E-07	g/s	Hexane	CAS_G31W
Maximum Hourly	2016	3	2.92594E-09	g/s	Methanol	CAS_G31W
Maximum Hourly	2016	3	4.87657E-10	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2016	3	1.21914E-09	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2016	3	7.46115E-08	g/s	Propylene	CAS_G31W
Maximum Hourly	2016	3	2.92594E-09	g/s	Styrene	CAS_G31W
Maximum Hourly	2016	3	9.29128E-07	g/s	Toluene	CAS_G31W
Maximum Hourly	2016	3	3.8519E-07	g/s	Xylenes	CAS_G31W
Maximum Hourly	2016	3	1.40475E-08	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2016	3	7.15147E-09	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2016	3	3.32032E-09	g/s	Acrolein	EW_C_6
Maximum Hourly	2016	3	2.38034E-07	g/s	Benzene	EW_C_6
Maximum Hourly	2016	3	8.5134E-08	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2016	3	4.03547E-08	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2016	3	7.89254E-07	g/s	Hexane	EW_C_6
Maximum Hourly	2016	3	3.06492E-09	g/s	Methanol	EW_C_6
Maximum Hourly	2016	3	5.10819E-10	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2016	3	1.27705E-09	g/s	Naphthalene	EW_C_6
Maximum Hourly	2016	3	7.81553E-08	g/s	Propylene	EW_C_6
Maximum Hourly	2016	3	3.06492E-09	g/s	Styrene	EW_C_6
Maximum Hourly	2016	3	9.73259E-07	g/s	Toluene	EW_C_6
Maximum Hourly	2016	3	4.03485E-07	g/s	Xylenes	EW_C_6
Maximum Hourly	2016	3	1.55954E-07	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2016	3	7.93945E-08	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2016	3	3.68617E-08	g/s	Acrolein	EW_C_7
Maximum Hourly	2016	3	2.64262E-06	g/s	Benzene	EW_C_7
Maximum Hourly	2016	3	9.45144E-07	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2016	3	4.48012E-07	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2016	3	8.76218E-06	g/s	Hexane	EW_C_7
Maximum Hourly	2016	3	3.40262E-08	g/s	Methanol	EW_C_7
Maximum Hourly	2016	3	5.67104E-09	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2016	3	1.41776E-08	g/s	Naphthalene	EW_C_7
Maximum Hourly	2016	3	8.67669E-07	g/s	Propylene	EW_C_7
Maximum Hourly	2016	3	3.40262E-08	g/s	Styrene	EW_C_7
Maximum Hourly	2016	3	1.0805E-05	g/s	Toluene	EW_C_7
Maximum Hourly	2016	3	4.47943E-06	g/s	Xylenes	EW_C_7
Maximum Hourly	2016	3	6.03898E-08	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2016	3	3.07439E-08	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2016	3	1.4274E-08	g/s	Acrolein	EW_C_8
Maximum Hourly	2016	3	1.0233E-06	g/s	Benzene	EW_C_8
Maximum Hourly	2016	3	3.65988E-07	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2016	3	1.73483E-07	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2016	3	3.39297E-06	g/s	Hexane	EW_C_8
Maximum Hourly	2016	3	1.3176E-08	g/s	Methanol	EW_C_8
Maximum Hourly	2016	3	2.19599E-09	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2016	3	5.48998E-09	g/s	Naphthalene	EW_C_8
Maximum Hourly	2016	3	3.35987E-07	g/s	Propylene	EW_C_8
Maximum Hourly	2016	3	1.3176E-08	g/s	Styrene	EW_C_8
Maximum Hourly	2016	3	4.184E-06	g/s	Toluene	EW_C_8
Maximum Hourly	2016	3	1.73457E-06	g/s	Xylenes	EW_C_8
Maximum Hourly	2016	3	2.06004E-08	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2016	3	1.04875E-08	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2016	3	4.86919E-09	g/s	Acrolein	EW_C_9
Maximum Hourly	2016	3	3.49072E-07	g/s	Benzene	EW_C_9
Maximum Hourly	2016	3	1.24847E-07	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2016	3	5.91794E-08	g/s	Formaldehyde	EW_C_9

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2016	3	1.15742E-06	g/s	Hexane	EW_C_9
Maximum Hourly	2016	3	4.49464E-09	g/s	Methanol	EW_C_9
Maximum Hourly	2016	3	7.49106E-10	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2016	3	1.87277E-09	g/s	Naphthalene	EW_C_9
Maximum Hourly	2016	3	1.14613E-07	g/s	Propylene	EW_C_9
Maximum Hourly	2016	3	4.49464E-09	g/s	Styrene	EW_C_9
Maximum Hourly	2016	3	1.42726E-06	g/s	Toluene	EW_C_9
Maximum Hourly	2016	3	5.91703E-07	g/s	Xylenes	EW_C_9
Maximum Hourly	2016	3	2.54298E-08	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2016	3	1.29461E-08	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2016	3	6.01069E-09	g/s	Acrolein	G31_G91W
Maximum Hourly	2016	3	4.30906E-07	g/s	Benzene	G31_G91W
Maximum Hourly	2016	3	1.54116E-07	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2016	3	7.3053E-08	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2016	3	1.42876E-06	g/s	Hexane	G31_G91W
Maximum Hourly	2016	3	5.54833E-09	g/s	Methanol	G31_G91W
Maximum Hourly	2016	3	9.24721E-10	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2016	3	2.3118E-09	g/s	Naphthalene	G31_G91W
Maximum Hourly	2016	3	1.41482E-07	g/s	Propylene	G31_G91W
Maximum Hourly	2016	3	5.54833E-09	g/s	Styrene	G31_G91W
Maximum Hourly	2016	3	1.76186E-06	g/s	Toluene	G31_G91W
Maximum Hourly	2016	3	7.30418E-07	g/s	Xylenes	G31_G91W
Maximum Hourly	2016	3	2.07585E-07	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2016	3	1.0568E-07	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2016	3	4.90656E-08	g/s	Acrolein	IWC_1
Maximum Hourly	2016	3	1.17376E-06	g/s	Benzene	IWC_1
Maximum Hourly	2016	3	4.76805E-07	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2016	3	5.96335E-07	g/s	Formaldehyde	IWC_1
Maximum Hourly	2016	3	1.63705E-06	g/s	Hexane	IWC_1
Maximum Hourly	2016	3	4.52913E-08	g/s	Methanol	IWC_1
Maximum Hourly	2016	3	7.54855E-09	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2016	3	1.88714E-08	g/s	Naphthalene	IWC_1
Maximum Hourly	2016	3	1.15493E-06	g/s	Propylene	IWC_1
Maximum Hourly	2016	3	4.52913E-08	g/s	Styrene	IWC_1
Maximum Hourly	2016	3	3.31449E-06	g/s	Toluene	IWC_1
Maximum Hourly	2016	3	2.19942E-06	g/s	Xylenes	IWC_1
Maximum Hourly	2016	3	1.45527E-05	g/s	1,3-Butadiene	IWCT
Maximum Hourly	2016	3	7.40865E-06	g/s	Acetaldehyde	IWCT
Maximum Hourly	2016	3	3.43973E-06	g/s	Acrolein	IWCT
Maximum Hourly	2016	3	0.000140271	g/s	Benzene	IWCT
Maximum Hourly	2016	3	5.27544E-05	g/s	Ethylbenzene	IWCT
Maximum Hourly	2016	3	4.18059E-05	g/s	Formaldehyde	IWCT
Maximum Hourly	2016	3	0.000362809	g/s	Hexane	IWCT
Maximum Hourly	2016	3	3.17513E-06	g/s	Methanol	IWCT
Maximum Hourly	2016	3	5.29189E-07	g/s	Methyl Ethyl Ketone	IWCT
Maximum Hourly	2016	3	1.32297E-06	g/s	Naphthalene	IWCT
Maximum Hourly	2016	3	8.09659E-05	g/s	Propylene	IWCT
Maximum Hourly	2016	3	3.17513E-06	g/s	Styrene	IWCT
Maximum Hourly	2016	3	0.000506176	g/s	Toluene	IWCT
Maximum Hourly	2016	3	0.000247287	g/s	Xylenes	IWCT
Maximum Hourly	2016	3	5.49694E-08	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2016	3	2.79844E-08	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2016	3	1.29928E-08	g/s	Acrolein	RAMPSW
Maximum Hourly	2016	3	9.31451E-07	g/s	Benzene	RAMPSW
Maximum Hourly	2016	3	3.33138E-07	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2016	3	1.57912E-07	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2016	3	3.08843E-06	g/s	Hexane	RAMPSW
Maximum Hourly	2016	3	1.19933E-08	g/s	Methanol	RAMPSW
Maximum Hourly	2016	3	1.99889E-09	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2016	3	4.99721E-09	g/s	Naphthalene	RAMPSW
Maximum Hourly	2016	3	3.0583E-07	g/s	Propylene	RAMPSW
Maximum Hourly	2016	3	1.19933E-08	g/s	Styrene	RAMPSW
Maximum Hourly	2016	3	3.80846E-06	g/s	Toluene	RAMPSW
Maximum Hourly	2016	3	1.57888E-06	g/s	Xylenes	RAMPSW
Maximum Hourly	2008	4	2.93973E-06	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2008	4	1.49659E-06	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2008	4	6.94845E-07	g/s	Acrolein	CAS_G31W
Maximum Hourly	2008	4	3.93964E-05	g/s	Benzene	CAS_G31W
Maximum Hourly	2008	4	1.43437E-05	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2008	4	8.44504E-06	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2008	4	0.000120606	g/s	Hexane	CAS_G31W
Maximum Hourly	2008	4	6.41396E-07	g/s	Methanol	CAS_G31W
Maximum Hourly	2008	4	1.06899E-07	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2008	4	2.67248E-07	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2008	4	1.63556E-05	g/s	Propylene	CAS_G31W
Maximum Hourly	2008	4	6.41396E-07	g/s	Styrene	CAS_G31W
Maximum Hourly	2008	4	0.000154483	g/s	Toluene	CAS_G31W
Maximum Hourly	2008	4	6.77124E-05	g/s	Xylenes	CAS_G31W
Maximum Hourly	2008	4	3.07936E-06	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2008	4	1.56767E-06	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2008	4	7.27848E-07	g/s	Acrolein	EW_C_6
Maximum Hourly	2008	4	4.12676E-05	g/s	Benzene	EW_C_6
Maximum Hourly	2008	4	1.5025E-05	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2008	4	8.84616E-06	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2008	4	0.000126334	g/s	Hexane	EW_C_6
Maximum Hourly	2008	4	6.7186E-07	g/s	Methanol	EW_C_6
Maximum Hourly	2008	4	1.11977E-07	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2008	4	2.79942E-07	g/s	Naphthalene	EW_C_6
Maximum Hourly	2008	4	1.71324E-05	g/s	Propylene	EW_C_6
Maximum Hourly	2008	4	6.7186E-07	g/s	Styrene	EW_C_6
Maximum Hourly	2008	4	0.00016182	g/s	Toluene	EW_C_6
Maximum Hourly	2008	4	7.09285E-05	g/s	Xylenes	EW_C_6
Maximum Hourly	2008	4	3.41866E-05	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2008	4	1.74041E-05	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2008	4	8.08046E-06	g/s	Acrolein	EW_C_7
Maximum Hourly	2008	4	0.000458147	g/s	Benzene	EW_C_7
Maximum Hourly	2008	4	0.000166805	g/s	Ethylbenzene	EW_C_7

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2008	4	9.82087E-05	g/s	Formaldehyde	EWC_7
Maximum Hourly	2008	4	0.001402542	g/s	Hexane	EWC_7
Maximum Hourly	2008	4	7.45889E-06	g/s	Methanol	EWC_7
Maximum Hourly	2008	4	1.24315E-06	g/s	Methyl Ethyl Ketone	EWC_7
Maximum Hourly	2008	4	3.10787E-06	g/s	Naphthalene	EWC_7
Maximum Hourly	2008	4	0.000190202	g/s	Propylene	EWC_7
Maximum Hourly	2008	4	7.45889E-06	g/s	Styrene	EWC_7
Maximum Hourly	2008	4	0.001796502	g/s	Toluene	EWC_7
Maximum Hourly	2008	4	0.000787437	g/s	Xylenes	EWC_7
Maximum Hourly	2008	4	1.32381E-05	g/s	1,3-Butadiene	EWC_8
Maximum Hourly	2008	4	6.73937E-06	g/s	Acetaldehyde	EWC_8
Maximum Hourly	2008	4	3.12899E-06	g/s	Acrolein	EWC_8
Maximum Hourly	2008	4	0.000177408	g/s	Benzene	EWC_8
Maximum Hourly	2008	4	6.45917E-05	g/s	Ethylbenzene	EWC_8
Maximum Hourly	2008	4	3.80293E-05	g/s	Formaldehyde	EWC_8
Maximum Hourly	2008	4	0.000543106	g/s	Hexane	EWC_8
Maximum Hourly	2008	4	2.8883E-06	g/s	Methanol	EWC_8
Maximum Hourly	2008	4	4.81384E-07	g/s	Methyl Ethyl Ketone	EWC_8
Maximum Hourly	2008	4	1.20346E-06	g/s	Naphthalene	EWC_8
Maximum Hourly	2008	4	7.36517E-05	g/s	Propylene	EWC_8
Maximum Hourly	2008	4	2.8883E-06	g/s	Styrene	EWC_8
Maximum Hourly	2008	4	0.000695659	g/s	Toluene	EWC_8
Maximum Hourly	2008	4	0.000304919	g/s	Xylenes	EWC_8
Maximum Hourly	2008	4	4.51582E-06	g/s	1,3-Butadiene	EWC_9
Maximum Hourly	2008	4	2.29896E-06	g/s	Acetaldehyde	EWC_9
Maximum Hourly	2008	4	1.06738E-06	g/s	Acrolein	EWC_9
Maximum Hourly	2008	4	6.05182E-05	g/s	Benzene	EWC_9
Maximum Hourly	2008	4	2.20338E-05	g/s	Ethylbenzene	EWC_9
Maximum Hourly	2008	4	1.29727E-05	g/s	Formaldehyde	EWC_9
Maximum Hourly	2008	4	0.000185266	g/s	Hexane	EWC_9
Maximum Hourly	2008	4	9.85269E-07	g/s	Methanol	EWC_9
Maximum Hourly	2008	4	1.64212E-07	g/s	Methyl Ethyl Ketone	EWC_9
Maximum Hourly	2008	4	4.10529E-07	g/s	Naphthalene	EWC_9
Maximum Hourly	2008	4	2.51244E-05	g/s	Propylene	EWC_9
Maximum Hourly	2008	4	9.85269E-07	g/s	Styrene	EWC_9
Maximum Hourly	2008	4	0.000237306	g/s	Toluene	EWC_9
Maximum Hourly	2008	4	0.000104015	g/s	Xylenes	EWC_9
Maximum Hourly	2008	4	5.57448E-06	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2008	4	2.83791E-06	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2008	4	1.3176E-06	g/s	Acrolein	G31_G91W
Maximum Hourly	2008	4	7.47056E-05	g/s	Benzene	G31_G91W
Maximum Hourly	2008	4	2.71992E-05	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2008	4	1.60139E-05	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2008	4	0.000228699	g/s	Hexane	G31_G91W
Maximum Hourly	2008	4	1.21625E-06	g/s	Methanol	G31_G91W
Maximum Hourly	2008	4	2.02708E-07	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2008	4	5.0677E-07	g/s	Naphthalene	G31_G91W
Maximum Hourly	2008	4	3.10144E-05	g/s	Propylene	G31_G91W
Maximum Hourly	2008	4	1.21625E-06	g/s	Styrene	G31_G91W
Maximum Hourly	2008	4	0.000292938	g/s	Toluene	G31_G91W
Maximum Hourly	2008	4	0.0001284	g/s	Xylenes	G31_G91W
Maximum Hourly	2008	4	3.85639E-05	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2008	4	1.96326E-05	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2008	4	9.11511E-06	g/s	Acrolein	IWC_1
Maximum Hourly	2008	4	0.000211067	g/s	Benzene	IWC_1
Maximum Hourly	2008	4	8.62485E-05	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2008	4	0.000110784	g/s	Formaldehyde	IWC_1
Maximum Hourly	2008	4	0.000274226	g/s	Hexane	IWC_1
Maximum Hourly	2008	4	8.41395E-06	g/s	Methanol	IWC_1
Maximum Hourly	2008	4	1.40233E-06	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2008	4	3.50581E-06	g/s	Naphthalene	IWC_1
Maximum Hourly	2008	4	0.000214556	g/s	Propylene	IWC_1
Maximum Hourly	2008	4	8.41395E-06	g/s	Styrene	IWC_1
Maximum Hourly	2008	4	0.000582745	g/s	Toluene	IWC_1
Maximum Hourly	2008	4	0.000397376	g/s	Xylenes	IWC_1
Maximum Hourly	2008	4	0.000147079	g/s	1,3-Butadiene	IWCH
Maximum Hourly	2008	4	7.48768E-05	g/s	Acetaldehyde	IWCH
Maximum Hourly	2008	4	3.47642E-05	g/s	Acrolein	IWCH
Maximum Hourly	2008	4	0.001202883	g/s	Benzene	IWCH
Maximum Hourly	2008	4	0.000461575	g/s	Ethylbenzene	IWCH
Maximum Hourly	2008	4	0.000422519	g/s	Formaldehyde	IWCH
Maximum Hourly	2008	4	0.002747974	g/s	Hexane	IWCH
Maximum Hourly	2008	4	3.209E-05	g/s	Methanol	IWCH
Maximum Hourly	2008	4	5.34834E-06	g/s	Methyl Ethyl Ketone	IWCH
Maximum Hourly	2008	4	1.33709E-05	g/s	Naphthalene	IWCH
Maximum Hourly	2008	4	0.000818296	g/s	Propylene	IWCH
Maximum Hourly	2008	4	3.209E-05	g/s	Styrene	IWCH
Maximum Hourly	2008	4	0.004101479	g/s	Toluene	IWCH
Maximum Hourly	2008	4	0.002154395	g/s	Xylenes	IWCH
Maximum Hourly	2008	4	2.13418E-05	g/s	1,3-Butadiene	IWCH_C
Maximum Hourly	2008	4	1.08649E-05	g/s	Acetaldehyde	IWCH_C
Maximum Hourly	2008	4	5.04442E-06	g/s	Acrolein	IWCH_C
Maximum Hourly	2008	4	9.86794E-05	g/s	Benzene	IWCH_C
Maximum Hourly	2008	4	4.16885E-05	g/s	Ethylbenzene	IWCH_C
Maximum Hourly	2008	4	6.13091E-05	g/s	Formaldehyde	IWCH_C
Maximum Hourly	2008	4	7.42146E-05	g/s	Hexane	IWCH_C
Maximum Hourly	2008	4	4.65639E-06	g/s	Methanol	IWCH_C
Maximum Hourly	2008	4	7.76064E-07	g/s	Methyl Ethyl Ketone	IWCH_C
Maximum Hourly	2008	4	1.94016E-06	g/s	Naphthalene	IWCH_C
Maximum Hourly	2008	4	0.000118738	g/s	Propylene	IWCH_C
Maximum Hourly	2008	4	4.65639E-06	g/s	Styrene	IWCH_C
Maximum Hourly	2008	4	0.000236896	g/s	Toluene	IWCH_C
Maximum Hourly	2008	4	0.000190808	g/s	Xylenes	IWCH_C
Maximum Hourly	2008	4	7.12489E-05	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2008	4	3.62722E-05	g/s	Acetaldehyde	IWCP
Maximum Hourly	2008	4	1.68407E-05	g/s	Acrolein	IWCP
Maximum Hourly	2008	4	0.00064539	g/s	Benzene	IWCP

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2008	4	0.000244493	g/s	Ethylbenzene	IWCP
Maximum Hourly	2008	4	0.000204679	g/s	Formaldehyde	IWCP
Maximum Hourly	2008	4	0.001599334	g/s	Hexane	IWCP
Maximum Hourly	2008	4	1.55452E-05	g/s	Methanol	IWCP
Maximum Hourly	2008	4	2.59087E-06	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2008	4	6.47717E-06	g/s	Naphthalene	IWCP
Maximum Hourly	2008	4	0.000396403	g/s	Propylene	IWCP
Maximum Hourly	2008	4	1.55452E-05	g/s	Styrene	IWCP
Maximum Hourly	2008	4	0.002282864	g/s	Toluene	IWCP
Maximum Hourly	2008	4	0.001144285	g/s	Xylenes	IWCP
Maximum Hourly	2008	4	1.34323E-05	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2008	4	6.83825E-06	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2008	4	3.1749E-06	g/s	Acrolein	IWCP_C
Maximum Hourly	2008	4	6.25915E-05	g/s	Benzene	IWCP_C
Maximum Hourly	2008	4	2.63996E-05	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2008	4	3.85873E-05	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2008	4	4.87793E-05	g/s	Hexane	IWCP_C
Maximum Hourly	2008	4	2.93068E-06	g/s	Methanol	IWCP_C
Maximum Hourly	2008	4	4.88446E-07	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2008	4	1.22112E-06	g/s	Naphthalene	IWCP_C
Maximum Hourly	2008	4	7.47323E-05	g/s	Propylene	IWCP_C
Maximum Hourly	2008	4	2.93068E-06	g/s	Styrene	IWCP_C
Maximum Hourly	2008	4	0.000151384	g/s	Toluene	IWCP_C
Maximum Hourly	2008	4	0.000120869	g/s	Xylenes	IWCP_C
Maximum Hourly	2008	4	4.74993E-05	g/s	1,3-Butadiene	IWCT
Maximum Hourly	2008	4	2.41814E-05	g/s	Acetaldehyde	IWCT
Maximum Hourly	2008	4	1.12271E-05	g/s	Acrolein	IWCT
Maximum Hourly	2008	4	0.00043026	g/s	Benzene	IWCT
Maximum Hourly	2008	4	0.000162995	g/s	Ethylbenzene	IWCT
Maximum Hourly	2008	4	0.000136452	g/s	Formaldehyde	IWCT
Maximum Hourly	2008	4	0.001066222	g/s	Hexane	IWCT
Maximum Hourly	2008	4	1.03635E-05	g/s	Methanol	IWCT
Maximum Hourly	2008	4	1.72725E-06	g/s	Methyl Ethyl Ketone	IWCT
Maximum Hourly	2008	4	4.31812E-06	g/s	Naphthalene	IWCT
Maximum Hourly	2008	4	0.000264269	g/s	Propylene	IWCT
Maximum Hourly	2008	4	1.03635E-05	g/s	Styrene	IWCT
Maximum Hourly	2008	4	0.00152191	g/s	Toluene	IWCT
Maximum Hourly	2008	4	0.000762856	g/s	Xylenes	IWCT
Maximum Hourly	2008	4	1.00742E-05	g/s	1,3-Butadiene	IWCT_C
Maximum Hourly	2008	4	5.12869E-06	g/s	Acetaldehyde	IWCT_C
Maximum Hourly	2008	4	2.38118E-06	g/s	Acrolein	IWCT_C
Maximum Hourly	2008	4	4.69436E-05	g/s	Benzene	IWCT_C
Maximum Hourly	2008	4	1.97997E-05	g/s	Ethylbenzene	IWCT_C
Maximum Hourly	2008	4	2.89404E-05	g/s	Formaldehyde	IWCT_C
Maximum Hourly	2008	4	3.65845E-05	g/s	Hexane	IWCT_C
Maximum Hourly	2008	4	2.19801E-06	g/s	Methanol	IWCT_C
Maximum Hourly	2008	4	3.66335E-07	g/s	Methyl Ethyl Ketone	IWCT_C
Maximum Hourly	2008	4	9.15837E-07	g/s	Naphthalene	IWCT_C
Maximum Hourly	2008	4	5.60492E-05	g/s	Propylene	IWCT_C
Maximum Hourly	2008	4	2.19801E-06	g/s	Styrene	IWCT_C
Maximum Hourly	2008	4	0.000113538	g/s	Toluene	IWCT_C
Maximum Hourly	2008	4	9.06518E-05	g/s	Xylenes	IWCT_C
Maximum Hourly	2008	4	1.20498E-05	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2008	4	6.13446E-06	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2008	4	2.84814E-06	g/s	Acrolein	RAMPSW
Maximum Hourly	2008	4	0.000161484	g/s	Benzene	RAMPSW
Maximum Hourly	2008	4	5.87941E-05	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2008	4	3.46159E-05	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2008	4	0.000494358	g/s	Hexane	RAMPSW
Maximum Hourly	2008	4	2.62905E-06	g/s	Methanol	RAMPSW
Maximum Hourly	2008	4	4.38176E-07	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2008	4	1.09544E-06	g/s	Naphthalene	RAMPSW
Maximum Hourly	2008	4	6.70409E-05	g/s	Propylene	RAMPSW
Maximum Hourly	2008	4	2.62905E-06	g/s	Styrene	RAMPSW
Maximum Hourly	2008	4	0.000633218	g/s	Toluene	RAMPSW
Maximum Hourly	2008	4	0.00027755	g/s	Xylenes	RAMPSW
Maximum Hourly	2014	4	7.98095E-07	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2014	4	4.06303E-07	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2014	4	1.88641E-07	g/s	Acrolein	CAS_G31W
Maximum Hourly	2014	4	1.26259E-05	g/s	Benzene	CAS_G31W
Maximum Hourly	2014	4	4.53754E-06	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2014	4	2.29271E-06	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2014	4	4.10001E-05	g/s	Hexane	CAS_G31W
Maximum Hourly	2014	4	1.7413E-07	g/s	Methanol	CAS_G31W
Maximum Hourly	2014	4	2.90216E-08	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2014	4	7.25541E-08	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2014	4	4.44031E-06	g/s	Propylene	CAS_G31W
Maximum Hourly	2014	4	1.7413E-07	g/s	Styrene	CAS_G31W
Maximum Hourly	2014	4	5.10551E-05	g/s	Toluene	CAS_G31W
Maximum Hourly	2014	4	2.14821E-05	g/s	Xylenes	CAS_G31W
Maximum Hourly	2014	4	8.36002E-07	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2014	4	4.25601E-07	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2014	4	1.976E-07	g/s	Acrolein	EW_C_6
Maximum Hourly	2014	4	1.32256E-05	g/s	Benzene	EW_C_6
Maximum Hourly	2014	4	4.75306E-06	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2014	4	2.40161E-06	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2014	4	4.29475E-05	g/s	Hexane	EW_C_6
Maximum Hourly	2014	4	1.824E-07	g/s	Methanol	EW_C_6
Maximum Hourly	2014	4	3.04001E-08	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2014	4	7.60002E-08	g/s	Naphthalene	EW_C_6
Maximum Hourly	2014	4	4.65121E-06	g/s	Propylene	EW_C_6
Maximum Hourly	2014	4	1.824E-07	g/s	Styrene	EW_C_6
Maximum Hourly	2014	4	5.34801E-05	g/s	Toluene	EW_C_6
Maximum Hourly	2014	4	2.25025E-05	g/s	Xylenes	EW_C_6
Maximum Hourly	2014	4	9.28117E-06	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2014	4	4.72496E-06	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2014	4	2.19373E-06	g/s	Acrolein	EW_C_7

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2014	4	0.000146828	g/s	Benzene	EW_C_7
Maximum Hourly	2014	4	5.27677E-05	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2014	4	2.66623E-05	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2014	4	0.000476797	g/s	Hexane	EW_C_7
Maximum Hourly	2014	4	2.02498E-06	g/s	Methanol	EW_C_7
Maximum Hourly	2014	4	3.37497E-07	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2014	4	8.43742E-07	g/s	Naphthalene	EW_C_7
Maximum Hourly	2014	4	5.1637E-05	g/s	Propylene	EW_C_7
Maximum Hourly	2014	4	2.02498E-06	g/s	Styrene	EW_C_7
Maximum Hourly	2014	4	0.000593728	g/s	Toluene	EW_C_7
Maximum Hourly	2014	4	0.000249819	g/s	Xylenes	EW_C_7
Maximum Hourly	2014	4	3.59394E-06	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2014	4	1.82964E-06	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2014	4	8.49477E-07	g/s	Acrolein	EW_C_8
Maximum Hourly	2014	4	5.68562E-05	g/s	Benzene	EW_C_8
Maximum Hourly	2014	4	2.04332E-05	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2014	4	1.03244E-05	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2014	4	0.00018463	g/s	Hexane	EW_C_8
Maximum Hourly	2014	4	7.84133E-07	g/s	Methanol	EW_C_8
Maximum Hourly	2014	4	1.30689E-07	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2014	4	3.26722E-07	g/s	Naphthalene	EW_C_8
Maximum Hourly	2014	4	1.99954E-05	g/s	Propylene	EW_C_8
Maximum Hourly	2014	4	7.84133E-07	g/s	Styrene	EW_C_8
Maximum Hourly	2014	4	0.000229909	g/s	Toluene	EW_C_8
Maximum Hourly	2014	4	9.67374E-05	g/s	Xylenes	EW_C_8
Maximum Hourly	2014	4	1.22598E-06	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2014	4	6.24135E-07	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2014	4	2.89777E-07	g/s	Acrolein	EW_C_9
Maximum Hourly	2014	4	1.9395E-05	g/s	Benzene	EW_C_9
Maximum Hourly	2014	4	6.97026E-06	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2014	4	3.52191E-06	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2014	4	6.29816E-05	g/s	Hexane	EW_C_9
Maximum Hourly	2014	4	2.67487E-07	g/s	Methanol	EW_C_9
Maximum Hourly	2014	4	4.45811E-08	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2014	4	1.11453E-07	g/s	Naphthalene	EW_C_9
Maximum Hourly	2014	4	6.82091E-06	g/s	Propylene	EW_C_9
Maximum Hourly	2014	4	2.67487E-07	g/s	Styrene	EW_C_9
Maximum Hourly	2014	4	7.84275E-05	g/s	Toluene	EW_C_9
Maximum Hourly	2014	4	3.29994E-05	g/s	Xylenes	EW_C_9
Maximum Hourly	2014	4	1.51339E-06	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2014	4	7.70453E-07	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2014	4	3.5771E-07	g/s	Acrolein	G31_G91W
Maximum Hourly	2014	4	2.39419E-05	g/s	Benzene	G31_G91W
Maximum Hourly	2014	4	8.60432E-06	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2014	4	4.34756E-06	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2014	4	7.77466E-05	g/s	Hexane	G31_G91W
Maximum Hourly	2014	4	3.30194E-07	g/s	Methanol	G31_G91W
Maximum Hourly	2014	4	5.50324E-08	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2014	4	1.37581E-07	g/s	Naphthalene	G31_G91W
Maximum Hourly	2014	4	8.41995E-06	g/s	Propylene	G31_G91W
Maximum Hourly	2014	4	3.30194E-07	g/s	Styrene	G31_G91W
Maximum Hourly	2014	4	9.68135E-05	g/s	Toluene	G31_G91W
Maximum Hourly	2014	4	4.07356E-05	g/s	Xylenes	G31_G91W
Maximum Hourly	2014	4	1.17168E-05	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2014	4	5.96494E-06	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2014	4	2.76944E-06	g/s	Acrolein	IWC_1
Maximum Hourly	2014	4	6.56944E-05	g/s	Benzene	IWC_1
Maximum Hourly	2014	4	2.67269E-05	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2014	4	3.36593E-05	g/s	Formaldehyde	IWC_1
Maximum Hourly	2014	4	9.00178E-05	g/s	Hexane	IWC_1
Maximum Hourly	2014	4	2.5564E-06	g/s	Methanol	IWC_1
Maximum Hourly	2014	4	4.26067E-07	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2014	4	1.06517E-06	g/s	Naphthalene	IWC_1
Maximum Hourly	2014	4	6.51883E-05	g/s	Propylene	IWC_1
Maximum Hourly	2014	4	2.5564E-06	g/s	Styrene	IWC_1
Maximum Hourly	2014	4	0.000184451	g/s	Toluene	IWC_1
Maximum Hourly	2014	4	0.000123249	g/s	Xylenes	IWC_1
Maximum Hourly	2014	4	3.08091E-05	g/s	1,3-Butadiene	IWCH
Maximum Hourly	2014	4	1.56846E-05	g/s	Acetaldehyde	IWCH
Maximum Hourly	2014	4	7.28215E-06	g/s	Acrolein	IWCH
Maximum Hourly	2014	4	0.000260616	g/s	Benzene	IWCH
Maximum Hourly	2014	4	9.9569E-05	g/s	Ethylbenzene	IWCH
Maximum Hourly	2014	4	8.85061E-05	g/s	Formaldehyde	IWCH
Maximum Hourly	2014	4	0.000612606	g/s	Hexane	IWCH
Maximum Hourly	2014	4	6.72198E-06	g/s	Methanol	IWCH
Maximum Hourly	2014	4	1.12033E-06	g/s	Methyl Ethyl Ketone	IWCH
Maximum Hourly	2014	4	2.80083E-06	g/s	Naphthalene	IWCH
Maximum Hourly	2014	4	0.00017141	g/s	Propylene	IWCH
Maximum Hourly	2014	4	6.72198E-06	g/s	Styrene	IWCH
Maximum Hourly	2014	4	0.000899971	g/s	Toluene	IWCH
Maximum Hourly	2014	4	0.000465167	g/s	Xylenes	IWCH
Maximum Hourly	2014	4	4.41159E-06	g/s	1,3-Butadiene	IWCH_C
Maximum Hourly	2014	4	2.2459E-06	g/s	Acetaldehyde	IWCH_C
Maximum Hourly	2014	4	1.04274E-06	g/s	Acrolein	IWCH_C
Maximum Hourly	2014	4	2.05125E-05	g/s	Benzene	IWCH_C
Maximum Hourly	2014	4	8.6556E-06	g/s	Ethylbenzene	IWCH_C
Maximum Hourly	2014	4	1.26733E-05	g/s	Formaldehyde	IWCH_C
Maximum Hourly	2014	4	1.58299E-05	g/s	Hexane	IWCH_C
Maximum Hourly	2014	4	9.62529E-07	g/s	Methanol	IWCH_C
Maximum Hourly	2014	4	1.60421E-07	g/s	Methyl Ethyl Ketone	IWCH_C
Maximum Hourly	2014	4	4.01054E-07	g/s	Naphthalene	IWCH_C
Maximum Hourly	2014	4	2.45445E-05	g/s	Propylene	IWCH_C
Maximum Hourly	2014	4	9.62529E-07	g/s	Styrene	IWCH_C
Maximum Hourly	2014	4	4.95089E-05	g/s	Toluene	IWCH_C
Maximum Hourly	2014	4	3.96257E-05	g/s	Xylenes	IWCH_C
Maximum Hourly	2014	4	2.13592E-05	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2014	4	1.08738E-05	g/s	Acetaldehyde	IWCP

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2014	4	5.04853E-06	g/s	Acrolein	IWCP
Maximum Hourly	2014	4	0.000202895	g/s	Benzene	IWCP
Maximum Hourly	2014	4	7.64343E-05	g/s	Ethylbenzene	IWCP
Maximum Hourly	2014	4	6.1359E-05	g/s	Formaldehyde	IWCP
Maximum Hourly	2014	4	0.000519743	g/s	Hexane	IWCP
Maximum Hourly	2014	4	4.66018E-06	g/s	Methanol	IWCP
Maximum Hourly	2014	4	7.76697E-07	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2014	4	1.94174E-06	g/s	Naphthalene	IWCP
Maximum Hourly	2014	4	0.000118835	g/s	Propylene	IWCP
Maximum Hourly	2014	4	4.66018E-06	g/s	Styrene	IWCP
Maximum Hourly	2014	4	0.00072884	g/s	Toluene	IWCP
Maximum Hourly	2014	4	0.000358159	g/s	Xylenes	IWCP
Maximum Hourly	2014	4	3.46456E-06	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2014	4	1.76377E-06	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2014	4	8.18895E-07	g/s	Acrolein	IWCP_C
Maximum Hourly	2014	4	1.62594E-05	g/s	Benzene	IWCP_C
Maximum Hourly	2014	4	6.84762E-06	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2014	4	9.95273E-06	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2014	4	1.30749E-05	g/s	Hexane	IWCP_C
Maximum Hourly	2014	4	7.55903E-07	g/s	Methanol	IWCP_C
Maximum Hourly	2014	4	1.25984E-07	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2014	4	3.1496E-07	g/s	Naphthalene	IWCP_C
Maximum Hourly	2014	4	1.92755E-05	g/s	Propylene	IWCP_C
Maximum Hourly	2014	4	7.55903E-07	g/s	Styrene	IWCP_C
Maximum Hourly	2014	4	3.95909E-05	g/s	Toluene	IWCP_C
Maximum Hourly	2014	4	3.13607E-05	g/s	Xylenes	IWCP_C
Maximum Hourly	2014	4	3.27136E-06	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2014	4	1.66542E-06	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2014	4	7.7323E-07	g/s	Acrolein	RAMPSW
Maximum Hourly	2014	4	5.17529E-05	g/s	Benzene	RAMPSW
Maximum Hourly	2014	4	1.85992E-05	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2014	4	9.39772E-06	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2014	4	0.000168058	g/s	Hexane	RAMPSW
Maximum Hourly	2014	4	7.13751E-07	g/s	Methanol	RAMPSW
Maximum Hourly	2014	4	1.18958E-07	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2014	4	2.97396E-07	g/s	Naphthalene	RAMPSW
Maximum Hourly	2014	4	1.82006E-05	g/s	Propylene	RAMPSW
Maximum Hourly	2014	4	7.13751E-07	g/s	Styrene	RAMPSW
Maximum Hourly	2014	4	0.000209273	g/s	Toluene	RAMPSW
Maximum Hourly	2014	4	8.80544E-05	g/s	Xylenes	RAMPSW
Maximum Hourly	2015	4	2.81223E-07	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2015	4	1.43168E-07	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2015	4	6.64709E-08	g/s	Acrolein	CAS_G31W
Maximum Hourly	2015	4	4.61524E-06	g/s	Benzene	CAS_G31W
Maximum Hourly	2015	4	1.65431E-06	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2015	4	8.07878E-07	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2015	4	1.51585E-05	g/s	Hexane	CAS_G31W
Maximum Hourly	2015	4	6.13578E-08	g/s	Methanol	CAS_G31W
Maximum Hourly	2015	4	1.02263E-08	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2015	4	2.55657E-08	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2015	4	1.56462E-06	g/s	Propylene	CAS_G31W
Maximum Hourly	2015	4	6.13578E-08	g/s	Styrene	CAS_G31W
Maximum Hourly	2015	4	1.87754E-05	g/s	Toluene	CAS_G31W
Maximum Hourly	2015	4	7.8366E-06	g/s	Xylenes	CAS_G31W
Maximum Hourly	2015	4	2.9458E-07	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2015	4	1.49968E-07	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2015	4	6.96281E-08	g/s	Acrolein	EW_C_6
Maximum Hourly	2015	4	4.83445E-06	g/s	Benzene	EW_C_6
Maximum Hourly	2015	4	1.73289E-06	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2015	4	8.46249E-07	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2015	4	1.58784E-05	g/s	Hexane	EW_C_6
Maximum Hourly	2015	4	6.42721E-08	g/s	Methanol	EW_C_6
Maximum Hourly	2015	4	1.0712E-08	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2015	4	2.678E-08	g/s	Naphthalene	EW_C_6
Maximum Hourly	2015	4	1.63894E-06	g/s	Propylene	EW_C_6
Maximum Hourly	2015	4	6.42721E-08	g/s	Styrene	EW_C_6
Maximum Hourly	2015	4	1.96672E-05	g/s	Toluene	EW_C_6
Maximum Hourly	2015	4	8.20882E-06	g/s	Xylenes	EW_C_6
Maximum Hourly	2015	4	3.27039E-06	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2015	4	1.66492E-06	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2015	4	7.73001E-07	g/s	Acrolein	EW_C_7
Maximum Hourly	2015	4	5.36713E-05	g/s	Benzene	EW_C_7
Maximum Hourly	2015	4	1.92382E-05	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2015	4	9.39493E-06	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2015	4	0.00017628	g/s	Hexane	EW_C_7
Maximum Hourly	2015	4	7.13539E-07	g/s	Methanol	EW_C_7
Maximum Hourly	2015	4	1.18923E-07	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2015	4	2.97308E-07	g/s	Naphthalene	EW_C_7
Maximum Hourly	2015	4	1.81952E-05	g/s	Propylene	EW_C_7
Maximum Hourly	2015	4	7.13539E-07	g/s	Styrene	EW_C_7
Maximum Hourly	2015	4	0.000218342	g/s	Toluene	EW_C_7
Maximum Hourly	2015	4	9.1133E-05	g/s	Xylenes	EW_C_7
Maximum Hourly	2015	4	1.26639E-06	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2015	4	6.44708E-07	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2015	4	2.99329E-07	g/s	Acrolein	EW_C_8
Maximum Hourly	2015	4	2.07831E-05	g/s	Benzene	EW_C_8
Maximum Hourly	2015	4	7.44961E-06	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2015	4	3.63799E-06	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2015	4	6.82608E-05	g/s	Hexane	EW_C_8
Maximum Hourly	2015	4	2.76303E-07	g/s	Methanol	EW_C_8
Maximum Hourly	2015	4	4.60506E-08	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2015	4	1.15126E-07	g/s	Naphthalene	EW_C_8
Maximum Hourly	2015	4	7.04574E-06	g/s	Propylene	EW_C_8
Maximum Hourly	2015	4	2.76303E-07	g/s	Styrene	EW_C_8
Maximum Hourly	2015	4	8.45486E-05	g/s	Toluene	EW_C_8
Maximum Hourly	2015	4	3.52894E-05	g/s	Xylenes	EW_C_8
Maximum Hourly	2015	4	4.31996E-07	g/s	1,3-Butadiene	EW_C_9

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2015	4	2.19925E-07	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2015	4	1.02108E-07	g/s	Acrolein	EW_C_9
Maximum Hourly	2015	4	7.08962E-06	g/s	Benzene	EW_C_9
Maximum Hourly	2015	4	2.54124E-06	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2015	4	1.24101E-06	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2015	4	2.32854E-05	g/s	Hexane	EW_C_9
Maximum Hourly	2015	4	9.42537E-08	g/s	Methanol	EW_C_9
Maximum Hourly	2015	4	1.5709E-08	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2015	4	3.92724E-08	g/s	Naphthalene	EW_C_9
Maximum Hourly	2015	4	2.40347E-06	g/s	Propylene	EW_C_9
Maximum Hourly	2015	4	9.42537E-08	g/s	Styrene	EW_C_9
Maximum Hourly	2015	4	2.88416E-05	g/s	Toluene	EW_C_9
Maximum Hourly	2015	4	1.20381E-05	g/s	Xylenes	EW_C_9
Maximum Hourly	2015	4	5.33271E-07	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2015	4	2.71483E-07	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2015	4	1.26046E-07	g/s	Acrolein	G31_G91W
Maximum Hourly	2015	4	8.75166E-06	g/s	Benzene	G31_G91W
Maximum Hourly	2015	4	3.13699E-06	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2015	4	1.53194E-06	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2015	4	2.87443E-05	g/s	Hexane	G31_G91W
Maximum Hourly	2015	4	1.1635E-07	g/s	Methanol	G31_G91W
Maximum Hourly	2015	4	1.93917E-08	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2015	4	4.84791E-08	g/s	Naphthalene	G31_G91W
Maximum Hourly	2015	4	2.96692E-06	g/s	Propylene	G31_G91W
Maximum Hourly	2015	4	1.1635E-07	g/s	Styrene	G31_G91W
Maximum Hourly	2015	4	3.5603E-05	g/s	Toluene	G31_G91W
Maximum Hourly	2015	4	1.48602E-05	g/s	Xylenes	G31_G91W
Maximum Hourly	2015	4	4.24689E-06	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2015	4	2.16205E-06	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2015	4	1.00381E-06	g/s	Acrolein	IWC_1
Maximum Hourly	2015	4	2.39201E-05	g/s	Benzene	IWC_1
Maximum Hourly	2015	4	9.7236E-06	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2015	4	1.22002E-05	g/s	Formaldehyde	IWC_1
Maximum Hourly	2015	4	3.3092E-05	g/s	Hexane	IWC_1
Maximum Hourly	2015	4	9.26594E-07	g/s	Methanol	IWC_1
Maximum Hourly	2015	4	1.54432E-07	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2015	4	3.86081E-07	g/s	Naphthalene	IWC_1
Maximum Hourly	2015	4	2.36282E-05	g/s	Propylene	IWC_1
Maximum Hourly	2015	4	9.26594E-07	g/s	Styrene	IWC_1
Maximum Hourly	2015	4	6.73685E-05	g/s	Toluene	IWC_1
Maximum Hourly	2015	4	4.4847E-05	g/s	Xylenes	IWC_1
Maximum Hourly	2015	4	1.90222E-05	g/s	1,3-Butadiene	IWCP
Maximum Hourly	2015	4	9.68401E-06	g/s	Acetaldehyde	IWCP
Maximum Hourly	2015	4	4.49615E-06	g/s	Acrolein	IWCP
Maximum Hourly	2015	4	0.000182071	g/s	Benzene	IWCP
Maximum Hourly	2015	4	6.85297E-05	g/s	Ethylbenzene	IWCP
Maximum Hourly	2015	4	5.46455E-05	g/s	Formaldehyde	IWCP
Maximum Hourly	2015	4	0.000468758	g/s	Hexane	IWCP
Maximum Hourly	2015	4	4.15029E-06	g/s	Methanol	IWCP
Maximum Hourly	2015	4	6.91715E-07	g/s	Methyl Ethyl Ketone	IWCP
Maximum Hourly	2015	4	1.72929E-06	g/s	Naphthalene	IWCP
Maximum Hourly	2015	4	0.000105832	g/s	Propylene	IWCP
Maximum Hourly	2015	4	4.15029E-06	g/s	Styrene	IWCP
Maximum Hourly	2015	4	0.000655588	g/s	Toluene	IWCP
Maximum Hourly	2015	4	0.000321179	g/s	Xylenes	IWCP
Maximum Hourly	2015	4	2.9216E-06	g/s	1,3-Butadiene	IWCP_C
Maximum Hourly	2015	4	1.48736E-06	g/s	Acetaldehyde	IWCP_C
Maximum Hourly	2015	4	6.9056E-07	g/s	Acrolein	IWCP_C
Maximum Hourly	2015	4	1.37435E-05	g/s	Benzene	IWCP_C
Maximum Hourly	2015	4	5.78523E-06	g/s	Ethylbenzene	IWCP_C
Maximum Hourly	2015	4	8.39296E-06	g/s	Formaldehyde	IWCP_C
Maximum Hourly	2015	4	1.11638E-05	g/s	Hexane	IWCP_C
Maximum Hourly	2015	4	6.3744E-07	g/s	Methanol	IWCP_C
Maximum Hourly	2015	4	1.0624E-07	g/s	Methyl Ethyl Ketone	IWCP_C
Maximum Hourly	2015	4	2.656E-07	g/s	Naphthalene	IWCP_C
Maximum Hourly	2015	4	1.62547E-05	g/s	Propylene	IWCP_C
Maximum Hourly	2015	4	6.3744E-07	g/s	Styrene	IWCP_C
Maximum Hourly	2015	4	3.35385E-05	g/s	Toluene	IWCP_C
Maximum Hourly	2015	4	2.64977E-05	g/s	Xylenes	IWCP_C
Maximum Hourly	2015	4	1.15272E-06	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2015	4	5.8684E-07	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2015	4	2.72462E-07	g/s	Acrolein	RAMPSW
Maximum Hourly	2015	4	1.89177E-05	g/s	Benzene	RAMPSW
Maximum Hourly	2015	4	6.78095E-06	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2015	4	3.31146E-06	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2015	4	6.21339E-05	g/s	Hexane	RAMPSW
Maximum Hourly	2015	4	2.51503E-07	g/s	Methanol	RAMPSW
Maximum Hourly	2015	4	4.19172E-08	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2015	4	1.04793E-07	g/s	Naphthalene	RAMPSW
Maximum Hourly	2015	4	6.41333E-06	g/s	Propylene	RAMPSW
Maximum Hourly	2015	4	2.51503E-07	g/s	Styrene	RAMPSW
Maximum Hourly	2015	4	7.69597E-05	g/s	Toluene	RAMPSW
Maximum Hourly	2015	4	3.21219E-05	g/s	Xylenes	RAMPSW
Maximum Hourly	2016	4	1.34106E-08	g/s	1,3-Butadiene	CAS_G31W
Maximum Hourly	2016	4	6.8272E-09	g/s	Acetaldehyde	CAS_G31W
Maximum Hourly	2016	4	3.16977E-09	g/s	Acrolein	CAS_G31W
Maximum Hourly	2016	4	2.27241E-07	g/s	Benzene	CAS_G31W
Maximum Hourly	2016	4	8.12737E-08	g/s	Ethylbenzene	CAS_G31W
Maximum Hourly	2016	4	3.85249E-08	g/s	Formaldehyde	CAS_G31W
Maximum Hourly	2016	4	7.53466E-07	g/s	Hexane	CAS_G31W
Maximum Hourly	2016	4	2.92594E-09	g/s	Methanol	CAS_G31W
Maximum Hourly	2016	4	4.87657E-10	g/s	Methyl Ethyl Ketone	CAS_G31W
Maximum Hourly	2016	4	1.21914E-09	g/s	Naphthalene	CAS_G31W
Maximum Hourly	2016	4	7.46115E-08	g/s	Propylene	CAS_G31W
Maximum Hourly	2016	4	2.92594E-09	g/s	Styrene	CAS_G31W
Maximum Hourly	2016	4	9.29128E-07	g/s	Toluene	CAS_G31W
Maximum Hourly	2016	4	3.8519E-07	g/s	Xylenes	CAS_G31W

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2016	4	1.40475E-08	g/s	1,3-Butadiene	EW_C_6
Maximum Hourly	2016	4	7.15147E-09	g/s	Acetaldehyde	EW_C_6
Maximum Hourly	2016	4	3.32032E-09	g/s	Acrolein	EW_C_6
Maximum Hourly	2016	4	2.38034E-07	g/s	Benzene	EW_C_6
Maximum Hourly	2016	4	8.5134E-08	g/s	Ethylbenzene	EW_C_6
Maximum Hourly	2016	4	4.03547E-08	g/s	Formaldehyde	EW_C_6
Maximum Hourly	2016	4	7.89254E-07	g/s	Hexane	EW_C_6
Maximum Hourly	2016	4	3.06492E-09	g/s	Methanol	EW_C_6
Maximum Hourly	2016	4	5.10819E-10	g/s	Methyl Ethyl Ketone	EW_C_6
Maximum Hourly	2016	4	1.27705E-09	g/s	Naphthalene	EW_C_6
Maximum Hourly	2016	4	7.81553E-08	g/s	Propylene	EW_C_6
Maximum Hourly	2016	4	3.06492E-09	g/s	Styrene	EW_C_6
Maximum Hourly	2016	4	9.73259E-07	g/s	Toluene	EW_C_6
Maximum Hourly	2016	4	4.03485E-07	g/s	Xylenes	EW_C_6
Maximum Hourly	2016	4	1.55954E-07	g/s	1,3-Butadiene	EW_C_7
Maximum Hourly	2016	4	7.93945E-08	g/s	Acetaldehyde	EW_C_7
Maximum Hourly	2016	4	3.68617E-08	g/s	Acrolein	EW_C_7
Maximum Hourly	2016	4	2.64262E-06	g/s	Benzene	EW_C_7
Maximum Hourly	2016	4	9.45144E-07	g/s	Ethylbenzene	EW_C_7
Maximum Hourly	2016	4	4.48012E-07	g/s	Formaldehyde	EW_C_7
Maximum Hourly	2016	4	8.76218E-06	g/s	Hexane	EW_C_7
Maximum Hourly	2016	4	3.40262E-08	g/s	Methanol	EW_C_7
Maximum Hourly	2016	4	5.67104E-09	g/s	Methyl Ethyl Ketone	EW_C_7
Maximum Hourly	2016	4	1.41776E-08	g/s	Naphthalene	EW_C_7
Maximum Hourly	2016	4	8.67669E-07	g/s	Propylene	EW_C_7
Maximum Hourly	2016	4	3.40262E-08	g/s	Styrene	EW_C_7
Maximum Hourly	2016	4	1.0805E-05	g/s	Toluene	EW_C_7
Maximum Hourly	2016	4	4.47943E-06	g/s	Xylenes	EW_C_7
Maximum Hourly	2016	4	6.03898E-08	g/s	1,3-Butadiene	EW_C_8
Maximum Hourly	2016	4	3.07439E-08	g/s	Acetaldehyde	EW_C_8
Maximum Hourly	2016	4	1.4274E-08	g/s	Acrolein	EW_C_8
Maximum Hourly	2016	4	1.0233E-06	g/s	Benzene	EW_C_8
Maximum Hourly	2016	4	3.65988E-07	g/s	Ethylbenzene	EW_C_8
Maximum Hourly	2016	4	1.73483E-07	g/s	Formaldehyde	EW_C_8
Maximum Hourly	2016	4	3.39297E-06	g/s	Hexane	EW_C_8
Maximum Hourly	2016	4	1.3176E-08	g/s	Methanol	EW_C_8
Maximum Hourly	2016	4	2.19599E-09	g/s	Methyl Ethyl Ketone	EW_C_8
Maximum Hourly	2016	4	5.48998E-09	g/s	Naphthalene	EW_C_8
Maximum Hourly	2016	4	3.35987E-07	g/s	Propylene	EW_C_8
Maximum Hourly	2016	4	1.3176E-08	g/s	Styrene	EW_C_8
Maximum Hourly	2016	4	4.184E-06	g/s	Toluene	EW_C_8
Maximum Hourly	2016	4	1.73457E-06	g/s	Xylenes	EW_C_8
Maximum Hourly	2016	4	2.06004E-08	g/s	1,3-Butadiene	EW_C_9
Maximum Hourly	2016	4	1.04875E-08	g/s	Acetaldehyde	EW_C_9
Maximum Hourly	2016	4	4.86919E-09	g/s	Acrolein	EW_C_9
Maximum Hourly	2016	4	3.49072E-07	g/s	Benzene	EW_C_9
Maximum Hourly	2016	4	1.24847E-07	g/s	Ethylbenzene	EW_C_9
Maximum Hourly	2016	4	5.91794E-08	g/s	Formaldehyde	EW_C_9
Maximum Hourly	2016	4	1.15742E-06	g/s	Hexane	EW_C_9
Maximum Hourly	2016	4	4.49464E-09	g/s	Methanol	EW_C_9
Maximum Hourly	2016	4	7.49106E-10	g/s	Methyl Ethyl Ketone	EW_C_9
Maximum Hourly	2016	4	1.87277E-09	g/s	Naphthalene	EW_C_9
Maximum Hourly	2016	4	1.14613E-07	g/s	Propylene	EW_C_9
Maximum Hourly	2016	4	4.49464E-09	g/s	Styrene	EW_C_9
Maximum Hourly	2016	4	1.42726E-06	g/s	Toluene	EW_C_9
Maximum Hourly	2016	4	5.91703E-07	g/s	Xylenes	EW_C_9
Maximum Hourly	2016	4	2.54298E-08	g/s	1,3-Butadiene	G31_G91W
Maximum Hourly	2016	4	1.29461E-08	g/s	Acetaldehyde	G31_G91W
Maximum Hourly	2016	4	6.01069E-09	g/s	Acrolein	G31_G91W
Maximum Hourly	2016	4	4.30906E-07	g/s	Benzene	G31_G91W
Maximum Hourly	2016	4	1.54116E-07	g/s	Ethylbenzene	G31_G91W
Maximum Hourly	2016	4	7.3053E-08	g/s	Formaldehyde	G31_G91W
Maximum Hourly	2016	4	1.42876E-06	g/s	Hexane	G31_G91W
Maximum Hourly	2016	4	5.54833E-09	g/s	Methanol	G31_G91W
Maximum Hourly	2016	4	9.24721E-10	g/s	Methyl Ethyl Ketone	G31_G91W
Maximum Hourly	2016	4	2.3118E-09	g/s	Naphthalene	G31_G91W
Maximum Hourly	2016	4	1.41482E-07	g/s	Propylene	G31_G91W
Maximum Hourly	2016	4	5.54833E-09	g/s	Styrene	G31_G91W
Maximum Hourly	2016	4	1.76186E-06	g/s	Toluene	G31_G91W
Maximum Hourly	2016	4	7.30418E-07	g/s	Xylenes	G31_G91W
Maximum Hourly	2016	4	2.07585E-07	g/s	1,3-Butadiene	IWC_1
Maximum Hourly	2016	4	1.0568E-07	g/s	Acetaldehyde	IWC_1
Maximum Hourly	2016	4	4.90656E-08	g/s	Acrolein	IWC_1
Maximum Hourly	2016	4	1.17376E-06	g/s	Benzene	IWC_1
Maximum Hourly	2016	4	4.76805E-07	g/s	Ethylbenzene	IWC_1
Maximum Hourly	2016	4	5.96335E-07	g/s	Formaldehyde	IWC_1
Maximum Hourly	2016	4	1.63705E-06	g/s	Hexane	IWC_1
Maximum Hourly	2016	4	4.52913E-08	g/s	Methanol	IWC_1
Maximum Hourly	2016	4	7.54855E-09	g/s	Methyl Ethyl Ketone	IWC_1
Maximum Hourly	2016	4	1.88714E-08	g/s	Naphthalene	IWC_1
Maximum Hourly	2016	4	1.15493E-06	g/s	Propylene	IWC_1
Maximum Hourly	2016	4	4.52913E-08	g/s	Styrene	IWC_1
Maximum Hourly	2016	4	3.31449E-06	g/s	Toluene	IWC_1
Maximum Hourly	2016	4	2.19942E-06	g/s	Xylenes	IWC_1
Maximum Hourly	2016	4	1.45527E-05	g/s	1,3-Butadiene	IWCT
Maximum Hourly	2016	4	7.40865E-06	g/s	Acetaldehyde	IWCT
Maximum Hourly	2016	4	3.43973E-06	g/s	Acrolein	IWCT
Maximum Hourly	2016	4	0.000140271	g/s	Benzene	IWCT
Maximum Hourly	2016	4	5.27544E-05	g/s	Ethylbenzene	IWCT
Maximum Hourly	2016	4	4.18059E-05	g/s	Formaldehyde	IWCT
Maximum Hourly	2016	4	0.000362809	g/s	Hexane	IWCT
Maximum Hourly	2016	4	3.17513E-06	g/s	Methanol	IWCT
Maximum Hourly	2016	4	5.29189E-07	g/s	Methyl Ethyl Ketone	IWCT
Maximum Hourly	2016	4	1.32297E-06	g/s	Naphthalene	IWCT
Maximum Hourly	2016	4	8.09659E-05	g/s	Propylene	IWCT
Maximum Hourly	2016	4	3.17513E-06	g/s	Styrene	IWCT
Maximum Hourly	2016	4	0.000506176	g/s	Toluene	IWCT

Table A4.3-CHRA-2c
Construction TAC Emissions Summary by Source Group - Onroad Vehicles
Chevron Modernization Project
Richmond, California

Emission Type	Year	Quarter	Emission Rate	Unit	Pollutant	Source Group ¹
Maximum Hourly	2016	4	0.000247287	g/s	Xylenes	IWCT
Maximum Hourly	2016	4	5.49694E-08	g/s	1,3-Butadiene	RAMPSW
Maximum Hourly	2016	4	2.79844E-08	g/s	Acetaldehyde	RAMPSW
Maximum Hourly	2016	4	1.29928E-08	g/s	Acrolein	RAMPSW
Maximum Hourly	2016	4	9.31451E-07	g/s	Benzene	RAMPSW
Maximum Hourly	2016	4	3.33138E-07	g/s	Ethylbenzene	RAMPSW
Maximum Hourly	2016	4	1.57912E-07	g/s	Formaldehyde	RAMPSW
Maximum Hourly	2016	4	3.08843E-06	g/s	Hexane	RAMPSW
Maximum Hourly	2016	4	1.19933E-08	g/s	Methanol	RAMPSW
Maximum Hourly	2016	4	1.99889E-09	g/s	Methyl Ethyl Ketone	RAMPSW
Maximum Hourly	2016	4	4.99721E-09	g/s	Naphthalene	RAMPSW
Maximum Hourly	2016	4	3.0583E-07	g/s	Propylene	RAMPSW
Maximum Hourly	2016	4	1.19933E-08	g/s	Styrene	RAMPSW
Maximum Hourly	2016	4	3.80846E-06	g/s	Toluene	RAMPSW
Maximum Hourly	2016	4	1.57888E-06	g/s	Xylenes	RAMPSW

Note:

1. The source groups names are used in the air dispersion modeling to represent one or a series of emissions sources.

Abbreviations:

g: gram

s: second

Table A4.3-CHRA-3
Sensitive Receptor Survey Summary
Chevron Modernization Project
Richmond, California

Sensitive Receptor Name ¹	UTMx ² [meter]	UTMy ² [meter]	Street	City	State	Zip	Receptor Type
Argosy University - San Francisco	554,961	4,196,985	999A Canal Blvd.	Point Richmond	CA	94804	School
Washington Elementary	554,439	4,197,648	565 Wine St.	Richmond	CA	94801	School
W.C.C.U.S.D. – Washington School	554,439	4,197,648	565 Wine St.	Richmond	CA	94801	Child Care Center
YMCA of the East Bay Y-Kids Washington Richmond	554,439	4,197,648	565 Wine St.	Richmond	CA	94801	Child Care Center
Lincoln Elementary	555,909	4,198,423	29 Sixth St.	Richmond	CA	94801	School
WCCUSD – Lincoln School	555,909	4,198,423	29 Sixth St.	Richmond	CA	94801	Child Care Center
Gompers (Samuel) Continuation	556,012	4,198,519	715 Chanslor Ave.	Richmond	CA	94801	School
Leadership Public Schools	556,012	4,198,519	715 Chanslor Ave.	Richmond	CA	94801	School
Norma's Child Development Cent	555,752	4,198,581	138 South Fourth St.	Richmond	CA	94801	School
Iglesia De Cristo Agape	556,323	4,198,606	151 11th St.	Richmond	CA	94801	School
WCCUSD Community Day School Program	556,157	4,198,615	157 Ninth St.	Richmond	CA	94801	School
Leadership Public Schools	556,157	4,198,615	157 Ninth St.	Richmond	CA	94801	School
Gompers Continuation School	556,039	4,198,685	750 Bissel Ave.	Richmond	CA	94801	School
WCCUSD - Nystrom	556,248	4,198,749	230 Harbour Way South	Richmond	CA	94801	Child Care Center
Brookside Community Health Center - Richmond	556,267	4,198,993	1030 Nevin Ave.	Richmond	CA	94801	Community Clinic
Kaiser FND Hospital – Richmond Campus	556,201	4,199,005	901 Nevin Ave.	Richmond	CA	94804	General Acute Care Hospital
Kaiser Home Health Agency – Oakland (Branch)	556,201	4,199,005	901 Nevin Ave.	Richmond	CA	94801	Home Health Agency
La Petite Academy/Magic Years	556,401	4,199,005	1221 Nevin Ave.	Richmond	CA	94801	Child Care Center
Maat Youth Academy	556,253	4,199,006	1015 Nevin Ave.	Richmond	CA	94801	School
Greater Richmond Social Service	556,071	4,199,075	445 Eighth St.	Richmond	CA	94801	School
YMCA of the East Bay - 8TH Street CDC	556,071	4,199,075	445 Eighth St.	Richmond	CA	94801	Child Care Center
Latour's Residential Care Home	556,329	4,199,445	640 11th St.	Richmond	CA	94801	Residential Care for the Elderly
Peres Elementary	555,848	4,199,677	719 Fifth St.	Richmond	CA	94801	School
WCCUSD – Peres School	555,848	4,199,677	719 Fifth St.	Richmond	CA	94801	Child Care Center
Gloria's Child Care	556,232	4,199,726	727 Tenth St.	Richmond	CA	94801	Child Care Center
Level One Child Care	556,073	4,199,832	797 Eighth St.	Richmond	CA	94801	Child Care Center
YMCA of the East Bay - Richmond CDC	555,839	4,199,848	485 Lucas Ave.	Richmond	CA	94801	Infant Center
YMCA of the East Bay - Richmond CDC	555,839	4,199,848	485 Lucas Ave.	Richmond	CA	94801	Child Care Center
YMCA of the East Bay – Kelsey CDC	555,864	4,200,773	1350 Kelsey St.	Richmond	CA	94801	Child Care Center
YMCA of the East Bay - Kelsey CDC	555,864	4,200,773	1350 Kelsey St.	Richmond	CA	94801	Infant Center
Contra Costa County Child Development Center - Las Deltas	555,373	4,201,175	135 West Grove St.	Richmond	CA	94801	Child Care Center
Contra Costa County Child Development Center - Las Deltas	555,373	4,201,175	135 West Grove St.	Richmond	CA	94801	Infant Center
Verde Elementary	555,936	4,201,656	2000 Giaramita St.	Richmond	CA	94801	School
Contra Costa County Child Development Center - Verde	555,936	4,201,656	2000 Giaramita St.	Richmond	CA	94801	Child Care Center
Even Start Family Literacy	555,936	4,201,656	2000 Giaramita St.	Richmond	CA	94801	Child Care Center
JC Hawkins Christian Academy	556,139	4,198,868	N/A (from Google)	Richmond	CA	94801	School
Saint Marks School	556,168	4,198,587	N/A (from Google)	Richmond	CA	94801	School
Chavez, Cesar Elementary School	556,846	4,200,082	960 17Th St.	Richmond	CA	94801	School
Nystrom Elementary School	556,289	4,198,041	230 Harbour Way	Richmond	CA	94801	School
Mount Olive Lutheran	556,928	4,199,151	1827 Barrett Ave.	Richmond	CA	94801	School
El Nuevo Mundo National	556,925	4,199,611	1707 Pennsylvania Ave.	Richmond	CA	94801	School
Atchison Village Community Center	555,240	4,198,745	Collins & Curry St.	Richmond	CA	94801	Day Care Center
Atchison Village Community Center	555,248	4,198,745	Collins & Curry St.	Richmond	CA	94801	Patient
Center For Human Development	555,891	4,200,852	1410 Kelsey St.	Richmond	CA	94801	School
Mlk Community Center	556,279	4,197,900	360, Harbour Way	Richmond	CA	94801	Community Center Child
Nevin Community Center	555,894	4,198,971	598, Nevin Ave.	Richmond	CA	94801	Community Center Child
Point Richmond Community Center	554,032	4,197,846	139, Washington Ave.	Richmond	CA	94801	Community Center Child
Shields-Reid Community Center	555,890	4,200,868	1410, Kelsey St.	Richmond	CA	94806	Community Center Child

Notes:

- Locations of sensitive receptors were obtained from the following databases:
 - (a) Schools (public and private) - California Department of Education, California School Directory (<http://www.cde.ca.gov/re/sd/>)
 - (b) Health Care Facilities - California Office of Statewide Health Planning and Development (<http://www.oshpd.ca.gov/HID/Products/Listings.html>)
 - (c) Childcare and Elderly Care Centers - California Department of Social Services, Community Care Licensing Division (http://www.cclcd.ca.gov/docs/cclcd_search/cclcd_search.aspx)
 - (d) Google Map (<https://www.maps.google.com/>), using keyword of “childcare”, “daycare”, and “school”, to supplement the searches above
 - (e) Community Centers provided by City of Richmond
- UTM coordinates are provided in NAD83.

Abbreviations:

UTM: Universal Transverse Mercator
N/A: not available

Table A4.3-CHRA-4
Construction Off-road Equipment Modeling Source Parameters
Chevron Modernization Project
Richmond, California

Phase	Source Group ¹	Source	Source Type	Source Dimension	Number of Sources	Release Height	Initial Vertical Dimension	Initial Lateral Dimension	Notes
				[m]		[m]	[m]	[m]	
Existing Hydrogen Plant	EXISH2	Construction Offroad Equipment	Volume	20	44	5	1.4	4.7	2,3,4,5,6,7
Hydrogen Plant Tie-In	TI		Volume	10	179	5	1.4	2.3	2,3,4,5,6,7
Hydrogen Plant Replacement (New Hydrogen Plant)	NEWH2		Volume	20	156	5	1.4	4.7	2,3,4,5,6,7
Sulfur Recovery Unit (SRU)	SRU		Volume	20	223	5	1.4	4.7	2,3,4,5,6,7
Fluid Catalytic Cracking Unit Feed Hydrotreater (FCCFHT, or TKC)	TKC		Volume	20	367	5	1.4	4.7	2,3,4,5,6,7
Project Water Reuse	WAT		Volume	20	449	5	1.4	4.7	2,3,4,5,6,7
Existing Storage Tank Domed Roof Installation	TKD		Volume	20	204	5	1.4	4.7	2,3,4,5,6,7

Notes:

1. Source groups are the names used in the air dispersion modeling. Dispersion factors were generated for each of the source groups separately.
2. Due to lack of specific instructions on modeling of construction emissions from BAAQMD, ENVIRON used SCAQMD LST methodology when setting up the model. for construction offroad equipment. According to the LST methodology, construction sources were modeled as adjacent volume sources.
3. For volume sources, source dimensions were determined by area of construction zone for each phase. 20-m volume sources were used for all phases except for Hydrogen Plant tie-in. Since the tie-in construction area is expected to occur on a long and skinny piece of land, ENVIRON used smaller volume sources to better represent the geometry of the construction zone.
4. Number of sources were determined by area of construction zone and source dimensions for the same phase.
5. According to the LST methodology, release height of the modeled volume sources representing construction equipment was set to 5 meters.
6. According to the LST methodology, initial vertical dimension of the modeled volume sources was set to 1.4 meters.
7. According to USEPA ISC3 User's Guide Volume II, initial lateral dimension of single volume sources is length of side divided by 4.3.

Abbreviations:

ARB: California Air Resources Board
BAAQMD: Bay Area Air Quality Management District
ISC: Industrial Source Complex Model
LST: Local Significance Threshold
m: meter
SCAQMD: South Coast Air Quality Management District
USEPA: United States Environmental Protection Agency

References:

South Coast Air Quality Management District (SCAQMD). 2008. Final Localized Significance Threshold (LST) Methodology. July. Available at http://www.aqmd.gov/ceqa/handbook/lst/Method_final.pdf
United States Environmental Protection Agency (USEPA). 1995. User's Guide for the Industrial Source Complex (ISC3) Dispersion Models. Volume II - Description of Model Algorithms. September. Available at <http://www.epa.gov/scram001/users/readme/isc3v2.pdf>

Table A4.3-CHRA-5
Construction On-road Mobile Modeling Source Parameters
Chevron Modernization Project
Richmond, California

Source Description	Source Group ¹	Source Type	Source Dimension	Number of Sources	Release Height	Initial Vertical Dimension	Initial Lateral Dimension	Notes
			[m]		[m]	[m]	[m]	
Onsite worker transport path to hydrogen plant	IWCH and IWCH_C	Volume	7 - 9	42	0.6	0.14	1.6	2,3,4,5,6,7
Onsite worker transport path to SRU	IWCP and IWCP_C	Volume	7 - 9	58	0.6	0.14	1.6 - 2.1	2,3,4,5,6,7
Onsite worker transport path to TKC and Tie-in	IWCT and IWCT_C	Volume	7 - 9	58	0.6	0.14	1.6 - 2.1	2,3,4,5,6,7
Onsite worker transport path to existing storage tank domed roof installation	IWCDOM	Volume	5 - 9	46	0.6	0.14	1.1 - 2.1	2,3,4,5,6,7
Worker commuting trip from Facility entrance to worker parking lot	IWC_1	Volume	12	7	0.6	0.14	2.8	2,3,4,5,6,7
Worker commuting offsite path on Richmond Parkway	EWC_6	Volume	36-57	11	0.6	0.14	8.3-13	2,3,4,5,6,7
	EWC_7	Volume	30.5	124	0.6	0.14	7.1	2,3,4,5,6,7
	EWC_8	Volume	21.4	48	0.6	0.14	5.0	2,3,4,5,6,7
	EWC_9	Volume	16.8	17	0.6	0.14	3.9	2,3,4,5,6,7
Worker commuting offsite path on Castro Street	RAMPST	Volume	3.4 - 28.3	39	0.6	0.14	0.8 - 6.6	2,3,4,5,6,7
	CAS_G31W	Volume	19.8	10	0.6	0.14	4.6	2,3,4,5,6,7
	G31_G91W	Volume	19.8	20	0.6	0.14	4.6	2,3,4,5,6,7
Delivery truck from Facility entrance to laydown area	ITCTN, ITCPN, ITCHN	Volume	9 - 14	14	4.57	1.1	2.1 - 3.3	2,3,4,6,7,8
Delivery truck idling area at Main Gate	ITC_IDLN	Area	Not Applicable	1	4.57	1.1	Not Applicable	9,10,11
Delivery truck and flatbeds idling at laydown area	ITCHIDLN, ITCIDLN, ITCTIDLN	Area	Not Applicable	1	4.57	1.1	Not Applicable	9,10,11
Delivery truck and flatbeds onsite path from laydown area to Project area	ITCW	Volume	6 - 15	48	4.57	1.1	1.4 - 3.5	2,3,4,6,7,8
Delivery truck, haul truck, and flatbeds idling at TKC staging area	ITCT_IDL	Area	Not Applicable	1	4.57	1.1	Not Applicable	9,10,11
Delivery truck, haul truck, and flatbeds idling at hydrogen plant staging area	ITCH_IDL	Area	Not Applicable	1	4.57	1.1	Not Applicable	9,10,11
Delivery truck, haul truck, and flatbeds idling at SRU staging area	ITCP_IDL	Area	Not Applicable	1	4.57	1.1	Not Applicable	9,10,11
Delivery truck and flatbeds onsite path from laydown area to existing storage tank domed roof installation	ITCD	Volume	5 - 9	42	4.57	1.1	1.1 - 2.1	2,3,4,6,7,8
Delivery truck and flatbeds idling at existing storage tank domed roof installation	ITCD_IDL	Area	Not Applicable	1	4.57	1.1	Not Applicable	9,10,11
Delivery truck and haul truck offsite path on Richmond Parkway	ETC_6	Volume	36-57	11	4.57	1.1	8.3-13	2,3,4,6,7,8
	ETC_7	Volume	30.5	124	4.57	1.1	7.1	2,3,4,6,7,8
	ETC_8	Volume	21.4	48	4.57	1.1	5.0	2,3,4,6,7,8
	ETC_9	Volume	16.8	37	4.57	1.1	3.9	2,3,4,6,7,8
Delivery truck and haul truck offsite path on Castro Street	RAMPST	Volume	3.4 - 28.3	39	4.57	1.1	0.8 - 6.6	2,3,4,6,7,8
	CAS_G31T	Volume	19.8	10	4.57	1.1	4.6	2,3,4,6,7,8
Haul truck onsite path to hydrogen plant	ITCH_1 and ITCH_2	Volume	7 - 14	47	4.57	1.1	1.6 - 3.3	2,3,4,6,7,8
Haul truck onsite path to SRU	ITCP_1 and ITCP_2	Volume	7 - 14	63	4.57	1.1	1.6 - 3.3	2,3,4,6,7,8
Haul truck onsite path to TKC and Tie-in	ITCT_1 and ITCT_2	Volume	7 - 14	63	4.57	1.1	1.6 - 3.3	2,3,4,6,7,8
Haul truck idling area at Gate 31	ITC_IDL	Area	Not Applicable	1	4.57	1.1	Not Applicable	9,10,11

Notes:

1. Source groups are the names used in the air dispersion modeling. Dispersion factors were generated for each of the source groups separately.
2. ENVIRON used non-adjacent volume sources to model onroad vehicle running emissions.
3. For volume sources, source dimensions were determined by the roadway width where the source is placed. The volume source is placed such that the roadway width is just covered by the volume source.
4. ENVIRON used 50-m spacing between volume sources. Number of sources were determined by the length of the roadway segment.
5. Consistent with ARB approved methodology (personal communication Gavin Hoch of ENVIRON by telephone with Jing Yuan of ARB on August 24, 2006), release height of the modeled volume sources representing non-truck onroad vehicles was set to 0.6 m.
6. According to USEPA ISC3 User's Guide Volume II, initial vertical dimension of elevated volume sources not on or adjacent to a building is release height divided by 4.3.
7. According to USEPA ISC3 User's Guide Volume II, initial lateral dimension of single volume sources is length of side divided by 4.3.
8. Consistent with BAAQMD recommendations for Health Risk Assessments & Land Use, release height of the modeled volume sources representing truck onroad vehicles was set to 4.57m.
9. ENVIRON used area sources to model onroad vehicle idling emissions.
10. Consistent with BAAQMD recommendations for Health Risk Assessments & Land Use, release height of the modeled area sources representing truck idling was set to 4.57m.
11. According to USEPA ISC3 User's Guide Volume II, initial vertical dimension of elevated area sources is release height divided by 4.3.

Abbreviations:

ARB: California Air Resources Board
BAAQMD: Bay Area Air Quality Management District
ISC: Industrial Source Complex Model
LST: Local Significance Threshold
m: meter
SCAQMD: South Coast Air Quality Management District
USEPA: United States Environmental Protection Agency

References:

South Coast Air Quality Management District (SCAQMD). 2008. Final Localized Significance Threshold (LST) Methodology. July. Available at http://www.aqmd.gov/ceqa/handbook/lst/Method_final.pdf
United States Environmental Protection Agency (USEPA). 1995. User's Guide for the Industrial Source Complex (ISC3) Dispersion Models. Volume II - Description of Model Algorithms.

Table A4.3-CHRA-6
Modeling Adjustment Factors - Construction
Chevron Modernization Project
Richmond, California

Receptor	Modeling Adjustment Factor (MAF)	Note
Resident Adult	1	a
Resident Child	1	a
Worker	3.4	b
School Child	3.4	b
Day Care Child	3.4	b
Adult Patient	1	a
Child Patient	1	a
Recreational Adult	3.4	b
Recreational Child	3.4	b
Community Center Child	3.4	b

Notes:

- a. Modeling adjustment factor is not needed for residents and patients because they were assumed to be present 24 hours per day, 7 days per week.
- b. A worker, a school child, a daycare child, a recreational user or a community center child was not present 24 hours per day, 7 days per week, but emissions were averaged over 24 hours per day, 7 days per week in the air dispersion model and the construction schedule was 10 hours per day, 5 days per week. Thus, an adjustment factor of 3.4 (equal to $[24 \text{ hours}/10 \text{ hours}] \times [7 \text{ days}/5 \text{ days}]$) was applied to the annual average concentrations to account for the actual exposure concentrations for these receptor types.

Sources:

Bay Area Air Quality Management District (BAAQMD). 2010. BAAQMD Air Toxics NSR Program Health Risk Screening Analysis (HRSA) Guidelines. January.

California Environmental Protection Agency (Cal/EPA). 2003. Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Office of Environmental Health Hazard Assessment. August.

Table A4.3-CHRA-7a
Exposure Assumptions - Completed and Future Construction (2008-2009, and 2014-2016)
Chevron Modernization Project
Richmond, California

Exposure Parameter	Units	Resident Adult ²	Resident Child ²	Worker ³	School Child ⁴	Day Care Child ⁵					Adult Patient ⁶	Child Patient ⁷	Recreational Adult ⁸	Recreational Child ⁸					Community Center Child ⁹				
		2008-2009 & 2014-2016				2008	2009	2014	2015	2016	2008-2009 & 2014-2016			2008	2009	2014	2015	2016	2008	2009	2014	2015	2016
Daily Breathing Rate (DBR)	[L/kg-day]	302	581	149	581	581	581	581	581	581	302	581	--	--	--	--	--	581	581	581	581	581	
Hourly Breathing Rate (HBR)	[m³/hour]	--	--	--	--	--	--	--	--	--	--	--	1.74	0.84	1.26	1.32	1.32	--	--	--	--	--	
Exposure Time (ET)	hours/24 hours	24	24	8	10	10	10	10	10	10	24	24	1	1	1	1	1	10	10	10	10	10	
Exposure Frequency (EF)	[days/year]	350	350	245	180	245	245	245	245	245	365	365	52	52	52	52	52	245	245	245	245	245	
Exposure Duration (ED) ¹	[years]	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0	0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0	0	
Averaging Time (AT)	[days]	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	
Intake Factor, Inhalation (IF _{inh})	[m³/kg-day]	0.0041	0.0080	0.0014	0.0017	0.0023	0.0023	0.00089	0	0	0.0043	0.0083	0.000056	0.000095	0.00014	0.00015	0.00015	0.0023	0.0023	0.00089	0	0	

Notes:

1. Intake factors were calculated for each single year for the previous construction duration of 2008-2009 and the future construction duration of 2014-2016 to be consistent with air concentration modeling. The construction durations were partial of the year for 2008 and 2009, but to be consistent with the modeled annual average air concentrations, the exposure durations were assumed to be the whole year.
2. Exposure parameters other than exposure duration reflect default values for residents from BAAQMD 2010.
3. Exposure parameters other than exposure duration reflect default values for workers from BAAQMD 2010. The daily breathing rate for a worker corresponds to an hourly breathing rate of 1.3 m³/hour for eight hours.
4. Exposure parameters other than exposure duration reflect default values for students from BAAQMD 2010.
5. Daily breathing rates for day care child receptors reflect default breathing rates for children from BAAQMD 2010. The day care centers were assumed to operate 10 hours per day from 7 AM to 5 PM. The day care child receptor was assumed to be at a day care center while the parents are at work; 245 days reflects the default exposure frequency for a worker from BAAQMD 2010. Usually, the day care centers are assumed to accept children from 6 weeks to 6 years old. Therefore, if a child is assumed to attend the daycare facility at age of 6 weeks in July 2008 (the beginning of the construction), he or she will not be present in the day care center when he or she turns 6 years old in May 2014 and in the entire year of 2015 and 2016.
6. Adult patient was assumed to be 16 years old and above, and stay in hospital for the whole construction period. Daily breathing rate and exposure time for adult patients reflect default values for resident adults from BAAQMD 2010.
7. Child patient was assumed to be in hospital for the whole construction period. Daily breathing rate and exposure time for child patients reflect default values for resident children from BAAQMD 2010.
8. Hourly breathing rates for recreational child and adult receptors reflect recommended mean breathing rates based on moderate activities for short-term exposures for age groups from birth to 9 years and from 16 years to 70 years from USEPA 2011. The recreational child and adult receptors were conservatively assumed to be at a recreational location 1 hours per day, once a week, every week (52 weeks) of the year.
9. For the child receptors at community center, the exposure parameters were conservatively assumed to be the same as those for day care child.

Equations:

Resident, Worker, School Child, Daycare Child, Community Center Child, and Patient:

$$IF_{inh} = DBR * ET * EF * ED * CF1 / AT$$

$$CF1 = 0.001 \text{ (m}^3\text{/L)}$$

Recreational User:

$$IF_{inh} = HBR * ET * EF * ED * CF2 / \text{Body Weight} / AT$$

Where: Body Weight_{adult} = 63 kg (Cal/EPA 2003)

Body Weight_{child} = 18 kg (Cal/EPA 2003)

CF2 = 24 hours/day

Abbreviations:

BAAQMD: Bay Area Air Quality Management District

Cal/EPA: California Environmental Protection Agency

kg: kilogram

L: Liter

m³: cubic meters

USEPA: US Environmental Protection Agency

Sources:

Bay Area Air Quality Management District (BAAQMD). 2010. *BAAQMD Air Toxics NSR Program Health Risk Screening Analysis (HRSA) Guidelines*. January.

California Environmental Protection Agency (Cal/EPA). 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. August.

United States Environmental Protection Agency (USEPA). 2011. *Exposure Factors Handbook: 2011 Edition*. Table 6-2. September.

Table A4.3-CHRA-7b
Exposure Assumptions - Future Only Construction (2014-2016)
Chevron Modernization Project
Richmond, California

Exposure Parameter	Units	Resident Adult ²	Resident Child ²	Worker ³	School Child ⁴	Day Care Child ⁵	Adult Patient ⁶	Child Patient ⁷	Recreational Adult ⁸	Recreational Child ⁸			Community Center Child ⁹
		2014-2016								2014	2015	2016	2014-2016
Daily Breathing Rate (DBR)	[L/kg-day]	302	581	149	581	581	302	581	--	--	--	--	581
Hourly Breathing Rate (HBR)	[m ³ /hour]	--	--	--	--	--	--	--	1.74	0.84	1.26	1.26	--
Exposure Time (ET)	hours/24 hours	24	24	8	10	10	24	24	1	1	1	1	10
Exposure Frequency (EF)	[days/year]	350	350	245	180	245	365	365	52	52	52	52	245
Exposure Duration (ED) ¹	[years]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Averaging Time (AT)	[days]	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550
Intake Factor, Inhalation (IF _{inh})	[m ³ /kg-day]	0.0041	0.0080	0.0014	0.0017	0.0023	0.0043	0.0083	0.000056	0.000095	0.00014	0.00014	0.0023

Notes:

- Intake factors were calculated for each single year for the future construction duration of 2014-2016 to be consistent with air concentration modeling.
- Exposure parameters other than exposure duration reflect default values for residents from BAAQMD 2010.
- Exposure parameters other than exposure duration reflect default values for workers from BAAQMD 2010. The daily breathing rate for a worker corresponds to an hourly breathing rate of 1.3 m³/hour for eight hours.
- Exposure parameters other than exposure duration reflect default values for students from BAAQMD 2010.
- Daily breathing rates for day care child receptors reflect default breathing rates from BAAQMD 2010. The day care centers were assumed to operate 10 hours per day from 7 AM to 5 PM. The day care child receptor was assumed to be at a day care center while the parents are at work; 245 days reflects the default exposure frequency for a worker from BAAQMD 2010.
- Adult patient was assumed to be 16 years old and above, and stay in hospital for the whole construction period. Daily breathing rate and exposure time for adult patients reflect default values for resident adults from BAAQMD 2010.
- Child patient was assumed to be in hospital for the whole construction period. Daily breathing rate and exposure time for child patients reflect default values for resident children from BAAQMD 2010.
- Hourly breathing rates for recreational child and adult receptors reflect recommended mean breathing rates based on moderate activities for short-term exposures for age groups from birth to 3 years and from 16 years to 70 years from USEPA 2011. The recreational child and adult receptors were conservatively assumed to be at a recreational location 1 hours per day, once a week, every week (52 weeks) of the year.
- For the child receptors at community center, the exposure parameters were conservatively assumed to be the same as those for day care child.

Equations:

Resident, Worker, School Child, Daycare Child, Community Center Child, and Patient:

$$IF_{inh} = DBR * ET * EF * ED * CF1 / AT$$

$$CF1 = 0.001 \text{ (m}^3\text{/L)}$$

Recreational User:

$$IF_{inh} = HBR * ET * EF * ED * CF2 / \text{Body Weight} / AT$$

Where: Body Weight_{adult} = 63 kg (Cal/EPA 2003)

Body Weight_{child} = 18 kg (Cal/EPA 2003)

CF2 = 24 hours/day

Abbreviations:

BAAQMD: Bay Area Air Quality Management District

Cal/EPA: California Environmental Protection Agency

kg: kilogram

L: Liter

m³: cubic meters

USEPA: US Environmental Protection Agency

Sources:

Bay Area Air Quality Management District (BAAQMD). 2010. *BAAQMD Air Toxics NSR Program Health Risk Screening Analysis*

California Environmental Protection Agency (Cal/EPA). 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. August.

United States Environmental Protection Agency (USEPA), 2011. *Exposure Factors Handbook: 2011 Edition*. Table 6-2. September.

Table A4.3-CHRA-8a
Cancer Risk Adjustment Factors - Completed and Future Construction (2008-2009, and 2014-2016)
Chevron Modernization Project
Richmond, California

Receptor	Year	Cancer Risk Adjustment Factorsr (CRAF)	Note
Resident Adult	2008-2009	1.0	a, b
	2014-2016		
Resident Child	2008-2009	10	a, c
	2014-2016	3	
Worker	2008-2009	1.0	a, d
	2014-2016		
School Child	2008-2009	3.0	a, e
	2014-2016		
Day Care Child	2008-2009	10	a, f
	2014-2016	3.0	
Adult Patient	2008-2009	1.0	a, g
	2014-2016		
Child Patient	2008-2009	10	a, h
	2014-2016	3.0	
Recreational Adult	2008-2009	1.0	a, i
	2014-2016		
Recreational Child	2008-2009	10	a, j
	2014-2016	3.0	
Community Center Child	2008-2009	10	a, k
	2014-2016	3.0	

Notes:

- a. Based on BAAQMD 2010.
- b. A resident adult was assumed to be 16 years old and above.
- c. A resident child was assumed to represent the third trimester of pregnancy to 8.25 years of age.
- d. A worker was assumed to represent age 16 to age 70 years.
- e. A school child was assumed to represent ages 7 years old to 16 years old.
- f. Daycare centers were conservatively assumed to accept children from 6 weeks to 6 year old.
- g. An adult patient was assumed to be 16 years older and above.
- h. A child patient was assumed to represent age third trimester to 8.25 years.
- i. A recreational adult was assumed to be 16 years older and above.
- j. A recreational child was assumed to represent age third trimester to 8.25 years.
- k. Community centers were conservatively assumed to accept children from 6 weeks to 6 year old.

Abbreviations:

BAAQMD: Bay Area Air Quality Management District

Sources:

Bay Area Air Quality Management District (BAAQMD). 2010. *BAAQMD Air Toxics NSR Program Health Risk Screening Analysis (HRS) Guidelines*. January.

Table A4.3-CHRA-8b
Cancer Risk Adjustment Factors - Future Construction (2014-2016)
Chevron Modernization Project
Richmond, California

Receptor	Year	Cancer Risk Adjustment Factorsr (CRAF)	Note
Resident Adult	2014-2016	1.0	a, b
Resident Child	2014-2015	10	a, c
	2016	4.8	
Worker	2014-2016	1.0	a, d
School Child		3.0	a, e
Day Care Child	2014	10	a, f
	2015	9.2	
	2016	3.0	
Adult Patient	2014-2016	1.0	a, g
Child Patient	2014-2015	10	a, h
	2016	4.8	
Recreational Adult	2014-2016	1.0	a, i
Recreational Child	2014-2015	10	a, j
	2016	4.8	
Community Center Child	2014	10	a, k
	2015	9.2	
	2016	3.0	

Notes:

- a. Based on BAAQMD 2010.
- b. A resident adult was assumed to be 16 years old and above.
- c. A resident child was assumed to represent the third trimester of pregnancy to 2.75 years of age.
- d. A worker was assumed to represent age 16 to age 70 years.
- e. A school child was assumed to represent ages 7 years old to 16 years old.
- f. Daycare centers were conservatively assumed to accept children as young as 6 weeks old. Therefore, the exposure for a day care child was conservatively assumed to occur from age 6 weeks to 3.1 years old.
- g. An adult patient was assumed to be 16 years older and above.
- h. A child patient was assumed to represent age third trimester to 2.75 years.
- i. A recreational adult was assumed to be 16 years older and above.
- j. A recreational child was assumed to represent age third trimester to 2.75 years.
- k. Community centers were conservatively assumed to accept children as young as 6 weeks old. Therefore, the exposure for a community center child was conservatively assumed to occur from age 6 weeks to 2.75 years old.

Abbreviations:

BAAQMD: Bay Area Air Quality Management District

Sources:

Bay Area Air Quality Management District (BAAQMD). 2010. *BAAQMD Air Toxics NSR Program Health Risk Screening Analysis (HRS) Guidelines*. January.

Table A4.3-CHRA-9a
Health Impact - Construction
Chevron Modernization Project
Richmond, California

Completed and Future Construction

Population	Receptor Types	Receptor Sub-category	UTMx	UTMy	Excess Lifetime Cancer Risk ¹	Chronic HI ²	PM _{2.5} Concentration ³	Acute HI ⁴
			(m)		(in a million)	(unitless)	(µg/m3)	(unitless)
MEISR (Cancer)	BAAQMD Sensitive Receptors and Recreational Users	Resident	552,950	4,198,200	10.6	--	--	--
	Worker	Worker	553,700	4,198,500	1.1	--	--	--
MEISR (Chronic HI and PM _{2.5})	BAAQMD Sensitive Receptors	Resident	552,950	4,198,200	--	0.013	0.065	--
	Recreational User	Recreational User	551,749	4,199,663	--	0.015	0.076	
	Worker	Worker	553,700	4,198,500	--	0.019	0.094	--
MEISR (Acute HI)	All Receptors including Fenceline	Worker	554,552	4,199,489	--	--	--	0.09
BAAQMD Threshold					10	1.0	0.3	1.0

Future Construction Only

Population	Receptor Types	Receptor Sub-category	UTMx	UTMy	Excess Lifetime Cancer Risk ¹	Chronic HI ²	PM _{2.5} Concentration ³	Acute HI ⁴
			(m)		(in a million)	(unitless)	(ug/m3)	(unitless)
MEISR (Cancer)	BAAQMD Sensitive Receptors and Recreational Users	Resident	552,950	4,198,200	5.2	--	--	--
	Worker	Worker	553,700	4,198,500	0.3	--	--	--
MEISR (Chronic HI and PM _{2.5})	BAAQMD Sensitive Receptors	Resident	552,950	4,198,200	--	0.010	0.049	--
	Recreational User	Recreational User	551,749	4,199,663	--	0.010	0.051	
	Worker	Worker	553,700	4,198,500	--	0.009	0.049	--
MEISR (Acute HI)	All Receptors including Fenceline	Worker	554,552	4,199,489	--	--	--	0.05
BAAQMD Threshold					10	1.0	0.3	1.0

Notes:

1. The excess lifetime cancer risk assumes that an individual adjacent to the construction activity is exposed to construction emissions from (1) completed and future construction; (2) future construction only. Cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risks attributed to the DPM and gasoline TOG emissions associated with the Project were calculated based on the DPM and TOG exposure point concentration (C), the intake factors presented in Tables 4.3-CHRA-7a and 7b, the CPF presented in Table 4.3-CHRA-1, and the CRAFs presented in Table 4.3-CHRA-8a and 8b.

Calculation:

$Risk_{inh} = \sum(C_i \times MAF \times CF \times IF_{inh} \times CPF_i \times ASF)$
Where:
Risk_{inh} = Cancer Risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)
C_i = Modeled Annual Average Concentration in air for Chemical I (µg/m³)
MAF = Modeling Adjustment Factor
CF = Conversion Factor (mg/µg)
IF_{inh} = Intake Factor for Inhalation (m³/kg-day)
CPF_i = Cancer Potency Factor for Chemical I (mg chemical/kg body weight-day)
ASF = Age Sensitivity Factor

2. The potential for exposure to result in chronic noncancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the chemical-specific noncancer chronic RELs. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient. The hazard quotients were then summed for all chemicals to yield the hazard index. The hazard quotients were calculated based on the modeled annual average DPM and TOG concentrations and the chronic REL presented in Table 4.3-CHRA-1.

Calculation:

$HQ_i = C_i / REL_i$; $HI = \sum HQ_i$
Where:
HI = Hazard Index
HQ_i = Hazard Quotient for Chemical I
C = Average Daily Air Concentration for Chemical I (µg/m³)
REL_i = Noncancer Reference Exposure Level for Chemical I (µg/m³)

3. The MEISR is the offsite receptor location with the maximum annual average PM_{2.5} concentration from the modeled construction sources. The PM_{2.5} concentration takes into account emissions from off-road equipment exhaust, on road vehicles exhaust, on road vehicles brake wear and tire wear, and fugitive dust emissions.

4. ENVIRON evaluated the acute hazard indices (HIs) for the maximum hourly construction emissions scenarios. In order to find the maximum hour, ENVIRON calculated emissions by source group by each quarter of the construction year, from (1) completed and future construction; (2) future construction only. Then these emissions were applied to the modeled maximum 1-hour dispersion factors to get concentrations by source group, quarter and year. The concentrations were then summed across all source groups to yield maximum 1-hour concentration by quarter and year. The maximum across all quarters were chosen as the maximum hour. The potential for exposure to result in acute noncancer effects is evaluated by comparing the estimated maximum hourly air concentration to the chemical-specific noncancer acute RELs. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient. The acute HI is calculated by summing all hazard quotients.

Calculation:

$Acute\ HI = \sum Acute\ HQ_i = \sum C_i / REL_i$
Where:
Acute HI = Acute Hazard Index
Acute HQ_i = Acute Hazard Quotient for Chemical i
C_i = Max hourly Air Concentration for Chemical i (µg/m3)
REL_i = Noncancer Reference Exposure Level for Chemical i (µg/m3)

Abbreviations:

µg: microgram
CPF: Cancer Potency Factor
DPM: Diesel Particulate Matter
HQ: Hazard Quotient
HI: Hazard Index
kg: kilogram
m: meter
MEISR: Maximally Exposed Individual Sensitive Receptor
REL: Reference Exposure Level
TOG: Total Organic Gases
UTM: Universal Transverse Mercator

Table A4.3-CHRA-9b
Health Impact Breakdown - Future Construction Only
Chevron Modernization Project
Richmond, California

Population	UTMx	UTMy	Total Risk, HI, or PM _{2.5} Concentration	Diesel Offroad Equipment	Onroad Vehicles
	(m)		(in a million for cancer risk, unitless for HI, or ug/m3 for		
MEISR (Cancer)	552,950	4,198,200	5.2	4.8	0.4
MEISR (Chronic HI)	551,749	4,199,663	0.010	9.86E-03	1.95E-04
MEISR (PM _{2.5} Concentration)	551,749	4,199,663	0.051	0.049	0.001
MEISR (Acute HI)	554,552	4,199,489	0.1	--	0.1

Abbreviations:

µg: microgram

HI: Hazard Index

m: meter

MEISR: Maximally Exposed Individual Sensitive Receptor

UTM: Universal Transverse Mercator

Table A4.3-CHRA-10
Health Impact - Construction of 2 MW Solar Facility
Chevron Modernization Project
Richmond, California

Population	Receptor Types	UTMx	UTMy	Excess Lifetime Cancer Risk ¹	Chronic HI ²	PM _{2.5} Concentration ²	Acute HI ²
		(m)		(in a million)	(unitless)	(ug/m3)	(unitless)
MEISR (Cancer)	BAAQMD Sensitive Receptors and Recreational Users	555,250	4,200,550	0.2	--	--	--
	Worker	555,000	4,200,000	0.2	--	--	--
MEISR (Chronic HI)	BAAQMD Sensitive Receptors and Recreational Users	555,250	4,200,550	--	0.0005	--	--
	Worker	555,000	4,200,000	--	0.009	--	--
MEISR (PM _{2.5})	BAAQMD Sensitive Receptors and Recreational Users	555,250	4,200,550	--	--	0.003	--
	Worker	555,000	4,200,000	--	--	0.044	--
MEISR (Acute HI)	All Receptors including Fenceline	554,843	4,199,839	--	--	--	0.03
BAAQMD Threshold				10	1.0	0.3	1.0

Abbreviations:

µg: microgram

HI: Hazard Index

m: meter

UTM: Universal Transverse Mercator

Table A4.3-CHRA-11a
Exposure Parameters - Construction of 14 Tank Domes
Chevron Modernization Project
Richmond, California

Exposure Parameter	Units	Resident Child ²
Daily Breathing Rate (DBR)	[L/kg-day]	581
Hourly Breathing Rate (HBR)	[m ³ /hour]	--
Exposure Time (ET)	hours/24 hours	24
Exposure Frequency (EF)	[days/year]	350
Exposure Duration (ED) ¹	[years]	7
Conversion Factor (CF)	[m ³ /L]	0.001
Averaging Time (AT)	[days]	25550
Intake Factor, Inhalation (IF _{inh})	[m ³ /kg-day]	0.056

Notes:

1. Exposure duration reflects the actual construction schedule from 2016-2022.
2. Exposure parameters other than exposure duration reflect default values for residents from

Equation:

$$IF_{inh} = DBR * ET * EF * ED * CF1 / AT$$

$$CF1 = 0.001 \text{ (m}^3\text{/L)}$$

Abbreviations:

BAAQMD = Bay Area Air Quality Management District

Cal/EPA = California Environmental Protection Agency

kg = kilogram

L = Liter

m³ = cubic meters

Source:

Bay Area Air Quality Management District (BAAQMD). 2010. *BAAQMD Air Toxics NSR Program*

Table A4.3-CHRA-11b
Health Impact - Construction of 14 Tank Domes
Chevron Modernization Project
Richmond, California

Population	Receptor Types	UTMx	UTMy	Excess Lifetime Cancer Risk ¹	Chronic HI ²	PM _{2.5} Concentration ²	Acute HI ²
		(m)		(in a million)	(unitless)	(ug/m3)	(unitless)
MEISR (Cancer)	BAAQMD Sensitive Receptors and Recreational Users	552,950	4,198,200	1.2	--	--	--
	Worker	553,700	4,198,500	0.05	--	--	--
MEISR (Chronic HI)	BAAQMD Sensitive Receptors and Recreational Users	552,950	4,198,200	--	0.001	--	--
	Worker	553,700	4,198,500	--	0.0003	--	--
MEISR (PM _{2.5})	BAAQMD Sensitive Receptors and Recreational Users	552,950	4,198,200	--	--	0.006	--
	Worker	553,700	4,198,500	--	--	0.001	--
MEISR (Acute HI)	All Receptors including Fenceline	554,552	4,199,489	--	--	--	0.0006
BAAQMD Threshold				10	1.0	0.3	1.0

Abbreviations:

µg: microgram

HI: Hazard Index

m: meter

UTM: Universal Transverse Mercator

1.8 REFERENCES

- Bay Area Air Quality Management District (BAAQMD). 2010a. *Air Toxics NSR Program Health Risk Screening Analysis (HRSA) Guidelines*. January.
- Bay Area Air Quality Management District (BAAQMD). 2010b. *Health Risk Assessment & Land Use Presentation*.
<http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/CEQA%20HRA%20Guidelines%20-%20Statewide%20Workshops%204-28-10.ashx?la=en>
- Bay Area Air Quality Management District (BAAQMD). 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*.
<http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20Modeling%20Approach.ashx>.
- California Air Resources Board (CARB). 1998. Findings of the Scientific Review Panel on The Report on Diesel Exhaust, as adopted at the Panel's April 22, 1998, meeting.
- California Air Resources Board (CARB). 2014. Consolidated Table of Approved Risk Assessment Health Values. Available at:
<http://www.arb.ca.gov/toxics/healthval/contable.pdf>.
- California Department of Education (CDE). 2013. *California School Directory*.
<http://www.cde.ca.gov/re/sd/>.
- California Department of Social Services, Community Care Licensing Division (CCLD). 2012. *CCLD Facility Search Form*.
http://www.cclld.ca.gov/docs/cclld_search/cclld_search.aspx.
- California Environmental Protection Agency (Cal/EPA). 2009. *Technical Support Document for Cancer Potency Factors: methodologies for derivation, listing of available values, and adjustments to allow for early life stage exposures*. May. http://oehha.ca.gov/air/hot_spots/2009/TSDCancerPotency.pdf.
- California Environmental Protection Agency (Cal/EPA). 2012. Air Toxics Hot Spots Program Risk Assessment Guidelines: Technical Support Document for Exposure Assessment and Stochastic Analysis, Appendix E.
- California Office of Statewide Health Planning and Development (OSHPD). 2014. *Facility Listings*. <http://www.oshpd.ca.gov/HID/Products/Listings.html>.

Chevron Data Transmittal #31 (Rev #3): Project Locations, 2012.

Chevron Data Transmittal #360 (Rev #3), Attachment 9: Construction Equipment Information, 2014.

Chevron Data Transmittal #43: Solar Installation Location, 2013.

Chevron Data Transmittal #47A (Rev #6): PDF Descriptions: Domes, LED, 2014.

Office of Environmental Health Hazard Assessment (OEHHA). 1998. *Findings of the Scientific Review Panel on The Report on Diesel Exhaust*, as adopted at the Panel's April 22, 1998, meeting.

Office of Environmental Health Hazard Assessment (OEHHA). 2003. *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.

Office of Environmental Health Hazard Assessment (OEHHA). 2012. *Air Toxics Hot Spots Program Risk Assessment Guidelines: Technical Support Document for Exposure Assessment and Stochastic Analysis*.
http://oehha.ca.gov/air/hot_spots/pdf/2012tsd/TSDportfolio2012.pdf.

Office of Environmental Health Hazard Assessment (OEHHA). 2014. *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values*.
<http://www.arb.ca.gov/toxics/healthval/contable.pdf>

South Coast Air Quality Management District (SCAQMD). 2008. *Localized Significance Threshold Methodology*. July.
http://www.aqmd.gov/ceqa/handbook/lst/Method_final.pdf

U.S. Environmental Protection Agency (EPA). 1995. *User's Guide for the Industrial Source Complex (ISC3) Dispersion Models, Volume II – Description of Model Algorithms*. Accessed March 8, 2013.
<http://www.epa.gov/ttn/scram/userg/regmod/isc3v2.pdf>.

U.S. Environmental Protection Agency (EPA). 2005. Code of Federal Regulations (CFR). Title 40, Part 51.

U.S. Environmental Protection Agency (EPA). 2009. *AERMOD Implementation Guide*. March 19.
http://www.epa.gov/ttn/scram/7thconf/aermod/aermod_implmntn_guide_19March2009.pdf.

U.S. Environmental Protection Agency (EPA). 2011. *Exposure Factors Handbook: 2011 Edition*. September. <http://www.epa.gov/ncea/efh/pdfs/efh-complete.pdf>.

U.S. Environmental Protection Agency (EPA), 2012a. *About Air Toxics*.
<http://www.epa.gov/oar/toxicair/newtoxics.html>.

U.S. Environmental Protection Agency (EPA), 2012b. *Memorandum – Haul Road Workgroup Final Report Submission to EPA-OAQPS*. Accessed March 8, 2013. http://www.epa.gov/scram001/reports/Haul_Road_Workgroup-Final_Report_Package-20120302.pdf.

Yuan, Jing. 2006. California Air Resources Board. Personal communication with Gavin Hoch of ENVIRON International Corporation. August 24.

ATTACHMENTS TO APPENDIX 4.3 - CHRA

APPENDIX 4.3 - CHRA

Attachment 1

Attachment 1 Example Modeling Input Offroad Sources.inp

A4.3-CHRA Attachment 1
Example Modeling Input File
Offroad Equipment Sources
Chevron Modernization Project
Richmond, California

** BREEZE AERMOD
** Trinity Consultants
** VERSION 7.7

CO STARTING
CO TITLEONE CVRN_Construction_Offroad
CO MODELOPT DFAULT CONC
CO RUNORNOT RUN
CO AVERTIME 1 PERIOD
CO POLLUTID OTHER
CO FLAGPOLE 1.8
CO FINISHED

S0 STARTING					
S0 ELEVUNIT	METERS				
S0 LOCATION	EH2_1	VOLUME	552960	4200370	4.07
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_2	VOLUME	552960	4200390	4.18
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_3	VOLUME	552980	4200350	3.58
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_4	VOLUME	552980	4200370	4.20
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_5	VOLUME	552980	4200390	4.09
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_6	VOLUME	552980	4200410	4.18
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_7	VOLUME	553000	4200350	3.83
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_8	VOLUME	553000	4200370	4.16
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_9	VOLUME	553000	4200390	4.02
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_10	VOLUME	553000	4200410	4.23
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_11	VOLUME	553000	4200430	4.12
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_12	VOLUME	553000	4200450	3.65
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_13	VOLUME	553020	4200350	4.21
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_14	VOLUME	553020	4200370	4.18
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_15	VOLUME	553020	4200390	4.41
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_16	VOLUME	553020	4200410	4.20
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_17	VOLUME	553020	4200430	4.20
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_18	VOLUME	553020	4200450	4.17
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_19	VOLUME	553020	4200470	3.96
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_20	VOLUME	553040	4200370	4.23
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_21	VOLUME	553040	4200390	4.14

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_22	VOLUME	553040	4200410	3.90
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_23	VOLUME	553040	4200430	4.22
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_24	VOLUME	553040	4200450	4.18
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_25	VOLUME	553040	4200470	4.09
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_26	VOLUME	553040	4200490	3.54
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_27	VOLUME	553060	4200410	4.00
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_28	VOLUME	553060	4200430	3.54
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_29	VOLUME	553060	4200450	4.09
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_30	VOLUME	553060	4200470	3.65
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_31	VOLUME	553060	4200490	3.55
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_32	VOLUME	553060	4200510	3.83
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_33	VOLUME	553080	4200430	4.19
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_34	VOLUME	553080	4200450	3.28
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_35	VOLUME	553080	4200470	3.38
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_36	VOLUME	553080	4200490	3.99
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_37	VOLUME	553080	4200510	3.64
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_38	VOLUME	553080	4200530	3.79
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_39	VOLUME	553100	4200450	3.34
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_40	VOLUME	553100	4200470	3.58
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_41	VOLUME	553100	4200490	3.18
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_42	VOLUME	553100	4200510	2.98
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_43	VOLUME	553120	4200470	3.31
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	EH2_44	VOLUME	553120	4200490	3.07
** SRCDESCR	Existing H2 Plant				
S0 LOCATION	NH2_1	VOLUME	553120	4200130	6.09
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_2	VOLUME	553140	4200050	6.20
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_3	VOLUME	553140	4200070	6.28
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_4	VOLUME	553140	4200090	6.22
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_5	VOLUME	553140	4200110	6.16
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_6	VOLUME	553160	4199930	4.47
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_7	VOLUME	553160	4199950	5.07
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_8	VOLUME	553160	4199970	4.59
** SRCDESCR	New H2 Plant				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	NH2_9	VOLUME	553160	4199990	5.15
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_10	VOLUME	553160	4200010	5.62
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_11	VOLUME	553160	4200030	5.17
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_12	VOLUME	553160	4200050	5.16
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_13	VOLUME	553160	4200070	5.37
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_14	VOLUME	553160	4200090	5.73
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_15	VOLUME	553160	4200110	5.61
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_16	VOLUME	553180	4199830	5.94
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_17	VOLUME	553180	4199850	5.01
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_18	VOLUME	553180	4199870	5.47
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_19	VOLUME	553180	4199890	4.42
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_20	VOLUME	553180	4199910	3.61
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_21	VOLUME	553180	4199930	3.83
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_22	VOLUME	553180	4199950	4.02
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_23	VOLUME	553180	4199970	4.27
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_24	VOLUME	553180	4199990	4.20
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_25	VOLUME	553180	4200010	3.76
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_26	VOLUME	553180	4200030	3.33
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_27	VOLUME	553180	4200050	3.72
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_28	VOLUME	553180	4200070	4.21
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_29	VOLUME	553180	4200090	5.09
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_30	VOLUME	553200	4199770	7.84
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_31	VOLUME	553200	4199790	5.73
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_32	VOLUME	553200	4199810	6.02
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_33	VOLUME	553200	4199830	5.71
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_34	VOLUME	553200	4199850	5.61
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_35	VOLUME	553200	4199870	4.01
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_36	VOLUME	553200	4199890	3.94
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_37	VOLUME	553200	4199910	3.53
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_38	VOLUME	553200	4199930	3.49
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_39	VOLUME	553200	4199950	3.87
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_40	VOLUME	553200	4199970	3.83

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_41	VOLUME	553200	4199990	3.58
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_42	VOLUME	553200	4200010	3.20
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_43	VOLUME	553200	4200030	3.02
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_44	VOLUME	553200	4200050	3.70
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_45	VOLUME	553200	4200070	4.57
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_46	VOLUME	553200	4200090	4.85
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_47	VOLUME	553220	4199790	5.90
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_48	VOLUME	553220	4199810	5.64
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_49	VOLUME	553220	4199830	4.02
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_50	VOLUME	553220	4199850	4.20
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_51	VOLUME	553220	4199870	4.52
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_52	VOLUME	553220	4199890	3.92
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_53	VOLUME	553220	4199910	3.73
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_54	VOLUME	553220	4199930	3.75
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_55	VOLUME	553220	4199950	3.53
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_56	VOLUME	553220	4199970	3.34
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_57	VOLUME	553220	4199990	3.16
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_58	VOLUME	553220	4200010	2.88
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_59	VOLUME	553220	4200030	2.87
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_60	VOLUME	553220	4200050	3.78
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_61	VOLUME	553220	4200070	4.86
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_62	VOLUME	553240	4199790	4.65
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_63	VOLUME	553240	4199810	4.53
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_64	VOLUME	553240	4199830	3.66
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_65	VOLUME	553240	4199850	3.72
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_66	VOLUME	553240	4199870	3.70
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_67	VOLUME	553240	4199890	3.63
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_68	VOLUME	553240	4199910	3.59
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_69	VOLUME	553240	4199930	3.54
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_70	VOLUME	553240	4199950	3.27
** SRCDESCR	New H2 Plant				
S0 LOCATION	NH2_71	VOLUME	553240	4199970	3.07
** SRCDESCR	New H2 Plant				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	NH2_72	VOLUME	553240	4199990	2.83
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_73	VOLUME	553240	4200010	2.79
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_74	VOLUME	553240	4200030	2.95
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_75	VOLUME	553240	4200050	3.60
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_76	VOLUME	553240	4200070	3.45
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_77	VOLUME	553260	4199810	3.53
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_78	VOLUME	553260	4199830	3.63
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_79	VOLUME	553260	4199850	3.62
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_80	VOLUME	553260	4199870	3.52
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_81	VOLUME	553260	4199890	3.41
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_82	VOLUME	553260	4199910	3.28
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_83	VOLUME	553260	4199930	3.47
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_84	VOLUME	553260	4199950	3.16
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_85	VOLUME	553260	4199970	2.83
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_86	VOLUME	553260	4199990	2.82
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_87	VOLUME	553260	4200010	2.82
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_88	VOLUME	553260	4200030	2.95
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_89	VOLUME	553260	4200050	4.49
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_90	VOLUME	553280	4199830	3.68
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_91	VOLUME	553280	4199850	3.52
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_92	VOLUME	553280	4199870	3.49
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_93	VOLUME	553280	4199890	3.33
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_94	VOLUME	553280	4199910	3.45
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_95	VOLUME	553280	4199930	3.16
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_96	VOLUME	553280	4199950	2.94
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_97	VOLUME	553280	4199970	2.70
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_98	VOLUME	553280	4199990	2.70
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_99	VOLUME	553280	4200010	2.76
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_100	VOLUME	553280	4200030	2.76
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_101	VOLUME	553280	4200050	3.61
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_102	VOLUME	553300	4199830	3.58
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_103	VOLUME	553300	4199850	3.51

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_104	VOLUME	553300	4199870 3.46
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_105	VOLUME	553300	4199890 3.32
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_106	VOLUME	553300	4199910 3.04
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_107	VOLUME	553300	4199930 2.90
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_108	VOLUME	553300	4199950 2.76
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_109	VOLUME	553300	4199970 2.75
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_110	VOLUME	553300	4199990 2.76
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_111	VOLUME	553300	4200010 2.71
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_112	VOLUME	553300	4200030 2.66
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_113	VOLUME	553320	4199850 3.52
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_114	VOLUME	553320	4199870 3.28
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_115	VOLUME	553320	4199890 3.26
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_116	VOLUME	553320	4199910 2.99
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_117	VOLUME	553320	4199930 3.08
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_118	VOLUME	553320	4199950 2.82
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_119	VOLUME	553320	4199970 2.80
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_120	VOLUME	553320	4199990 2.88
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_121	VOLUME	553320	4200010 2.58
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_122	VOLUME	553340	4199850 3.29
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_123	VOLUME	553340	4199870 3.35
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_124	VOLUME	553340	4199890 3.19
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_125	VOLUME	553340	4199910 3.09
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_126	VOLUME	553340	4199930 3.06
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_127	VOLUME	553340	4199950 2.82
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_128	VOLUME	553340	4199970 3.08
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_129	VOLUME	553340	4199990 2.93
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_130	VOLUME	553340	4200010 2.59
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_131	VOLUME	553360	4199870 3.41
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_132	VOLUME	553360	4199890 3.14
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_133	VOLUME	553360	4199910 2.88
** SRCDESCR	New H2 Plant			
S0 LOCATION	NH2_134	VOLUME	553360	4199930 2.83
** SRCDESCR	New H2 Plant			

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	NH2_135	VOLUME	553360	4199950	2.97
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_136	VOLUME	553360	4199970	3.04
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_137	VOLUME	553360	4199990	2.80
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_138	VOLUME	553380	4199890	2.83
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_139	VOLUME	553380	4199910	2.88
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_140	VOLUME	553380	4199930	2.98
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_141	VOLUME	553380	4199950	3.03
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_142	VOLUME	553380	4199970	2.90
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_143	VOLUME	553380	4199990	2.90
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_144	VOLUME	553400	4199890	2.82
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_145	VOLUME	553400	4199910	3.00
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_146	VOLUME	553400	4199930	3.03
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_147	VOLUME	553400	4199950	3.07
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_148	VOLUME	553400	4199970	2.93
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_149	VOLUME	553420	4199910	3.12
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_150	VOLUME	553420	4199930	3.17
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_151	VOLUME	553420	4199950	3.10
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_152	VOLUME	553420	4199970	3.38
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_153	VOLUME	553440	4199910	3.14
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_154	VOLUME	553440	4199930	3.20
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_155	VOLUME	553440	4199950	3.04
**	SRCDESCR	New H2 Plant				
S0	LOCATION	NH2_156	VOLUME	553460	4199930	3.05
**	SRCDESCR	New H2 Plant				
S0	LOCATION	SRU_1	VOLUME	552120	4200670	4.55
**	SRCDESCR	SRU				
S0	LOCATION	SRU_2	VOLUME	552140	4200650	4.58
**	SRCDESCR	SRU				
S0	LOCATION	SRU_3	VOLUME	552140	4200670	4.64
**	SRCDESCR	SRU				
S0	LOCATION	SRU_4	VOLUME	552140	4200690	4.63
**	SRCDESCR	SRU				
S0	LOCATION	SRU_5	VOLUME	552160	4200630	4.53
**	SRCDESCR	SRU				
S0	LOCATION	SRU_6	VOLUME	552160	4200650	4.55
**	SRCDESCR	SRU				
S0	LOCATION	SRU_7	VOLUME	552160	4200670	4.59
**	SRCDESCR	SRU				
S0	LOCATION	SRU_8	VOLUME	552160	4200690	4.69
**	SRCDESCR	SRU				
S0	LOCATION	SRU_9	VOLUME	552160	4200710	4.58
**	SRCDESCR	SRU				
S0	LOCATION	SRU_10	VOLUME	552160	4200730	4.65

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	SRU				
S0 LOCATION	SRU_11	VOLUME	552180	4200610	4.70
** SRCDESCR	SRU				
S0 LOCATION	SRU_12	VOLUME	552180	4200630	4.54
** SRCDESCR	SRU				
S0 LOCATION	SRU_13	VOLUME	552180	4200650	4.60
** SRCDESCR	SRU				
S0 LOCATION	SRU_14	VOLUME	552180	4200670	4.65
** SRCDESCR	SRU				
S0 LOCATION	SRU_15	VOLUME	552180	4200690	4.65
** SRCDESCR	SRU				
S0 LOCATION	SRU_16	VOLUME	552180	4200710	4.59
** SRCDESCR	SRU				
S0 LOCATION	SRU_17	VOLUME	552180	4200730	4.44
** SRCDESCR	SRU				
S0 LOCATION	SRU_18	VOLUME	552180	4200750	4.81
** SRCDESCR	SRU				
S0 LOCATION	SRU_19	VOLUME	552200	4200590	4.56
** SRCDESCR	SRU				
S0 LOCATION	SRU_20	VOLUME	552200	4200610	4.90
** SRCDESCR	SRU				
S0 LOCATION	SRU_21	VOLUME	552200	4200630	4.56
** SRCDESCR	SRU				
S0 LOCATION	SRU_22	VOLUME	552200	4200650	4.59
** SRCDESCR	SRU				
S0 LOCATION	SRU_23	VOLUME	552200	4200670	4.49
** SRCDESCR	SRU				
S0 LOCATION	SRU_24	VOLUME	552200	4200690	4.59
** SRCDESCR	SRU				
S0 LOCATION	SRU_25	VOLUME	552200	4200710	4.42
** SRCDESCR	SRU				
S0 LOCATION	SRU_26	VOLUME	552200	4200730	4.50
** SRCDESCR	SRU				
S0 LOCATION	SRU_27	VOLUME	552200	4200750	3.41
** SRCDESCR	SRU				
S0 LOCATION	SRU_28	VOLUME	552200	4200770	5.89
** SRCDESCR	SRU				
S0 LOCATION	SRU_29	VOLUME	552220	4200590	4.44
** SRCDESCR	SRU				
S0 LOCATION	SRU_30	VOLUME	552220	4200610	4.94
** SRCDESCR	SRU				
S0 LOCATION	SRU_31	VOLUME	552220	4200630	4.49
** SRCDESCR	SRU				
S0 LOCATION	SRU_32	VOLUME	552220	4200650	4.58
** SRCDESCR	SRU				
S0 LOCATION	SRU_33	VOLUME	552220	4200670	4.54
** SRCDESCR	SRU				
S0 LOCATION	SRU_34	VOLUME	552220	4200690	4.54
** SRCDESCR	SRU				
S0 LOCATION	SRU_35	VOLUME	552220	4200710	4.51
** SRCDESCR	SRU				
S0 LOCATION	SRU_36	VOLUME	552220	4200730	4.91
** SRCDESCR	SRU				
S0 LOCATION	SRU_37	VOLUME	552220	4200750	5.63
** SRCDESCR	SRU				
S0 LOCATION	SRU_38	VOLUME	552220	4200770	4.34
** SRCDESCR	SRU				
S0 LOCATION	SRU_39	VOLUME	552220	4200790	5.42
** SRCDESCR	SRU				
S0 LOCATION	SRU_40	VOLUME	552240	4200570	4.53
** SRCDESCR	SRU				
S0 LOCATION	SRU_41	VOLUME	552240	4200590	4.69
** SRCDESCR	SRU				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	SRU_42	VOLUME	552240	4200610	4.65
**	SRCDESCR	SRU				
S0	LOCATION	SRU_43	VOLUME	552240	4200630	4.43
**	SRCDESCR	SRU				
S0	LOCATION	SRU_44	VOLUME	552240	4200650	4.37
**	SRCDESCR	SRU				
S0	LOCATION	SRU_45	VOLUME	552240	4200670	4.53
**	SRCDESCR	SRU				
S0	LOCATION	SRU_46	VOLUME	552240	4200690	4.83
**	SRCDESCR	SRU				
S0	LOCATION	SRU_47	VOLUME	552240	4200710	3.89
**	SRCDESCR	SRU				
S0	LOCATION	SRU_48	VOLUME	552240	4200730	5.66
**	SRCDESCR	SRU				
S0	LOCATION	SRU_49	VOLUME	552240	4200750	4.31
**	SRCDESCR	SRU				
S0	LOCATION	SRU_50	VOLUME	552240	4200770	4.09
**	SRCDESCR	SRU				
S0	LOCATION	SRU_51	VOLUME	552240	4200790	4.72
**	SRCDESCR	SRU				
S0	LOCATION	SRU_52	VOLUME	552240	4200810	5.15
**	SRCDESCR	SRU				
S0	LOCATION	SRU_53	VOLUME	552240	4200830	3.00
**	SRCDESCR	SRU				
S0	LOCATION	SRU_54	VOLUME	552260	4200550	4.74
**	SRCDESCR	SRU				
S0	LOCATION	SRU_55	VOLUME	552260	4200570	4.57
**	SRCDESCR	SRU				
S0	LOCATION	SRU_56	VOLUME	552260	4200590	4.53
**	SRCDESCR	SRU				
S0	LOCATION	SRU_57	VOLUME	552260	4200610	4.55
**	SRCDESCR	SRU				
S0	LOCATION	SRU_58	VOLUME	552260	4200630	4.37
**	SRCDESCR	SRU				
S0	LOCATION	SRU_59	VOLUME	552260	4200650	4.34
**	SRCDESCR	SRU				
S0	LOCATION	SRU_60	VOLUME	552260	4200670	4.60
**	SRCDESCR	SRU				
S0	LOCATION	SRU_61	VOLUME	552260	4200690	4.74
**	SRCDESCR	SRU				
S0	LOCATION	SRU_62	VOLUME	552260	4200710	5.32
**	SRCDESCR	SRU				
S0	LOCATION	SRU_63	VOLUME	552260	4200730	4.17
**	SRCDESCR	SRU				
S0	LOCATION	SRU_64	VOLUME	552260	4200750	3.91
**	SRCDESCR	SRU				
S0	LOCATION	SRU_65	VOLUME	552260	4200770	4.05
**	SRCDESCR	SRU				
S0	LOCATION	SRU_66	VOLUME	552260	4200790	4.66
**	SRCDESCR	SRU				
S0	LOCATION	SRU_67	VOLUME	552260	4200810	4.21
**	SRCDESCR	SRU				
S0	LOCATION	SRU_68	VOLUME	552260	4200830	3.13
**	SRCDESCR	SRU				
S0	LOCATION	SRU_69	VOLUME	552260	4200850	3.05
**	SRCDESCR	SRU				
S0	LOCATION	SRU_70	VOLUME	552280	4200530	4.58
**	SRCDESCR	SRU				
S0	LOCATION	SRU_71	VOLUME	552280	4200550	4.56
**	SRCDESCR	SRU				
S0	LOCATION	SRU_72	VOLUME	552280	4200570	4.45
**	SRCDESCR	SRU				
S0	LOCATION	SRU_73	VOLUME	552280	4200590	4.52

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	SRU				
S0 LOCATION	SRU_74	VOLUME	552280	4200610	4.52
** SRCDESCR	SRU				
S0 LOCATION	SRU_75	VOLUME	552280	4200630	4.61
** SRCDESCR	SRU				
S0 LOCATION	SRU_76	VOLUME	552280	4200650	4.36
** SRCDESCR	SRU				
S0 LOCATION	SRU_77	VOLUME	552280	4200670	4.17
** SRCDESCR	SRU				
S0 LOCATION	SRU_78	VOLUME	552280	4200690	4.44
** SRCDESCR	SRU				
S0 LOCATION	SRU_79	VOLUME	552280	4200710	5.68
** SRCDESCR	SRU				
S0 LOCATION	SRU_80	VOLUME	552280	4200730	5.84
** SRCDESCR	SRU				
S0 LOCATION	SRU_81	VOLUME	552280	4200750	4.04
** SRCDESCR	SRU				
S0 LOCATION	SRU_82	VOLUME	552280	4200770	3.60
** SRCDESCR	SRU				
S0 LOCATION	SRU_83	VOLUME	552280	4200790	5.09
** SRCDESCR	SRU				
S0 LOCATION	SRU_84	VOLUME	552280	4200810	2.98
** SRCDESCR	SRU				
S0 LOCATION	SRU_85	VOLUME	552280	4200830	2.99
** SRCDESCR	SRU				
S0 LOCATION	SRU_86	VOLUME	552280	4200850	3.07
** SRCDESCR	SRU				
S0 LOCATION	SRU_87	VOLUME	552280	4200870	3.42
** SRCDESCR	SRU				
S0 LOCATION	SRU_88	VOLUME	552300	4200510	4.72
** SRCDESCR	SRU				
S0 LOCATION	SRU_89	VOLUME	552300	4200530	4.70
** SRCDESCR	SRU				
S0 LOCATION	SRU_90	VOLUME	552300	4200550	4.51
** SRCDESCR	SRU				
S0 LOCATION	SRU_91	VOLUME	552300	4200570	4.57
** SRCDESCR	SRU				
S0 LOCATION	SRU_92	VOLUME	552300	4200590	4.48
** SRCDESCR	SRU				
S0 LOCATION	SRU_93	VOLUME	552300	4200610	4.58
** SRCDESCR	SRU				
S0 LOCATION	SRU_94	VOLUME	552300	4200630	4.57
** SRCDESCR	SRU				
S0 LOCATION	SRU_95	VOLUME	552300	4200650	4.49
** SRCDESCR	SRU				
S0 LOCATION	SRU_96	VOLUME	552300	4200670	4.16
** SRCDESCR	SRU				
S0 LOCATION	SRU_97	VOLUME	552300	4200690	4.03
** SRCDESCR	SRU				
S0 LOCATION	SRU_98	VOLUME	552300	4200710	5.73
** SRCDESCR	SRU				
S0 LOCATION	SRU_99	VOLUME	552300	4200730	4.46
** SRCDESCR	SRU				
S0 LOCATION	SRU_100	VOLUME	552300	4200750	4.09
** SRCDESCR	SRU				
S0 LOCATION	SRU_101	VOLUME	552300	4200770	5.09
** SRCDESCR	SRU				
S0 LOCATION	SRU_102	VOLUME	552300	4200790	2.98
** SRCDESCR	SRU				
S0 LOCATION	SRU_103	VOLUME	552300	4200810	2.90
** SRCDESCR	SRU				
S0 LOCATION	SRU_104	VOLUME	552300	4200830	2.73
** SRCDESCR	SRU				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	SRU_105	VOLUME	552300	4200850	2.72
**	SRCDESCR	SRU				
S0	LOCATION	SRU_106	VOLUME	552320	4200510	4.49
**	SRCDESCR	SRU				
S0	LOCATION	SRU_107	VOLUME	552320	4200530	4.45
**	SRCDESCR	SRU				
S0	LOCATION	SRU_108	VOLUME	552320	4200550	4.53
**	SRCDESCR	SRU				
S0	LOCATION	SRU_109	VOLUME	552320	4200570	4.55
**	SRCDESCR	SRU				
S0	LOCATION	SRU_110	VOLUME	552320	4200590	4.60
**	SRCDESCR	SRU				
S0	LOCATION	SRU_111	VOLUME	552320	4200610	4.58
**	SRCDESCR	SRU				
S0	LOCATION	SRU_112	VOLUME	552320	4200630	4.59
**	SRCDESCR	SRU				
S0	LOCATION	SRU_113	VOLUME	552320	4200650	5.26
**	SRCDESCR	SRU				
S0	LOCATION	SRU_114	VOLUME	552320	4200670	5.32
**	SRCDESCR	SRU				
S0	LOCATION	SRU_115	VOLUME	552320	4200690	5.04
**	SRCDESCR	SRU				
S0	LOCATION	SRU_116	VOLUME	552320	4200710	3.52
**	SRCDESCR	SRU				
S0	LOCATION	SRU_117	VOLUME	552320	4200730	4.24
**	SRCDESCR	SRU				
S0	LOCATION	SRU_118	VOLUME	552320	4200750	5.09
**	SRCDESCR	SRU				
S0	LOCATION	SRU_119	VOLUME	552320	4200770	3.97
**	SRCDESCR	SRU				
S0	LOCATION	SRU_120	VOLUME	552320	4200790	2.75
**	SRCDESCR	SRU				
S0	LOCATION	SRU_121	VOLUME	552320	4200810	4.58
**	SRCDESCR	SRU				
S0	LOCATION	SRU_122	VOLUME	552320	4200830	3.20
**	SRCDESCR	SRU				
S0	LOCATION	SRU_123	VOLUME	552340	4200510	4.50
**	SRCDESCR	SRU				
S0	LOCATION	SRU_124	VOLUME	552340	4200530	4.51
**	SRCDESCR	SRU				
S0	LOCATION	SRU_125	VOLUME	552340	4200550	4.31
**	SRCDESCR	SRU				
S0	LOCATION	SRU_126	VOLUME	552340	4200570	4.53
**	SRCDESCR	SRU				
S0	LOCATION	SRU_127	VOLUME	552340	4200590	4.46
**	SRCDESCR	SRU				
S0	LOCATION	SRU_128	VOLUME	552340	4200610	4.59
**	SRCDESCR	SRU				
S0	LOCATION	SRU_129	VOLUME	552340	4200630	4.63
**	SRCDESCR	SRU				
S0	LOCATION	SRU_130	VOLUME	552340	4200650	5.01
**	SRCDESCR	SRU				
S0	LOCATION	SRU_131	VOLUME	552340	4200670	4.94
**	SRCDESCR	SRU				
S0	LOCATION	SRU_132	VOLUME	552340	4200690	4.81
**	SRCDESCR	SRU				
S0	LOCATION	SRU_133	VOLUME	552340	4200710	4.76
**	SRCDESCR	SRU				
S0	LOCATION	SRU_134	VOLUME	552340	4200730	3.83
**	SRCDESCR	SRU				
S0	LOCATION	SRU_135	VOLUME	552340	4200750	4.98
**	SRCDESCR	SRU				
S0	LOCATION	SRU_136	VOLUME	552340	4200770	2.84

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	SRU				
S0 LOCATION	SRU_137	VOLUME	552340	4200790	4.04
** SRCDESCR	SRU				
S0 LOCATION	SRU_138	VOLUME	552340	4200810	5.14
** SRCDESCR	SRU				
S0 LOCATION	SRU_139	VOLUME	552340	4200830	4.75
** SRCDESCR	SRU				
S0 LOCATION	SRU_140	VOLUME	552360	4200510	4.49
** SRCDESCR	SRU				
S0 LOCATION	SRU_141	VOLUME	552360	4200530	4.50
** SRCDESCR	SRU				
S0 LOCATION	SRU_142	VOLUME	552360	4200550	4.48
** SRCDESCR	SRU				
S0 LOCATION	SRU_143	VOLUME	552360	4200570	4.49
** SRCDESCR	SRU				
S0 LOCATION	SRU_144	VOLUME	552360	4200590	4.63
** SRCDESCR	SRU				
S0 LOCATION	SRU_145	VOLUME	552360	4200610	4.64
** SRCDESCR	SRU				
S0 LOCATION	SRU_146	VOLUME	552360	4200630	5.25
** SRCDESCR	SRU				
S0 LOCATION	SRU_147	VOLUME	552360	4200650	4.98
** SRCDESCR	SRU				
S0 LOCATION	SRU_148	VOLUME	552360	4200670	4.85
** SRCDESCR	SRU				
S0 LOCATION	SRU_149	VOLUME	552360	4200690	4.80
** SRCDESCR	SRU				
S0 LOCATION	SRU_150	VOLUME	552360	4200710	5.03
** SRCDESCR	SRU				
S0 LOCATION	SRU_151	VOLUME	552360	4200730	5.05
** SRCDESCR	SRU				
S0 LOCATION	SRU_152	VOLUME	552360	4200750	3.34
** SRCDESCR	SRU				
S0 LOCATION	SRU_153	VOLUME	552360	4200770	2.66
** SRCDESCR	SRU				
S0 LOCATION	SRU_154	VOLUME	552360	4200790	2.88
** SRCDESCR	SRU				
S0 LOCATION	SRU_155	VOLUME	552360	4200810	4.78
** SRCDESCR	SRU				
S0 LOCATION	SRU_156	VOLUME	552380	4200510	4.54
** SRCDESCR	SRU				
S0 LOCATION	SRU_157	VOLUME	552380	4200530	4.48
** SRCDESCR	SRU				
S0 LOCATION	SRU_158	VOLUME	552380	4200550	4.48
** SRCDESCR	SRU				
S0 LOCATION	SRU_159	VOLUME	552380	4200570	4.91
** SRCDESCR	SRU				
S0 LOCATION	SRU_160	VOLUME	552380	4200590	4.79
** SRCDESCR	SRU				
S0 LOCATION	SRU_161	VOLUME	552380	4200610	5.29
** SRCDESCR	SRU				
S0 LOCATION	SRU_162	VOLUME	552380	4200630	5.09
** SRCDESCR	SRU				
S0 LOCATION	SRU_163	VOLUME	552380	4200650	4.65
** SRCDESCR	SRU				
S0 LOCATION	SRU_164	VOLUME	552380	4200670	4.71
** SRCDESCR	SRU				
S0 LOCATION	SRU_165	VOLUME	552380	4200690	4.64
** SRCDESCR	SRU				
S0 LOCATION	SRU_166	VOLUME	552380	4200710	4.67
** SRCDESCR	SRU				
S0 LOCATION	SRU_167	VOLUME	552380	4200730	3.76
** SRCDESCR	SRU				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	SRU_168	VOLUME	552380	4200750	3.17
**	SRCDESCR	SRU				
S0	LOCATION	SRU_169	VOLUME	552380	4200770	2.79
**	SRCDESCR	SRU				
S0	LOCATION	SRU_170	VOLUME	552380	4200790	2.74
**	SRCDESCR	SRU				
S0	LOCATION	SRU_171	VOLUME	552400	4200510	4.78
**	SRCDESCR	SRU				
S0	LOCATION	SRU_172	VOLUME	552400	4200530	4.53
**	SRCDESCR	SRU				
S0	LOCATION	SRU_173	VOLUME	552400	4200550	4.51
**	SRCDESCR	SRU				
S0	LOCATION	SRU_174	VOLUME	552400	4200570	4.48
**	SRCDESCR	SRU				
S0	LOCATION	SRU_175	VOLUME	552400	4200590	5.23
**	SRCDESCR	SRU				
S0	LOCATION	SRU_176	VOLUME	552400	4200610	5.44
**	SRCDESCR	SRU				
S0	LOCATION	SRU_177	VOLUME	552400	4200630	4.91
**	SRCDESCR	SRU				
S0	LOCATION	SRU_178	VOLUME	552400	4200650	4.73
**	SRCDESCR	SRU				
S0	LOCATION	SRU_179	VOLUME	552400	4200670	4.66
**	SRCDESCR	SRU				
S0	LOCATION	SRU_180	VOLUME	552400	4200690	4.79
**	SRCDESCR	SRU				
S0	LOCATION	SRU_181	VOLUME	552400	4200710	3.46
**	SRCDESCR	SRU				
S0	LOCATION	SRU_182	VOLUME	552400	4200730	3.32
**	SRCDESCR	SRU				
S0	LOCATION	SRU_183	VOLUME	552400	4200750	3.24
**	SRCDESCR	SRU				
S0	LOCATION	SRU_184	VOLUME	552400	4200770	2.87
**	SRCDESCR	SRU				
S0	LOCATION	SRU_185	VOLUME	552420	4200550	4.68
**	SRCDESCR	SRU				
S0	LOCATION	SRU_186	VOLUME	552420	4200570	4.65
**	SRCDESCR	SRU				
S0	LOCATION	SRU_187	VOLUME	552420	4200590	5.78
**	SRCDESCR	SRU				
S0	LOCATION	SRU_188	VOLUME	552420	4200610	5.06
**	SRCDESCR	SRU				
S0	LOCATION	SRU_189	VOLUME	552420	4200630	4.96
**	SRCDESCR	SRU				
S0	LOCATION	SRU_190	VOLUME	552420	4200650	4.44
**	SRCDESCR	SRU				
S0	LOCATION	SRU_191	VOLUME	552420	4200670	4.80
**	SRCDESCR	SRU				
S0	LOCATION	SRU_192	VOLUME	552420	4200690	3.44
**	SRCDESCR	SRU				
S0	LOCATION	SRU_193	VOLUME	552420	4200710	3.24
**	SRCDESCR	SRU				
S0	LOCATION	SRU_194	VOLUME	552420	4200730	3.57
**	SRCDESCR	SRU				
S0	LOCATION	SRU_195	VOLUME	552420	4200750	3.23
**	SRCDESCR	SRU				
S0	LOCATION	SRU_196	VOLUME	552440	4200570	5.86
**	SRCDESCR	SRU				
S0	LOCATION	SRU_197	VOLUME	552440	4200590	5.77
**	SRCDESCR	SRU				
S0	LOCATION	SRU_198	VOLUME	552440	4200610	4.64
**	SRCDESCR	SRU				
S0	LOCATION	SRU_199	VOLUME	552440	4200630	4.60

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	SRU				
S0 LOCATION	SRU_200	VOLUME	552440	4200650	4.63
** SRCDESCR	SRU				
S0 LOCATION	SRU_201	VOLUME	552440	4200670	4.24
** SRCDESCR	SRU				
S0 LOCATION	SRU_202	VOLUME	552440	4200690	3.67
** SRCDESCR	SRU				
S0 LOCATION	SRU_203	VOLUME	552440	4200710	3.30
** SRCDESCR	SRU				
S0 LOCATION	SRU_204	VOLUME	552440	4200730	3.34
** SRCDESCR	SRU				
S0 LOCATION	SRU_205	VOLUME	552460	4200590	4.83
** SRCDESCR	SRU				
S0 LOCATION	SRU_206	VOLUME	552460	4200610	4.66
** SRCDESCR	SRU				
S0 LOCATION	SRU_207	VOLUME	552460	4200630	4.51
** SRCDESCR	SRU				
S0 LOCATION	SRU_208	VOLUME	552460	4200650	4.53
** SRCDESCR	SRU				
S0 LOCATION	SRU_209	VOLUME	552460	4200670	4.36
** SRCDESCR	SRU				
S0 LOCATION	SRU_210	VOLUME	552460	4200690	2.86
** SRCDESCR	SRU				
S0 LOCATION	SRU_211	VOLUME	552460	4200710	3.22
** SRCDESCR	SRU				
S0 LOCATION	SRU_212	VOLUME	552460	4200730	3.22
** SRCDESCR	SRU				
S0 LOCATION	SRU_213	VOLUME	552480	4200610	4.64
** SRCDESCR	SRU				
S0 LOCATION	SRU_214	VOLUME	552480	4200630	4.50
** SRCDESCR	SRU				
S0 LOCATION	SRU_215	VOLUME	552480	4200650	4.56
** SRCDESCR	SRU				
S0 LOCATION	SRU_216	VOLUME	552480	4200670	2.83
** SRCDESCR	SRU				
S0 LOCATION	SRU_217	VOLUME	552480	4200690	2.86
** SRCDESCR	SRU				
S0 LOCATION	SRU_218	VOLUME	552480	4200710	2.53
** SRCDESCR	SRU				
S0 LOCATION	SRU_219	VOLUME	552500	4200630	3.75
** SRCDESCR	SRU				
S0 LOCATION	SRU_220	VOLUME	552500	4200650	3.54
** SRCDESCR	SRU				
S0 LOCATION	SRU_221	VOLUME	552500	4200670	2.72
** SRCDESCR	SRU				
S0 LOCATION	SRU_222	VOLUME	552500	4200690	2.77
** SRCDESCR	SRU				
S0 LOCATION	SRU_223	VOLUME	552520	4200670	2.52
** SRCDESCR	SRU				
S0 LOCATION	TKC_1	VOLUME	552620	4200590	3.61
** SRCDESCR	TKC				
S0 LOCATION	TKC_2	VOLUME	552640	4200570	4.00
** SRCDESCR	TKC				
S0 LOCATION	TKC_3	VOLUME	552640	4200590	4.13
** SRCDESCR	TKC				
S0 LOCATION	TKC_4	VOLUME	552640	4200610	3.07
** SRCDESCR	TKC				
S0 LOCATION	TKC_5	VOLUME	552660	4200570	4.10
** SRCDESCR	TKC				
S0 LOCATION	TKC_6	VOLUME	552660	4200590	4.02
** SRCDESCR	TKC				
S0 LOCATION	TKC_7	VOLUME	552660	4200610	4.10
** SRCDESCR	TKC				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	TKC_8	VOLUME	552660	4200630	4.18
**	SRCDESCR	TKC				
S0	LOCATION	TKC_9	VOLUME	552660	4200650	2.04
**	SRCDESCR	TKC				
S0	LOCATION	TKC_10	VOLUME	552680	4200550	4.40
**	SRCDESCR	TKC				
S0	LOCATION	TKC_11	VOLUME	552680	4200570	3.95
**	SRCDESCR	TKC				
S0	LOCATION	TKC_12	VOLUME	552680	4200590	4.12
**	SRCDESCR	TKC				
S0	LOCATION	TKC_13	VOLUME	552680	4200610	3.93
**	SRCDESCR	TKC				
S0	LOCATION	TKC_14	VOLUME	552680	4200630	4.09
**	SRCDESCR	TKC				
S0	LOCATION	TKC_15	VOLUME	552680	4200650	2.53
**	SRCDESCR	TKC				
S0	LOCATION	TKC_16	VOLUME	552680	4200670	2.28
**	SRCDESCR	TKC				
S0	LOCATION	TKC_17	VOLUME	552700	4200530	4.15
**	SRCDESCR	TKC				
S0	LOCATION	TKC_18	VOLUME	552700	4200550	4.00
**	SRCDESCR	TKC				
S0	LOCATION	TKC_19	VOLUME	552700	4200570	3.89
**	SRCDESCR	TKC				
S0	LOCATION	TKC_20	VOLUME	552700	4200590	4.03
**	SRCDESCR	TKC				
S0	LOCATION	TKC_21	VOLUME	552700	4200610	4.15
**	SRCDESCR	TKC				
S0	LOCATION	TKC_22	VOLUME	552700	4200630	4.37
**	SRCDESCR	TKC				
S0	LOCATION	TKC_23	VOLUME	552700	4200650	3.94
**	SRCDESCR	TKC				
S0	LOCATION	TKC_24	VOLUME	552700	4200670	2.43
**	SRCDESCR	TKC				
S0	LOCATION	TKC_25	VOLUME	552700	4200690	2.24
**	SRCDESCR	TKC				
S0	LOCATION	TKC_26	VOLUME	552720	4200510	4.12
**	SRCDESCR	TKC				
S0	LOCATION	TKC_27	VOLUME	552720	4200530	4.06
**	SRCDESCR	TKC				
S0	LOCATION	TKC_28	VOLUME	552720	4200550	4.11
**	SRCDESCR	TKC				
S0	LOCATION	TKC_29	VOLUME	552720	4200570	4.01
**	SRCDESCR	TKC				
S0	LOCATION	TKC_30	VOLUME	552720	4200590	4.02
**	SRCDESCR	TKC				
S0	LOCATION	TKC_31	VOLUME	552720	4200610	3.98
**	SRCDESCR	TKC				
S0	LOCATION	TKC_32	VOLUME	552720	4200630	3.98
**	SRCDESCR	TKC				
S0	LOCATION	TKC_33	VOLUME	552720	4200650	3.28
**	SRCDESCR	TKC				
S0	LOCATION	TKC_34	VOLUME	552720	4200670	2.73
**	SRCDESCR	TKC				
S0	LOCATION	TKC_35	VOLUME	552720	4200690	3.28
**	SRCDESCR	TKC				
S0	LOCATION	TKC_36	VOLUME	552720	4200710	2.55
**	SRCDESCR	TKC				
S0	LOCATION	TKC_37	VOLUME	552740	4200490	4.09
**	SRCDESCR	TKC				
S0	LOCATION	TKC_38	VOLUME	552740	4200510	4.08
**	SRCDESCR	TKC				
S0	LOCATION	TKC_39	VOLUME	552740	4200530	4.06

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	TKC				
S0 LOCATION	TKC_40	VOLUME	552740	4200550	4.06
** SRCDESCR	TKC				
S0 LOCATION	TKC_41	VOLUME	552740	4200570	4.11
** SRCDESCR	TKC				
S0 LOCATION	TKC_42	VOLUME	552740	4200590	4.23
** SRCDESCR	TKC				
S0 LOCATION	TKC_43	VOLUME	552740	4200610	4.04
** SRCDESCR	TKC				
S0 LOCATION	TKC_44	VOLUME	552740	4200630	4.18
** SRCDESCR	TKC				
S0 LOCATION	TKC_45	VOLUME	552740	4200650	4.05
** SRCDESCR	TKC				
S0 LOCATION	TKC_46	VOLUME	552740	4200670	3.09
** SRCDESCR	TKC				
S0 LOCATION	TKC_47	VOLUME	552740	4200690	2.95
** SRCDESCR	TKC				
S0 LOCATION	TKC_48	VOLUME	552740	4200710	2.57
** SRCDESCR	TKC				
S0 LOCATION	TKC_49	VOLUME	552740	4200730	3.23
** SRCDESCR	TKC				
S0 LOCATION	TKC_50	VOLUME	552760	4200490	4.03
** SRCDESCR	TKC				
S0 LOCATION	TKC_51	VOLUME	552760	4200510	4.06
** SRCDESCR	TKC				
S0 LOCATION	TKC_52	VOLUME	552760	4200530	3.98
** SRCDESCR	TKC				
S0 LOCATION	TKC_53	VOLUME	552760	4200550	4.04
** SRCDESCR	TKC				
S0 LOCATION	TKC_54	VOLUME	552760	4200570	3.99
** SRCDESCR	TKC				
S0 LOCATION	TKC_55	VOLUME	552760	4200590	4.21
** SRCDESCR	TKC				
S0 LOCATION	TKC_56	VOLUME	552760	4200610	4.02
** SRCDESCR	TKC				
S0 LOCATION	TKC_57	VOLUME	552760	4200630	3.97
** SRCDESCR	TKC				
S0 LOCATION	TKC_58	VOLUME	552760	4200650	4.05
** SRCDESCR	TKC				
S0 LOCATION	TKC_59	VOLUME	552760	4200670	3.92
** SRCDESCR	TKC				
S0 LOCATION	TKC_60	VOLUME	552760	4200690	4.03
** SRCDESCR	TKC				
S0 LOCATION	TKC_61	VOLUME	552760	4200710	3.35
** SRCDESCR	TKC				
S0 LOCATION	TKC_62	VOLUME	552760	4200730	2.68
** SRCDESCR	TKC				
S0 LOCATION	TKC_63	VOLUME	552760	4200750	2.16
** SRCDESCR	TKC				
S0 LOCATION	TKC_64	VOLUME	552760	4200770	1.70
** SRCDESCR	TKC				
S0 LOCATION	TKC_65	VOLUME	552780	4200470	3.94
** SRCDESCR	TKC				
S0 LOCATION	TKC_66	VOLUME	552780	4200490	4.03
** SRCDESCR	TKC				
S0 LOCATION	TKC_67	VOLUME	552780	4200510	3.96
** SRCDESCR	TKC				
S0 LOCATION	TKC_68	VOLUME	552780	4200530	4.07
** SRCDESCR	TKC				
S0 LOCATION	TKC_69	VOLUME	552780	4200550	3.98
** SRCDESCR	TKC				
S0 LOCATION	TKC_70	VOLUME	552780	4200570	3.78
** SRCDESCR	TKC				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	TKC_71	VOLUME	552780	4200590	4.05
**	SRCDESCR	TKC				
S0	LOCATION	TKC_72	VOLUME	552780	4200610	4.11
**	SRCDESCR	TKC				
S0	LOCATION	TKC_73	VOLUME	552780	4200630	3.97
**	SRCDESCR	TKC				
S0	LOCATION	TKC_74	VOLUME	552780	4200650	4.13
**	SRCDESCR	TKC				
S0	LOCATION	TKC_75	VOLUME	552780	4200670	4.06
**	SRCDESCR	TKC				
S0	LOCATION	TKC_76	VOLUME	552780	4200690	3.93
**	SRCDESCR	TKC				
S0	LOCATION	TKC_77	VOLUME	552780	4200710	3.97
**	SRCDESCR	TKC				
S0	LOCATION	TKC_78	VOLUME	552780	4200730	3.35
**	SRCDESCR	TKC				
S0	LOCATION	TKC_79	VOLUME	552780	4200750	3.00
**	SRCDESCR	TKC				
S0	LOCATION	TKC_80	VOLUME	552780	4200770	2.47
**	SRCDESCR	TKC				
S0	LOCATION	TKC_81	VOLUME	552800	4200450	4.12
**	SRCDESCR	TKC				
S0	LOCATION	TKC_82	VOLUME	552800	4200470	4.09
**	SRCDESCR	TKC				
S0	LOCATION	TKC_83	VOLUME	552800	4200490	4.18
**	SRCDESCR	TKC				
S0	LOCATION	TKC_84	VOLUME	552800	4200510	4.06
**	SRCDESCR	TKC				
S0	LOCATION	TKC_85	VOLUME	552800	4200530	4.04
**	SRCDESCR	TKC				
S0	LOCATION	TKC_86	VOLUME	552800	4200550	3.94
**	SRCDESCR	TKC				
S0	LOCATION	TKC_87	VOLUME	552800	4200570	4.14
**	SRCDESCR	TKC				
S0	LOCATION	TKC_88	VOLUME	552800	4200590	3.95
**	SRCDESCR	TKC				
S0	LOCATION	TKC_89	VOLUME	552800	4200610	3.92
**	SRCDESCR	TKC				
S0	LOCATION	TKC_90	VOLUME	552800	4200630	4.05
**	SRCDESCR	TKC				
S0	LOCATION	TKC_91	VOLUME	552800	4200650	3.96
**	SRCDESCR	TKC				
S0	LOCATION	TKC_92	VOLUME	552800	4200670	3.89
**	SRCDESCR	TKC				
S0	LOCATION	TKC_93	VOLUME	552800	4200690	4.02
**	SRCDESCR	TKC				
S0	LOCATION	TKC_94	VOLUME	552800	4200710	3.51
**	SRCDESCR	TKC				
S0	LOCATION	TKC_95	VOLUME	552800	4200730	3.41
**	SRCDESCR	TKC				
S0	LOCATION	TKC_96	VOLUME	552800	4200750	3.38
**	SRCDESCR	TKC				
S0	LOCATION	TKC_97	VOLUME	552800	4200770	2.73
**	SRCDESCR	TKC				
S0	LOCATION	TKC_98	VOLUME	552820	4200430	3.60
**	SRCDESCR	TKC				
S0	LOCATION	TKC_99	VOLUME	552820	4200450	4.06
**	SRCDESCR	TKC				
S0	LOCATION	TKC_100	VOLUME	552820	4200470	4.02
**	SRCDESCR	TKC				
S0	LOCATION	TKC_101	VOLUME	552820	4200490	4.01
**	SRCDESCR	TKC				
S0	LOCATION	TKC_102	VOLUME	552820	4200510	4.15

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	TKC				
S0 LOCATION	TKC_103	VOLUME	552820	4200530	4.11
** SRCDESCR	TKC				
S0 LOCATION	TKC_104	VOLUME	552820	4200550	4.08
** SRCDESCR	TKC				
S0 LOCATION	TKC_105	VOLUME	552820	4200570	4.24
** SRCDESCR	TKC				
S0 LOCATION	TKC_106	VOLUME	552820	4200590	3.88
** SRCDESCR	TKC				
S0 LOCATION	TKC_107	VOLUME	552820	4200610	4.06
** SRCDESCR	TKC				
S0 LOCATION	TKC_108	VOLUME	552820	4200630	4.02
** SRCDESCR	TKC				
S0 LOCATION	TKC_109	VOLUME	552820	4200650	4.03
** SRCDESCR	TKC				
S0 LOCATION	TKC_110	VOLUME	552820	4200670	3.93
** SRCDESCR	TKC				
S0 LOCATION	TKC_111	VOLUME	552820	4200690	3.94
** SRCDESCR	TKC				
S0 LOCATION	TKC_112	VOLUME	552820	4200710	3.12
** SRCDESCR	TKC				
S0 LOCATION	TKC_113	VOLUME	552820	4200730	3.36
** SRCDESCR	TKC				
S0 LOCATION	TKC_114	VOLUME	552820	4200750	3.25
** SRCDESCR	TKC				
S0 LOCATION	TKC_115	VOLUME	552820	4200770	2.61
** SRCDESCR	TKC				
S0 LOCATION	TKC_116	VOLUME	552840	4200410	3.60
** SRCDESCR	TKC				
S0 LOCATION	TKC_117	VOLUME	552840	4200430	4.22
** SRCDESCR	TKC				
S0 LOCATION	TKC_118	VOLUME	552840	4200450	4.04
** SRCDESCR	TKC				
S0 LOCATION	TKC_119	VOLUME	552840	4200470	4.14
** SRCDESCR	TKC				
S0 LOCATION	TKC_120	VOLUME	552840	4200490	4.10
** SRCDESCR	TKC				
S0 LOCATION	TKC_121	VOLUME	552840	4200510	4.00
** SRCDESCR	TKC				
S0 LOCATION	TKC_122	VOLUME	552840	4200530	3.87
** SRCDESCR	TKC				
S0 LOCATION	TKC_123	VOLUME	552840	4200550	3.81
** SRCDESCR	TKC				
S0 LOCATION	TKC_124	VOLUME	552840	4200570	4.10
** SRCDESCR	TKC				
S0 LOCATION	TKC_125	VOLUME	552840	4200590	3.99
** SRCDESCR	TKC				
S0 LOCATION	TKC_126	VOLUME	552840	4200610	3.94
** SRCDESCR	TKC				
S0 LOCATION	TKC_127	VOLUME	552840	4200630	3.90
** SRCDESCR	TKC				
S0 LOCATION	TKC_128	VOLUME	552840	4200650	3.98
** SRCDESCR	TKC				
S0 LOCATION	TKC_129	VOLUME	552840	4200670	4.34
** SRCDESCR	TKC				
S0 LOCATION	TKC_130	VOLUME	552840	4200690	4.12
** SRCDESCR	TKC				
S0 LOCATION	TKC_131	VOLUME	552840	4200710	3.57
** SRCDESCR	TKC				
S0 LOCATION	TKC_132	VOLUME	552840	4200730	3.43
** SRCDESCR	TKC				
S0 LOCATION	TKC_133	VOLUME	552840	4200750	2.62
** SRCDESCR	TKC				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	TKC_134	VOLUME	552840	4200770	2.66
**	SRCDESCR	TKC				
S0	LOCATION	TKC_135	VOLUME	552860	4200410	4.14
**	SRCDESCR	TKC				
S0	LOCATION	TKC_136	VOLUME	552860	4200430	4.00
**	SRCDESCR	TKC				
S0	LOCATION	TKC_137	VOLUME	552860	4200450	4.07
**	SRCDESCR	TKC				
S0	LOCATION	TKC_138	VOLUME	552860	4200470	4.11
**	SRCDESCR	TKC				
S0	LOCATION	TKC_139	VOLUME	552860	4200490	4.08
**	SRCDESCR	TKC				
S0	LOCATION	TKC_140	VOLUME	552860	4200510	4.11
**	SRCDESCR	TKC				
S0	LOCATION	TKC_141	VOLUME	552860	4200530	4.01
**	SRCDESCR	TKC				
S0	LOCATION	TKC_142	VOLUME	552860	4200550	4.03
**	SRCDESCR	TKC				
S0	LOCATION	TKC_143	VOLUME	552860	4200570	3.83
**	SRCDESCR	TKC				
S0	LOCATION	TKC_144	VOLUME	552860	4200590	4.09
**	SRCDESCR	TKC				
S0	LOCATION	TKC_145	VOLUME	552860	4200610	3.95
**	SRCDESCR	TKC				
S0	LOCATION	TKC_146	VOLUME	552860	4200630	3.89
**	SRCDESCR	TKC				
S0	LOCATION	TKC_147	VOLUME	552860	4200650	4.35
**	SRCDESCR	TKC				
S0	LOCATION	TKC_148	VOLUME	552860	4200670	4.72
**	SRCDESCR	TKC				
S0	LOCATION	TKC_149	VOLUME	552860	4200690	4.60
**	SRCDESCR	TKC				
S0	LOCATION	TKC_150	VOLUME	552860	4200710	4.57
**	SRCDESCR	TKC				
S0	LOCATION	TKC_151	VOLUME	552860	4200730	3.28
**	SRCDESCR	TKC				
S0	LOCATION	TKC_152	VOLUME	552860	4200750	2.40
**	SRCDESCR	TKC				
S0	LOCATION	TKC_153	VOLUME	552880	4200390	4.06
**	SRCDESCR	TKC				
S0	LOCATION	TKC_154	VOLUME	552880	4200410	4.08
**	SRCDESCR	TKC				
S0	LOCATION	TKC_155	VOLUME	552880	4200430	4.00
**	SRCDESCR	TKC				
S0	LOCATION	TKC_156	VOLUME	552880	4200450	3.76
**	SRCDESCR	TKC				
S0	LOCATION	TKC_157	VOLUME	552880	4200470	4.02
**	SRCDESCR	TKC				
S0	LOCATION	TKC_158	VOLUME	552880	4200490	4.05
**	SRCDESCR	TKC				
S0	LOCATION	TKC_159	VOLUME	552880	4200510	4.01
**	SRCDESCR	TKC				
S0	LOCATION	TKC_160	VOLUME	552880	4200530	4.01
**	SRCDESCR	TKC				
S0	LOCATION	TKC_161	VOLUME	552880	4200550	4.03
**	SRCDESCR	TKC				
S0	LOCATION	TKC_162	VOLUME	552880	4200570	4.08
**	SRCDESCR	TKC				
S0	LOCATION	TKC_163	VOLUME	552880	4200590	3.70
**	SRCDESCR	TKC				
S0	LOCATION	TKC_164	VOLUME	552880	4200610	4.00
**	SRCDESCR	TKC				
S0	LOCATION	TKC_165	VOLUME	552880	4200630	4.20

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	TKC				
S0 LOCATION	TKC_166	VOLUME	552880	4200650	4.43
** SRCDESCR	TKC				
S0 LOCATION	TKC_167	VOLUME	552880	4200670	4.80
** SRCDESCR	TKC				
S0 LOCATION	TKC_168	VOLUME	552880	4200690	4.51
** SRCDESCR	TKC				
S0 LOCATION	TKC_169	VOLUME	552880	4200710	4.15
** SRCDESCR	TKC				
S0 LOCATION	TKC_170	VOLUME	552880	4200730	2.57
** SRCDESCR	TKC				
S0 LOCATION	TKC_171	VOLUME	552880	4200750	2.49
** SRCDESCR	TKC				
S0 LOCATION	TKC_172	VOLUME	552900	4200370	3.61
** SRCDESCR	TKC				
S0 LOCATION	TKC_173	VOLUME	552900	4200390	3.95
** SRCDESCR	TKC				
S0 LOCATION	TKC_174	VOLUME	552900	4200410	3.96
** SRCDESCR	TKC				
S0 LOCATION	TKC_175	VOLUME	552900	4200430	4.05
** SRCDESCR	TKC				
S0 LOCATION	TKC_176	VOLUME	552900	4200450	3.71
** SRCDESCR	TKC				
S0 LOCATION	TKC_177	VOLUME	552900	4200470	3.75
** SRCDESCR	TKC				
S0 LOCATION	TKC_178	VOLUME	552900	4200490	4.13
** SRCDESCR	TKC				
S0 LOCATION	TKC_179	VOLUME	552900	4200510	3.86
** SRCDESCR	TKC				
S0 LOCATION	TKC_180	VOLUME	552900	4200530	4.07
** SRCDESCR	TKC				
S0 LOCATION	TKC_181	VOLUME	552900	4200550	4.00
** SRCDESCR	TKC				
S0 LOCATION	TKC_182	VOLUME	552900	4200570	3.86
** SRCDESCR	TKC				
S0 LOCATION	TKC_183	VOLUME	552900	4200590	4.03
** SRCDESCR	TKC				
S0 LOCATION	TKC_184	VOLUME	552900	4200610	3.63
** SRCDESCR	TKC				
S0 LOCATION	TKC_185	VOLUME	552900	4200630	3.62
** SRCDESCR	TKC				
S0 LOCATION	TKC_186	VOLUME	552900	4200650	4.06
** SRCDESCR	TKC				
S0 LOCATION	TKC_187	VOLUME	552900	4200670	4.38
** SRCDESCR	TKC				
S0 LOCATION	TKC_188	VOLUME	552900	4200690	4.27
** SRCDESCR	TKC				
S0 LOCATION	TKC_189	VOLUME	552900	4200710	2.36
** SRCDESCR	TKC				
S0 LOCATION	TKC_190	VOLUME	552900	4200730	2.54
** SRCDESCR	TKC				
S0 LOCATION	TKC_191	VOLUME	552900	4200750	2.10
** SRCDESCR	TKC				
S0 LOCATION	TKC_192	VOLUME	552920	4200350	3.35
** SRCDESCR	TKC				
S0 LOCATION	TKC_193	VOLUME	552920	4200370	3.85
** SRCDESCR	TKC				
S0 LOCATION	TKC_194	VOLUME	552920	4200390	3.71
** SRCDESCR	TKC				
S0 LOCATION	TKC_195	VOLUME	552920	4200410	4.00
** SRCDESCR	TKC				
S0 LOCATION	TKC_196	VOLUME	552920	4200430	3.87
** SRCDESCR	TKC				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	TKC_197	VOLUME	552920	4200450	4.07
**	SRCDESCR	TKC				
S0	LOCATION	TKC_198	VOLUME	552920	4200470	3.86
**	SRCDESCR	TKC				
S0	LOCATION	TKC_199	VOLUME	552920	4200490	4.11
**	SRCDESCR	TKC				
S0	LOCATION	TKC_200	VOLUME	552920	4200510	3.74
**	SRCDESCR	TKC				
S0	LOCATION	TKC_201	VOLUME	552920	4200530	4.09
**	SRCDESCR	TKC				
S0	LOCATION	TKC_202	VOLUME	552920	4200550	4.03
**	SRCDESCR	TKC				
S0	LOCATION	TKC_203	VOLUME	552920	4200570	4.00
**	SRCDESCR	TKC				
S0	LOCATION	TKC_204	VOLUME	552920	4200590	4.11
**	SRCDESCR	TKC				
S0	LOCATION	TKC_205	VOLUME	552920	4200610	3.73
**	SRCDESCR	TKC				
S0	LOCATION	TKC_206	VOLUME	552920	4200630	3.67
**	SRCDESCR	TKC				
S0	LOCATION	TKC_207	VOLUME	552920	4200650	3.51
**	SRCDESCR	TKC				
S0	LOCATION	TKC_208	VOLUME	552920	4200670	3.68
**	SRCDESCR	TKC				
S0	LOCATION	TKC_209	VOLUME	552920	4200690	2.65
**	SRCDESCR	TKC				
S0	LOCATION	TKC_210	VOLUME	552920	4200710	2.71
**	SRCDESCR	TKC				
S0	LOCATION	TKC_211	VOLUME	552920	4200730	2.58
**	SRCDESCR	TKC				
S0	LOCATION	TKC_212	VOLUME	552920	4200750	1.93
**	SRCDESCR	TKC				
S0	LOCATION	TKC_213	VOLUME	552940	4200330	3.20
**	SRCDESCR	TKC				
S0	LOCATION	TKC_214	VOLUME	552940	4200350	4.20
**	SRCDESCR	TKC				
S0	LOCATION	TKC_215	VOLUME	552940	4200370	4.21
**	SRCDESCR	TKC				
S0	LOCATION	TKC_216	VOLUME	552940	4200390	4.06
**	SRCDESCR	TKC				
S0	LOCATION	TKC_217	VOLUME	552940	4200410	4.00
**	SRCDESCR	TKC				
S0	LOCATION	TKC_218	VOLUME	552940	4200430	3.88
**	SRCDESCR	TKC				
S0	LOCATION	TKC_219	VOLUME	552940	4200450	3.90
**	SRCDESCR	TKC				
S0	LOCATION	TKC_220	VOLUME	552940	4200470	4.00
**	SRCDESCR	TKC				
S0	LOCATION	TKC_221	VOLUME	552940	4200490	4.06
**	SRCDESCR	TKC				
S0	LOCATION	TKC_222	VOLUME	552940	4200510	3.60
**	SRCDESCR	TKC				
S0	LOCATION	TKC_223	VOLUME	552940	4200530	3.94
**	SRCDESCR	TKC				
S0	LOCATION	TKC_224	VOLUME	552940	4200550	3.95
**	SRCDESCR	TKC				
S0	LOCATION	TKC_225	VOLUME	552940	4200570	4.23
**	SRCDESCR	TKC				
S0	LOCATION	TKC_226	VOLUME	552940	4200590	4.02
**	SRCDESCR	TKC				
S0	LOCATION	TKC_227	VOLUME	552940	4200610	3.64
**	SRCDESCR	TKC				
S0	LOCATION	TKC_228	VOLUME	552940	4200630	3.65

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	TKC				
S0 LOCATION	TKC_229	VOLUME	552940	4200650	3.95
** SRCDESCR	TKC				
S0 LOCATION	TKC_230	VOLUME	552940	4200670	3.07
** SRCDESCR	TKC				
S0 LOCATION	TKC_231	VOLUME	552940	4200690	2.83
** SRCDESCR	TKC				
S0 LOCATION	TKC_232	VOLUME	552940	4200710	2.75
** SRCDESCR	TKC				
S0 LOCATION	TKC_233	VOLUME	552940	4200730	2.95
** SRCDESCR	TKC				
S0 LOCATION	TKC_234	VOLUME	552960	4200310	3.27
** SRCDESCR	TKC				
S0 LOCATION	TKC_235	VOLUME	552960	4200330	4.22
** SRCDESCR	TKC				
S0 LOCATION	TKC_236	VOLUME	552960	4200350	4.24
** SRCDESCR	TKC				
S0 LOCATION	TKC_237	VOLUME	552960	4200410	3.80
** SRCDESCR	TKC				
S0 LOCATION	TKC_238	VOLUME	552960	4200430	3.82
** SRCDESCR	TKC				
S0 LOCATION	TKC_239	VOLUME	552960	4200450	3.96
** SRCDESCR	TKC				
S0 LOCATION	TKC_240	VOLUME	552960	4200470	3.95
** SRCDESCR	TKC				
S0 LOCATION	TKC_241	VOLUME	552960	4200490	4.03
** SRCDESCR	TKC				
S0 LOCATION	TKC_242	VOLUME	552960	4200510	4.10
** SRCDESCR	TKC				
S0 LOCATION	TKC_243	VOLUME	552960	4200530	3.38
** SRCDESCR	TKC				
S0 LOCATION	TKC_244	VOLUME	552960	4200550	3.65
** SRCDESCR	TKC				
S0 LOCATION	TKC_245	VOLUME	552960	4200570	4.03
** SRCDESCR	TKC				
S0 LOCATION	TKC_246	VOLUME	552960	4200590	3.60
** SRCDESCR	TKC				
S0 LOCATION	TKC_247	VOLUME	552960	4200610	3.46
** SRCDESCR	TKC				
S0 LOCATION	TKC_248	VOLUME	552960	4200630	3.94
** SRCDESCR	TKC				
S0 LOCATION	TKC_249	VOLUME	552960	4200650	3.47
** SRCDESCR	TKC				
S0 LOCATION	TKC_250	VOLUME	552960	4200670	3.63
** SRCDESCR	TKC				
S0 LOCATION	TKC_251	VOLUME	552960	4200690	2.75
** SRCDESCR	TKC				
S0 LOCATION	TKC_252	VOLUME	552960	4200710	2.54
** SRCDESCR	TKC				
S0 LOCATION	TKC_253	VOLUME	552960	4200730	2.18
** SRCDESCR	TKC				
S0 LOCATION	TKC_254	VOLUME	552980	4200310	4.42
** SRCDESCR	TKC				
S0 LOCATION	TKC_255	VOLUME	552980	4200330	3.60
** SRCDESCR	TKC				
S0 LOCATION	TKC_256	VOLUME	552980	4200430	3.88
** SRCDESCR	TKC				
S0 LOCATION	TKC_257	VOLUME	552980	4200450	3.72
** SRCDESCR	TKC				
S0 LOCATION	TKC_258	VOLUME	552980	4200470	3.76
** SRCDESCR	TKC				
S0 LOCATION	TKC_259	VOLUME	552980	4200490	3.77
** SRCDESCR	TKC				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	TKC_260	VOLUME	552980	4200510	3.72
**	SRCDESCR	TKC				
S0	LOCATION	TKC_261	VOLUME	552980	4200530	3.66
**	SRCDESCR	TKC				
S0	LOCATION	TKC_262	VOLUME	552980	4200550	3.67
**	SRCDESCR	TKC				
S0	LOCATION	TKC_263	VOLUME	552980	4200570	3.43
**	SRCDESCR	TKC				
S0	LOCATION	TKC_264	VOLUME	552980	4200590	3.38
**	SRCDESCR	TKC				
S0	LOCATION	TKC_265	VOLUME	552980	4200610	3.52
**	SRCDESCR	TKC				
S0	LOCATION	TKC_266	VOLUME	552980	4200630	3.11
**	SRCDESCR	TKC				
S0	LOCATION	TKC_267	VOLUME	552980	4200650	3.32
**	SRCDESCR	TKC				
S0	LOCATION	TKC_268	VOLUME	552980	4200670	2.89
**	SRCDESCR	TKC				
S0	LOCATION	TKC_269	VOLUME	552980	4200690	2.32
**	SRCDESCR	TKC				
S0	LOCATION	TKC_270	VOLUME	553000	4200290	3.88
**	SRCDESCR	TKC				
S0	LOCATION	TKC_271	VOLUME	553000	4200310	4.21
**	SRCDESCR	TKC				
S0	LOCATION	TKC_272	VOLUME	553000	4200330	4.21
**	SRCDESCR	TKC				
S0	LOCATION	TKC_273	VOLUME	553000	4200470	3.67
**	SRCDESCR	TKC				
S0	LOCATION	TKC_274	VOLUME	553000	4200490	3.70
**	SRCDESCR	TKC				
S0	LOCATION	TKC_275	VOLUME	553000	4200510	3.73
**	SRCDESCR	TKC				
S0	LOCATION	TKC_276	VOLUME	553000	4200530	3.42
**	SRCDESCR	TKC				
S0	LOCATION	TKC_277	VOLUME	553000	4200550	3.13
**	SRCDESCR	TKC				
S0	LOCATION	TKC_278	VOLUME	553000	4200570	3.20
**	SRCDESCR	TKC				
S0	LOCATION	TKC_279	VOLUME	553000	4200590	3.37
**	SRCDESCR	TKC				
S0	LOCATION	TKC_280	VOLUME	553000	4200610	3.38
**	SRCDESCR	TKC				
S0	LOCATION	TKC_281	VOLUME	553000	4200630	3.22
**	SRCDESCR	TKC				
S0	LOCATION	TKC_282	VOLUME	553000	4200650	3.24
**	SRCDESCR	TKC				
S0	LOCATION	TKC_283	VOLUME	553000	4200670	2.66
**	SRCDESCR	TKC				
S0	LOCATION	TKC_284	VOLUME	553020	4200270	5.18
**	SRCDESCR	TKC				
S0	LOCATION	TKC_285	VOLUME	553020	4200290	3.77
**	SRCDESCR	TKC				
S0	LOCATION	TKC_286	VOLUME	553020	4200310	4.18
**	SRCDESCR	TKC				
S0	LOCATION	TKC_287	VOLUME	553020	4200330	4.23
**	SRCDESCR	TKC				
S0	LOCATION	TKC_288	VOLUME	553020	4200490	3.59
**	SRCDESCR	TKC				
S0	LOCATION	TKC_289	VOLUME	553020	4200510	3.75
**	SRCDESCR	TKC				
S0	LOCATION	TKC_290	VOLUME	553020	4200530	3.66
**	SRCDESCR	TKC				
S0	LOCATION	TKC_291	VOLUME	553020	4200550	3.28

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	TKC				
S0 LOCATION	TKC_292	VOLUME	553020	4200570	3.28
** SRCDESCR	TKC				
S0 LOCATION	TKC_293	VOLUME	553020	4200590	3.54
** SRCDESCR	TKC				
S0 LOCATION	TKC_294	VOLUME	553020	4200610	3.52
** SRCDESCR	TKC				
S0 LOCATION	TKC_295	VOLUME	553020	4200630	3.55
** SRCDESCR	TKC				
S0 LOCATION	TKC_296	VOLUME	553020	4200650	3.19
** SRCDESCR	TKC				
S0 LOCATION	TKC_297	VOLUME	553040	4200270	4.27
** SRCDESCR	TKC				
S0 LOCATION	TKC_298	VOLUME	553040	4200290	4.30
** SRCDESCR	TKC				
S0 LOCATION	TKC_299	VOLUME	553040	4200310	3.90
** SRCDESCR	TKC				
S0 LOCATION	TKC_300	VOLUME	553040	4200330	4.09
** SRCDESCR	TKC				
S0 LOCATION	TKC_301	VOLUME	553040	4200350	4.24
** SRCDESCR	TKC				
S0 LOCATION	TKC_302	VOLUME	553040	4200510	3.64
** SRCDESCR	TKC				
S0 LOCATION	TKC_303	VOLUME	553040	4200530	4.04
** SRCDESCR	TKC				
S0 LOCATION	TKC_304	VOLUME	553040	4200550	3.75
** SRCDESCR	TKC				
S0 LOCATION	TKC_305	VOLUME	553040	4200570	2.61
** SRCDESCR	TKC				
S0 LOCATION	TKC_306	VOLUME	553040	4200590	3.15
** SRCDESCR	TKC				
S0 LOCATION	TKC_307	VOLUME	553040	4200610	3.43
** SRCDESCR	TKC				
S0 LOCATION	TKC_308	VOLUME	553040	4200630	3.28
** SRCDESCR	TKC				
S0 LOCATION	TKC_309	VOLUME	553060	4200290	4.27
** SRCDESCR	TKC				
S0 LOCATION	TKC_310	VOLUME	553060	4200310	4.27
** SRCDESCR	TKC				
S0 LOCATION	TKC_311	VOLUME	553060	4200330	4.00
** SRCDESCR	TKC				
S0 LOCATION	TKC_312	VOLUME	553060	4200350	4.11
** SRCDESCR	TKC				
S0 LOCATION	TKC_313	VOLUME	553060	4200370	4.11
** SRCDESCR	TKC				
S0 LOCATION	TKC_314	VOLUME	553060	4200390	4.14
** SRCDESCR	TKC				
S0 LOCATION	TKC_315	VOLUME	553060	4200530	4.01
** SRCDESCR	TKC				
S0 LOCATION	TKC_316	VOLUME	553060	4200550	3.88
** SRCDESCR	TKC				
S0 LOCATION	TKC_317	VOLUME	553060	4200570	3.46
** SRCDESCR	TKC				
S0 LOCATION	TKC_318	VOLUME	553060	4200590	3.49
** SRCDESCR	TKC				
S0 LOCATION	TKC_319	VOLUME	553060	4200610	3.47
** SRCDESCR	TKC				
S0 LOCATION	TKC_320	VOLUME	553080	4200310	4.28
** SRCDESCR	TKC				
S0 LOCATION	TKC_321	VOLUME	553080	4200330	4.27
** SRCDESCR	TKC				
S0 LOCATION	TKC_322	VOLUME	553080	4200350	4.05
** SRCDESCR	TKC				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	TKC_323	VOLUME	553080	4200370	4.11
**	SRCDESCR	TKC				
S0	LOCATION	TKC_324	VOLUME	553080	4200390	4.14
**	SRCDESCR	TKC				
S0	LOCATION	TKC_325	VOLUME	553080	4200410	3.97
**	SRCDESCR	TKC				
S0	LOCATION	TKC_326	VOLUME	553080	4200550	3.80
**	SRCDESCR	TKC				
S0	LOCATION	TKC_327	VOLUME	553080	4200570	2.91
**	SRCDESCR	TKC				
S0	LOCATION	TKC_328	VOLUME	553080	4200590	3.05
**	SRCDESCR	TKC				
S0	LOCATION	TKC_329	VOLUME	553100	4200350	4.29
**	SRCDESCR	TKC				
S0	LOCATION	TKC_330	VOLUME	553100	4200370	4.22
**	SRCDESCR	TKC				
S0	LOCATION	TKC_331	VOLUME	553100	4200390	3.95
**	SRCDESCR	TKC				
S0	LOCATION	TKC_332	VOLUME	553100	4200410	4.20
**	SRCDESCR	TKC				
S0	LOCATION	TKC_333	VOLUME	553100	4200430	3.73
**	SRCDESCR	TKC				
S0	LOCATION	TKC_334	VOLUME	553100	4200530	3.64
**	SRCDESCR	TKC				
S0	LOCATION	TKC_335	VOLUME	553100	4200550	3.30
**	SRCDESCR	TKC				
S0	LOCATION	TKC_336	VOLUME	553100	4200570	2.76
**	SRCDESCR	TKC				
S0	LOCATION	TKC_337	VOLUME	553120	4200370	4.17
**	SRCDESCR	TKC				
S0	LOCATION	TKC_338	VOLUME	553120	4200390	3.98
**	SRCDESCR	TKC				
S0	LOCATION	TKC_339	VOLUME	553120	4200410	3.49
**	SRCDESCR	TKC				
S0	LOCATION	TKC_340	VOLUME	553120	4200430	3.38
**	SRCDESCR	TKC				
S0	LOCATION	TKC_341	VOLUME	553120	4200450	3.60
**	SRCDESCR	TKC				
S0	LOCATION	TKC_342	VOLUME	553120	4200510	2.87
**	SRCDESCR	TKC				
S0	LOCATION	TKC_343	VOLUME	553120	4200530	2.64
**	SRCDESCR	TKC				
S0	LOCATION	TKC_344	VOLUME	553120	4200550	2.76
**	SRCDESCR	TKC				
S0	LOCATION	TKC_345	VOLUME	553140	4200390	4.27
**	SRCDESCR	TKC				
S0	LOCATION	TKC_346	VOLUME	553140	4200410	3.45
**	SRCDESCR	TKC				
S0	LOCATION	TKC_347	VOLUME	553140	4200430	3.88
**	SRCDESCR	TKC				
S0	LOCATION	TKC_348	VOLUME	553140	4200450	3.76
**	SRCDESCR	TKC				
S0	LOCATION	TKC_349	VOLUME	553140	4200470	3.04
**	SRCDESCR	TKC				
S0	LOCATION	TKC_350	VOLUME	553140	4200490	2.93
**	SRCDESCR	TKC				
S0	LOCATION	TKC_351	VOLUME	553140	4200510	2.63
**	SRCDESCR	TKC				
S0	LOCATION	TKC_352	VOLUME	553140	4200530	2.88
**	SRCDESCR	TKC				
S0	LOCATION	TKC_353	VOLUME	553160	4200410	3.17
**	SRCDESCR	TKC				
S0	LOCATION	TKC_354	VOLUME	553160	4200430	3.52

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	TKC				
S0 LOCATION	TKC_355	VOLUME	553160	4200450	3.73
** SRCDESCR	TKC				
S0 LOCATION	TKC_356	VOLUME	553160	4200470	3.47
** SRCDESCR	TKC				
S0 LOCATION	TKC_357	VOLUME	553160	4200490	3.27
** SRCDESCR	TKC				
S0 LOCATION	TKC_358	VOLUME	553160	4200510	2.61
** SRCDESCR	TKC				
S0 LOCATION	TKC_359	VOLUME	553160	4200530	2.48
** SRCDESCR	TKC				
S0 LOCATION	TKC_360	VOLUME	553180	4200430	3.07
** SRCDESCR	TKC				
S0 LOCATION	TKC_361	VOLUME	553180	4200450	3.36
** SRCDESCR	TKC				
S0 LOCATION	TKC_362	VOLUME	553180	4200470	3.50
** SRCDESCR	TKC				
S0 LOCATION	TKC_363	VOLUME	553180	4200490	2.80
** SRCDESCR	TKC				
S0 LOCATION	TKC_364	VOLUME	553180	4200510	2.69
** SRCDESCR	TKC				
S0 LOCATION	TKC_365	VOLUME	553200	4200450	3.18
** SRCDESCR	TKC				
S0 LOCATION	TKC_366	VOLUME	553200	4200470	2.87
** SRCDESCR	TKC				
S0 LOCATION	TKC_367	VOLUME	553200	4200490	2.68
** SRCDESCR	TKC				
S0 LOCATION	TI_1	VOLUME	553127	4200045	13.55
** SRCDESCR	Tie In				
S0 LOCATION	TI_2	VOLUME	553137	4200045	6.59
** SRCDESCR	Tie In				
S0 LOCATION	TI_3	VOLUME	553127	4200055	13.88
** SRCDESCR	Tie In				
S0 LOCATION	TI_4	VOLUME	553137	4200055	6.47
** SRCDESCR	Tie In				
S0 LOCATION	TI_5	VOLUME	553127	4200065	12.57
** SRCDESCR	Tie In				
S0 LOCATION	TI_6	VOLUME	553137	4200065	6.18
** SRCDESCR	Tie In				
S0 LOCATION	TI_7	VOLUME	553127	4200075	10.63
** SRCDESCR	Tie In				
S0 LOCATION	TI_8	VOLUME	553137	4200075	6.25
** SRCDESCR	Tie In				
S0 LOCATION	TI_9	VOLUME	553127	4200085	7.09
** SRCDESCR	Tie In				
S0 LOCATION	TI_10	VOLUME	553107	4200095	14.92
** SRCDESCR	Tie In				
S0 LOCATION	TI_11	VOLUME	553117	4200095	11.31
** SRCDESCR	Tie In				
S0 LOCATION	TI_12	VOLUME	553127	4200095	6.19
** SRCDESCR	Tie In				
S0 LOCATION	TI_13	VOLUME	553107	4200105	12.98
** SRCDESCR	Tie In				
S0 LOCATION	TI_14	VOLUME	553117	4200105	8.08
** SRCDESCR	Tie In				
S0 LOCATION	TI_15	VOLUME	553127	4200105	6.24
** SRCDESCR	Tie In				
S0 LOCATION	TI_16	VOLUME	553107	4200115	8.40
** SRCDESCR	Tie In				
S0 LOCATION	TI_17	VOLUME	553117	4200115	6.23
** SRCDESCR	Tie In				
S0 LOCATION	TI_18	VOLUME	553127	4200115	6.29
** SRCDESCR	Tie In				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	TI_19	VOLUME	553097	4200125	6.60
**	SRCDESCR	Tie In				
S0	LOCATION	TI_20	VOLUME	553107	4200125	6.30
**	SRCDESCR	Tie In				
S0	LOCATION	TI_21	VOLUME	553117	4200125	6.21
**	SRCDESCR	Tie In				
S0	LOCATION	TI_22	VOLUME	553087	4200135	6.30
**	SRCDESCR	Tie In				
S0	LOCATION	TI_23	VOLUME	553097	4200135	6.21
**	SRCDESCR	Tie In				
S0	LOCATION	TI_24	VOLUME	553107	4200135	6.14
**	SRCDESCR	Tie In				
S0	LOCATION	TI_25	VOLUME	553077	4200145	6.16
**	SRCDESCR	Tie In				
S0	LOCATION	TI_26	VOLUME	553087	4200145	6.15
**	SRCDESCR	Tie In				
S0	LOCATION	TI_27	VOLUME	553097	4200145	6.13
**	SRCDESCR	Tie In				
S0	LOCATION	TI_28	VOLUME	553057	4200155	6.62
**	SRCDESCR	Tie In				
S0	LOCATION	TI_29	VOLUME	553067	4200155	6.13
**	SRCDESCR	Tie In				
S0	LOCATION	TI_30	VOLUME	553077	4200155	6.12
**	SRCDESCR	Tie In				
S0	LOCATION	TI_31	VOLUME	553087	4200155	5.71
**	SRCDESCR	Tie In				
S0	LOCATION	TI_32	VOLUME	553047	4200165	6.29
**	SRCDESCR	Tie In				
S0	LOCATION	TI_33	VOLUME	553057	4200165	6.14
**	SRCDESCR	Tie In				
S0	LOCATION	TI_34	VOLUME	553067	4200165	6.09
**	SRCDESCR	Tie In				
S0	LOCATION	TI_35	VOLUME	553037	4200175	6.27
**	SRCDESCR	Tie In				
S0	LOCATION	TI_36	VOLUME	553047	4200175	6.16
**	SRCDESCR	Tie In				
S0	LOCATION	TI_37	VOLUME	553057	4200175	5.97
**	SRCDESCR	Tie In				
S0	LOCATION	TI_38	VOLUME	553017	4200185	6.44
**	SRCDESCR	Tie In				
S0	LOCATION	TI_39	VOLUME	553027	4200185	6.30
**	SRCDESCR	Tie In				
S0	LOCATION	TI_40	VOLUME	553037	4200185	6.09
**	SRCDESCR	Tie In				
S0	LOCATION	TI_41	VOLUME	553047	4200185	5.69
**	SRCDESCR	Tie In				
S0	LOCATION	TI_42	VOLUME	553007	4200195	6.26
**	SRCDESCR	Tie In				
S0	LOCATION	TI_43	VOLUME	553017	4200195	6.21
**	SRCDESCR	Tie In				
S0	LOCATION	TI_44	VOLUME	553027	4200195	6.04
**	SRCDESCR	Tie In				
S0	LOCATION	TI_45	VOLUME	553037	4200195	5.50
**	SRCDESCR	Tie In				
S0	LOCATION	TI_46	VOLUME	552997	4200205	6.09
**	SRCDESCR	Tie In				
S0	LOCATION	TI_47	VOLUME	553007	4200205	6.10
**	SRCDESCR	Tie In				
S0	LOCATION	TI_48	VOLUME	553017	4200205	5.97
**	SRCDESCR	Tie In				
S0	LOCATION	TI_49	VOLUME	553027	4200205	5.32
**	SRCDESCR	Tie In				
S0	LOCATION	TI_50	VOLUME	552987	4200215	5.99

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	Tie In				
S0 LOCATION	TI_51	VOLUME	552997	4200215	5.98
** SRCDESCR	Tie In				
S0 LOCATION	TI_52	VOLUME	553007	4200215	5.88
** SRCDESCR	Tie In				
S0 LOCATION	TI_53	VOLUME	552977	4200225	5.84
** SRCDESCR	Tie In				
S0 LOCATION	TI_54	VOLUME	552987	4200225	5.87
** SRCDESCR	Tie In				
S0 LOCATION	TI_55	VOLUME	552997	4200225	5.74
** SRCDESCR	Tie In				
S0 LOCATION	TI_56	VOLUME	552967	4200235	5.27
** SRCDESCR	Tie In				
S0 LOCATION	TI_57	VOLUME	552977	4200235	5.69
** SRCDESCR	Tie In				
S0 LOCATION	TI_58	VOLUME	552987	4200235	5.61
** SRCDESCR	Tie In				
S0 LOCATION	TI_59	VOLUME	552957	4200245	4.36
** SRCDESCR	Tie In				
S0 LOCATION	TI_60	VOLUME	552967	4200245	5.66
** SRCDESCR	Tie In				
S0 LOCATION	TI_61	VOLUME	552977	4200245	5.35
** SRCDESCR	Tie In				
S0 LOCATION	TI_62	VOLUME	552947	4200255	4.71
** SRCDESCR	Tie In				
S0 LOCATION	TI_63	VOLUME	552957	4200255	3.69
** SRCDESCR	Tie In				
S0 LOCATION	TI_64	VOLUME	552967	4200255	4.43
** SRCDESCR	Tie In				
S0 LOCATION	TI_65	VOLUME	552937	4200265	4.36
** SRCDESCR	Tie In				
S0 LOCATION	TI_66	VOLUME	552947	4200265	4.47
** SRCDESCR	Tie In				
S0 LOCATION	TI_67	VOLUME	552917	4200275	3.98
** SRCDESCR	Tie In				
S0 LOCATION	TI_68	VOLUME	552927	4200275	4.48
** SRCDESCR	Tie In				
S0 LOCATION	TI_69	VOLUME	552937	4200275	4.41
** SRCDESCR	Tie In				
S0 LOCATION	TI_70	VOLUME	552907	4200285	3.98
** SRCDESCR	Tie In				
S0 LOCATION	TI_71	VOLUME	552917	4200285	4.54
** SRCDESCR	Tie In				
S0 LOCATION	TI_72	VOLUME	552927	4200285	4.24
** SRCDESCR	Tie In				
S0 LOCATION	TI_73	VOLUME	552897	4200295	3.70
** SRCDESCR	Tie In				
S0 LOCATION	TI_74	VOLUME	552907	4200295	4.38
** SRCDESCR	Tie In				
S0 LOCATION	TI_75	VOLUME	552917	4200295	4.13
** SRCDESCR	Tie In				
S0 LOCATION	TI_76	VOLUME	552887	4200305	3.42
** SRCDESCR	Tie In				
S0 LOCATION	TI_77	VOLUME	552897	4200305	4.12
** SRCDESCR	Tie In				
S0 LOCATION	TI_78	VOLUME	552907	4200305	3.71
** SRCDESCR	Tie In				
S0 LOCATION	TI_79	VOLUME	552877	4200315	3.58
** SRCDESCR	Tie In				
S0 LOCATION	TI_80	VOLUME	552887	4200315	3.94
** SRCDESCR	Tie In				
S0 LOCATION	TI_81	VOLUME	552857	4200325	3.69
** SRCDESCR	Tie In				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	TI_82	VOLUME	552867	4200325	3.73
**	SRCDESCR	Tie In				
S0	LOCATION	TI_83	VOLUME	552877	4200325	3.76
**	SRCDESCR	Tie In				
S0	LOCATION	TI_84	VOLUME	552847	4200335	3.63
**	SRCDESCR	Tie In				
S0	LOCATION	TI_85	VOLUME	552857	4200335	3.79
**	SRCDESCR	Tie In				
S0	LOCATION	TI_86	VOLUME	552867	4200335	3.74
**	SRCDESCR	Tie In				
S0	LOCATION	TI_87	VOLUME	552837	4200345	3.54
**	SRCDESCR	Tie In				
S0	LOCATION	TI_88	VOLUME	552847	4200345	3.84
**	SRCDESCR	Tie In				
S0	LOCATION	TI_89	VOLUME	552857	4200345	3.63
**	SRCDESCR	Tie In				
S0	LOCATION	TI_90	VOLUME	552817	4200355	3.96
**	SRCDESCR	Tie In				
S0	LOCATION	TI_91	VOLUME	552827	4200355	3.86
**	SRCDESCR	Tie In				
S0	LOCATION	TI_92	VOLUME	552837	4200355	3.81
**	SRCDESCR	Tie In				
S0	LOCATION	TI_93	VOLUME	552847	4200355	3.54
**	SRCDESCR	Tie In				
S0	LOCATION	TI_94	VOLUME	552807	4200365	3.66
**	SRCDESCR	Tie In				
S0	LOCATION	TI_95	VOLUME	552817	4200365	3.84
**	SRCDESCR	Tie In				
S0	LOCATION	TI_96	VOLUME	552827	4200365	3.71
**	SRCDESCR	Tie In				
S0	LOCATION	TI_97	VOLUME	552797	4200375	3.63
**	SRCDESCR	Tie In				
S0	LOCATION	TI_98	VOLUME	552807	4200375	3.75
**	SRCDESCR	Tie In				
S0	LOCATION	TI_99	VOLUME	552817	4200375	3.72
**	SRCDESCR	Tie In				
S0	LOCATION	TI_100	VOLUME	552787	4200385	4.07
**	SRCDESCR	Tie In				
S0	LOCATION	TI_101	VOLUME	552797	4200385	3.74
**	SRCDESCR	Tie In				
S0	LOCATION	TI_102	VOLUME	552807	4200385	3.66
**	SRCDESCR	Tie In				
S0	LOCATION	TI_103	VOLUME	552777	4200395	4.04
**	SRCDESCR	Tie In				
S0	LOCATION	TI_104	VOLUME	552787	4200395	3.97
**	SRCDESCR	Tie In				
S0	LOCATION	TI_105	VOLUME	552797	4200395	3.82
**	SRCDESCR	Tie In				
S0	LOCATION	TI_106	VOLUME	552767	4200405	3.99
**	SRCDESCR	Tie In				
S0	LOCATION	TI_107	VOLUME	552777	4200405	3.86
**	SRCDESCR	Tie In				
S0	LOCATION	TI_108	VOLUME	552787	4200405	3.83
**	SRCDESCR	Tie In				
S0	LOCATION	TI_109	VOLUME	552747	4200415	4.06
**	SRCDESCR	Tie In				
S0	LOCATION	TI_110	VOLUME	552757	4200415	3.91
**	SRCDESCR	Tie In				
S0	LOCATION	TI_111	VOLUME	552767	4200415	3.80
**	SRCDESCR	Tie In				
S0	LOCATION	TI_112	VOLUME	552737	4200425	3.83
**	SRCDESCR	Tie In				
S0	LOCATION	TI_113	VOLUME	552747	4200425	3.92

Attachment 1 Example Modeling Input Offroad Sources.inp

** SRCDESCR	Tie In				
S0 LOCATION	TI_114	VOLUME	552757	4200425	3.79
** SRCDESCR	Tie In				
S0 LOCATION	TI_115	VOLUME	552727	4200435	3.92
** SRCDESCR	Tie In				
S0 LOCATION	TI_116	VOLUME	552737	4200435	3.86
** SRCDESCR	Tie In				
S0 LOCATION	TI_117	VOLUME	552747	4200435	3.77
** SRCDESCR	Tie In				
S0 LOCATION	TI_118	VOLUME	552717	4200445	3.59
** SRCDESCR	Tie In				
S0 LOCATION	TI_119	VOLUME	552727	4200445	3.71
** SRCDESCR	Tie In				
S0 LOCATION	TI_120	VOLUME	552737	4200445	3.51
** SRCDESCR	Tie In				
S0 LOCATION	TI_121	VOLUME	552697	4200455	3.61
** SRCDESCR	Tie In				
S0 LOCATION	TI_122	VOLUME	552707	4200455	3.60
** SRCDESCR	Tie In				
S0 LOCATION	TI_123	VOLUME	552717	4200455	3.78
** SRCDESCR	Tie In				
S0 LOCATION	TI_124	VOLUME	552727	4200455	3.54
** SRCDESCR	Tie In				
S0 LOCATION	TI_125	VOLUME	552687	4200465	3.43
** SRCDESCR	Tie In				
S0 LOCATION	TI_126	VOLUME	552697	4200465	3.65
** SRCDESCR	Tie In				
S0 LOCATION	TI_127	VOLUME	552707	4200465	3.79
** SRCDESCR	Tie In				
S0 LOCATION	TI_128	VOLUME	552677	4200475	3.69
** SRCDESCR	Tie In				
S0 LOCATION	TI_129	VOLUME	552687	4200475	3.74
** SRCDESCR	Tie In				
S0 LOCATION	TI_130	VOLUME	552697	4200475	3.88
** SRCDESCR	Tie In				
S0 LOCATION	TI_131	VOLUME	552657	4200485	4.63
** SRCDESCR	Tie In				
S0 LOCATION	TI_132	VOLUME	552667	4200485	3.51
** SRCDESCR	Tie In				
S0 LOCATION	TI_133	VOLUME	552677	4200485	3.88
** SRCDESCR	Tie In				
S0 LOCATION	TI_134	VOLUME	552687	4200485	3.78
** SRCDESCR	Tie In				
S0 LOCATION	TI_135	VOLUME	552647	4200495	4.15
** SRCDESCR	Tie In				
S0 LOCATION	TI_136	VOLUME	552657	4200495	3.60
** SRCDESCR	Tie In				
S0 LOCATION	TI_137	VOLUME	552667	4200495	4.03
** SRCDESCR	Tie In				
S0 LOCATION	TI_138	VOLUME	552677	4200495	3.87
** SRCDESCR	Tie In				
S0 LOCATION	TI_139	VOLUME	552637	4200505	3.98
** SRCDESCR	Tie In				
S0 LOCATION	TI_140	VOLUME	552647	4200505	3.52
** SRCDESCR	Tie In				
S0 LOCATION	TI_141	VOLUME	552657	4200505	4.25
** SRCDESCR	Tie In				
S0 LOCATION	TI_142	VOLUME	552627	4200515	3.69
** SRCDESCR	Tie In				
S0 LOCATION	TI_143	VOLUME	552637	4200515	3.79
** SRCDESCR	Tie In				
S0 LOCATION	TI_144	VOLUME	552647	4200515	4.31
** SRCDESCR	Tie In				

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	LOCATION	TI_145	VOLUME	552617	4200525	3.87
**	SRCDESCR	Tie In				
S0	LOCATION	TI_146	VOLUME	552627	4200525	4.06
**	SRCDESCR	Tie In				
S0	LOCATION	TI_147	VOLUME	552637	4200525	4.29
**	SRCDESCR	Tie In				
S0	LOCATION	TI_148	VOLUME	552597	4200535	3.47
**	SRCDESCR	Tie In				
S0	LOCATION	TI_149	VOLUME	552607	4200535	4.25
**	SRCDESCR	Tie In				
S0	LOCATION	TI_150	VOLUME	552617	4200535	4.28
**	SRCDESCR	Tie In				
S0	LOCATION	TI_151	VOLUME	552627	4200535	3.70
**	SRCDESCR	Tie In				
S0	LOCATION	TI_152	VOLUME	552567	4200545	4.40
**	SRCDESCR	Tie In				
S0	LOCATION	TI_153	VOLUME	552577	4200545	4.33
**	SRCDESCR	Tie In				
S0	LOCATION	TI_154	VOLUME	552587	4200545	4.45
**	SRCDESCR	Tie In				
S0	LOCATION	TI_155	VOLUME	552597	4200545	4.20
**	SRCDESCR	Tie In				
S0	LOCATION	TI_156	VOLUME	552607	4200545	3.72
**	SRCDESCR	Tie In				
S0	LOCATION	TI_157	VOLUME	552547	4200555	4.47
**	SRCDESCR	Tie In				
S0	LOCATION	TI_158	VOLUME	552557	4200555	4.38
**	SRCDESCR	Tie In				
S0	LOCATION	TI_159	VOLUME	552567	4200555	4.22
**	SRCDESCR	Tie In				
S0	LOCATION	TI_160	VOLUME	552577	4200555	4.13
**	SRCDESCR	Tie In				
S0	LOCATION	TI_161	VOLUME	552587	4200555	3.85
**	SRCDESCR	Tie In				
S0	LOCATION	TI_162	VOLUME	552537	4200565	4.46
**	SRCDESCR	Tie In				
S0	LOCATION	TI_163	VOLUME	552547	4200565	4.21
**	SRCDESCR	Tie In				
S0	LOCATION	TI_164	VOLUME	552557	4200565	4.11
**	SRCDESCR	Tie In				
S0	LOCATION	TI_165	VOLUME	552527	4200575	4.57
**	SRCDESCR	Tie In				
S0	LOCATION	TI_166	VOLUME	552537	4200575	4.31
**	SRCDESCR	Tie In				
S0	LOCATION	TI_167	VOLUME	552547	4200575	4.19
**	SRCDESCR	Tie In				
S0	LOCATION	TI_168	VOLUME	552507	4200585	4.70
**	SRCDESCR	Tie In				
S0	LOCATION	TI_169	VOLUME	552517	4200585	4.73
**	SRCDESCR	Tie In				
S0	LOCATION	TI_170	VOLUME	552527	4200585	4.53
**	SRCDESCR	Tie In				
S0	LOCATION	TI_171	VOLUME	552537	4200585	4.21
**	SRCDESCR	Tie In				
S0	LOCATION	TI_172	VOLUME	552497	4200595	4.85
**	SRCDESCR	Tie In				
S0	LOCATION	TI_173	VOLUME	552507	4200595	4.74
**	SRCDESCR	Tie In				
S0	LOCATION	TI_174	VOLUME	552517	4200595	4.45
**	SRCDESCR	Tie In				
S0	LOCATION	TI_175	VOLUME	552487	4200605	4.69
**	SRCDESCR	Tie In				
S0	LOCATION	TI_176	VOLUME	552497	4200605	4.72

Attachment 1 Example Modeling Input Offroad Sources.inp

```

** SRCDESCR Tie In
S0 LOCATION TI_177 VOLUME 552507 4200605 4.38
** SRCDESCR Tie In
S0 LOCATION TI_178 VOLUME 552487 4200615 4.65
** SRCDESCR Tie In
S0 LOCATION TI_179 VOLUME 552497 4200615 4.44
** SRCDESCR Tie In
S0 SRCPARAM EH2_1 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_2 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_3 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_4 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_5 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_6 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_7 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_8 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_9 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_10 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_11 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_12 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_13 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_14 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_15 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_16 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_17 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_18 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_19 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_20 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_21 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_22 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_23 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_24 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_25 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_26 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_27 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_28 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_29 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_30 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_31 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_32 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_33 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_34 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_35 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_36 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_37 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_38 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_39 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_40 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_41 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_42 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_43 0.0227 5 4.7 1.4
S0 SRCPARAM EH2_44 0.0227 5 4.7 1.4
S0 SRCPARAM NH2_1 0.0064 5 4.7 1.4
S0 SRCPARAM NH2_2 0.0064 5 4.7 1.4
S0 SRCPARAM NH2_3 0.0064 5 4.7 1.4
S0 SRCPARAM NH2_4 0.0064 5 4.7 1.4
S0 SRCPARAM NH2_5 0.0064 5 4.7 1.4
S0 SRCPARAM NH2_6 0.0064 5 4.7 1.4
S0 SRCPARAM NH2_7 0.0064 5 4.7 1.4
S0 SRCPARAM NH2_8 0.0064 5 4.7 1.4
S0 SRCPARAM NH2_9 0.0064 5 4.7 1.4
S0 SRCPARAM NH2_10 0.0064 5 4.7 1.4
S0 SRCPARAM NH2_11 0.0064 5 4.7 1.4
S0 SRCPARAM NH2_12 0.0064 5 4.7 1.4

```

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	NH2_13	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_14	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_15	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_16	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_17	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_18	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_19	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_20	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_21	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_22	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_23	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_24	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_25	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_26	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_27	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_28	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_29	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_30	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_31	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_32	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_33	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_34	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_35	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_36	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_37	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_38	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_39	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_40	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_41	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_42	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_43	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_44	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_45	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_46	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_47	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_48	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_49	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_50	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_51	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_52	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_53	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_54	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_55	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_56	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_57	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_58	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_59	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_60	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_61	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_62	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_63	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_64	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_65	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_66	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_67	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_68	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_69	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_70	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_71	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_72	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_73	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_74	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_75	0.0064	5	4.7	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	NH2_76	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_77	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_78	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_79	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_80	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_81	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_82	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_83	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_84	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_85	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_86	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_87	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_88	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_89	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_90	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_91	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_92	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_93	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_94	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_95	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_96	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_97	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_98	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_99	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_100	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_101	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_102	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_103	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_104	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_105	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_106	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_107	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_108	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_109	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_110	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_111	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_112	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_113	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_114	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_115	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_116	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_117	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_118	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_119	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_120	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_121	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_122	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_123	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_124	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_125	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_126	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_127	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_128	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_129	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_130	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_131	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_132	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_133	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_134	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_135	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_136	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_137	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_138	0.0064	5	4.7	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	NH2_139	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_140	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_141	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_142	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_143	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_144	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_145	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_146	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_147	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_148	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_149	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_150	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_151	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_152	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_153	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_154	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_155	0.0064	5	4.7	1.4
S0	SRCPARAM	NH2_156	0.0064	5	4.7	1.4
S0	SRCPARAM	SRU_1	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_2	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_3	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_4	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_5	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_6	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_7	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_8	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_9	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_10	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_11	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_12	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_13	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_14	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_15	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_16	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_17	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_18	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_19	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_20	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_21	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_22	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_23	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_24	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_25	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_26	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_27	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_28	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_29	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_30	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_31	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_32	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_33	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_34	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_35	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_36	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_37	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_38	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_39	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_40	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_41	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_42	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_43	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_44	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_45	0.0045	5	4.7	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	SRU_46	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_47	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_48	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_49	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_50	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_51	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_52	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_53	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_54	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_55	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_56	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_57	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_58	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_59	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_60	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_61	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_62	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_63	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_64	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_65	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_66	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_67	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_68	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_69	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_70	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_71	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_72	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_73	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_74	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_75	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_76	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_77	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_78	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_79	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_80	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_81	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_82	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_83	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_84	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_85	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_86	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_87	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_88	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_89	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_90	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_91	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_92	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_93	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_94	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_95	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_96	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_97	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_98	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_99	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_100	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_101	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_102	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_103	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_104	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_105	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_106	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_107	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_108	0.0045	5	4.7	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	SRU_109	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_110	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_111	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_112	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_113	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_114	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_115	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_116	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_117	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_118	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_119	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_120	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_121	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_122	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_123	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_124	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_125	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_126	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_127	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_128	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_129	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_130	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_131	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_132	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_133	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_134	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_135	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_136	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_137	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_138	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_139	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_140	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_141	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_142	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_143	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_144	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_145	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_146	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_147	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_148	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_149	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_150	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_151	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_152	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_153	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_154	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_155	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_156	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_157	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_158	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_159	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_160	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_161	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_162	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_163	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_164	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_165	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_166	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_167	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_168	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_169	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_170	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_171	0.0045	5	4.7	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	SRU_172	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_173	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_174	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_175	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_176	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_177	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_178	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_179	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_180	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_181	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_182	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_183	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_184	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_185	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_186	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_187	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_188	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_189	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_190	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_191	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_192	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_193	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_194	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_195	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_196	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_197	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_198	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_199	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_200	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_201	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_202	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_203	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_204	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_205	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_206	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_207	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_208	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_209	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_210	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_211	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_212	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_213	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_214	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_215	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_216	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_217	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_218	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_219	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_220	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_221	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_222	0.0045	5	4.7	1.4
S0	SRCPARAM	SRU_223	0.0045	5	4.7	1.4
S0	SRCPARAM	TKC_1	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_2	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_3	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_4	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_5	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_6	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_7	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_8	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_9	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_10	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_11	0.0027	5	4.7	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	TKC_12	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_13	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_14	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_15	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_16	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_17	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_18	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_19	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_20	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_21	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_22	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_23	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_24	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_25	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_26	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_27	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_28	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_29	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_30	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_31	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_32	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_33	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_34	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_35	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_36	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_37	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_38	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_39	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_40	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_41	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_42	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_43	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_44	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_45	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_46	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_47	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_48	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_49	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_50	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_51	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_52	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_53	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_54	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_55	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_56	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_57	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_58	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_59	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_60	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_61	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_62	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_63	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_64	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_65	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_66	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_67	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_68	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_69	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_70	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_71	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_72	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_73	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_74	0.0027	5	4.7	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	TKC_75	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_76	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_77	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_78	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_79	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_80	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_81	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_82	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_83	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_84	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_85	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_86	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_87	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_88	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_89	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_90	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_91	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_92	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_93	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_94	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_95	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_96	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_97	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_98	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_99	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_100	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_101	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_102	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_103	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_104	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_105	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_106	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_107	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_108	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_109	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_110	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_111	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_112	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_113	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_114	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_115	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_116	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_117	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_118	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_119	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_120	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_121	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_122	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_123	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_124	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_125	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_126	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_127	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_128	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_129	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_130	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_131	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_132	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_133	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_134	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_135	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_136	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_137	0.0027	5	4.7	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	TKC_138	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_139	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_140	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_141	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_142	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_143	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_144	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_145	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_146	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_147	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_148	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_149	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_150	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_151	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_152	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_153	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_154	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_155	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_156	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_157	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_158	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_159	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_160	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_161	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_162	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_163	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_164	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_165	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_166	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_167	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_168	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_169	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_170	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_171	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_172	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_173	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_174	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_175	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_176	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_177	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_178	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_179	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_180	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_181	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_182	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_183	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_184	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_185	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_186	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_187	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_188	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_189	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_190	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_191	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_192	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_193	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_194	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_195	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_196	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_197	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_198	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_199	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_200	0.0027	5	4.7	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	TKC_201	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_202	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_203	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_204	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_205	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_206	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_207	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_208	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_209	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_210	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_211	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_212	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_213	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_214	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_215	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_216	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_217	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_218	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_219	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_220	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_221	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_222	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_223	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_224	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_225	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_226	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_227	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_228	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_229	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_230	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_231	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_232	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_233	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_234	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_235	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_236	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_237	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_238	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_239	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_240	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_241	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_242	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_243	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_244	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_245	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_246	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_247	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_248	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_249	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_250	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_251	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_252	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_253	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_254	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_255	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_256	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_257	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_258	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_259	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_260	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_261	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_262	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_263	0.0027	5	4.7	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	TKC_264	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_265	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_266	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_267	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_268	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_269	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_270	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_271	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_272	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_273	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_274	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_275	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_276	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_277	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_278	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_279	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_280	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_281	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_282	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_283	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_284	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_285	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_286	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_287	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_288	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_289	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_290	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_291	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_292	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_293	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_294	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_295	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_296	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_297	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_298	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_299	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_300	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_301	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_302	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_303	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_304	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_305	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_306	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_307	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_308	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_309	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_310	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_311	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_312	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_313	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_314	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_315	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_316	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_317	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_318	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_319	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_320	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_321	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_322	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_323	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_324	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_325	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_326	0.0027	5	4.7	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	TKC_327	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_328	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_329	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_330	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_331	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_332	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_333	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_334	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_335	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_336	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_337	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_338	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_339	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_340	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_341	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_342	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_343	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_344	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_345	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_346	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_347	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_348	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_349	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_350	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_351	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_352	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_353	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_354	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_355	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_356	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_357	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_358	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_359	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_360	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_361	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_362	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_363	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_364	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_365	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_366	0.0027	5	4.7	1.4
S0	SRCPARAM	TKC_367	0.0027	5	4.7	1.4
S0	SRCPARAM	TI_1	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_2	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_3	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_4	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_5	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_6	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_7	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_8	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_9	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_10	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_11	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_12	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_13	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_14	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_15	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_16	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_17	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_18	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_19	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_20	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_21	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_22	0.0056	5	2.3	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	TI_23	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_24	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_25	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_26	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_27	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_28	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_29	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_30	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_31	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_32	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_33	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_34	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_35	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_36	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_37	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_38	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_39	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_40	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_41	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_42	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_43	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_44	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_45	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_46	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_47	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_48	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_49	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_50	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_51	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_52	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_53	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_54	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_55	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_56	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_57	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_58	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_59	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_60	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_61	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_62	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_63	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_64	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_65	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_66	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_67	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_68	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_69	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_70	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_71	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_72	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_73	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_74	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_75	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_76	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_77	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_78	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_79	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_80	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_81	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_82	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_83	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_84	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_85	0.0056	5	2.3	1.4

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCPARAM	TI_86	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_87	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_88	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_89	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_90	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_91	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_92	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_93	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_94	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_95	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_96	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_97	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_98	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_99	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_100	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_101	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_102	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_103	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_104	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_105	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_106	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_107	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_108	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_109	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_110	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_111	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_112	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_113	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_114	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_115	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_116	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_117	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_118	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_119	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_120	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_121	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_122	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_123	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_124	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_125	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_126	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_127	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_128	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_129	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_130	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_131	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_132	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_133	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_134	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_135	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_136	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_137	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_138	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_139	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_140	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_141	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_142	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_143	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_144	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_145	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_146	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_147	0.0056	5	2.3	1.4
S0	SRCPARAM	TI_148	0.0056	5	2.3	1.4

[illegible]

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

Attachment 1 - Example Modeling Input for Head Sources Ship													
SO	EMISFACT	NH2_4	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_5	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_5	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_6	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_6	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_7	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_7	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_8	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_8	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_9	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_9	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_10	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_10	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_11	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_11	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_12	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_12	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_13	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_13	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_14	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_14	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_15	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_15	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_16	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_16	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_17	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_17	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_18	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_18	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_19	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_19	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_20	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_20	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_21	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_21	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_22	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_22	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_23	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_23	HROFDY	2.4	2.4	2							

[illegible]

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

Attachment 1 - Example Modeling Input for Load Source Estimation													
SO	EMISFACT	NH2_130	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_131	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_131	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_132	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_132	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_133	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_133	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_134	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_134	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_135	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_135	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_136	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_136	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_137	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_137	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_138	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_138	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_139	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_139	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_140	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_140	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_141	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_141	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_142	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_142	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_143	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_143	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_144	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_144	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_145	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_145	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_146	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_146	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_147	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_147	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_148	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	NH2_148	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	NH2_149	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4

Attachment 1 Example Modeling Input Offroad Sources.inp

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

[illegible]

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

Attachment 1 - Example Node Linking Input - 31 Nodes, 51 Edges, 10 Sources, 10 Sinks													
Node	Activity	Node	Activity	Node	Activity	Node	Activity	Node	Activity	Node	Activity	Node	Activity
S0	EMISFACT	SRU_132	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_132	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_133	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_133	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_134	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_134	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_135	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_135	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_136	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_136	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_137	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_137	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_138	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_138	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_139	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_139	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_140	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_140	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_141	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_141	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_142	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_142	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_143	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_143	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_144	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_144	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_145	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_145	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_146	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_146	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_147	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_147	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_148	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_148	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_149	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
S0	EMISFACT	SRU_149	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	SRU_150	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4

Attachment 1 Example Modeling Input Offroad Sources.inp

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

Table 1: Example Node Input of Head Sources												
Source	Node	Input	Head	Source	Node	Input	Head	Source	Node	Input	Head	Source
SO	EMISFACT	TKC_3	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_4	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_4	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_5	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_5	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_6	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_6	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_7	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_7	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_8	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_8	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_9	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_9	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_10	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_10	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_11	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_11	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_12	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_12	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_13	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_13	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_14	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_14	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_15	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_15	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_16	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_16	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_17	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_17	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_18	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_18	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_19	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_19	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_20	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_20	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_21	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_21	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_22	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_22	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0
SO	EMISFACT	TKC_23	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4

Attachment 1 Example Modeling Input Offroad Sources.inp

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

		Attachment 1 - Example Node Input	Output	Source	Destination									
SO	EMISFACT	TKC_129	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_130	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_130	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_131	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_131	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_132	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_132	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_133	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_133	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_134	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_134	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_135	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_135	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_136	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_136	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_137	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_137	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_138	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_138	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_139	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_139	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_140	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_140	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_141	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_141	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_142	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_142	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_143	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_143	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_144	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_144	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_145	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_145	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_146	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_146	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
SO	EMISFACT	TKC_147	HROFDY	0	0	0	0	0</						

Attachment 1 Example Modeling Input Offroad Sources.inp

[illegible]

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

[illegible]

[illegible]

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

Attachment 1 - Example Modeling Input of Lead Source Effect													
SO	EMISFACT	TKC_318	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_319	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_319	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_320	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_320	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_321	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_321	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_322	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_322	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_323	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_323	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_324	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_324	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_325	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_325	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_326	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_326	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_327	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_327	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_328	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_328	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_329	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_329	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_330	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_330	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_331	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_331	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_332	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_332	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_333	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_333	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_334	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_334	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_335	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_335	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_336	HROFDY	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
SO	EMISFACT	TKC_336	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TKC_337	HROFDY	0	0	0	0	1.2	2.4				

Attachment 1 Example Modeling Input Offroad Sources.inp

[illegible]

[illegible]

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

Attachment 1 - Example Modeling Input of Head Sources Ship													
SO	EMISFACT	TI_77	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_78	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_78	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_79	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_79	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_80	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_80	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_81	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_81	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_82	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_82	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_83	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_83	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_84	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_84	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_85	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_85	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_86	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_86	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_87	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_87	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_88	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_88	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_89	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_89	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_90	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_90	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_91	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_91	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_92	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_92	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_93	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_93	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_94	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_94	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_95	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_95	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_96	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_96	HROFDY	2.4	2.4	2.4	2.4	1.2	0				

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

Attachment 1 - Example Modeling Input for Lead Sources - Ship													
SO	EMISFACT	TI_140	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_141	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_141	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_142	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_142	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_143	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_143	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_144	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_144	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_145	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_145	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_146	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_146	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_147	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_147	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_148	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_148	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_149	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_149	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_150	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_150	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_151	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_151	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_152	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_152	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_153	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_153	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_154	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_154	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_155	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_155	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_156	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_156	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_157	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_157	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_158	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_158	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
SO	EMISFACT	TI_159	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4
SO	EMISFACT	TI_159	HROFDY	2.4									

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	EMISFACT	TI_172	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
S0	EMISFACT	TI_172	HROFDY	2.4	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0
S0	EMISFACT	TI_173	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
S0	EMISFACT	TI_173	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
S0	EMISFACT	TI_174	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
S0	EMISFACT	TI_174	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
S0	EMISFACT	TI_175	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
S0	EMISFACT	TI_175	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
S0	EMISFACT	TI_176	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
S0	EMISFACT	TI_176	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
S0	EMISFACT	TI_177	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
S0	EMISFACT	TI_177	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
S0	EMISFACT	TI_178	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
S0	EMISFACT	TI_178	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
S0	EMISFACT	TI_179	HROFDY	0	0	0	0	0	1.2	2.4	2.4	2.4	2.4	2.4
S0	EMISFACT	TI_179	HROFDY	2.4	2.4	2.4	2.4	1.2	0	0	0	0	0	0
S0	SRCGROUP	EXISH2	EH2_1	EH2_2	EH2_3	EH2_4	EH2_5	EH2_6	EH2_7	EH2_8				
S0	SRCGROUP	EXISH2	EH2_9	EH2_10	EH2_11	EH2_12	EH2_13	EH2_14	EH2_15					
S0	SRCGROUP	EXISH2	EH2_16	EH2_17	EH2_18	EH2_19	EH2_20	EH2_21	EH2_22					
S0	SRCGROUP	EXISH2	EH2_23	EH2_24	EH2_25	EH2_26	EH2_27	EH2_28	EH2_29					
S0	SRCGROUP	EXISH2	EH2_30	EH2_31	EH2_32	EH2_33	EH2_34	EH2_35	EH2_36					
S0	SRCGROUP	EXISH2	EH2_37	EH2_38	EH2_39	EH2_40	EH2_41	EH2_42	EH2_43					
S0	SRCGROUP	EXISH2	EH2_44											
S0	SRCGROUP	NEWH2	NH2_1	NH2_2	NH2_3	NH2_4	NH2_5	NH2_6	NH2_7	NH2_8				
S0	SRCGROUP	NEWH2	NH2_9	NH2_10	NH2_11	NH2_12	NH2_13	NH2_14	NH2_15					
S0	SRCGROUP	NEWH2	NH2_16	NH2_17	NH2_18	NH2_19	NH2_20	NH2_21	NH2_22					
S0	SRCGROUP	NEWH2	NH2_23	NH2_24	NH2_25	NH2_26	NH2_27	NH2_28	NH2_29					
S0	SRCGROUP	NEWH2	NH2_30	NH2_31	NH2_32	NH2_33	NH2_34	NH2_35	NH2_36					
S0	SRCGROUP	NEWH2	NH2_37	NH2_38	NH2_39	NH2_40	NH2_41	NH2_42	NH2_43					
S0	SRCGROUP	NEWH2	NH2_44	NH2_45	NH2_46	NH2_47	NH2_48	NH2_49	NH2_50					
S0	SRCGROUP	NEWH2	NH2_51	NH2_52	NH2_53	NH2_54	NH2_55	NH2_56	NH2_57					
S0	SRCGROUP	NEWH2	NH2_58	NH2_59	NH2_60	NH2_61	NH2_62	NH2_63	NH2_64					
S0	SRCGROUP	NEWH2	NH2_65	NH2_66	NH2_67	NH2_68	NH2_69	NH2_70	NH2_71					
S0	SRCGROUP	NEWH2	NH2_72	NH2_73	NH2_74	NH2_75	NH2_76	NH2_77	NH2_78					
S0	SRCGROUP	NEWH2	NH2_79	NH2_80	NH2_81	NH2_82	NH2_83	NH2_84	NH2_85					
S0	SRCGROUP	NEWH2	NH2_86	NH2_87	NH2_88	NH2_89	NH2_90	NH2_91	NH2_92					
S0	SRCGROUP	NEWH2	NH2_93	NH2_94	NH2_95	NH2_96	NH2_97	NH2_98	NH2_99					
S0	SRCGROUP	NEWH2	NH2_100	NH2_101	NH2_102	NH2_103	NH2_104	NH2_105						
S0	SRCGROUP	NEWH2	NH2_106	NH2_107	NH2_108	NH2_109	NH2_110	NH2_111						
S0	SRCGROUP	NEWH2	NH2_112	NH2_113	NH2_114	NH2_115	NH2_116	NH2_117						
S0	SRCGROUP	NEWH2	NH2_118	NH2_119	NH2_120	NH2_121	NH2_122	NH2_123						
S0	SRCGROUP	NEWH2	NH2_124	NH2_125	NH2_126	NH2_127	NH2_128	NH2_129						
S0	SRCGROUP	NEWH2	NH2_130	NH2_131	NH2_132	NH2_133	NH2_134	NH2_135						
S0	SRCGROUP	NEWH2	NH2_136	NH2_137	NH2_138	NH2_139	NH2_140	NH2_141						
S0	SRCGROUP	NEWH2	NH2_142	NH2_143	NH2_144	NH2_145	NH2_146	NH2_147						
S0	SRCGROUP	NEWH2	NH2_148	NH2_149	NH2_150	NH2_151	NH2_152	NH2_153						
S0	SRCGROUP	NEWH2	NH2_154	NH2_155	NH2_156									
S0	SRCGROUP	SRU	SRU_1	SRU_2	SRU_3	SRU_4	SRU_5	SRU_6	SRU_7	SRU_8	SRU_9			
S0	SRCGROUP	SRU	SRU_10	SRU_11	SRU_12	SRU_13	SRU_14	SRU_15	SRU_16	SRU_17				
S0	SRCGROUP	SRU	SRU_18	SRU_19	SRU_20	SRU_21	SRU_22	SRU_23	SRU_24	SRU_25				
S0	SRCGROUP	SRU	SRU_26	SRU_27	SRU_28	SRU_29	SRU_30	SRU_31	SRU_32	SRU_33				
S0	SRCGROUP	SRU	SRU_34	SRU_35	SRU_36	SRU_37	SRU_38	SRU_39	SRU_40	SRU_41				
S0	SRCGROUP	SRU	SRU_42	SRU_43	SRU_44	SRU_45	SRU_46	SRU_47	SRU_48	SRU_49				
S0	SRCGROUP	SRU	SRU_50	SRU_51	SRU_52	SRU_53	SRU_54	SRU_55	SRU_56	SRU_57				
S0	SRCGROUP	SRU	SRU_58	SRU_59	SRU_60	SRU_61	SRU_62	SRU_63	SRU_64	SRU_65				
S0	SRCGROUP	SRU	SRU_66	SRU_67	SRU_68	SRU_69	SRU_70	SRU_71	SRU_72	SRU_73				
S0	SRCGROUP	SRU	SRU_74	SRU_75	SRU_76	SRU_77	SRU_78	SRU_79	SRU_80	SRU_81				
S0	SRCGROUP	SRU	SRU_82	SRU_83	SRU_84	SRU_85	SRU_86	SRU_87	SRU_88	SRU_89				
S0	SRCGROUP	SRU	SRU_90	SRU_91	SRU_92	SRU_93	SRU_94	SRU_95	SRU_96	SRU_97				
S0	SRCGROUP	SRU	SRU_98	SRU_99	SRU_100	SRU_101	SRU_102	SRU_103	SRU_104					
S0	SRCGROUP	SRU	SRU_105	SRU_106	SRU_107	SRU_108	SRU_109	SRU_110	SRU_111					
S0	SRCGROUP	SRU	SRU_112	SRU_113	SRU_114	SRU_115	SRU_116	SRU_117	SRU_118					
S0	SRCGROUP	SRU	SRU_119	SRU_120	SRU_121	SRU_122	SRU_123	SRU_124	SRU_125					

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCGROUP	SRU	SRU_126	SRU_127	SRU_128	SRU_129	SRU_130	SRU_131	SRU_132
S0	SRCGROUP	SRU	SRU_133	SRU_134	SRU_135	SRU_136	SRU_137	SRU_138	SRU_139
S0	SRCGROUP	SRU	SRU_140	SRU_141	SRU_142	SRU_143	SRU_144	SRU_145	SRU_146
S0	SRCGROUP	SRU	SRU_147	SRU_148	SRU_149	SRU_150	SRU_151	SRU_152	SRU_153
S0	SRCGROUP	SRU	SRU_154	SRU_155	SRU_156	SRU_157	SRU_158	SRU_159	SRU_160
S0	SRCGROUP	SRU	SRU_161	SRU_162	SRU_163	SRU_164	SRU_165	SRU_166	SRU_167
S0	SRCGROUP	SRU	SRU_168	SRU_169	SRU_170	SRU_171	SRU_172	SRU_173	SRU_174
S0	SRCGROUP	SRU	SRU_175	SRU_176	SRU_177	SRU_178	SRU_179	SRU_180	SRU_181
S0	SRCGROUP	SRU	SRU_182	SRU_183	SRU_184	SRU_185	SRU_186	SRU_187	SRU_188
S0	SRCGROUP	SRU	SRU_189	SRU_190	SRU_191	SRU_192	SRU_193	SRU_194	SRU_195
S0	SRCGROUP	SRU	SRU_196	SRU_197	SRU_198	SRU_199	SRU_200	SRU_201	SRU_202
S0	SRCGROUP	SRU	SRU_203	SRU_204	SRU_205	SRU_206	SRU_207	SRU_208	SRU_209
S0	SRCGROUP	SRU	SRU_210	SRU_211	SRU_212	SRU_213	SRU_214	SRU_215	SRU_216
S0	SRCGROUP	SRU	SRU_217	SRU_218	SRU_219	SRU_220	SRU_221	SRU_222	SRU_223
S0	SRCGROUP	TKC	TKC_1	TKC_2	TKC_3	TKC_4	TKC_5	TKC_6	TKC_7
S0	SRCGROUP	TKC	TKC_10	TKC_11	TKC_12	TKC_13	TKC_14	TKC_15	TKC_16
S0	SRCGROUP	TKC	TKC_18	TKC_19	TKC_20	TKC_21	TKC_22	TKC_23	TKC_24
S0	SRCGROUP	TKC	TKC_26	TKC_27	TKC_28	TKC_29	TKC_30	TKC_31	TKC_32
S0	SRCGROUP	TKC	TKC_34	TKC_35	TKC_36	TKC_37	TKC_38	TKC_39	TKC_40
S0	SRCGROUP	TKC	TKC_42	TKC_43	TKC_44	TKC_45	TKC_46	TKC_47	TKC_48
S0	SRCGROUP	TKC	TKC_50	TKC_51	TKC_52	TKC_53	TKC_54	TKC_55	TKC_56
S0	SRCGROUP	TKC	TKC_58	TKC_59	TKC_60	TKC_61	TKC_62	TKC_63	TKC_64
S0	SRCGROUP	TKC	TKC_66	TKC_67	TKC_68	TKC_69	TKC_70	TKC_71	TKC_72
S0	SRCGROUP	TKC	TKC_74	TKC_75	TKC_76	TKC_77	TKC_78	TKC_79	TKC_80
S0	SRCGROUP	TKC	TKC_82	TKC_83	TKC_84	TKC_85	TKC_86	TKC_87	TKC_88
S0	SRCGROUP	TKC	TKC_90	TKC_91	TKC_92	TKC_93	TKC_94	TKC_95	TKC_96
S0	SRCGROUP	TKC	TKC_98	TKC_99	TKC_100	TKC_101	TKC_102	TKC_103	TKC_104
S0	SRCGROUP	TKC	TKC_105	TKC_106	TKC_107	TKC_108	TKC_109	TKC_110	TKC_111
S0	SRCGROUP	TKC	TKC_112	TKC_113	TKC_114	TKC_115	TKC_116	TKC_117	TKC_118
S0	SRCGROUP	TKC	TKC_119	TKC_120	TKC_121	TKC_122	TKC_123	TKC_124	TKC_125
S0	SRCGROUP	TKC	TKC_126	TKC_127	TKC_128	TKC_129	TKC_130	TKC_131	TKC_132
S0	SRCGROUP	TKC	TKC_133	TKC_134	TKC_135	TKC_136	TKC_137	TKC_138	TKC_139
S0	SRCGROUP	TKC	TKC_140	TKC_141	TKC_142	TKC_143	TKC_144	TKC_145	TKC_146
S0	SRCGROUP	TKC	TKC_147	TKC_148	TKC_149	TKC_150	TKC_151	TKC_152	TKC_153
S0	SRCGROUP	TKC	TKC_154	TKC_155	TKC_156	TKC_157	TKC_158	TKC_159	TKC_160
S0	SRCGROUP	TKC	TKC_161	TKC_162	TKC_163	TKC_164	TKC_165	TKC_166	TKC_167
S0	SRCGROUP	TKC	TKC_168	TKC_169	TKC_170	TKC_171	TKC_172	TKC_173	TKC_174
S0	SRCGROUP	TKC	TKC_175	TKC_176	TKC_177	TKC_178	TKC_179	TKC_180	TKC_181
S0	SRCGROUP	TKC	TKC_182	TKC_183	TKC_184	TKC_185	TKC_186	TKC_187	TKC_188
S0	SRCGROUP	TKC	TKC_189	TKC_190	TKC_191	TKC_192	TKC_193	TKC_194	TKC_195
S0	SRCGROUP	TKC	TKC_196	TKC_197	TKC_198	TKC_199	TKC_200	TKC_201	TKC_202
S0	SRCGROUP	TKC	TKC_203	TKC_204	TKC_205	TKC_206	TKC_207	TKC_208	TKC_209
S0	SRCGROUP	TKC	TKC_210	TKC_211	TKC_212	TKC_213	TKC_214	TKC_215	TKC_216
S0	SRCGROUP	TKC	TKC_217	TKC_218	TKC_219	TKC_220	TKC_221	TKC_222	TKC_223
S0	SRCGROUP	TKC	TKC_224	TKC_225	TKC_226	TKC_227	TKC_228	TKC_229	TKC_230
S0	SRCGROUP	TKC	TKC_231	TKC_232	TKC_233	TKC_234	TKC_235	TKC_236	TKC_237
S0	SRCGROUP	TKC	TKC_238	TKC_239	TKC_240	TKC_241	TKC_242	TKC_243	TKC_244
S0	SRCGROUP	TKC	TKC_245	TKC_246	TKC_247	TKC_248	TKC_249	TKC_250	TKC_251
S0	SRCGROUP	TKC	TKC_252	TKC_253	TKC_254	TKC_255	TKC_256	TKC_257	TKC_258
S0	SRCGROUP	TKC	TKC_259	TKC_260	TKC_261	TKC_262	TKC_263	TKC_264	TKC_265
S0	SRCGROUP	TKC	TKC_266	TKC_267	TKC_268	TKC_269	TKC_270	TKC_271	TKC_272
S0	SRCGROUP	TKC	TKC_273	TKC_274	TKC_275	TKC_276	TKC_277	TKC_278	TKC_279
S0	SRCGROUP	TKC	TKC_280	TKC_281	TKC_282	TKC_283	TKC_284	TKC_285	TKC_286
S0	SRCGROUP	TKC	TKC_287	TKC_288	TKC_289	TKC_290	TKC_291	TKC_292	TKC_293
S0	SRCGROUP	TKC	TKC_294	TKC_295	TKC_296	TKC_297	TKC_298	TKC_299	TKC_300
S0	SRCGROUP	TKC	TKC_301	TKC_302	TKC_303	TKC_304	TKC_305	TKC_306	TKC_307
S0	SRCGROUP	TKC	TKC_308	TKC_309	TKC_310	TKC_311	TKC_312	TKC_313	TKC_314
S0	SRCGROUP	TKC	TKC_315	TKC_316	TKC_317	TKC_318	TKC_319	TKC_320	TKC_321
S0	SRCGROUP	TKC	TKC_322	TKC_323	TKC_324	TKC_325	TKC_326	TKC_327	TKC_328
S0	SRCGROUP	TKC	TKC_329	TKC_330	TKC_331	TKC_332	TKC_333	TKC_334	TKC_335
S0	SRCGROUP	TKC	TKC_336	TKC_337	TKC_338	TKC_339	TKC_340	TKC_341	TKC_342
S0	SRCGROUP	TKC	TKC_343	TKC_344	TKC_345	TKC_346	TKC_347	TKC_348	TKC_349
S0	SRCGROUP	TKC	TKC_350	TKC_351	TKC_352	TKC_353	TKC_354	TKC_355	TKC_356

Attachment 1 Example Modeling Input Offroad Sources.inp

S0	SRCGROUP	TKC	TKC_357	TKC_358	TKC_359	TKC_360	TKC_361	TKC_362	TKC_363
S0	SRCGROUP	TKC	TKC_364	TKC_365	TKC_366	TKC_367			
S0	SRCGROUP	TI	TI_1	TI_2	TI_3	TI_4	TI_5	TI_6	TI_7
S0	SRCGROUP	TI	TI_11	TI_12	TI_13	TI_14	TI_15	TI_16	TI_17
S0	SRCGROUP	TI	TI_20	TI_21	TI_22	TI_23	TI_24	TI_25	TI_26
S0	SRCGROUP	TI	TI_29	TI_30	TI_31	TI_32	TI_33	TI_34	TI_35
S0	SRCGROUP	TI	TI_38	TI_39	TI_40	TI_41	TI_42	TI_43	TI_44
S0	SRCGROUP	TI	TI_47	TI_48	TI_49	TI_50	TI_51	TI_52	TI_53
S0	SRCGROUP	TI	TI_56	TI_57	TI_58	TI_59	TI_60	TI_61	TI_62
S0	SRCGROUP	TI	TI_65	TI_66	TI_67	TI_68	TI_69	TI_70	TI_71
S0	SRCGROUP	TI	TI_74	TI_75	TI_76	TI_77	TI_78	TI_79	TI_80
S0	SRCGROUP	TI	TI_83	TI_84	TI_85	TI_86	TI_87	TI_88	TI_89
S0	SRCGROUP	TI	TI_92	TI_93	TI_94	TI_95	TI_96	TI_97	TI_98
S0	SRCGROUP	TI	TI_101	TI_102	TI_103	TI_104	TI_105	TI_106	TI_107
S0	SRCGROUP	TI	TI_109	TI_110	TI_111	TI_112	TI_113	TI_114	TI_115
S0	SRCGROUP	TI	TI_117	TI_118	TI_119	TI_120	TI_121	TI_122	TI_123
S0	SRCGROUP	TI	TI_125	TI_126	TI_127	TI_128	TI_129	TI_130	TI_131
S0	SRCGROUP	TI	TI_133	TI_134	TI_135	TI_136	TI_137	TI_138	TI_139
S0	SRCGROUP	TI	TI_141	TI_142	TI_143	TI_144	TI_145	TI_146	TI_147
S0	SRCGROUP	TI	TI_149	TI_150	TI_151	TI_152	TI_153	TI_154	TI_155
S0	SRCGROUP	TI	TI_157	TI_158	TI_159	TI_160	TI_161	TI_162	TI_163
S0	SRCGROUP	TI	TI_165	TI_166	TI_167	TI_168	TI_169	TI_170	TI_171
S0	SRCGROUP	TI	TI_173	TI_174	TI_175	TI_176	TI_177	TI_178	TI_179
S0	FINISHED								

RE	STARTING	RE	ELEVUNIT	METERS	RE	GRIDCART	REC1	STA	RE	GRIDCART	REC1	XYINC	549000	61	200	4194000	61	200
RE	GRIDCART	REC1	ELEV	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	1	0.3	8.7	0.5	0.7	5.4	21.7								
RE	GRIDCART	REC1	ELEV	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	2	0.2	0.4	0.6	1.7	7.0	32.0								
RE	GRIDCART	REC1	ELEV	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	3	-0.1	0.2	0.2	0.3	0.8	1.8	6.2	39.1						
RE	GRIDCART	REC1	ELEV	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	4	0.3	0.3	0.6	1.0	3.0	6.4	51.2							
RE	GRIDCART	REC1	ELEV	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	5	-0.3	-0.2	-0.0	0.2	1.9	17.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	5	4.6	6.6	2.1	4.3	3.0	4.1	3.6							
RE	GRIDCART	REC1	ELEV	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	6	1.6	0.0	-0.3	-0.1	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

		Attachment 1 Example Modeling Input Offroad Sources.inp													
RE	GRIDCART	REC1	ELEV	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	3.7
RE	GRIDCART	REC1	ELEV	6	5.2	3.9	1.6	2.6	8.8	3.7	4.1				
RE	GRIDCART	REC1	ELEV	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.0	
RE	GRIDCART	REC1	ELEV	7	0.2	0.3	0.3	0.1	0.1	-0.1	-0.3	0.0	0.0	0.0	
RE	GRIDCART	REC1	ELEV	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
RE	GRIDCART	REC1	ELEV	7	5.5	3.9	1.4	3.6	3.8	20.0	13.9	5.8			
RE	GRIDCART	REC1	ELEV	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.5	0.9
RE	GRIDCART	REC1	ELEV	8	1.1	0.9	0.8	0.5	0.3	-0.2	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	6.2	2.8
RE	GRIDCART	REC1	ELEV	8	3.6	16.7	10.6	15.8	11.2	7.5					
RE	GRIDCART	REC1	ELEV	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.9	1.1	5.3
RE	GRIDCART	REC1	ELEV	9	5.3	4.9	1.1	0.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	4.1	1.7
RE	GRIDCART	REC1	ELEV	9	3.9	4.1	10.5	20.7	10.6	10.3					
RE	GRIDCART	REC1	ELEV	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	10	2.3	1.0	1.1	1.1	1.5	1.0	1.1	1.1	4.5	6.9	7.4
RE	GRIDCART	REC1	ELEV	10	5.5	4.7	1.2	1.1	1.0	0.4	-0.2	3.6	4.0	4.3	
RE	GRIDCART	REC1	ELEV	10	4.2	3.4	1.1	1.1	1.5	1.1	1.5	1.5	1.1	1.9	1.6
RE	GRIDCART	REC1	ELEV	10	4.9	2.7	3.7	18.3	20.4	11.9	12.8				
RE	GRIDCART	REC1	ELEV	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	11	0.0	1.8	4.4	4.6	2.9	2.1	1.5	3.9	16.4	8.4	
RE	GRIDCART	REC1	ELEV	11	7.8	5.1	4.3	1.1	1.5	4.5	4.4	0.9	0.0	1.1	1.3
RE	GRIDCART	REC1	ELEV	11	5.2	4.6	4.4	1.5	1.5	0.6	1.2	2.0	3.4	2.1	4.2
RE	GRIDCART	REC1	ELEV	11	2.7	3.4	4.9	7.5	10.2	12.4	15.0				
RE	GRIDCART	REC1	ELEV	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	12	0.0	1.0	3.8	25.8	28.8	3.6	4.2	15.5	49.7	34.4	
RE	GRIDCART	REC1	ELEV	12	40.6	3.8	3.6	1.2	3.8	4.6	4.5	1.1	0.8	1.1	
RE	GRIDCART	REC1	ELEV	12	1.5	5.0	5.0	3.8	4.5	1.2	5.3	5.4	3.8	3.6	1.7
RE	GRIDCART	REC1	ELEV	12	3.1	4.1	12.5	12.9	28.9	34.1	15.8	17.3			
RE	GRIDCART	REC1	ELEV	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	13	0.0	0.0	2.7	5.3	19.5	27.0	28.0	67.5	80.0		
RE	GRIDCART	REC1	ELEV	13	14.7	4.1	3.9	1.3	1.2	3.7	4.3	4.3	1.1	1.3	
RE	GRIDCART	REC1	ELEV	13	1.4	5.1	4.0	4.9	4.3	4.0	4.4	4.3	6.6	4.9	4.9
RE	GRIDCART	REC1	ELEV	13	5.1	6.5	6.7	13.4	39.6	36.1	22.1	20.0	23.8		
RE	GRIDCART	REC1	ELEV	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	14	0.0	0.0	1.2	2.6	4.0	69.3	96.1	82.0	67.9	10.4	
RE	GRIDCART	REC1	ELEV	14	4.1	3.9	4.0	1.1	3.7	3.9	4.1	3.6	3.4	4.0	3.2
RE	GRIDCART	REC1	ELEV	14	4.0	3.3	3.7	5.1	5.4	5.8	6.9	6.4	7.4	5.2	9.2
RE	GRIDCART	REC1	ELEV	14	27.7	14.8	20.6	29.2	20.5	24.2	27.5				
RE	GRIDCART	REC1	ELEV	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	15	0.0	0.0	1.2	3.0	5.0	26.8	56.9	6.8	6.2	4.5	
RE	GRIDCART	REC1	ELEV	15	4.2	3.6	1.1	1.1	3.3	3.7	3.9	4.0	4.2	4.4	4.0
RE	GRIDCART	REC1	ELEV	15	3.6	3.4	3.9	5.3	6.9	7.2	7.8	8.0	7.4	6.4	7.0
RE	GRIDCART	REC1	ELEV	15	9.5	16.0	15.8	19.5	21.4	26.5	31.6				
RE	GRIDCART	REC1	ELEV	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	16	0.0	0.0	1.2	3.6	50.3	69.9	7.4	5.2	4.0	3.8	
RE	GRIDCART	REC1	ELEV	16	3.9	1.1	3.3	2.3	3.5	2.8	3.2	3.6	3.8	3.6	3.9
RE	GRIDCART	REC1	ELEV	16	5.6	5.4	5.5	6.3	7.7	9.4	8.0	9.6	8.7	8.4	9.4
RE	GRIDCART	REC1	ELEV	16	9.7	17.8	15.8	18.6	21.9	26.3	32.7				
RE	GRIDCART	REC1	ELEV	17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Attachment 1 Example Modeling Input Offroad Sources.inp

RE	GRIDCART	REC1	ELEV	17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	17	0.0	0.0	1.2	14.7	93.0	68.0	6.6	4.1	4.0	4.1
RE	GRIDCART	REC1	ELEV	17	1.1	1.1	3.7	4.3	3.4	2.7	2.7	3.7	3.2	4.1
RE	GRIDCART	REC1	ELEV	17	6.3	6.4	6.0	5.6	8.4	5.7	9.9	11.0	9.8	10.8
RE	GRIDCART	REC1	ELEV	17	11.0	11.8	16.3	16.6	20.1	24.9	30.8	42.3		
RE	GRIDCART	REC1	ELEV	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	18	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	18	0.0	1.1	8.2	50.6	21.2	25.7	4.6	3.4	1.1	1.1
RE	GRIDCART	REC1	ELEV	18	2.8	1.6	3.8	4.0	3.2	-0.9	5.4	5.0	5.3	5.7
RE	GRIDCART	REC1	ELEV	18	2.6	8.4	9.0	8.6	9.1	10.1	11.5	12.6	12.3	12.0
RE	GRIDCART	REC1	ELEV	18	12.2	13.3	13.3	14.6	17.9	21.6	28.7	36.0	43.0	
RE	GRIDCART	REC1	ELEV	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	19	1.1	19.9	40.2	13.8	3.7	2.8	3.7	2.9	3.3	3.2
RE	GRIDCART	REC1	ELEV	19	3.0	2.3	4.0	3.0	-0.0	3.7	3.8	6.1	6.7	7.1
RE	GRIDCART	REC1	ELEV	19	8.7	13.7	12.5	10.5	10.6	11.8	11.8	13.6	14.1	
RE	GRIDCART	REC1	ELEV	19	13.0	12.8	14.6	18.9	16.4	19.2	24.4	31.5	38.3	
RE	GRIDCART	REC1	ELEV	19	60.0									
RE	GRIDCART	REC1	ELEV	20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1
RE	GRIDCART	REC1	ELEV	20	1.1	39.3	25.6	6.0	3.5	2.7	2.8	2.6	2.9	2.7
RE	GRIDCART	REC1	ELEV	20	3.2	2.6	4.5	3.6	4.5	4.8	4.8	6.1	8.0	8.4
RE	GRIDCART	REC1	ELEV	20	9.9	11.6	12.1	12.4	12.9	13.8	14.3	15.3	15.5	
RE	GRIDCART	REC1	ELEV	20	14.8	16.8	16.2	19.3	25.2	34.6	49.3	51.8	104.2	
RE	GRIDCART	REC1	ELEV	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.0	1.1
RE	GRIDCART	REC1	ELEV	21	33.0	39.6	12.9	8.1	3.3	2.8	2.7	3.5	3.2	4.3
RE	GRIDCART	REC1	ELEV	21	4.2	3.6	3.5	4.1	4.9	6.0	5.6	7.3	8.6	9.7
RE	GRIDCART	REC1	ELEV	21	10.4	11.4	11.5	13.5	14.3	14.0	14.9	15.1	16.8	
RE	GRIDCART	REC1	ELEV	21	16.7	16.5	17.9	19.3	26.3	45.2	56.9	68.4	84.3	
RE	GRIDCART	REC1	ELEV	21	137.8									
RE	GRIDCART	REC1	ELEV	22	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	22	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	5.6	6.1
RE	GRIDCART	REC1	ELEV	22	28.6	27.1	12.6	9.6	3.3	2.3	3.5	2.9	3.1	4.3
RE	GRIDCART	REC1	ELEV	22	3.8	4.7	4.1	4.3	4.7	5.4	6.6	6.7	7.7	9.6
RE	GRIDCART	REC1	ELEV	22	11.0	11.6	11.8	12.4	14.2	14.7	15.6	15.8	16.8	
RE	GRIDCART	REC1	ELEV	22	18.0	18.4	17.1	20.6	35.0	62.2	81.1	75.5	83.3	
RE	GRIDCART	REC1	ELEV	22	105.6	150.9								
RE	GRIDCART	REC1	ELEV	23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	23	0.0	0.0	0.0	1.1	1.1	1.0	1.3	3.7	10.3	43.7
RE	GRIDCART	REC1	ELEV	23	36.1	15.6	2.9	3.1	3.3	3.1	4.1	3.6	3.0	3.6
RE	GRIDCART	REC1	ELEV	23	3.8	4.3	4.8	5.0	5.4	6.2	6.9	9.2	9.0	9.6
RE	GRIDCART	REC1	ELEV	23	11.5	12.4	15.6	15.6	15.4	16.9	18.8	18.5	18.4	
RE	GRIDCART	REC1	ELEV	23	17.6	17.3	20.1	23.6	35.9	45.6	66.2	90.5	116.6	
RE	GRIDCART	REC1	ELEV	23	140.7	162.0								
RE	GRIDCART	REC1	ELEV	24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	24	0.0	0.0	0.0	0.8	27.4	13.4	14.5	31.8	38.7	
RE	GRIDCART	REC1	ELEV	24	12.8	5.0	3.9	3.1	4.0	3.0	3.1	3.4	3.5	3.8
RE	GRIDCART	REC1	ELEV	24	3.4	3.9	3.8	5.5	5.8	6.5	6.8	7.7	8.8	9.6
RE	GRIDCART	REC1	ELEV	24	10.3	12.1	13.8	15.7	16.3	16.4	16.8	18.0	18.9	
RE	GRIDCART	REC1	ELEV	24	19.9	20.0	27.1	21.2	25.3	39.9	58.5	73.2	97.5	
RE	GRIDCART	REC1	ELEV	24	129.8	147.6	160.0							
RE	GRIDCART	REC1	ELEV	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	25	0.0	0.0	0.9	20.4	30.5	29.6	32.7	28.6	75.7	
RE	GRIDCART	REC1	ELEV	25	18.3	5.3	3.0	3.1	2.9	3.3	3.6	2.6	4.0	3.5
RE	GRIDCART	REC1	ELEV	25	4.1	4.4	4.9	6.0	7.2	7.3	7.9	8.4	9.0	10.7
RE	GRIDCART	REC1	ELEV	25	12.7	12.9	13.4	15.6	17.1	19.2	18.4	19.3	19.8	
RE	GRIDCART	REC1	ELEV	25	21.4	21.3	21.5	24.1	29.2	42.8	55.5	80.3	122.1	
RE	GRIDCART	REC1	ELEV	25	129.4	146.8	167.2							
RE	GRIDCART	REC1	ELEV	26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	26	0.0	0.0	6.3	28.6	32.4	34.5	35.8	98.3	33.6	
RE	GRIDCART	REC1	ELEV	26	19.7	22.0	4.2	3.6	3.0	2.9	3.0	2.2	9.4	4.1
RE	GRIDCART	REC1	ELEV	26	3.9	4.8	4.6	5.6	6.3	7.4	8.4	9.2	10.3	12.1

Attachment 1 Example Modeling Input Offroad Sources.inp

RE	GRIDCART	REC1	ELEV	26	13.2	14.2	14.4	17.1	18.4	19.8	20.8	20.5	21.9
RE	GRIDCART	REC1	ELEV	26	23.3	23.8	30.3	27.4	36.5	51.4	70.5	87.3	109.3
RE	GRIDCART	REC1	ELEV	26	123.5	158.4	174.1						
RE	GRIDCART	REC1	ELEV	27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	27	0.0	0.0	0.9	7.9	39.1	60.2	85.0	81.1	51.0
RE	GRIDCART	REC1	ELEV	27	40.9	56.7	11.9	3.4	0.8	2.8	3.3	3.7	4.4
RE	GRIDCART	REC1	ELEV	27	3.6	4.5	4.0	5.0	6.0	7.4	9.0	9.7	10.8
RE	GRIDCART	REC1	ELEV	27	12.9	15.0	15.6	16.8	19.3	21.3	22.0	21.5	23.8
RE	GRIDCART	REC1	ELEV	27	24.8	25.7	24.4	29.9	52.7	60.9	71.8	92.6	107.4
RE	GRIDCART	REC1	ELEV	27	127.1	153.3	178.6						
RE	GRIDCART	REC1	ELEV	28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	28	0.0	0.0	0.9	1.7	41.8	71.2	95.4	97.6	88.4
RE	GRIDCART	REC1	ELEV	28	72.3	53.9	4.0	3.7	1.4	2.4	2.4	3.5	2.9
RE	GRIDCART	REC1	ELEV	28	3.5	3.4	4.6	4.9	6.0	6.9	8.2	9.8	11.2
RE	GRIDCART	REC1	ELEV	28	14.1	15.3	17.3	17.6	20.1	22.3	24.2	23.6	27.4
RE	GRIDCART	REC1	ELEV	28	27.3	27.2	27.4	27.4	55.4	64.8	78.2	96.0	112.2
RE	GRIDCART	REC1	ELEV	28	128.0	152.2	148.1						
RE	GRIDCART	REC1	ELEV	29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	29	0.0	0.0	0.1	6.2	18.1	37.3	102.5	109.7	82.6
RE	GRIDCART	REC1	ELEV	29	48.8	9.5	4.1	3.5	2.5	1.5	3.3	3.4	3.3
RE	GRIDCART	REC1	ELEV	29	2.4	3.0	3.8	4.8	6.2	7.2	8.9	9.9	11.9
RE	GRIDCART	REC1	ELEV	29	14.3	16.3	18.1	19.0	21.1	23.2	26.0	25.6	36.6
RE	GRIDCART	REC1	ELEV	29	29.1	30.6	29.5	24.7	38.8	63.1	80.3	96.5	116.1
RE	GRIDCART	REC1	ELEV	29	132.3	127.9	81.1						
RE	GRIDCART	REC1	ELEV	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	30	0.0	-0.1	2.6	11.9	28.7	87.7	115.1	69.3	89.7
RE	GRIDCART	REC1	ELEV	30	39.5	5.7	4.1	4.2	2.7	2.9	5.1	3.4	3.7
RE	GRIDCART	REC1	ELEV	30	3.0	3.3	3.9	5.2	6.2	7.4	9.9	11.2	12.6
RE	GRIDCART	REC1	ELEV	30	15.5	17.3	19.3	21.2	22.0	23.9	28.1	28.2	28.3
RE	GRIDCART	REC1	ELEV	30	30.9	32.3	31.6	24.2	34.6	45.7	72.6	90.0	122.6
RE	GRIDCART	REC1	ELEV	30	120.1	79.2	113.3						
RE	GRIDCART	REC1	ELEV	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
RE	GRIDCART	REC1	ELEV	31	0.4	10.4	19.8	26.1	67.4	118.2	55.6	25.1	23.1
RE	GRIDCART	REC1	ELEV	31	46.4	3.3	3.6	5.0	3.1	3.0	2.6	3.2	6.2
RE	GRIDCART	REC1	ELEV	31	5.1	2.8	3.9	4.2	9.7	7.6	8.8	11.4	12.7
RE	GRIDCART	REC1	ELEV	31	16.3	18.8	19.4	21.8	22.9	25.4	28.5	31.0	31.4
RE	GRIDCART	REC1	ELEV	31	33.1	35.5	34.3	34.5	48.4	66.8	74.2	108.4	
RE	GRIDCART	REC1	ELEV	31	115.4	76.9	99.0	149.0					
RE	GRIDCART	REC1	ELEV	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.6
RE	GRIDCART	REC1	ELEV	32	28.8	27.0	41.1	56.0	81.2	87.0	82.2	27.1	7.5
RE	GRIDCART	REC1	ELEV	32	5.0	6.2	4.1	4.4	3.0	1.4	2.1	2.0	1.8
RE	GRIDCART	REC1	ELEV	32	6.1	2.8	4.4	4.8	6.3	10.4	10.3	11.6	12.8
RE	GRIDCART	REC1	ELEV	32	16.4	17.6	19.8	21.6	24.1	24.8	27.9	30.3	33.9
RE	GRIDCART	REC1	ELEV	32	34.0	37.0	36.4	39.1	51.8	77.2	100.9	105.5	
RE	GRIDCART	REC1	ELEV	32	59.1	90.6	141.0	185.1					
RE	GRIDCART	REC1	ELEV	33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
RE	GRIDCART	REC1	ELEV	33	11.7	24.9	98.5	98.9	97.0	46.6	50.4	4.7	3.8
RE	GRIDCART	REC1	ELEV	33	4.2	3.4	2.2	2.2	1.3	1.4	1.7	2.7	3.4
RE	GRIDCART	REC1	ELEV	33	9.5	3.6	4.5	5.8	7.3	9.5	11.0	13.0	14.9
RE	GRIDCART	REC1	ELEV	33	18.1	19.8	21.5	23.2	26.6	27.8	30.4	32.0	36.8
RE	GRIDCART	REC1	ELEV	33	35.2	33.0	41.2	62.2	90.3	99.6	61.2	82.1	108.3
RE	GRIDCART	REC1	ELEV	33	139.6	163.7							
RE	GRIDCART	REC1	ELEV	34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
RE	GRIDCART	REC1	ELEV	34	11.1	50.6	83.4	90.1	66.2	4.5	5.8	2.9	4.0
RE	GRIDCART	REC1	ELEV	34	3.0	2.7	2.3	0.4	1.7	2.2	3.0	3.7	3.5
RE	GRIDCART	REC1	ELEV	34	3.5	4.7	6.7	8.8	9.9	12.0	14.5	15.7	17.5
RE	GRIDCART	REC1	ELEV	34	20.7	22.7	23.8	25.5	27.4	29.2	31.5	33.3	31.4
RE	GRIDCART	REC1	ELEV	34	37.3	43.7	59.8	75.2	57.6	73.6	94.9	125.4	
RE	GRIDCART	REC1	ELEV	34	149.3	180.1							
RE	GRIDCART	REC1	ELEV	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
RE	GRIDCART	REC1	ELEV	35	20.2	71.4	81.2	59.4	33.0	4.6	2.3	1.2	0.1
RE	GRIDCART	REC1	ELEV	35	-0.6	0.1	0.1	1.7	1.6	1.6	1.4	4.4	4.9
RE	GRIDCART	REC1	ELEV	35	1.5	3.6	3.3	4.8	6.5	7.9	10.1	12.3	13.9

Attachment 1 Example Modeling Input Offroad Sources.inp

RE	GRIDCART	REC1	ELEV	35	16.8	18.8	20.9	23.0	24.6	24.7	27.1	28.8	31.5
RE	GRIDCART	REC1	ELEV	35	33.8	37.7	39.5	50.5	54.7	70.0	109.5	94.9	
RE	GRIDCART	REC1	ELEV	35	117.5	145.3	192.3	208.5					
RE	GRIDCART	REC1	ELEV	36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	3.0
RE	GRIDCART	REC1	ELEV	36	14.6	44.6	66.2	29.3	8.7	1.0	2.9	0.9	0.6
RE	GRIDCART	REC1	ELEV	36	0.9	1.7	0.9	1.6	1.8	1.8	2.0	4.1	2.3
RE	GRIDCART	REC1	ELEV	36	4.5	3.5	4.1	5.6	7.6	9.6	11.5	11.6	13.5
RE	GRIDCART	REC1	ELEV	36	17.4	19.0	20.5	21.3	24.0	24.8	29.9	34.3	39.7
RE	GRIDCART	REC1	ELEV	36	47.1	69.8	75.6	89.6	117.9	128.9	129.7	156.5	
RE	GRIDCART	REC1	ELEV	36	173.2	197.9	168.1						
RE	GRIDCART	REC1	ELEV	37	0.0	0.0	0.0	0.0	0.0	0.0	0.6	14.9	10.4
RE	GRIDCART	REC1	ELEV	37	23.6	66.2	31.4	4.4	1.0	0.4	0.0	0.0	0.8
RE	GRIDCART	REC1	ELEV	37	1.5	1.7	1.8	1.7	1.8	1.9	2.1	2.4	3.7
RE	GRIDCART	REC1	ELEV	37	3.9	3.6	4.2	5.1	7.2	9.0	10.8	10.2	12.0
RE	GRIDCART	REC1	ELEV	37	15.9	17.6	19.5	20.7	23.0	26.9	30.0	29.5	41.9
RE	GRIDCART	REC1	ELEV	37	66.1	93.6	114.5	128.9	157.7	147.6	163.5	179.7	
RE	GRIDCART	REC1	ELEV	37	208.5	168.3	136.3						
RE	GRIDCART	REC1	ELEV	38	0.0	0.0	0.0	0.0	0.0	0.7	0.5	5.3	42.2
RE	GRIDCART	REC1	ELEV	38	62.2	84.5	67.4	19.9	0.4	0.3	0.0	0.0	0.6
RE	GRIDCART	REC1	ELEV	38	1.9	1.6	1.8	1.8	1.5	1.9	1.7	2.4	2.3
RE	GRIDCART	REC1	ELEV	38	4.3	4.6	4.7	5.9	6.8	8.3	10.1	10.4	11.4
RE	GRIDCART	REC1	ELEV	38	15.2	16.8	17.6	19.1	23.3	18.2	21.0	35.0	39.9
RE	GRIDCART	REC1	ELEV	38	65.6	97.5	125.2	121.7	122.7	148.8	145.1	180.3	
RE	GRIDCART	REC1	ELEV	38	181.2	122.0	109.6						
RE	GRIDCART	REC1	ELEV	39	0.0	0.0	0.0	0.0	0.6	0.5	0.5	0.4	33.9
RE	GRIDCART	REC1	ELEV	39	34.4	48.8	58.6	5.2	0.6	0.0	0.0	0.0	1.0
RE	GRIDCART	REC1	ELEV	39	1.8	1.8	1.8	1.7	1.8	1.8	2.2	1.8	2.8
RE	GRIDCART	REC1	ELEV	39	7.2	3.2	2.9	6.0	6.4	8.1	9.8	10.7	12.4
RE	GRIDCART	REC1	ELEV	39	15.6	16.3	16.6	18.5	19.0	19.6	19.5	29.3	39.5
RE	GRIDCART	REC1	ELEV	39	64.1	84.0	87.4	91.7	98.3	101.6	90.6	125.6	
RE	GRIDCART	REC1	ELEV	39	114.1	89.4	81.6						
RE	GRIDCART	REC1	ELEV	40	0.0	0.0	0.0	0.5	0.4	0.4	0.5	10.7	59.4
RE	GRIDCART	REC1	ELEV	40	2.9	9.8	30.3	1.6	0.0	0.0	0.0	0.0	1.6
RE	GRIDCART	REC1	ELEV	40	1.5	1.4	1.6	1.4	1.3	1.9	1.9	1.6	2.5
RE	GRIDCART	REC1	ELEV	40	3.3	4.7	5.2	6.2	6.5	7.8	9.6	11.3	12.0
RE	GRIDCART	REC1	ELEV	40	14.0	15.3	16.1	17.0	17.7	16.3	20.6	30.5	22.3
RE	GRIDCART	REC1	ELEV	40	36.8	47.3	51.4	58.1	47.9	60.2	57.9	75.0	75.7
RE	GRIDCART	REC1	ELEV	40	66.4	50.3							
RE	GRIDCART	REC1	ELEV	41	0.0	0.0	0.0	0.0	0.0	0.4	4.6	41.7	7.1
RE	GRIDCART	REC1	ELEV	41	2.6	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
RE	GRIDCART	REC1	ELEV	41	1.7	1.4	8.1	2.3	1.4	1.7	2.0	2.2	3.2
RE	GRIDCART	REC1	ELEV	41	4.5	5.3	5.5	6.0	7.2	8.4	11.2	11.9	10.5
RE	GRIDCART	REC1	ELEV	41	14.2	15.9	17.1	17.9	19.2	20.9	23.3	24.1	25.2
RE	GRIDCART	REC1	ELEV	41	25.6	34.4	30.5	30.4	35.2	33.4	36.1	67.8	49.3
RE	GRIDCART	REC1	ELEV	41	62.4								
RE	GRIDCART	REC1	ELEV	42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	42	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.6	1.5
RE	GRIDCART	REC1	ELEV	42	26.6	35.1	34.0	23.2	2.7	2.9	1.7	2.3	3.4
RE	GRIDCART	REC1	ELEV	42	4.1	6.3	5.4	4.9	5.9	6.9	8.4	10.3	10.5
RE	GRIDCART	REC1	ELEV	42	12.0	13.2	15.3	16.2	17.6	18.6	22.3	23.2	24.7
RE	GRIDCART	REC1	ELEV	42	25.8	26.7	32.2	26.6	29.3	23.0	23.2	33.1	43.6
RE	GRIDCART	REC1	ELEV	42	44.7	38.2							
RE	GRIDCART	REC1	ELEV	43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	43	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.6	2.5
RE	GRIDCART	REC1	ELEV	43	37.3	47.8	47.1	45.6	6.9	4.2	1.8	2.5	1.6
RE	GRIDCART	REC1	ELEV	43	3.6	4.2	5.3	2.5	7.3	3.6	8.8	8.1	8.3
RE	GRIDCART	REC1	ELEV	43	11.5	13.1	15.0	16.0	15.8	18.6	20.9	31.3	30.3
RE	GRIDCART	REC1	ELEV	43	26.2	31.8	38.8	41.9	35.4	34.9	38.2	27.0	34.3
RE	GRIDCART	REC1	ELEV	43	31.7	26.8							
RE	GRIDCART	REC1	ELEV	44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
RE	GRIDCART	REC1	ELEV	44	1.8	1.5	23.2	10.5	10.4	4.6	2.3	2.6	3.3
RE	GRIDCART	REC1	ELEV	44	3.2	4.2	5.1	5.7	7.1	7.4	7.8	8.8	10.0
RE	GRIDCART	REC1	ELEV	44									11.5

Attachment 1 Example Modeling Input Offroad Sources.inp

RE	GRIDCART	REC1	ELEV	44	13.2	14.1	15.1	16.2	21.2	31.8	40.3	51.5	32.1
RE	GRIDCART	REC1	ELEV	44	33.6	45.8	47.8	67.4	70.4	63.5	40.0	33.7	34.6
RE	GRIDCART	REC1	ELEV	44	56.0								
RE	GRIDCART	REC1	ELEV	45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	45	0.0	1.7	5.8	7.4	7.1	2.1	2.3	2.4	2.5
RE	GRIDCART	REC1	ELEV	45	3.2	4.5	4.6	5.6	6.2	7.6	9.3	9.9	11.5
RE	GRIDCART	REC1	ELEV	45	13.0	14.7	21.6	24.6	54.2	59.2	46.2	63.8	43.3
RE	GRIDCART	REC1	ELEV	45	52.0	55.1	70.0	67.9	75.4	62.1	63.2	40.6	35.5
RE	GRIDCART	REC1	ELEV	46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	46	0.0	0.0	1.6	1.4	1.7	1.8	1.9	1.8	1.7
RE	GRIDCART	REC1	ELEV	46	3.4	3.9	4.3	5.7	7.4	8.4	8.9	10.2	10.9
RE	GRIDCART	REC1	ELEV	46	12.7	19.0	33.2	59.6	60.6	67.8	76.5	69.8	71.3
RE	GRIDCART	REC1	ELEV	46	65.6	57.3	63.1	75.3	85.0	87.0	82.2	51.2	51.5
RE	GRIDCART	REC1	ELEV	47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	47	0.0	0.0	0.0	1.5	1.9	1.8	1.7	1.5	1.4
RE	GRIDCART	REC1	ELEV	47	3.8	2.9	4.1	4.9	6.0	7.4	8.4	9.3	11.1
RE	GRIDCART	REC1	ELEV	47	13.8	30.6	48.4	62.8	69.9	77.1	73.9	74.7	71.5
RE	GRIDCART	REC1	ELEV	47	80.7	82.6	70.1	82.8	90.3	103.1	87.7	81.4	62.5
RE	GRIDCART	REC1	ELEV	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
RE	GRIDCART	REC1	ELEV	48	3.5	3.2	4.0	4.5	5.5	7.3	7.8	8.9	11.0
RE	GRIDCART	REC1	ELEV	48	40.5	41.3	68.2	63.3	74.5	75.5	74.5	73.0	79.2
RE	GRIDCART	REC1	ELEV	48	88.5	87.2	83.4	89.6	101.4	107.3	101.3	99.2	
RE	GRIDCART	REC1	ELEV	48	95.6								
RE	GRIDCART	REC1	ELEV	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
RE	GRIDCART	REC1	ELEV	49	3.1	3.3	3.7	4.2	6.0	6.6	8.0	10.7	14.8
RE	GRIDCART	REC1	ELEV	49	43.0	47.8	71.1	79.5	79.4	69.9	63.1	62.1	70.7
RE	GRIDCART	REC1	ELEV	49	81.9	87.2	88.2	98.2	92.6	95.4	85.2	101.4	
RE	GRIDCART	REC1	ELEV	49	102.9								
RE	GRIDCART	REC1	ELEV	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
RE	GRIDCART	REC1	ELEV	50	2.5	3.0	4.3	4.5	7.3	7.9	8.4	12.2	19.9
RE	GRIDCART	REC1	ELEV	50	58.1	74.4	66.1	72.7	76.2	60.2	57.0	61.9	64.6
RE	GRIDCART	REC1	ELEV	50	67.2	56.9	49.9	75.8	70.6	68.2	70.2	72.2	86.9
RE	GRIDCART	REC1	ELEV	51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	51	1.3	1.9	3.4	3.5	5.5	5.7	9.4	16.1	25.1
RE	GRIDCART	REC1	ELEV	51	63.5	75.6	75.1	79.1	62.4	57.0	60.9	57.6	57.4
RE	GRIDCART	REC1	ELEV	51	57.6	52.5	58.7	81.2	61.9	71.6	85.0	73.1	101.2
RE	GRIDCART	REC1	ELEV	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	52	0.0	1.1	2.5	2.9	3.8	6.0	9.4	14.2	31.8
RE	GRIDCART	REC1	ELEV	52	55.8	66.0	70.3	70.7	57.6	47.9	44.2	51.9	33.9
RE	GRIDCART	REC1	ELEV	52	55.8	59.0	65.3	75.3	67.6	69.3	96.2	83.8	90.1
RE	GRIDCART	REC1	ELEV	53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	53	0.0	2.8	3.9	2.7	2.8	4.5	9.3	22.9	27.3
RE	GRIDCART	REC1	ELEV	53	48.2	54.1	52.6	56.5	60.9	50.9	41.8	27.0	43.1
RE	GRIDCART	REC1	ELEV	53	59.4	63.3	68.2	71.9	78.7	77.3	84.3	82.3	78.1
RE	GRIDCART	REC1	ELEV	54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	54	0.0	0.0	1.2	2.0	2.0	4.4	10.8	30.7	40.6

Attachment 1 Example Modeling Input Offroad Sources.inp

RE	GRIDCART	REC1	ELEV	54	34.0	51.7	49.9	47.4	52.5	49.6	41.3	27.9	33.9
RE	GRIDCART	REC1	ELEV	54	63.1	71.4	72.3	75.6	76.0	82.1	72.7	79.4	88.2
RE	GRIDCART	REC1	ELEV	55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	55	0.0	0.0	1.3	1.3	2.1	8.1	15.9	31.6	43.8
RE	GRIDCART	REC1	ELEV	55	47.2	44.6	45.8	40.8	44.7	44.9	38.7	28.6	31.9
RE	GRIDCART	REC1	ELEV	55	51.1	47.6	60.7	64.4	63.4	73.1	68.3	81.7	82.7
RE	GRIDCART	REC1	ELEV	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	56	0.0	0.0	0.0	1.3	2.0	10.3	22.3	31.1	32.9
RE	GRIDCART	REC1	ELEV	56	37.6	44.4	37.7	37.0	42.0	40.6	35.6	20.6	30.3
RE	GRIDCART	REC1	ELEV	56	25.9	42.0	50.1	61.4	41.0	52.0	64.9	72.6	64.6
RE	GRIDCART	REC1	ELEV	57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	57	0.0	0.0	1.4	1.3	6.6	13.4	22.7	28.2	28.7
RE	GRIDCART	REC1	ELEV	57	26.2	33.4	25.5	27.9	32.9	35.3	36.7	34.5	15.4
RE	GRIDCART	REC1	ELEV	57	18.3	39.0	52.1	32.4	51.0	65.8	55.5	64.7	55.1
RE	GRIDCART	REC1	ELEV	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	58	0.0	0.0	1.6	6.5	19.4	21.3	23.0	21.7	26.4
RE	GRIDCART	REC1	ELEV	58	24.7	17.1	18.3	9.3	24.5	29.2	28.9	26.9	34.8
RE	GRIDCART	REC1	ELEV	58	20.2	11.9	38.2	39.1	26.3	38.0	49.4	50.9	41.0
RE	GRIDCART	REC1	ELEV	58	58.9								
RE	GRIDCART	REC1	ELEV	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	59	0.0	1.6	2.6	20.0	19.6	20.0	19.9	19.4	18.4
RE	GRIDCART	REC1	ELEV	59	14.7	14.7	14.7	13.8	19.9	15.8	17.4	20.3	29.5
RE	GRIDCART	REC1	ELEV	59	34.6	19.7	11.6	31.7	20.7	30.7	39.2	37.2	43.9
RE	GRIDCART	REC1	ELEV	59	61.5								
RE	GRIDCART	REC1	ELEV	60	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	60	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
RE	GRIDCART	REC1	ELEV	60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	60	0.0	0.0	-0.0	9.6	29.6	25.2	18.8	9.1	16.5
RE	GRIDCART	REC1	ELEV	60	18.5	17.2	14.1	13.4	14.6	11.5	11.1	8.3	14.1
RE	GRIDCART	REC1	ELEV	60	12.2	22.0	25.2	8.7	12.2	22.2	14.5	28.6	36.1
RE	GRIDCART	REC1	ELEV	60	32.5	43.3	72.8						
RE	GRIDCART	REC1	ELEV	61	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	1.1
RE	GRIDCART	REC1	ELEV	61	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0
RE	GRIDCART	REC1	ELEV	61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	61	0.5	18.3	31.6	26.0	19.2	13.3	15.4	10.1	10.3
RE	GRIDCART	REC1	ELEV	61	15.6	8.7	4.0	6.9	8.2	4.7	3.9	5.4	11.6
RE	GRIDCART	REC1	ELEV	61	6.4	7.7	8.6	12.5	17.2	31.4	31.5	50.9	79.8
RE	GRIDCART	REC1	HILL	1	229.6	229.6	229.6	229.6	193.9	193.9	0.0	0.0	
RE	GRIDCART	REC1	HILL	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	1	1.7	0.0	0.2	11.0	8.7	103.6	103.6	103.6	103.6
RE	GRIDCART	REC1	HILL	2	229.6	229.6	229.6	229.6	193.9	193.9	0.0	0.0	
RE	GRIDCART	REC1	HILL	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	2	0.0	0.0	0.0	0.0	0.0	0.0	51.1	51.1	51.1
RE	GRIDCART	REC1	HILL	2	51.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	2	0.0	0.0	0.0	0.2	0.2	103.6	103.6	103.6	103.6
RE	GRIDCART	REC1	HILL	2	103.6								
RE	GRIDCART	REC1	HILL	3	229.6	229.6	229.6	227.7	193.9	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Attachment 1 Example Modeling Input Offroad Sources.inp

RE GRIDCART REC1 HILL	3	0.0	0.0	0.0	0.0	0.0	51.1	51.1	51.1	51.1	51.1
RE GRIDCART REC1 HILL	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	3	-0.1	4.7	0.2	0.2	103.6	103.6	103.6	103.6	103.6	103.6
RE GRIDCART REC1 HILL	4	229.6	229.6	229.6	193.9	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	4	0.0	0.0	0.0	0.0	0.0	51.1	51.1	51.1	51.1	51.1
RE GRIDCART REC1 HILL	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	4	25.6	25.6	0.3	0.3	103.6	103.6	103.6	103.6		
RE GRIDCART REC1 HILL	4	103.6									
RE GRIDCART REC1 HILL	5	229.6	229.6	229.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	0.0
RE GRIDCART REC1 HILL	5	0.0	-0.3	0.0	-0.0	0.2	51.1	51.1	51.1	51.1	0.0
RE GRIDCART REC1 HILL	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.6
RE GRIDCART REC1 HILL	5	25.6	6.3	7.5	101.2	103.6	103.6	103.6	103.6		
RE GRIDCART REC1 HILL	6	229.6	229.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	6	1.7	2.6	0.0	0.0	-0.1	0.1	51.1	51.1	0.0	0.0
RE GRIDCART REC1 HILL	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8
RE GRIDCART REC1 HILL	6	4.8	5.2	3.9	10.9	103.6	103.6	103.6	103.6		
RE GRIDCART REC1 HILL	7	229.6	227.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2
RE GRIDCART REC1 HILL	7	-0.0	0.2	0.3	0.3	0.1	0.1	-0.1	-0.3	0.0	0.0
RE GRIDCART REC1 HILL	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	7	4.0	6.8	3.9	1.4	25.5	29.3	29.5	103.6	307.0	
RE GRIDCART REC1 HILL	8	227.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	101.4	101.4
RE GRIDCART REC1 HILL	8	101.3	0.9	5.8	0.9	0.8	0.5	0.3	-0.2	0.0	0.0
RE GRIDCART REC1 HILL	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	8	1.1	6.2	4.3	3.6	25.5	25.5	17.4	307.7	307.7	
RE GRIDCART REC1 HILL	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	9	0.0	0.0	0.0	60.0	60.0	103.5	103.5	103.5	103.5	
RE GRIDCART REC1 HILL	9	103.4	101.4	5.3	4.9	1.1	0.9	0.6	0.0	0.0	0.0
RE GRIDCART REC1 HILL	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	9	1.1	4.1	1.7	3.9	6.2	25.8	307.0	307.7	307.7	
RE GRIDCART REC1 HILL	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	10	5.9	1.0	60.2	94.9	103.5	103.5	103.5	103.5		
RE GRIDCART REC1 HILL	10	103.5	103.5	103.4	101.4	4.7	1.2	1.1	1.1	1.0	0.4
RE GRIDCART REC1 HILL	10	-0.2	8.1	5.5	4.3	4.2	5.3	1.1	1.1	1.5	1.1
RE GRIDCART REC1 HILL	10	1.5	1.5	1.1	3.3	1.6	4.9	4.8	307.7	307.7	
RE GRIDCART REC1 HILL	10	307.7	307.7	307.7							
RE GRIDCART REC1 HILL	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	11	0.0	60.2	94.9	103.5	103.5	103.5	103.5	103.5		
RE GRIDCART REC1 HILL	11	103.5	103.5	103.5	103.4	101.4	1.1	4.7	4.5	4.4	
RE GRIDCART REC1 HILL	11	0.9	0.0	1.1	1.3	5.2	4.6	4.4	1.5	1.5	3.9
RE GRIDCART REC1 HILL	11	2.8	3.4	2.8	4.2	4.7	307.7	307.7	307.7	307.7	
RE GRIDCART REC1 HILL	11	307.7	307.7								
RE GRIDCART REC1 HILL	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	12	0.0	94.9	113.7	100.9	103.5	113.7	113.7	103.5		
RE GRIDCART REC1 HILL	12	103.5	103.5	101.4	103.5	101.4	1.2	3.8	4.6	4.5	
RE GRIDCART REC1 HILL	12	1.1	0.8	1.1	1.5	5.5	5.0	3.8	4.5	1.2	5.3
RE GRIDCART REC1 HILL	12	3.8	3.6	10.8	5.3	307.7	307.7	307.7	307.7		
RE GRIDCART REC1 HILL	12	307.7	307.7	307.7							
RE GRIDCART REC1 HILL	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Attachment 1 Example Modeling Input Offroad Sources.inp

RE	GRIDCART	REC1	HILL	13	0.0	113.7	113.7	113.7	113.7	113.7	113.7	103.5			
RE	GRIDCART	REC1	HILL	13	103.4	103.5	103.5	103.5	103.4	1.2	3.7	4.3	4.3		
RE	GRIDCART	REC1	HILL	13	1.1	1.3	1.4	5.1	4.9	4.9	4.3	4.0	4.4	4.3	6.6
RE	GRIDCART	REC1	HILL	13	4.9	4.9	6.5	16.2	307.7	307.7	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	13	307.7	307.7	307.7								
RE	GRIDCART	REC1	HILL	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
RE	GRIDCART	REC1	HILL	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
RE	GRIDCART	REC1	HILL	14	113.7	113.7	113.7	113.7	113.7	100.9	100.7				
RE	GRIDCART	REC1	HILL	14	103.5	103.5	103.5	103.5	103.5	102.5	1.1	3.7			
RE	GRIDCART	REC1	HILL	14	3.9	4.1	3.6	3.4	4.0	3.2	4.0	3.3	3.7	5.1	5.6
RE	GRIDCART	REC1	HILL	14	5.8	7.0	6.4	7.4	5.2	32.7	32.8	307.7	307.7		
RE	GRIDCART	REC1	HILL	14	307.7	307.7	307.7	307.7							
RE	GRIDCART	REC1	HILL	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	15	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7		
RE	GRIDCART	REC1	HILL	15	113.7	113.7	113.7	103.5	103.5	101.4	1.1	3.3			
RE	GRIDCART	REC1	HILL	15	3.7	3.9	5.6	4.2	4.4	4.0	3.6	3.4	4.0	6.2	6.9
RE	GRIDCART	REC1	HILL	15	7.2	7.8	8.4	8.4	6.4	307.7	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	15	307.7	307.7	307.7	307.7							
RE	GRIDCART	REC1	HILL	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	16	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7		
RE	GRIDCART	REC1	HILL	16	113.7	113.7	113.7	113.7	103.5	103.5	3.3	11.9			
RE	GRIDCART	REC1	HILL	16	3.5	3.7	3.8	3.6	3.8	3.6	3.9	5.6	5.4	5.5	6.3
RE	GRIDCART	REC1	HILL	16	7.7	9.4	11.6	9.6	8.7	8.4	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	16	307.7	307.7	307.7	307.7	307.7	307.7					
RE	GRIDCART	REC1	HILL	17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	17	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	17	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7		
RE	GRIDCART	REC1	HILL	17	113.7	113.7	113.7	113.7	113.7	113.7	1.1	3.7	4.7	3.8	
RE	GRIDCART	REC1	HILL	17	2.7	2.7	3.7	3.2	4.1	5.3	6.3	6.4	6.6	7.4	8.4
RE	GRIDCART	REC1	HILL	17	13.3	9.9	11.0	9.8	307.6	307.7	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	17	307.7	307.7	307.7	307.7	307.7	307.7					
RE	GRIDCART	REC1	HILL	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	18	0.0	0.0	0.0	5.1	4.8	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	18	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7		
RE	GRIDCART	REC1	HILL	18	113.7	113.7	113.7	113.7	113.7	2.8	2.4	3.8	4.0	3.2	
RE	GRIDCART	REC1	HILL	18	3.4	5.7	5.0	5.3	5.7	8.9	9.2	9.0	8.6	9.1	
RE	GRIDCART	REC1	HILL	18	10.1	11.5	12.6	12.3	12.0	307.7	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	18	307.7	307.7	307.7	307.7	307.7	307.7	307.7				
RE	GRIDCART	REC1	HILL	19	0.0	0.0	0.0	0.0	53.5	53.5	53.5	0.0	0.0	0.0	
RE	GRIDCART	REC1	HILL	19	0.0	0.0	0.0	11.0	0.0	0.0	6.3	0.0	0.0	0.0	
RE	GRIDCART	REC1	HILL	19	0.0	65.4	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7	
RE	GRIDCART	REC1	HILL	19	113.7	113.7	113.7	113.7	113.7	3.0	2.3	4.0	3.7	7.5	
RE	GRIDCART	REC1	HILL	19	3.7	3.8	6.1	6.7	7.1	21.7	13.7	13.1	10.5	10.6	
RE	GRIDCART	REC1	HILL	19	11.8	11.8	13.6	14.1	13.2	307.7	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	19	307.7	307.7	307.7	307.7	307.7	307.7	307.7				
RE	GRIDCART	REC1	HILL	20	0.0	0.0	0.0	53.5	53.5	53.5	53.5	53.5	0.0	0.0	
RE	GRIDCART	REC1	HILL	20	0.0	0.0	14.1	14.1	0.0	0.0	0.0	5.3	0.0	0.0	
RE	GRIDCART	REC1	HILL	20	1.1	65.4	113.7	65.4	113.7	113.7	3.2	2.9	4.5	3.6	4.5
RE	GRIDCART	REC1	HILL	20	113.7	113.7	113.7	113.7	113.7	3.2	2.9	4.5	3.6	4.5	
RE	GRIDCART	REC1	HILL	20	4.8	4.8	6.1	8.0	8.4	9.0	9.9	11.6	12.1	12.4	
RE	GRIDCART	REC1	HILL	20	12.9	13.8	14.3	15.3	15.5	307.7	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	20	307.7	307.7	307.7	307.7	307.7	307.7	307.7				
RE	GRIDCART	REC1	HILL	21	0.0	0.0	0.0	53.5	53.5	53.5	53.5	53.5	0.0	0.0	
RE	GRIDCART	REC1	HILL	21	0.0	0.0	0.0	0.0	0.0	145.1	145.1	145.1	145.1	145.1	
RE	GRIDCART	REC1	HILL	21	145.1	145.1	65.4	65.4	65.4	113.7	113.7	113.7	113.7		
RE	GRIDCART	REC1	HILL	21	113.7	113.7	113.7	113.7	11.9	12.6	3.6	3.5	4.1		
RE	GRIDCART	REC1	HILL	21	4.9	6.0	5.6	7.3	8.6	9.7	10.4	11.5	12.0	13.5	
RE	GRIDCART	REC1	HILL	21	14.3	14.0	14.9	15.1	16.8	16.7	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	21	307.7	307.7	307.7	307.7	307.7	307.7	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	22	0.0	0.0	0.0	53.5	53.5	53.5	53.5	53.5	0.0	0.0	
RE	GRIDCART	REC1	HILL	22	0.0	0.0	0.0	145.1	145.1	150.1	150.1	150.1	150.1	150.1	

Attachment 1 Example Modeling Input Offroad Sources.inp

RE	GRIDCART	REC1	HILL	22	150.1	150.1	145.1	59.9	53.9	65.4	65.4	113.7
RE	GRIDCART	REC1	HILL	22	113.7	113.7	113.7	3.1	4.3	3.8	4.7	4.1
RE	GRIDCART	REC1	HILL	22	4.7	5.4	6.6	6.7	7.7	9.6	11.0	12.3
RE	GRIDCART	REC1	HILL	22	14.2	14.9	15.6	16.0	16.8	18.0	18.4	307.7
RE	GRIDCART	REC1	HILL	22	307.7	307.7	307.7	307.7	307.7	307.7	307.7	307.7
RE	GRIDCART	REC1	HILL	22	307.7							
RE	GRIDCART	REC1	HILL	23	0.0	0.0	0.0	53.5	53.5	53.5	53.5	53.5
RE	GRIDCART	REC1	HILL	23	0.0	0.0	145.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	23	150.1	150.1	59.9	59.9	59.9	65.4	65.4	4.5
RE	GRIDCART	REC1	HILL	23	4.1	3.6	3.0	3.6	3.8	4.3	4.8	5.4
RE	GRIDCART	REC1	HILL	23	11.3	9.0	13.0	13.1	13.5	16.2	16.3	16.0
RE	GRIDCART	REC1	HILL	23	18.8	19.0	19.0	21.1	28.4	213.1	307.7	307.7
RE	GRIDCART	REC1	HILL	23	307.7	307.7	307.7	307.7	307.7	307.7	307.7	
RE	GRIDCART	REC1	HILL	24	0.0	0.0	0.0	0.0	0.0	53.5	3.4	0.0
RE	GRIDCART	REC1	HILL	24	0.0	144.0	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	24	150.1	150.1	150.1	150.1	150.1	150.1	4.5	4.6
RE	GRIDCART	REC1	HILL	24	4.2	4.2	3.5	3.8	3.4	3.9	4.6	5.5
RE	GRIDCART	REC1	HILL	24	7.7	8.8	9.6	10.3	12.1	13.8	15.7	16.3
RE	GRIDCART	REC1	HILL	24	16.8	18.0	18.9	19.9	20.0	27.1	213.1	307.7
RE	GRIDCART	REC1	HILL	24	307.7	307.7	307.7	307.7	307.7	307.4	307.5	307.7
RE	GRIDCART	REC1	HILL	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	25	145.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	25	150.1	145.1	150.1	150.1	150.1	150.1	5.4	4.9
RE	GRIDCART	REC1	HILL	25	4.5	4.5	4.0	3.5	4.1	4.4	4.9	6.0
RE	GRIDCART	REC1	HILL	25	8.4	9.0	10.7	12.7	12.9	13.7	15.6	17.1
RE	GRIDCART	REC1	HILL	25	18.4	19.3	19.8	21.4	21.7	29.7	213.1	270.4
RE	GRIDCART	REC1	HILL	25	307.7	307.7	307.7	213.1	213.1	213.1	270.0	213.1
RE	GRIDCART	REC1	HILL	26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	26	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	26	145.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	26	4.4	3.9	11.7	4.1	3.9	4.8	5.1	5.6
RE	GRIDCART	REC1	HILL	26	8.4	9.2	10.3	12.1	13.2	14.2	14.4	17.1
RE	GRIDCART	REC1	HILL	26	19.8	20.8	20.5	22.4	23.3	23.8	30.3	212.9
RE	GRIDCART	REC1	HILL	26	213.1	213.1	213.1	213.1	213.1	213.1	213.1	213.1
RE	GRIDCART	REC1	HILL	26	213.1							
RE	GRIDCART	REC1	HILL	27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	27	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	27	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	27	3.9	4.1	7.0	3.6	3.6	4.5	4.9	5.4
RE	GRIDCART	REC1	HILL	27	9.7	11.4	11.9	12.9	15.0	15.6	16.8	19.3
RE	GRIDCART	REC1	HILL	27	22.0	21.9	24.1	24.8	25.7	30.4	198.1	198.1
RE	GRIDCART	REC1	HILL	27	213.0	213.1	213.1	213.1	213.1	213.1	212.9	198.1
RE	GRIDCART	REC1	HILL	28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	28	131.6	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	28	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	28	150.1	2.4	2.4	4.9	5.7	4.1	4.1	4.5
RE	GRIDCART	REC1	HILL	28	6.0	6.9	8.2	10.2	11.5	12.8	14.1	15.3
RE	GRIDCART	REC1	HILL	28	17.6	20.7	22.3	24.2	24.1	39.6	27.3	27.2
RE	GRIDCART	REC1	HILL	28	198.1	64.2	198.1	198.1	198.1	198.1	198.1	198.1
RE	GRIDCART	REC1	HILL	28	212.9							
RE	GRIDCART	REC1	HILL	29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	131.6
RE	GRIDCART	REC1	HILL	29	134.5	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	29	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	29	150.1	149.5	3.8	4.8	4.8	3.3	4.1	4.1
RE	GRIDCART	REC1	HILL	29	6.2	7.2	8.9	11.4	11.9	13.0	14.3	16.3
RE	GRIDCART	REC1	HILL	29	19.0	21.1	23.2	26.0	26.2	43.1	29.8	30.6
RE	GRIDCART	REC1	HILL	29	246.0	246.0	246.0	246.0	246.0	246.0	198.1	198.1
RE	GRIDCART	REC1	HILL	29	323.5	326.3						
RE	GRIDCART	REC1	HILL	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	134.5
RE	GRIDCART	REC1	HILL	30	134.5	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	30	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	30	150.1	4.4	6.0	5.4	3.7	3.6	3.8	5.3
RE	GRIDCART	REC1	HILL	30	6.8	7.4	9.9	11.5	12.6	14.2	15.5	17.3

Attachment 1 Example Modeling Input Offroad Sources.inp

RE GRIDCART REC1 HILL	30	21.2	22.0	24.3	28.1	28.2	28.3	30.9	32.3	31.6
RE GRIDCART REC1 HILL	30	246.0	246.0	246.0	246.0	246.0	246.0	246.0	246.0	
RE GRIDCART REC1 HILL	30	326.3	326.3							
RE GRIDCART REC1 HILL	31	0.0	0.0	0.0	0.0	0.0	0.0	5.9	131.6	134.5
RE GRIDCART REC1 HILL	31	134.5	150.1	150.1	150.1	150.1	150.1	150.1	120.0	
RE GRIDCART REC1 HILL	31	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1	
RE GRIDCART REC1 HILL	31	150.1	6.1	4.0	4.6	6.2	3.6	5.1	2.8	5.1 6.2
RE GRIDCART REC1 HILL	31	12.0	8.0	9.4	11.4	12.7	13.8	16.5	18.8	20.0
RE GRIDCART REC1 HILL	31	21.8	22.9	25.4	28.5	31.7	31.4	33.1	35.8	245.6
RE GRIDCART REC1 HILL	31	246.0	246.0	246.0	246.0	246.0	246.0	246.0	326.3	
RE GRIDCART REC1 HILL	31	326.3	323.5							
RE GRIDCART REC1 HILL	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	134.5	134.5
RE GRIDCART REC1 HILL	32	134.5	134.5	134.5	134.5	134.5	134.5	134.5	134.5	
RE GRIDCART REC1 HILL	32	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1	
RE GRIDCART REC1 HILL	32	150.1	2.5	2.0	4.3	4.8	2.8	6.1	2.8	13.7 8.7
RE GRIDCART REC1 HILL	32	6.3	15.1	10.3	11.6	13.0	14.7	16.4	17.6	19.8
RE GRIDCART REC1 HILL	32	21.6	24.1	24.8	27.9	30.9	33.9	34.0	222.2	
RE GRIDCART REC1 HILL	32	246.0	246.0	246.0	246.0	246.0	246.0	246.0	326.3	
RE GRIDCART REC1 HILL	32	323.5	323.5	246.0						
RE GRIDCART REC1 HILL	33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	134.5	134.5
RE GRIDCART REC1 HILL	33	134.5	134.5	134.5	134.5	134.5	134.5	134.5	150.1	
RE GRIDCART REC1 HILL	33	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1	6.4
RE GRIDCART REC1 HILL	33	1.4	1.7	6.5	3.4	4.1	5.6	9.5	11.7	5.8 6.8
RE GRIDCART REC1 HILL	33	10.2	17.3	12.0	13.0	14.9	16.2	18.1	19.8	21.5
RE GRIDCART REC1 HILL	33	23.2	26.6	27.8	30.4	33.1	36.8	223.0	246.0	
RE GRIDCART REC1 HILL	33	246.0	246.0	246.0	246.0	323.5	323.5	323.5	323.5	
RE GRIDCART REC1 HILL	33	323.5	323.1							
RE GRIDCART REC1 HILL	34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	134.5	134.5
RE GRIDCART REC1 HILL	34	134.5	134.5	134.5	134.5	134.5	134.5	134.5	150.1	
RE GRIDCART REC1 HILL	34	150.1	150.1	150.1	150.1	150.1	150.1	150.1	129.9	6.7
RE GRIDCART REC1 HILL	34	6.1	2.2	3.9	6.0	3.9	3.7	4.6	4.0	5.9 7.3 8.8
RE GRIDCART REC1 HILL	34	10.7	12.3	14.5	15.7	17.5	19.2	20.7	23.4	23.8
RE GRIDCART REC1 HILL	34	25.5	27.4	29.2	31.5	223.0	228.0	246.0	246.0	
RE GRIDCART REC1 HILL	34	246.0	246.0	323.5	323.5	323.5	265.1	265.1		
RE GRIDCART REC1 HILL	34	246.0								
RE GRIDCART REC1 HILL	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	134.5	134.5
RE GRIDCART REC1 HILL	35	134.5	134.5	134.5	134.5	134.5	134.5	134.5	150.1	
RE GRIDCART REC1 HILL	35	150.1	150.1	150.1	150.1	150.1	148.5	5.0	1.6	
RE GRIDCART REC1 HILL	35	1.6	6.2	4.4	4.9	1.8	5.8	3.6	3.9	5.5 6.8 8.4
RE GRIDCART REC1 HILL	35	10.1	15.9	13.9	15.0	16.8	18.8	20.9	23.0	24.6
RE GRIDCART REC1 HILL	35	24.7	27.1	28.8	161.1	223.0	223.0	246.0	246.0	
RE GRIDCART REC1 HILL	35	246.0	246.0	246.0	246.0	246.0	246.0	246.0	246.0	
RE GRIDCART REC1 HILL	35	246.0								
RE GRIDCART REC1 HILL	36	0.0	0.0	0.0	0.0	0.0	5.6	101.5	131.6	
RE GRIDCART REC1 HILL	36	134.5	134.5	134.5	131.6	134.5	134.5	134.5	134.5	
RE GRIDCART REC1 HILL	36	150.1	150.1	150.1	150.1	148.5	4.0	6.0	1.6	1.8
RE GRIDCART REC1 HILL	36	1.8	2.0	4.1	2.3	3.2	3.0	4.5	3.5	5.0 6.2 7.9
RE GRIDCART REC1 HILL	36	10.1	13.7	12.5	13.5	15.3	17.4	19.3	20.5	21.9
RE GRIDCART REC1 HILL	36	24.0	24.8	143.0	161.1	223.0	223.0	223.0	228.0	
RE GRIDCART REC1 HILL	36	228.0	223.0	228.0	246.0	246.0	246.0	246.0	228.0	
RE GRIDCART REC1 HILL	36	265.1								
RE GRIDCART REC1 HILL	37	0.0	0.0	0.0	0.0	0.0	6.2	101.5	101.5	
RE GRIDCART REC1 HILL	37	131.6	131.6	101.5	134.5	134.5	134.5	134.5	134.5	
RE GRIDCART REC1 HILL	37	134.5	134.5	134.5	134.5	1.5	1.7	1.8	1.7	1.8
RE GRIDCART REC1 HILL	37	1.9	2.1	2.4	3.7	4.1	3.1	3.9	4.2	5.1 6.1 7.2
RE GRIDCART REC1 HILL	37	9.0	11.7	11.0	12.0	14.1	15.9	17.6	19.5	20.7
RE GRIDCART REC1 HILL	37	23.0	26.9	145.5	222.2	223.0	223.0	223.0	222.2	222.2
RE GRIDCART REC1 HILL	37	222.2	161.1	223.0	223.0	223.0	223.0	223.0	246.0	
RE GRIDCART REC1 HILL	37	323.5								
RE GRIDCART REC1 HILL	38	0.0	0.0	0.0	0.0	0.0	74.0	101.5	101.5	
RE GRIDCART REC1 HILL	38	101.5	101.5	101.5	101.5	134.5	134.5	134.5	134.5	
RE GRIDCART REC1 HILL	38	134.5	134.5	134.5	134.5	1.9	1.6	1.8	1.8	1.5
RE GRIDCART REC1 HILL	38	1.9	1.7	2.4	2.3	4.3	4.5	4.3	4.6	5.3 5.9 7.1

Attachment 1 Example Modeling Input Offroad Sources.inp

RE	GRIDCART	REC1	HILL	38	8.3	10.1	10.7	11.4	13.8	15.2	17.2	17.9	19.1
RE	GRIDCART	REC1	HILL	38	23.3	26.5	161.1	222.2	223.0	223.0	161.1	145.5	
RE	GRIDCART	REC1	HILL	38	223.0	223.0	223.0	223.0	223.0	223.0	266.8		
RE	GRIDCART	REC1	HILL	38	323.5								
RE	GRIDCART	REC1	HILL	39	0.0	0.0	0.0	0.0	0.6	70.3	74.0	101.5	74.0
RE	GRIDCART	REC1	HILL	39	74.0	101.5	101.5	101.5	134.5	134.5	134.5	134.5	
RE	GRIDCART	REC1	HILL	39	134.5	134.5	1.0	1.8	1.8	1.8	1.7	1.8	1.8
RE	GRIDCART	REC1	HILL	39	2.2	3.6	2.8	4.5	7.2	7.9	6.5	6.7	7.1
RE	GRIDCART	REC1	HILL	39	10.7	12.4	14.1	15.6	16.3	16.6	18.5	19.0	19.6
RE	GRIDCART	REC1	HILL	39	145.5	222.2	223.0	222.9	222.8	223.0	223.0		
RE	GRIDCART	REC1	HILL	39	223.0	228.0	246.0	228.0	246.0	323.5	323.5		
RE	GRIDCART	REC1	HILL	40	0.0	0.0	0.0	7.8	7.4	70.3	73.7	74.0	70.3
RE	GRIDCART	REC1	HILL	40	101.5	101.5	101.5	101.5	128.6	134.5	134.5		
RE	GRIDCART	REC1	HILL	40	128.6	0.0	0.0	1.6	1.5	51.7	53.0	53.6	53.6
RE	GRIDCART	REC1	HILL	40	1.9	1.9	1.6	3.6	2.9	4.7	4.3	4.7	5.2
RE	GRIDCART	REC1	HILL	40	8.2	9.6	11.3	12.0	13.8	14.3	15.3	16.1	17.0
RE	GRIDCART	REC1	HILL	40	17.7	22.0	145.5	145.5	223.0	223.0	223.0	223.0	
RE	GRIDCART	REC1	HILL	40	228.0	246.0	246.0	266.8	266.8	323.2	323.5		
RE	GRIDCART	REC1	HILL	40	326.3								
RE	GRIDCART	REC1	HILL	41	0.0	0.0	0.0	0.0	0.0	70.3	70.3	44.4	101.5
RE	GRIDCART	REC1	HILL	41	101.5	101.5	101.5	101.5	101.5	101.5	101.5	101.5	0.0
RE	GRIDCART	REC1	HILL	41	0.0	0.0	3.2	53.0	53.0	53.6	53.6	53.6	53.6
RE	GRIDCART	REC1	HILL	41	1.8	2.0	2.2	3.4	4.0	4.6	7.0	7.1	5.5
RE	GRIDCART	REC1	HILL	41	8.4	11.2	11.9	15.4	14.3	14.2	15.9	17.1	17.9
RE	GRIDCART	REC1	HILL	41	19.2	20.9	222.2	223.0	223.0	223.0	228.0	246.0	
RE	GRIDCART	REC1	HILL	41	246.0	265.1	266.8	323.5	266.8	323.5	323.5		
RE	GRIDCART	REC1	HILL	42	0.0	0.0	0.0	0.0	0.0	44.4	70.3	70.3	74.0
RE	GRIDCART	REC1	HILL	42	101.5	101.5	101.5	101.5	101.5	101.5	101.5	0.0	0.0
RE	GRIDCART	REC1	HILL	42	0.0	1.8	50.0	53.0	53.0	53.0	53.6	53.6	53.6
RE	GRIDCART	REC1	HILL	42	53.6	1.7	2.3	3.4	4.9	4.1	11.4	5.4	5.3
RE	GRIDCART	REC1	HILL	42	6.9	8.4	10.3	10.5	11.4	12.0	13.9	15.3	16.2
RE	GRIDCART	REC1	HILL	42	18.6	18.6	22.3	23.2	222.8	223.0	223.0	223.0	
RE	GRIDCART	REC1	HILL	42	228.0	246.0	266.8	266.8	323.5	323.5	323.5		
RE	GRIDCART	REC1	HILL	42	323.5								
RE	GRIDCART	REC1	HILL	43	0.0	0.0	0.0	0.0	0.0	0.0	43.8	70.3	70.3
RE	GRIDCART	REC1	HILL	43	0.0	101.5	101.5	0.0	0.0	0.0	0.0	0.0	1.8
RE	GRIDCART	REC1	HILL	43	53.0	50.0	47.8	47.1	45.6	53.6	48.3	1.8	3.0
RE	GRIDCART	REC1	HILL	43	4.3	4.8	3.6	4.2	5.3	9.8	7.3	11.0	8.8
RE	GRIDCART	REC1	HILL	43	8.9	10.5	11.5	13.1	15.0	16.0	17.3	18.6	65.7
RE	GRIDCART	REC1	HILL	43	63.9	66.3	223.0	223.0	223.0	223.0	228.0	228.0	
RE	GRIDCART	REC1	HILL	43	246.0	266.8	323.5	323.5	323.5				
RE	GRIDCART	REC1	HILL	44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.0
RE	GRIDCART	REC1	HILL	44	53.0	53.6	53.6	50.3	53.6	26.1	25.7	2.3	2.6
RE	GRIDCART	REC1	HILL	44	3.3	3.2	3.2	4.2	5.3	7.0	7.1	7.4	8.4
RE	GRIDCART	REC1	HILL	44	10.0	11.5	13.2	14.6	16.5	82.9	82.9	65.7	66.3
RE	GRIDCART	REC1	HILL	44	66.3	77.7	222.7	222.9	223.0	223.0	223.0	223.0	
RE	GRIDCART	REC1	HILL	44	228.0	266.8	323.1	266.8					
RE	GRIDCART	REC1	HILL	45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.3
RE	GRIDCART	REC1	HILL	45	53.0	53.0	53.6	48.6	39.9	29.4	26.0	2.3	2.9
RE	GRIDCART	REC1	HILL	45	2.5	3.5	2.7	3.2	4.5	4.6	10.0	6.2	8.9
RE	GRIDCART	REC1	HILL	45	9.9	11.5	12.3	14.0	82.9	82.9	83.8	54.2	65.7
RE	GRIDCART	REC1	HILL	45	83.8	63.8	78.4	75.7	74.9	74.9	81.9	83.9	223.0
RE	GRIDCART	REC1	HILL	45	223.0	223.0	266.8						
RE	GRIDCART	REC1	HILL	46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	46	0.0	0.0	39.9	39.9	1.7	1.8	1.9	1.8	1.7
RE	GRIDCART	REC1	HILL	46	4.4	3.4	3.9	4.3	5.7	7.4	8.4	8.9	10.2
RE	GRIDCART	REC1	HILL	46	11.7	88.7	88.7	88.7	82.9	83.8	83.8	76.5	69.8
RE	GRIDCART	REC1	HILL	46	71.3	83.0	89.8	63.1	87.6	87.2	109.1	110.5	
RE	GRIDCART	REC1	HILL	46	112.1	110.5							
RE	GRIDCART	REC1	HILL	47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Attachment 1 Example Modeling Input Offroad Sources.inp

RE	GRIDCART	REC1	HILL	47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
RE	GRIDCART	REC1	HILL	47	0.0	0.0	0.0	1.5	1.9	1.8	1.7	1.5	1.4	1.9	3.5
RE	GRIDCART	REC1	HILL	47	3.8	2.9	4.5	4.9	6.8	7.4	8.4	9.3	11.1	79.4	
RE	GRIDCART	REC1	HILL	47	88.7	88.7	88.7	82.9	82.9	77.1	76.4	74.7	74.1		
RE	GRIDCART	REC1	HILL	47	81.7	82.6	110.0	110.0	111.4	111.4	112.1	97.3			
RE	GRIDCART	REC1	HILL	47	107.3										
RE	GRIDCART	REC1	HILL	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	2.2
RE	GRIDCART	REC1	HILL	48	3.5	3.2	4.0	16.9	16.9	7.3	8.1	9.6	74.7	77.1	
RE	GRIDCART	REC1	HILL	48	48.3	88.7	88.7	88.7	81.7	75.5	74.5	74.4	84.4		
RE	GRIDCART	REC1	HILL	48	90.7	89.6	86.3	110.0	107.5	110.0	108.2	99.2			
RE	GRIDCART	REC1	HILL	48	103.9										
RE	GRIDCART	REC1	HILL	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.6
RE	GRIDCART	REC1	HILL	49	11.9	3.9	4.2	4.8	7.7	6.9	8.0	10.7	77.5	77.3	
RE	GRIDCART	REC1	HILL	49	78.6	88.7	88.7	88.6	81.2	69.9	74.1	69.1	88.8		
RE	GRIDCART	REC1	HILL	49	83.9	91.0	94.3	98.2	104.4	111.2	111.2	107.6			
RE	GRIDCART	REC1	HILL	49	102.9										
RE	GRIDCART	REC1	HILL	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
RE	GRIDCART	REC1	HILL	50	2.5	3.0	4.3	4.5	7.3	7.9	20.6	45.1	77.5	77.3	
RE	GRIDCART	REC1	HILL	50	77.5	74.4	77.7	72.7	80.6	83.3	70.3	76.5	77.8		
RE	GRIDCART	REC1	HILL	50	93.3	95.6	110.0	109.1	110.0	111.2	111.2	107.6			
RE	GRIDCART	REC1	HILL	50	103.7										
RE	GRIDCART	REC1	HILL	51	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	51	0.0	1.3	1.9	3.4	3.7	7.0	8.8	9.4	45.1	73.4	
RE	GRIDCART	REC1	HILL	51	74.8	75.1	78.5	77.1	80.4	77.2	57.0	66.1	76.2		
RE	GRIDCART	REC1	HILL	51	75.8	93.3	93.3	88.3	88.0	102.1	102.1	102.1			
RE	GRIDCART	REC1	HILL	51	108.7	101.2									
RE	GRIDCART	REC1	HILL	52	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	52	0.0	0.0	1.1	2.5	2.9	7.0	8.4	9.4	53.8	62.1	
RE	GRIDCART	REC1	HILL	52	64.5	64.2	68.3	78.1	76.4	70.9	59.8	65.8	60.9		
RE	GRIDCART	REC1	HILL	52	83.8	83.8	83.8	88.3	88.3	86.8	102.1	97.0	98.1		
RE	GRIDCART	REC1	HILL	52	90.5										
RE	GRIDCART	REC1	HILL	53	108.1	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	53	0.0	0.0	2.8	3.9	2.7	7.2	9.2	9.6	26.2	47.8	
RE	GRIDCART	REC1	HILL	53	64.1	62.3	69.8	78.1	56.5	60.9	57.9	57.9	75.7		
RE	GRIDCART	REC1	HILL	53	75.7	82.7	88.4	88.4	80.9	95.0	96.0	93.4	82.3		
RE	GRIDCART	REC1	HILL	53	80.1										
RE	GRIDCART	REC1	HILL	54	108.1	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	54	0.0	0.0	1.1	1.2	2.0	7.5	9.6	34.7	34.1	40.6	
RE	GRIDCART	REC1	HILL	54	47.8	63.2	51.7	49.9	57.3	52.5	54.7	53.2	63.6		
RE	GRIDCART	REC1	HILL	54	88.2	70.5	88.2	88.4	87.1	93.4	83.6	88.5	79.4		
RE	GRIDCART	REC1	HILL	54	88.2										
RE	GRIDCART	REC1	HILL	55	108.1	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	55	0.0	0.0	0.0	1.3	1.8	2.1	8.1	27.8	33.4	41.5	
RE	GRIDCART	REC1	HILL	55	43.8	49.9	52.6	52.1	40.8	44.7	44.9	52.6	53.1		
RE	GRIDCART	REC1	HILL	55	88.2	88.2	88.4	88.2	88.7	93.4	74.5	69.6	87.5		
RE	GRIDCART	REC1	HILL	55	91.0										
RE	GRIDCART	REC1	HILL	56	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Attachment 1 Example Modeling Input Offroad Sources.inp

RE	GRIDCART	REC1	HILL	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	56	0.0	0.0	0.0	0.0	1.3	2.0	23.3	26.4	31.6	35.0
RE	GRIDCART	REC1	HILL	56	38.3	38.2	48.2	50.6	37.3	44.6	44.5	47.3	51.8	
RE	GRIDCART	REC1	HILL	56	32.0	88.4	88.2	87.1	61.4	93.4	93.4	72.9	72.6	
RE	GRIDCART	REC1	HILL	56	101.2									
RE	GRIDCART	REC1	HILL	57	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	57	0.0	0.0	0.0	1.4	1.9	13.8	20.8	27.5	28.2	29.6
RE	GRIDCART	REC1	HILL	57	31.8	48.0	48.0	35.8	27.9	32.9	37.3	37.1	37.0	
RE	GRIDCART	REC1	HILL	57	36.9	88.2	57.9	57.9	88.7	70.2	70.2	70.0	66.3	
RE	GRIDCART	REC1	HILL	57	81.8									
RE	GRIDCART	REC1	HILL	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	58	0.0	0.0	1.6	21.5	19.4	22.9	24.5	25.4	26.4	
RE	GRIDCART	REC1	HILL	58	32.4	26.5	18.3	33.4	33.4	30.9	28.9	37.8	39.1	
RE	GRIDCART	REC1	HILL	58	38.2	57.9	45.7	39.1	70.2	70.2	69.7	56.3	81.4	
RE	GRIDCART	REC1	HILL	58	58.9									
RE	GRIDCART	REC1	HILL	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	59	0.0	34.4	35.9	25.8	19.6	21.6	21.3	22.4	22.1	
RE	GRIDCART	REC1	HILL	59	27.7	14.7	20.9	33.1	27.3	28.6	22.8	29.3	32.2	
RE	GRIDCART	REC1	HILL	59	40.1	40.3	57.9	31.7	33.5	50.5	51.1	51.7	106.8	
RE	GRIDCART	REC1	HILL	59	106.8									
RE	GRIDCART	REC1	HILL	60	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	60	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	
RE	GRIDCART	REC1	HILL	60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	60	0.0	0.0	35.8	36.0	34.3	25.2	18.8	19.4	19.9	
RE	GRIDCART	REC1	HILL	60	20.0	17.2	14.1	13.4	14.8	11.5	11.1	9.2	14.1	
RE	GRIDCART	REC1	HILL	60	16.9	24.2	35.7	40.3	19.1	22.2	27.8	31.9	45.2	
RE	GRIDCART	REC1	HILL	60	106.8	106.8	106.8							
RE	GRIDCART	REC1	HILL	61	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	1.1
RE	GRIDCART	REC1	HILL	61	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	61	36.0	36.0	31.6	26.0	19.2	13.3	15.4	17.3	17.7	
RE	GRIDCART	REC1	HILL	61	15.9	12.3	4.0	8.1	8.2	6.8	6.9	21.3	25.8	34.2
RE	GRIDCART	REC1	HILL	61	6.4	16.8	76.0	76.8	81.0	81.4	106.8	106.8		
RE	GRIDCART	REC1	HILL	61	106.6									
RE	GRIDCART	REC1	FLAG	1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Attachment 1 Example Modeling Input Offroad Sources.inp

RE	GRIDCART	REC1	FLAG	57	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	57	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	57	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	57	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	58	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	58	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	58	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	58	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	58	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	59	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	59	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	59	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	59	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	59	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	60	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	60	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	60	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	60	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	60	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	61	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	61	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	61	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	61	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	61	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	END											
RE	DISCCART	553800	4197250	1.2	113.66	1.8								
RE	DISCCART	553850	4197250	7.76	113.66	1.8								
RE	DISCCART	553900	4197250	7.52	113.66	1.8								
RE	DISCCART	553950	4197250	14.48	113.66	1.8								
RE	DISCCART	554000	4197250	13.22	113.66	1.8								
RE	DISCCART	554050	4197250	38.54	113.66	1.8								
RE	DISCCART	554100	4197250	67.1	113.66	1.8								
RE	DISCCART	554150	4197250	74.36	113.66	1.8								
RE	DISCCART	554200	4197250	80.55	113.66	1.8								
RE	DISCCART	554250	4197250	74.15	113.66	1.8								
RE	DISCCART	554300	4197250	77.64	113.66	1.8								
RE	DISCCART	554350	4197250	92.05	113.66	1.8								
RE	DISCCART	554400	4197250	80.35	113.66	1.8								
RE	DISCCART	554450	4197250	54.76	113.66	1.8								
RE	DISCCART	554500	4197250	13.66	113.66	1.8								
RE	DISCCART	554550	4197250	9.67	113.66	1.8								
RE	DISCCART	554600	4197250	7.91	113.66	1.8								
RE	DISCCART	553800	4197300	1.18	113.66	1.8								
RE	DISCCART	553850	4197300	18.96	113.66	1.8								
RE	DISCCART	553900	4197300	30.97	113.66	1.8								
RE	DISCCART	553950	4197300	25.99	113.66	1.8								
RE	DISCCART	554000	4197300	35.32	113.66	1.8								
RE	DISCCART	554050	4197300	52.71	113.66	1.8								
RE	DISCCART	554100	4197300	65.84	113.66	1.8								
RE	DISCCART	554150	4197300	48.85	113.66	1.8								
RE	DISCCART	554200	4197300	54.07	113.66	1.8								
RE	DISCCART	554250	4197300	54.35	113.66	1.8								
RE	DISCCART	554300	4197300	64.01	113.66	1.8								
RE	DISCCART	554350	4197300	66.48	113.66	1.8								
RE	DISCCART	554400	4197300	59.88	113.66	1.8								
RE	DISCCART	554450	4197300	66.68	113.66	1.8								
RE	DISCCART	554500	4197300	16.29	113.66	1.8								
RE	DISCCART	554550	4197300	9.62	113.66	1.8								

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	554600	4197300	8.08	113.66	1.8
RE DISCCART	553750	4197350	1.15	113.66	1.8
RE DISCCART	553800	4197350	3.36	113.66	1.8
RE DISCCART	553850	4197350	19.73	113.66	1.8
RE DISCCART	553900	4197350	38.01	113.66	1.8
RE DISCCART	553950	4197350	44.83	113.66	1.8
RE DISCCART	554000	4197350	55.77	113.66	1.8
RE DISCCART	554050	4197350	61.64	113.66	1.8
RE DISCCART	554100	4197350	56.79	113.66	1.8
RE DISCCART	554150	4197350	32.21	113.66	1.8
RE DISCCART	554200	4197350	32.62	113.66	1.8
RE DISCCART	554250	4197350	38.04	113.66	1.8
RE DISCCART	554300	4197350	53.98	113.66	1.8
RE DISCCART	554350	4197350	51.86	113.66	1.8
RE DISCCART	554400	4197350	41.81	113.66	1.8
RE DISCCART	554450	4197350	52.71	113.66	1.8
RE DISCCART	554500	4197350	29.66	113.66	1.8
RE DISCCART	554550	4197350	6.92	113.66	1.8
RE DISCCART	554600	4197350	6.24	113.66	1.8
RE DISCCART	553550	4197400	2.63	113.66	1.8
RE DISCCART	553600	4197400	1.12	113.66	1.8
RE DISCCART	553650	4197400	1.14	113.66	1.8
RE DISCCART	553700	4197400	1.12	113.66	1.8
RE DISCCART	553750	4197400	5.23	113.66	1.8
RE DISCCART	553800	4197400	8.18	113.66	1.8
RE DISCCART	553850	4197400	14.42	113.66	1.8
RE DISCCART	553900	4197400	26.54	113.66	1.8
RE DISCCART	553950	4197400	50.38	113.66	1.8
RE DISCCART	554000	4197400	50.55	113.66	1.8
RE DISCCART	554050	4197400	36.78	113.66	1.8
RE DISCCART	554100	4197400	45.44	113.66	1.8
RE DISCCART	554150	4197400	26.69	113.66	1.8
RE DISCCART	554200	4197400	21.2	113.66	1.8
RE DISCCART	554250	4197400	29.79	113.66	1.8
RE DISCCART	554300	4197400	42.17	113.66	1.8
RE DISCCART	554350	4197400	33.88	113.66	1.8
RE DISCCART	554400	4197400	25.65	113.66	1.8
RE DISCCART	554450	4197400	35.95	113.66	1.8
RE DISCCART	554500	4197400	27.78	113.66	1.8
RE DISCCART	554550	4197400	5.68	113.66	1.8
RE DISCCART	554600	4197400	4.61	113.66	1.8
RE DISCCART	553550	4197450	10.16	113.66	1.8
RE DISCCART	553600	4197450	17.45	113.66	1.8
RE DISCCART	553650	4197450	23	113.66	1.8
RE DISCCART	553700	4197450	20.31	113.66	1.8
RE DISCCART	553750	4197450	16.78	113.66	1.8
RE DISCCART	553800	4197450	16.18	113.66	1.8
RE DISCCART	553850	4197450	18.92	113.66	1.8
RE DISCCART	553900	4197450	35.57	113.66	1.8
RE DISCCART	553950	4197450	49.75	113.66	1.8
RE DISCCART	554000	4197450	33.37	113.66	1.8
RE DISCCART	554050	4197450	20.61	113.66	1.8
RE DISCCART	554100	4197450	23.28	113.66	1.8
RE DISCCART	554150	4197450	14.82	113.66	1.8
RE DISCCART	554200	4197450	13.79	113.66	1.8
RE DISCCART	554250	4197450	13.4	113.66	1.8
RE DISCCART	554300	4197450	20.09	113.66	1.8
RE DISCCART	554350	4197450	14.62	113.66	1.8
RE DISCCART	554400	4197450	12.46	113.66	1.8
RE DISCCART	554450	4197450	12.57	113.66	1.8
RE DISCCART	554500	4197450	16.3	113.66	1.8
RE DISCCART	554550	4197450	4.09	113.66	1.8
RE DISCCART	554600	4197450	4.64	113.66	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556550	4197450	4.07	4.07	1.8
RE DISCCART	556600	4197450	4.13	4.73	1.8
RE DISCCART	553550	4197500	1.12	113.66	1.8
RE DISCCART	553600	4197500	18.23	113.66	1.8
RE DISCCART	553650	4197500	27.58	113.66	1.8
RE DISCCART	553700	4197500	31.01	113.66	1.8
RE DISCCART	553750	4197500	34.59	113.66	1.8
RE DISCCART	553800	4197500	32.37	113.66	1.8
RE DISCCART	553850	4197500	35.37	113.66	1.8
RE DISCCART	553900	4197500	43.32	113.66	1.8
RE DISCCART	553950	4197500	44.1	113.66	1.8
RE DISCCART	554000	4197500	27.35	113.66	1.8
RE DISCCART	554050	4197500	4.1	113.66	1.8
RE DISCCART	554100	4197500	6.41	113.66	1.8
RE DISCCART	554150	4197500	6.34	113.66	1.8
RE DISCCART	554200	4197500	7.24	113.66	1.8
RE DISCCART	554250	4197500	5.35	113.66	1.8
RE DISCCART	554300	4197500	2.92	113.66	1.8
RE DISCCART	554350	4197500	3.7	113.66	1.8
RE DISCCART	554400	4197500	4.48	113.66	1.8
RE DISCCART	554450	4197500	3.43	113.66	1.8
RE DISCCART	554500	4197500	3.3	113.66	1.8
RE DISCCART	554550	4197500	3.5	113.66	1.8
RE DISCCART	554600	4197500	3.77	113.66	1.8
RE DISCCART	556400	4197500	3.15	3.15	1.8
RE DISCCART	556450	4197500	3.13	3.13	1.8
RE DISCCART	556500	4197500	3.43	3.43	1.8
RE DISCCART	556550	4197500	3.68	3.68	1.8
RE DISCCART	556600	4197500	3.64	3.64	1.8
RE DISCCART	553550	4197550	1.11	113.66	1.8
RE DISCCART	553600	4197550	17.66	113.66	1.8
RE DISCCART	553650	4197550	23.7	113.66	1.8
RE DISCCART	553700	4197550	34.6	113.66	1.8
RE DISCCART	553750	4197550	40.31	113.66	1.8
RE DISCCART	553800	4197550	45.01	113.66	1.8
RE DISCCART	553850	4197550	49.18	113.66	1.8
RE DISCCART	553900	4197550	51.62	113.66	1.8
RE DISCCART	553950	4197550	38.55	113.66	1.8
RE DISCCART	554000	4197550	21.68	113.66	1.8
RE DISCCART	554050	4197550	12.71	113.66	1.8
RE DISCCART	554100	4197550	6.17	113.66	1.8
RE DISCCART	554150	4197550	4.48	113.66	1.8
RE DISCCART	554200	4197550	3.84	113.66	1.8
RE DISCCART	554250	4197550	3.33	113.66	1.8
RE DISCCART	554300	4197550	3.06	113.66	1.8
RE DISCCART	554350	4197550	3.02	113.66	1.8
RE DISCCART	554400	4197550	2.8	113.66	1.8
RE DISCCART	554450	4197550	3.24	113.66	1.8
RE DISCCART	554500	4197550	3.57	113.66	1.8
RE DISCCART	554550	4197550	3.68	113.66	1.8
RE DISCCART	554600	4197550	3.92	113.66	1.8
RE DISCCART	556350	4197550	3.41	3.41	1.8
RE DISCCART	556400	4197550	3.35	3.35	1.8
RE DISCCART	556450	4197550	3.35	3.35	1.8
RE DISCCART	556500	4197550	3.51	3.51	1.8
RE DISCCART	556550	4197550	3.86	3.86	1.8
RE DISCCART	556600	4197550	3.66	3.66	1.8
RE DISCCART	553550	4197600	1.77	113.66	1.8
RE DISCCART	553600	4197600	19.94	113.66	1.8
RE DISCCART	553650	4197600	26.94	113.66	1.8
RE DISCCART	553700	4197600	40.24	65.41	1.8
RE DISCCART	553750	4197600	46.91	46.91	1.8
RE DISCCART	553800	4197600	40.18	113.66	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	553850	4197600	40.75	113.66	1.8
RE DISCCART	553900	4197600	35.86	113.66	1.8
RE DISCCART	553950	4197600	33.5	113.66	1.8
RE DISCCART	554000	4197600	13.8	113.66	1.8
RE DISCCART	554050	4197600	6.99	113.66	1.8
RE DISCCART	554100	4197600	5.03	113.66	1.8
RE DISCCART	554150	4197600	4.04	113.66	1.8
RE DISCCART	554200	4197600	3.72	113.66	1.8
RE DISCCART	554250	4197600	3.57	113.66	1.8
RE DISCCART	554300	4197600	2.89	113.66	1.8
RE DISCCART	554350	4197600	2.79	113.66	1.8
RE DISCCART	554400	4197600	2.82	113.66	1.8
RE DISCCART	554450	4197600	2.99	113.66	1.8
RE DISCCART	554500	4197600	3.73	113.66	1.8
RE DISCCART	554550	4197600	3.8	113.66	1.8
RE DISCCART	554600	4197600	3.68	113.66	1.8
RE DISCCART	556300	4197600	3.7	3.7	1.8
RE DISCCART	556350	4197600	3.68	3.68	1.8
RE DISCCART	556400	4197600	3.71	3.71	1.8
RE DISCCART	556450	4197600	3.61	3.61	1.8
RE DISCCART	556500	4197600	3.66	3.66	1.8
RE DISCCART	556550	4197600	4.28	4.28	1.8
RE DISCCART	556600	4197600	3.83	3.83	1.8
RE DISCCART	553550	4197650	1.14	113.66	1.8
RE DISCCART	553600	4197650	13.97	113.66	1.8
RE DISCCART	553650	4197650	21.75	113.66	1.8
RE DISCCART	553700	4197650	34.73	113.66	1.8
RE DISCCART	553750	4197650	46.58	65.29	1.8
RE DISCCART	553800	4197650	33.1	113.66	1.8
RE DISCCART	553850	4197650	31.65	113.66	1.8
RE DISCCART	553900	4197650	24.14	113.66	1.8
RE DISCCART	553950	4197650	23.02	113.66	1.8
RE DISCCART	554000	4197650	9.11	113.66	1.8
RE DISCCART	554050	4197650	4.95	113.66	1.8
RE DISCCART	554100	4197650	4.11	113.66	1.8
RE DISCCART	554150	4197650	3.93	113.66	1.8
RE DISCCART	554200	4197650	3.69	113.66	1.8
RE DISCCART	554250	4197650	3.16	113.66	1.8
RE DISCCART	554300	4197650	2.7	113.66	1.8
RE DISCCART	554350	4197650	2.82	113.66	1.8
RE DISCCART	554400	4197650	2.89	113.66	1.8
RE DISCCART	554450	4197650	3.02	113.66	1.8
RE DISCCART	554500	4197650	4.29	113.66	1.8
RE DISCCART	554550	4197650	4.1	113.66	1.8
RE DISCCART	554600	4197650	3.69	113.66	1.8
RE DISCCART	556200	4197650	3.62	3.62	1.8
RE DISCCART	556250	4197650	4.77	4.77	1.8
RE DISCCART	556300	4197650	4	4	1.8
RE DISCCART	556350	4197650	3.86	3.86	1.8
RE DISCCART	556400	4197650	3.78	3.78	1.8
RE DISCCART	556450	4197650	3.76	3.76	1.8
RE DISCCART	556500	4197650	3.87	3.87	1.8
RE DISCCART	556550	4197650	4.18	4.18	1.8
RE DISCCART	556600	4197650	3.83	3.83	1.8
RE DISCCART	553500	4197700	1.09	113.66	1.8
RE DISCCART	553550	4197700	11.38	113.66	1.8
RE DISCCART	553600	4197700	25.53	113.49	1.8
RE DISCCART	553650	4197700	30.57	65.41	1.8
RE DISCCART	553700	4197700	36.9	65.41	1.8
RE DISCCART	553750	4197700	45.12	65.41	1.8
RE DISCCART	553800	4197700	28.79	113.66	1.8
RE DISCCART	553850	4197700	24.18	113.66	1.8
RE DISCCART	553900	4197700	19.66	113.66	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	553950	4197700	12.39	113.66	1.8
RE DISCCART	554000	4197700	6.59	113.66	1.8
RE DISCCART	554050	4197700	4.76	113.66	1.8
RE DISCCART	554100	4197700	3.98	113.66	1.8
RE DISCCART	554150	4197700	3.86	113.66	1.8
RE DISCCART	554200	4197700	2.94	113.66	1.8
RE DISCCART	554250	4197700	2.82	113.66	1.8
RE DISCCART	554300	4197700	2.68	113.66	1.8
RE DISCCART	554350	4197700	2.61	113.66	1.8
RE DISCCART	554400	4197700	2.55	113.66	1.8
RE DISCCART	554450	4197700	2.28	113.66	1.8
RE DISCCART	554500	4197700	2.57	113.66	1.8
RE DISCCART	554550	4197700	2.74	113.66	1.8
RE DISCCART	554600	4197700	2.48	113.66	1.8
RE DISCCART	556200	4197700	3.72	3.72	1.8
RE DISCCART	556250	4197700	3.86	3.86	1.8
RE DISCCART	556300	4197700	3.83	3.83	1.8
RE DISCCART	556350	4197700	3.77	3.77	1.8
RE DISCCART	556400	4197700	3.61	3.61	1.8
RE DISCCART	556450	4197700	3.64	3.64	1.8
RE DISCCART	556500	4197700	3.75	3.75	1.8
RE DISCCART	556550	4197700	3.95	3.95	1.8
RE DISCCART	556600	4197700	4.09	4.09	1.8
RE DISCCART	553450	4197750	1.09	113.66	1.8
RE DISCCART	553500	4197750	13.47	113.66	1.8
RE DISCCART	553550	4197750	16.09	113.66	1.8
RE DISCCART	553600	4197750	31.57	65.41	1.8
RE DISCCART	553650	4197750	44.22	65.41	1.8
RE DISCCART	553700	4197750	55.71	65.41	1.8
RE DISCCART	553750	4197750	48.27	65.41	1.8
RE DISCCART	553800	4197750	25.44	113.66	1.8
RE DISCCART	553850	4197750	19.74	113.66	1.8
RE DISCCART	553900	4197750	15.76	113.66	1.8
RE DISCCART	553950	4197750	10.31	113.66	1.8
RE DISCCART	554000	4197750	5.91	113.66	1.8
RE DISCCART	554050	4197750	4.78	113.66	1.8
RE DISCCART	554100	4197750	3.83	113.66	1.8
RE DISCCART	554150	4197750	3.77	113.66	1.8
RE DISCCART	554200	4197750	3.22	113.66	1.8
RE DISCCART	554250	4197750	2.7	113.66	1.8
RE DISCCART	554300	4197750	2.83	113.66	1.8
RE DISCCART	554350	4197750	2.84	113.66	1.8
RE DISCCART	554400	4197750	2.87	113.66	1.8
RE DISCCART	554450	4197750	2.82	113.66	1.8
RE DISCCART	554500	4197750	2.67	113.66	1.8
RE DISCCART	554550	4197750	2.47	113.66	1.8
RE DISCCART	554600	4197750	2.75	113.66	1.8
RE DISCCART	556050	4197750	3.58	7.41	1.8
RE DISCCART	556100	4197750	4.11	4.11	1.8
RE DISCCART	556150	4197750	3.91	3.91	1.8
RE DISCCART	556200	4197750	4.42	4.42	1.8
RE DISCCART	556250	4197750	3.86	3.86	1.8
RE DISCCART	556300	4197750	4.44	4.44	1.8
RE DISCCART	556350	4197750	4.34	4.34	1.8
RE DISCCART	556400	4197750	4.26	4.26	1.8
RE DISCCART	556450	4197750	4.33	4.33	1.8
RE DISCCART	556500	4197750	4.39	4.39	1.8
RE DISCCART	556550	4197750	4.59	4.59	1.8
RE DISCCART	556600	4197750	4.57	4.57	1.8
RE DISCCART	553400	4197800	1.13	113.66	1.8
RE DISCCART	553450	4197800	11.37	65.41	1.8
RE DISCCART	553500	4197800	20.06	65.41	1.8
RE DISCCART	553550	4197800	30.45	65.41	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	553600	4197800	39.3	65.41	1.8
RE DISCCART	553650	4197800	59.79	65.41	1.8
RE DISCCART	553700	4197800	62.66	63.85	1.8
RE DISCCART	553750	4197800	43.34	65.41	1.8
RE DISCCART	553800	4197800	25.61	113.66	1.8
RE DISCCART	553850	4197800	17.85	113.66	1.8
RE DISCCART	553900	4197800	12.45	113.66	1.8
RE DISCCART	553950	4197800	8.61	113.66	1.8
RE DISCCART	554000	4197800	6.03	113.66	1.8
RE DISCCART	554050	4197800	4.87	113.66	1.8
RE DISCCART	554100	4197800	3.06	113.66	1.8
RE DISCCART	554150	4197800	3.87	113.66	1.8
RE DISCCART	554200	4197800	3.5	113.66	1.8
RE DISCCART	554250	4197800	2.99	113.66	1.8
RE DISCCART	554300	4197800	2.82	113.66	1.8
RE DISCCART	554350	4197800	2.88	113.66	1.8
RE DISCCART	554400	4197800	2.74	113.66	1.8
RE DISCCART	554450	4197800	2.66	113.66	1.8
RE DISCCART	554500	4197800	2.77	113.66	1.8
RE DISCCART	554550	4197800	2.74	113.66	1.8
RE DISCCART	554600	4197800	2.77	113.66	1.8
RE DISCCART	555950	4197800	3.56	3.56	1.8
RE DISCCART	556000	4197800	3.62	3.62	1.8
RE DISCCART	556050	4197800	4.11	4.11	1.8
RE DISCCART	556100	4197800	4.27	4.27	1.8
RE DISCCART	556150	4197800	4	4	1.8
RE DISCCART	556200	4197800	4.54	4.54	1.8
RE DISCCART	556250	4197800	4.05	4.05	1.8
RE DISCCART	556300	4197800	4.67	4.67	1.8
RE DISCCART	556350	4197800	4.74	4.74	1.8
RE DISCCART	556400	4197800	4.84	4.84	1.8
RE DISCCART	556450	4197800	5.15	5.15	1.8
RE DISCCART	556500	4197800	5.06	5.06	1.8
RE DISCCART	556550	4197800	5.13	5.13	1.8
RE DISCCART	556600	4197800	4.77	4.77	1.8
RE DISCCART	553350	4197850	1.11	65.41	1.8
RE DISCCART	553400	4197850	7.07	65.41	1.8
RE DISCCART	553450	4197850	10.79	65.41	1.8
RE DISCCART	553500	4197850	26.01	65.41	1.8
RE DISCCART	553550	4197850	38.65	65.41	1.8
RE DISCCART	553600	4197850	46.79	65.41	1.8
RE DISCCART	553650	4197850	56.03	65.41	1.8
RE DISCCART	553700	4197850	52	65.41	1.8
RE DISCCART	553750	4197850	40.9	65.41	1.8
RE DISCCART	553800	4197850	28.64	113.42	1.8
RE DISCCART	553850	4197850	16.39	113.66	1.8
RE DISCCART	553900	4197850	11.26	113.66	1.8
RE DISCCART	553950	4197850	8.15	113.66	1.8
RE DISCCART	554000	4197850	6.01	113.66	1.8
RE DISCCART	554050	4197850	4.84	113.66	1.8
RE DISCCART	554100	4197850	2.83	113.66	1.8
RE DISCCART	554150	4197850	3.8	113.66	1.8
RE DISCCART	554200	4197850	3.55	113.66	1.8
RE DISCCART	554250	4197850	3.19	113.66	1.8
RE DISCCART	554300	4197850	2.87	113.66	1.8
RE DISCCART	554350	4197850	2.6	113.66	1.8
RE DISCCART	554400	4197850	2.96	113.66	1.8
RE DISCCART	554450	4197850	3.01	113.66	1.8
RE DISCCART	554500	4197850	3.02	113.66	1.8
RE DISCCART	554550	4197850	2.75	113.66	1.8
RE DISCCART	554600	4197850	2.87	113.66	1.8
RE DISCCART	555850	4197850	3.23	6.06	1.8
RE DISCCART	555900	4197850	2.95	3.43	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555950	4197850	3.55	3.55	1.8
RE DISCCART	556000	4197850	3.81	3.81	1.8
RE DISCCART	556050	4197850	4.01	4.01	1.8
RE DISCCART	556100	4197850	4.31	4.31	1.8
RE DISCCART	556150	4197850	4.29	4.29	1.8
RE DISCCART	556200	4197850	4.76	4.76	1.8
RE DISCCART	556250	4197850	4.21	4.21	1.8
RE DISCCART	556300	4197850	4.88	4.88	1.8
RE DISCCART	556350	4197850	5.44	5.44	1.8
RE DISCCART	556400	4197850	5.4	6.49	1.8
RE DISCCART	556450	4197850	5.22	5.22	1.8
RE DISCCART	556500	4197850	5.12	5.12	1.8
RE DISCCART	556550	4197850	5.11	5.11	1.8
RE DISCCART	556600	4197850	4.99	4.99	1.8
RE DISCCART	553300	4197900	1.07	65.41	1.8
RE DISCCART	553350	4197900	17.54	65.41	1.8
RE DISCCART	553400	4197900	16.82	65.41	1.8
RE DISCCART	553450	4197900	12.37	65.41	1.8
RE DISCCART	553500	4197900	15.85	65.41	1.8
RE DISCCART	553550	4197900	21.27	65.41	1.8
RE DISCCART	553600	4197900	32.8	65.41	1.8
RE DISCCART	553650	4197900	45.89	65.41	1.8
RE DISCCART	553700	4197900	44.8	65.41	1.8
RE DISCCART	553750	4197900	39.66	65.41	1.8
RE DISCCART	553800	4197900	24.33	113.53	1.8
RE DISCCART	553850	4197900	18.69	113.66	1.8
RE DISCCART	553900	4197900	14.53	113.66	1.8
RE DISCCART	553950	4197900	11.73	113.66	1.8
RE DISCCART	554000	4197900	8.8	113.66	1.8
RE DISCCART	554050	4197900	5.06	113.66	1.8
RE DISCCART	554100	4197900	4.49	113.66	1.8
RE DISCCART	554150	4197900	3.87	113.66	1.8
RE DISCCART	555750	4197900	3.08	9.34	1.8
RE DISCCART	555800	4197900	3.11	7.39	1.8
RE DISCCART	555850	4197900	3.7	3.7	1.8
RE DISCCART	555900	4197900	3.27	3.27	1.8
RE DISCCART	555950	4197900	3.91	3.91	1.8
RE DISCCART	556000	4197900	3.91	3.91	1.8
RE DISCCART	556050	4197900	4.07	4.07	1.8
RE DISCCART	556100	4197900	4.64	4.64	1.8
RE DISCCART	556150	4197900	4.35	4.35	1.8
RE DISCCART	556200	4197900	4.99	4.99	1.8
RE DISCCART	556250	4197900	4.33	4.33	1.8
RE DISCCART	556300	4197900	5.51	5.51	1.8
RE DISCCART	556350	4197900	5.12	5.12	1.8
RE DISCCART	556400	4197900	5.42	5.42	1.8
RE DISCCART	556450	4197900	5.28	5.28	1.8
RE DISCCART	556500	4197900	5.09	5.09	1.8
RE DISCCART	556550	4197900	5.23	5.23	1.8
RE DISCCART	556600	4197900	5.16	5.16	1.8
RE DISCCART	553300	4197950	11.69	65.41	1.8
RE DISCCART	553350	4197950	28.43	65.41	1.8
RE DISCCART	553400	4197950	29.39	65.41	1.8
RE DISCCART	553450	4197950	20.81	65.41	1.8
RE DISCCART	553500	4197950	21.15	65.41	1.8
RE DISCCART	553550	4197950	23.83	65.41	1.8
RE DISCCART	553600	4197950	38.27	65.41	1.8
RE DISCCART	553650	4197950	42.22	65.41	1.8
RE DISCCART	553700	4197950	32.1	65.41	1.8
RE DISCCART	553750	4197950	35.08	65.41	1.8
RE DISCCART	553800	4197950	21.01	65.41	1.8
RE DISCCART	553850	4197950	16.86	113.66	1.8
RE DISCCART	553900	4197950	22.16	113.66	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	553950	4197950	17.14	113.66	1.8
RE DISCCART	554000	4197950	11.91	113.66	1.8
RE DISCCART	554050	4197950	8.09	113.66	1.8
RE DISCCART	554100	4197950	4.27	113.66	1.8
RE DISCCART	554150	4197950	3.54	113.66	1.8
RE DISCCART	555600	4197950	3.4	11.53	1.8
RE DISCCART	555650	4197950	3.37	11.41	1.8
RE DISCCART	555700	4197950	3.38	10.23	1.8
RE DISCCART	555750	4197950	3.52	3.52	1.8
RE DISCCART	555800	4197950	3.3	3.3	1.8
RE DISCCART	555850	4197950	3.17	3.17	1.8
RE DISCCART	555900	4197950	3.29	3.29	1.8
RE DISCCART	555950	4197950	3.95	3.95	1.8
RE DISCCART	556000	4197950	3.91	3.91	1.8
RE DISCCART	556050	4197950	4.54	4.54	1.8
RE DISCCART	556100	4197950	4.82	4.82	1.8
RE DISCCART	556150	4197950	4.41	4.41	1.8
RE DISCCART	556200	4197950	5.17	5.17	1.8
RE DISCCART	556250	4197950	4.44	4.75	1.8
RE DISCCART	556300	4197950	5.42	5.42	1.8
RE DISCCART	556350	4197950	5.31	5.31	1.8
RE DISCCART	556400	4197950	5.43	5.43	1.8
RE DISCCART	556450	4197950	5.68	5.68	1.8
RE DISCCART	556500	4197950	5.24	5.24	1.8
RE DISCCART	556550	4197950	5.35	5.35	1.8
RE DISCCART	556600	4197950	5.35	5.35	1.8
RE DISCCART	553200	4198000	1.08	65.41	1.8
RE DISCCART	553250	4198000	4.91	65.41	1.8
RE DISCCART	553300	4198000	13.8	65.41	1.8
RE DISCCART	553350	4198000	23.38	65.41	1.8
RE DISCCART	553400	4198000	33	65.41	1.8
RE DISCCART	553450	4198000	33.83	65.41	1.8
RE DISCCART	553500	4198000	32.09	65.41	1.8
RE DISCCART	553550	4198000	33.23	65.41	1.8
RE DISCCART	553600	4198000	39.6	65.41	1.8
RE DISCCART	553650	4198000	36.7	65.41	1.8
RE DISCCART	553700	4198000	27.73	65.41	1.8
RE DISCCART	553750	4198000	18.76	65.41	1.8
RE DISCCART	553800	4198000	12.93	113.66	1.8
RE DISCCART	553850	4198000	11.69	113.66	1.8
RE DISCCART	553900	4198000	16.44	113.66	1.8
RE DISCCART	553950	4198000	13.49	113.66	1.8
RE DISCCART	554000	4198000	8.12	113.66	1.8
RE DISCCART	554050	4198000	4.68	113.66	1.8
RE DISCCART	554100	4198000	4.06	113.66	1.8
RE DISCCART	555450	4198000	3.54	3.54	1.8
RE DISCCART	555500	4198000	3.27	3.27	1.8
RE DISCCART	555550	4198000	3.04	11.53	1.8
RE DISCCART	555600	4198000	3.62	3.62	1.8
RE DISCCART	555650	4198000	3.46	3.46	1.8
RE DISCCART	555700	4198000	3.64	3.64	1.8
RE DISCCART	555750	4198000	3.58	3.58	1.8
RE DISCCART	555800	4198000	3.49	3.49	1.8
RE DISCCART	555850	4198000	3.45	3.45	1.8
RE DISCCART	555900	4198000	3.39	3.74	1.8
RE DISCCART	555950	4198000	3.91	3.91	1.8
RE DISCCART	556000	4198000	4.13	4.13	1.8
RE DISCCART	556050	4198000	4.28	4.28	1.8
RE DISCCART	556100	4198000	4.77	4.77	1.8
RE DISCCART	556150	4198000	4.48	4.48	1.8
RE DISCCART	556200	4198000	4.95	4.95	1.8
RE DISCCART	556250	4198000	4.59	5.06	1.8
RE DISCCART	556300	4198000	5.86	5.86	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556350	4198000	6.16	6.16	1.8
RE DISCCART	556400	4198000	6.03	6.03	1.8
RE DISCCART	556450	4198000	5.64	5.64	1.8
RE DISCCART	556500	4198000	5.46	5.46	1.8
RE DISCCART	556550	4198000	5.78	5.78	1.8
RE DISCCART	556600	4198000	5.62	5.62	1.8
RE DISCCART	553150	4198050	1.02	144.71	1.8
RE DISCCART	553200	4198050	7.62	65.41	1.8
RE DISCCART	553250	4198050	11.97	65.41	1.8
RE DISCCART	553300	4198050	16.78	65.41	1.8
RE DISCCART	553350	4198050	24.67	65.41	1.8
RE DISCCART	553400	4198050	36.44	47.72	1.8
RE DISCCART	553450	4198050	44.99	47.51	1.8
RE DISCCART	553500	4198050	45.92	47.72	1.8
RE DISCCART	553550	4198050	41.11	47.51	1.8
RE DISCCART	553600	4198050	42.33	46.14	1.8
RE DISCCART	553650	4198050	41.42	65.41	1.8
RE DISCCART	553700	4198050	29.65	65.41	1.8
RE DISCCART	553750	4198050	18.19	65.41	1.8
RE DISCCART	553800	4198050	9.95	113.66	1.8
RE DISCCART	553850	4198050	8.1	113.66	1.8
RE DISCCART	553900	4198050	5.42	113.66	1.8
RE DISCCART	553950	4198050	4.37	113.66	1.8
RE DISCCART	554000	4198050	3.91	113.66	1.8
RE DISCCART	555450	4198050	3.69	3.69	1.8
RE DISCCART	555500	4198050	3.61	3.61	1.8
RE DISCCART	555550	4198050	3.16	3.16	1.8
RE DISCCART	555600	4198050	3.59	3.59	1.8
RE DISCCART	555650	4198050	3.6	3.6	1.8
RE DISCCART	555700	4198050	3.76	3.76	1.8
RE DISCCART	555750	4198050	3.8	3.8	1.8
RE DISCCART	555800	4198050	3.76	3.76	1.8
RE DISCCART	555850	4198050	3.76	3.76	1.8
RE DISCCART	555900	4198050	3.57	3.74	1.8
RE DISCCART	555950	4198050	4.03	4.03	1.8
RE DISCCART	556000	4198050	4.29	4.29	1.8
RE DISCCART	556050	4198050	4.44	4.44	1.8
RE DISCCART	556100	4198050	4.67	4.67	1.8
RE DISCCART	556150	4198050	4.68	4.68	1.8
RE DISCCART	556200	4198050	5.04	5.04	1.8
RE DISCCART	556250	4198050	4.74	5.3	1.8
RE DISCCART	556300	4198050	5.5	5.5	1.8
RE DISCCART	556350	4198050	5.91	5.91	1.8
RE DISCCART	556400	4198050	6.08	6.08	1.8
RE DISCCART	556450	4198050	5.88	5.88	1.8
RE DISCCART	556500	4198050	5.7	5.7	1.8
RE DISCCART	556550	4198050	5.83	5.83	1.8
RE DISCCART	556600	4198050	5.79	5.79	1.8
RE DISCCART	553100	4198100	1.26	145.07	1.8
RE DISCCART	553150	4198100	10.82	59.92	1.8
RE DISCCART	553200	4198100	11.47	59.92	1.8
RE DISCCART	553250	4198100	16.26	59.92	1.8
RE DISCCART	553300	4198100	23.5	53.91	1.8
RE DISCCART	553350	4198100	31.7	47.72	1.8
RE DISCCART	553400	4198100	43.03	47.34	1.8
RE DISCCART	553450	4198100	40.59	47.72	1.8
RE DISCCART	553500	4198100	37.02	47.72	1.8
RE DISCCART	553550	4198100	28.06	65.41	1.8
RE DISCCART	553600	4198100	30.82	65.41	1.8
RE DISCCART	553650	4198100	38.33	46.14	1.8
RE DISCCART	553700	4198100	27.66	65.41	1.8
RE DISCCART	553750	4198100	17.01	65.41	1.8
RE DISCCART	555450	4198100	3.55	3.55	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555500	4198100	3.56	3.56	1.8
RE DISCCART	555550	4198100	3.2	3.44	1.8
RE DISCCART	555600	4198100	3.74	3.74	1.8
RE DISCCART	555650	4198100	3.85	3.85	1.8
RE DISCCART	555700	4198100	3.8	3.8	1.8
RE DISCCART	555750	4198100	3.92	3.92	1.8
RE DISCCART	555800	4198100	3.88	3.88	1.8
RE DISCCART	555850	4198100	3.94	3.94	1.8
RE DISCCART	555900	4198100	3.69	3.83	1.8
RE DISCCART	555950	4198100	4.41	4.41	1.8
RE DISCCART	556000	4198100	4.44	4.44	1.8
RE DISCCART	556050	4198100	4.67	4.67	1.8
RE DISCCART	556100	4198100	4.84	4.84	1.8
RE DISCCART	556150	4198100	4.76	4.76	1.8
RE DISCCART	556200	4198100	5.11	5.11	1.8
RE DISCCART	556250	4198100	4.9	5.42	1.8
RE DISCCART	556300	4198100	5.91	5.91	1.8
RE DISCCART	556350	4198100	5.77	5.77	1.8
RE DISCCART	556400	4198100	5.99	5.99	1.8
RE DISCCART	556450	4198100	6.24	6.24	1.8
RE DISCCART	556500	4198100	6.1	6.1	1.8
RE DISCCART	556550	4198100	6.11	6.11	1.8
RE DISCCART	556600	4198100	6.13	6.13	1.8
RE DISCCART	553150	4198150	18.9	59.92	1.8
RE DISCCART	553200	4198150	19.1	59.92	1.8
RE DISCCART	553250	4198150	21.75	59.92	1.8
RE DISCCART	553300	4198150	36.02	52.26	1.8
RE DISCCART	553350	4198150	34.84	47.88	1.8
RE DISCCART	553400	4198150	35.55	47.34	1.8
RE DISCCART	553450	4198150	28.07	47.88	1.8
RE DISCCART	553500	4198150	22.81	65.41	1.8
RE DISCCART	553550	4198150	18.08	65.41	1.8
RE DISCCART	553600	4198150	17.82	65.41	1.8
RE DISCCART	553650	4198150	26.97	65.41	1.8
RE DISCCART	553700	4198150	25.39	65.41	1.8
RE DISCCART	553750	4198150	12.29	65.41	1.8
RE DISCCART	555450	4198150	4.03	4.03	1.8
RE DISCCART	555500	4198150	3.84	3.84	1.8
RE DISCCART	555550	4198150	3.26	3.64	1.8
RE DISCCART	555600	4198150	3.8	3.8	1.8
RE DISCCART	555650	4198150	3.94	3.94	1.8
RE DISCCART	555700	4198150	4.03	4.03	1.8
RE DISCCART	555750	4198150	4.27	4.27	1.8
RE DISCCART	555800	4198150	4.06	4.06	1.8
RE DISCCART	555850	4198150	4.45	4.45	1.8
RE DISCCART	555900	4198150	3.97	3.97	1.8
RE DISCCART	555950	4198150	4.44	4.44	1.8
RE DISCCART	556000	4198150	4.68	4.68	1.8
RE DISCCART	556050	4198150	4.76	4.76	1.8
RE DISCCART	556100	4198150	4.82	4.82	1.8
RE DISCCART	556150	4198150	4.91	4.91	1.8
RE DISCCART	556200	4198150	5.27	5.27	1.8
RE DISCCART	556250	4198150	5.09	5.09	1.8
RE DISCCART	556300	4198150	6.03	6.03	1.8
RE DISCCART	556350	4198150	5.87	5.87	1.8
RE DISCCART	556400	4198150	6.13	6.13	1.8
RE DISCCART	556450	4198150	6.5	6.5	1.8
RE DISCCART	556500	4198150	6.57	6.57	1.8
RE DISCCART	556550	4198150	6.62	6.62	1.8
RE DISCCART	556600	4198150	6.44	6.44	1.8
RE DISCCART	553150	4198200	26.51	59.92	1.8
RE DISCCART	553200	4198200	28.55	59.92	1.8
RE DISCCART	553250	4198200	32.25	53.91	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	553300	4198200	41.7	47.61	1.8
RE DISCCART	553350	4198200	38.28	52.26	1.8
RE DISCCART	553400	4198200	27.13	53.91	1.8
RE DISCCART	553450	4198200	24.76	53.91	1.8
RE DISCCART	553500	4198200	15.23	65.41	1.8
RE DISCCART	553900	4198200	3.21	65.41	1.8
RE DISCCART	553950	4198200	2.92	113.66	1.8
RE DISCCART	555450	4198200	3.9	3.9	1.8
RE DISCCART	555500	4198200	3.89	3.89	1.8
RE DISCCART	555550	4198200	3.47	3.77	1.8
RE DISCCART	555600	4198200	4.05	4.05	1.8
RE DISCCART	555650	4198200	4.14	4.14	1.8
RE DISCCART	555700	4198200	4.14	4.14	1.8
RE DISCCART	555750	4198200	4.34	4.34	1.8
RE DISCCART	555800	4198200	4.26	4.26	1.8
RE DISCCART	555850	4198200	4.51	4.51	1.8
RE DISCCART	555900	4198200	4.13	4.13	1.8
RE DISCCART	555950	4198200	4.6	4.6	1.8
RE DISCCART	556000	4198200	4.74	4.74	1.8
RE DISCCART	556050	4198200	4.91	4.91	1.8
RE DISCCART	556100	4198200	5.28	5.28	1.8
RE DISCCART	556150	4198200	5.07	5.07	1.8
RE DISCCART	556200	4198200	5.41	5.41	1.8
RE DISCCART	556250	4198200	5.28	5.28	1.8
RE DISCCART	556300	4198200	5.97	5.97	1.8
RE DISCCART	556350	4198200	6.06	6.06	1.8
RE DISCCART	556400	4198200	6.64	6.64	1.8
RE DISCCART	556450	4198200	6.54	6.54	1.8
RE DISCCART	556500	4198200	6.74	6.74	1.8
RE DISCCART	556550	4198200	6.73	6.73	1.8
RE DISCCART	556600	4198200	6.73	6.73	1.8
RE DISCCART	553250	4198250	42.29	53.91	1.8
RE DISCCART	553300	4198250	46.94	46.94	1.8
RE DISCCART	553350	4198250	35.34	53.91	1.8
RE DISCCART	553800	4198250	4.89	65.41	1.8
RE DISCCART	553850	4198250	4.28	65.41	1.8
RE DISCCART	553900	4198250	3.58	65.41	1.8
RE DISCCART	553950	4198250	2.78	65.41	1.8
RE DISCCART	554000	4198250	3.12	65.41	1.8
RE DISCCART	555450	4198250	3.94	3.94	1.8
RE DISCCART	555500	4198250	4.08	4.08	1.8
RE DISCCART	555550	4198250	3.77	3.77	1.8
RE DISCCART	555600	4198250	4.24	4.24	1.8
RE DISCCART	555650	4198250	4.3	4.3	1.8
RE DISCCART	555700	4198250	4.29	4.29	1.8
RE DISCCART	555750	4198250	4.42	4.42	1.8
RE DISCCART	555800	4198250	4.34	4.34	1.8
RE DISCCART	555850	4198250	4.62	4.62	1.8
RE DISCCART	555900	4198250	4.39	4.39	1.8
RE DISCCART	555950	4198250	4.8	4.8	1.8
RE DISCCART	556000	4198250	5.04	5.04	1.8
RE DISCCART	556050	4198250	5.06	5.06	1.8
RE DISCCART	556100	4198250	5.35	5.35	1.8
RE DISCCART	556150	4198250	5.27	5.27	1.8
RE DISCCART	556200	4198250	5.67	5.67	1.8
RE DISCCART	556250	4198250	5.57	5.57	1.8
RE DISCCART	556300	4198250	6.2	6.2	1.8
RE DISCCART	556350	4198250	6.45	6.45	1.8
RE DISCCART	556400	4198250	6.71	6.71	1.8
RE DISCCART	556450	4198250	6.68	6.68	1.8
RE DISCCART	556500	4198250	6.82	6.82	1.8
RE DISCCART	556550	4198250	7.07	7.07	1.8
RE DISCCART	556600	4198250	6.98	6.98	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	553650	4198300	3.75	65.41	1.8
RE DISCCART	553700	4198300	3.34	65.41	1.8
RE DISCCART	553750	4198300	3.28	65.41	1.8
RE DISCCART	553800	4198300	3.31	65.41	1.8
RE DISCCART	553850	4198300	3.53	65.41	1.8
RE DISCCART	553900	4198300	3.53	65.41	1.8
RE DISCCART	553950	4198300	3.18	65.41	1.8
RE DISCCART	555450	4198300	4.34	4.34	1.8
RE DISCCART	555500	4198300	4.34	4.34	1.8
RE DISCCART	555550	4198300	4.17	4.17	1.8
RE DISCCART	555600	4198300	4.33	4.33	1.8
RE DISCCART	555650	4198300	4.59	4.59	1.8
RE DISCCART	555700	4198300	4.43	4.43	1.8
RE DISCCART	555750	4198300	4.65	4.65	1.8
RE DISCCART	555800	4198300	4.5	4.5	1.8
RE DISCCART	555850	4198300	4.91	4.91	1.8
RE DISCCART	555900	4198300	4.56	4.56	1.8
RE DISCCART	555950	4198300	4.92	4.92	1.8
RE DISCCART	556000	4198300	5.04	5.04	1.8
RE DISCCART	556050	4198300	5.32	5.32	1.8
RE DISCCART	556100	4198300	5.4	5.4	1.8
RE DISCCART	556150	4198300	5.39	5.7	1.8
RE DISCCART	556200	4198300	5.93	5.93	1.8
RE DISCCART	556250	4198300	5.92	6.25	1.8
RE DISCCART	556300	4198300	6.42	6.42	1.8
RE DISCCART	556350	4198300	6.65	6.65	1.8
RE DISCCART	556400	4198300	6.76	6.76	1.8
RE DISCCART	556450	4198300	6.99	6.99	1.8
RE DISCCART	556500	4198300	7.01	7.33	1.8
RE DISCCART	556550	4198300	7.34	7.34	1.8
RE DISCCART	556600	4198300	7.16	7.64	1.8
RE DISCCART	553550	4198350	3.55	65.41	1.8
RE DISCCART	553600	4198350	3.97	65.41	1.8
RE DISCCART	553650	4198350	2.9	65.41	1.8
RE DISCCART	553700	4198350	3.05	65.41	1.8
RE DISCCART	553750	4198350	3.25	65.41	1.8
RE DISCCART	553800	4198350	3.38	65.41	1.8
RE DISCCART	553850	4198350	3.37	65.41	1.8
RE DISCCART	553900	4198350	3.01	65.41	1.8
RE DISCCART	555450	4198350	4.2	4.2	1.8
RE DISCCART	555500	4198350	4.32	4.32	1.8
RE DISCCART	555550	4198350	4.34	4.34	1.8
RE DISCCART	555600	4198350	4.52	4.52	1.8
RE DISCCART	555650	4198350	4.51	4.51	1.8
RE DISCCART	555700	4198350	4.73	4.73	1.8
RE DISCCART	555750	4198350	4.76	5.23	1.8
RE DISCCART	555800	4198350	5.03	5.03	1.8
RE DISCCART	555850	4198350	5.06	5.06	1.8
RE DISCCART	555900	4198350	4.99	4.99	1.8
RE DISCCART	555950	4198350	5.26	5.26	1.8
RE DISCCART	556000	4198350	5.22	5.22	1.8
RE DISCCART	556050	4198350	5.39	5.39	1.8
RE DISCCART	556100	4198350	5.56	5.56	1.8
RE DISCCART	556150	4198350	5.82	6.43	1.8
RE DISCCART	556200	4198350	6.04	6.67	1.8
RE DISCCART	556250	4198350	6.37	6.77	1.8
RE DISCCART	556300	4198350	6.85	6.85	1.8
RE DISCCART	556350	4198350	6.67	6.67	1.8
RE DISCCART	556400	4198350	6.93	6.93	1.8
RE DISCCART	556450	4198350	7.15	7.15	1.8
RE DISCCART	556500	4198350	7.25	8.05	1.8
RE DISCCART	556550	4198350	7.37	8.08	1.8
RE DISCCART	556600	4198350	7.3	8.19	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	553500	4198400	3.81	145.07	1.8
RE DISCCART	553550	4198400	3.65	65.41	1.8
RE DISCCART	553600	4198400	2.94	65.41	1.8
RE DISCCART	553650	4198400	2.76	65.41	1.8
RE DISCCART	553700	4198400	3.08	65.41	1.8
RE DISCCART	553750	4198400	3.42	65.41	1.8
RE DISCCART	553800	4198400	3.15	65.41	1.8
RE DISCCART	553850	4198400	2.92	65.41	1.8
RE DISCCART	553900	4198400	4.31	4.5	1.8
RE DISCCART	553950	4198400	2.97	4.46	1.8
RE DISCCART	554950	4198400	2.39	3.7	1.8
RE DISCCART	555000	4198400	3.63	3.63	1.8
RE DISCCART	555050	4198400	3.71	3.71	1.8
RE DISCCART	555100	4198400	3.61	3.61	1.8
RE DISCCART	555150	4198400	3.59	3.59	1.8
RE DISCCART	555200	4198400	3.79	3.79	1.8
RE DISCCART	555250	4198400	3.72	3.72	1.8
RE DISCCART	555300	4198400	4.08	4.08	1.8
RE DISCCART	555350	4198400	4.26	4.26	1.8
RE DISCCART	555400	4198400	4.25	4.25	1.8
RE DISCCART	555450	4198400	4.56	4.56	1.8
RE DISCCART	555500	4198400	4.61	4.61	1.8
RE DISCCART	555550	4198400	4.69	4.69	1.8
RE DISCCART	555600	4198400	4.81	4.81	1.8
RE DISCCART	555650	4198400	5	5	1.8
RE DISCCART	555700	4198400	5.09	5.43	1.8
RE DISCCART	555750	4198400	5.01	5.43	1.8
RE DISCCART	555800	4198400	5.02	5.43	1.8
RE DISCCART	555850	4198400	5.4	5.66	1.8
RE DISCCART	555900	4198400	5.43	6.06	1.8
RE DISCCART	555950	4198400	5.72	6.31	1.8
RE DISCCART	556000	4198400	5.37	5.94	1.8
RE DISCCART	556050	4198400	5.67	6.94	1.8
RE DISCCART	556100	4198400	5.93	6.93	1.8
RE DISCCART	556150	4198400	5.67	6.93	1.8
RE DISCCART	556200	4198400	6.17	6.93	1.8
RE DISCCART	556250	4198400	6.76	6.76	1.8
RE DISCCART	556300	4198400	6.97	6.97	1.8
RE DISCCART	556350	4198400	7.08	7.4	1.8
RE DISCCART	556400	4198400	6.9	8.74	1.8
RE DISCCART	556450	4198400	7.06	8.61	1.8
RE DISCCART	556500	4198400	7.32	8.44	1.8
RE DISCCART	556550	4198400	7.69	10.75	1.8
RE DISCCART	556600	4198400	9.21	11.27	1.8
RE DISCCART	553650	4198450	2.94	53.91	1.8
RE DISCCART	553700	4198450	3.03	53.91	1.8
RE DISCCART	553750	4198450	3.04	45.98	1.8
RE DISCCART	553800	4198450	3.11	5.09	1.8
RE DISCCART	553850	4198450	3.28	4.8	1.8
RE DISCCART	553900	4198450	3.23	4.46	1.8
RE DISCCART	553950	4198450	3.14	4.46	1.8
RE DISCCART	554900	4198450	3.74	3.74	1.8
RE DISCCART	554950	4198450	3.69	3.69	1.8
RE DISCCART	555000	4198450	3.34	3.34	1.8
RE DISCCART	555050	4198450	3.31	3.31	1.8
RE DISCCART	555100	4198450	3.45	3.45	1.8
RE DISCCART	555150	4198450	3.5	3.5	1.8
RE DISCCART	555200	4198450	3.35	3.35	1.8
RE DISCCART	555250	4198450	3.54	3.54	1.8
RE DISCCART	555300	4198450	3.72	3.72	1.8
RE DISCCART	555350	4198450	3.85	3.85	1.8
RE DISCCART	555400	4198450	3.78	3.78	1.8
RE DISCCART	555450	4198450	4.71	4.71	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555500	4198450	4.7	4.7	1.8
RE DISCCART	555550	4198450	4.81	4.81	1.8
RE DISCCART	555600	4198450	4.7	4.7	1.8
RE DISCCART	555650	4198450	4.94	4.94	1.8
RE DISCCART	555700	4198450	5.07	5.07	1.8
RE DISCCART	555750	4198450	5	5.24	1.8
RE DISCCART	555800	4198450	5.42	5.42	1.8
RE DISCCART	555850	4198450	5.63	5.63	1.8
RE DISCCART	555900	4198450	5.73	5.73	1.8
RE DISCCART	555950	4198450	5.75	5.75	1.8
RE DISCCART	556000	4198450	5.63	6.17	1.8
RE DISCCART	556050	4198450	6.03	6.23	1.8
RE DISCCART	556100	4198450	6.43	6.66	1.8
RE DISCCART	556150	4198450	6.66	6.66	1.8
RE DISCCART	556200	4198450	6.31	6.83	1.8
RE DISCCART	556250	4198450	6.36	6.83	1.8
RE DISCCART	556300	4198450	6.8	6.8	1.8
RE DISCCART	556350	4198450	7.27	7.27	1.8
RE DISCCART	556400	4198450	7.27	7.27	1.8
RE DISCCART	556450	4198450	7.55	7.55	1.8
RE DISCCART	556500	4198450	7.43	7.43	1.8
RE DISCCART	556550	4198450	7.66	7.66	1.8
RE DISCCART	556600	4198450	7.7	7.7	1.8
RE DISCCART	553700	4198500	3.19	53.84	1.8
RE DISCCART	553850	4198500	3.34	4.67	1.8
RE DISCCART	553900	4198500	3.09	4.46	1.8
RE DISCCART	554850	4198500	3.59	3.59	1.8
RE DISCCART	554900	4198500	3.68	3.68	1.8
RE DISCCART	554950	4198500	3.63	3.63	1.8
RE DISCCART	555000	4198500	3.21	3.21	1.8
RE DISCCART	555050	4198500	3.01	3.01	1.8
RE DISCCART	555100	4198500	2.86	3.54	1.8
RE DISCCART	555150	4198500	3.32	3.32	1.8
RE DISCCART	555200	4198500	3.55	3.55	1.8
RE DISCCART	555250	4198500	3.4	3.4	1.8
RE DISCCART	555300	4198500	3.7	3.7	1.8
RE DISCCART	555350	4198500	3.86	3.86	1.8
RE DISCCART	555400	4198500	3.6	3.83	1.8
RE DISCCART	555450	4198500	4.38	4.38	1.8
RE DISCCART	555500	4198500	4.66	4.66	1.8
RE DISCCART	555550	4198500	4.95	4.95	1.8
RE DISCCART	555600	4198500	5.06	5.06	1.8
RE DISCCART	555650	4198500	4.96	4.96	1.8
RE DISCCART	555700	4198500	5.09	5.31	1.8
RE DISCCART	555750	4198500	5.16	5.47	1.8
RE DISCCART	555800	4198500	5.38	5.66	1.8
RE DISCCART	555850	4198500	5.66	5.66	1.8
RE DISCCART	555900	4198500	5.76	5.76	1.8
RE DISCCART	555950	4198500	5.84	5.84	1.8
RE DISCCART	556000	4198500	5.94	5.94	1.8
RE DISCCART	556050	4198500	6.07	6.07	1.8
RE DISCCART	556100	4198500	6.23	6.23	1.8
RE DISCCART	556150	4198500	6.29	6.29	1.8
RE DISCCART	556200	4198500	6.57	6.57	1.8
RE DISCCART	556250	4198500	6.48	7.01	1.8
RE DISCCART	556300	4198500	6.89	6.89	1.8
RE DISCCART	556350	4198500	7.33	7.33	1.8
RE DISCCART	556400	4198500	7.53	7.53	1.8
RE DISCCART	556450	4198500	7.73	7.73	1.8
RE DISCCART	556500	4198500	7.84	7.84	1.8
RE DISCCART	556550	4198500	7.83	7.83	1.8
RE DISCCART	556600	4198500	7.94	7.94	1.8
RE DISCCART	554850	4198550	3.47	3.47	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	554900	4198550	3.69	3.69	1.8
RE DISCCART	554950	4198550	3.43	3.43	1.8
RE DISCCART	555000	4198550	2.98	2.98	1.8
RE DISCCART	555050	4198550	3.04	3.43	1.8
RE DISCCART	555100	4198550	3.28	3.28	1.8
RE DISCCART	555150	4198550	3.59	3.59	1.8
RE DISCCART	555200	4198550	3.78	3.78	1.8
RE DISCCART	555250	4198550	3.5	3.5	1.8
RE DISCCART	555300	4198550	3.94	3.94	1.8
RE DISCCART	555350	4198550	4.13	4.13	1.8
RE DISCCART	555400	4198550	3.74	4.23	1.8
RE DISCCART	555450	4198550	4.73	4.73	1.8
RE DISCCART	555500	4198550	4.89	4.89	1.8
RE DISCCART	555550	4198550	5.32	5.32	1.8
RE DISCCART	555600	4198550	5.37	5.37	1.8
RE DISCCART	555650	4198550	5.12	5.42	1.8
RE DISCCART	555700	4198550	5.27	5.47	1.8
RE DISCCART	555750	4198550	5.37	5.66	1.8
RE DISCCART	555800	4198550	5.51	5.89	1.8
RE DISCCART	555850	4198550	5.91	5.91	1.8
RE DISCCART	555900	4198550	5.96	5.96	1.8
RE DISCCART	555950	4198550	6.18	6.18	1.8
RE DISCCART	556000	4198550	6.12	6.12	1.8
RE DISCCART	556050	4198550	6.59	6.59	1.8
RE DISCCART	556100	4198550	6.5	6.5	1.8
RE DISCCART	556150	4198550	6.46	6.46	1.8
RE DISCCART	556200	4198550	6.5	6.5	1.8
RE DISCCART	556250	4198550	6.44	7.12	1.8
RE DISCCART	556300	4198550	7.08	7.08	1.8
RE DISCCART	556350	4198550	7.34	7.34	1.8
RE DISCCART	556400	4198550	7.6	7.6	1.8
RE DISCCART	556450	4198550	7.93	7.93	1.8
RE DISCCART	556500	4198550	7.89	7.89	1.8
RE DISCCART	556550	4198550	8.11	8.73	1.8
RE DISCCART	556600	4198550	8.26	8.26	1.8
RE DISCCART	554900	4198600	3.73	3.73	1.8
RE DISCCART	554950	4198600	3.64	3.64	1.8
RE DISCCART	555000	4198600	3.39	3.39	1.8
RE DISCCART	555050	4198600	3.27	3.27	1.8
RE DISCCART	555100	4198600	3.43	3.43	1.8
RE DISCCART	555150	4198600	3.74	3.74	1.8
RE DISCCART	555200	4198600	3.91	3.91	1.8
RE DISCCART	555250	4198600	3.69	3.69	1.8
RE DISCCART	555300	4198600	4.19	4.19	1.8
RE DISCCART	555350	4198600	4.34	4.34	1.8
RE DISCCART	555400	4198600	3.82	4.65	1.8
RE DISCCART	555450	4198600	5.25	5.25	1.8
RE DISCCART	555500	4198600	5.23	5.23	1.8
RE DISCCART	555550	4198600	5.57	5.57	1.8
RE DISCCART	555600	4198600	5.5	5.5	1.8
RE DISCCART	555650	4198600	5.56	5.56	1.8
RE DISCCART	555700	4198600	6.01	6.01	1.8
RE DISCCART	555750	4198600	5.77	5.77	1.8
RE DISCCART	555800	4198600	5.8	5.8	1.8
RE DISCCART	555850	4198600	5.96	5.96	1.8
RE DISCCART	555900	4198600	6.2	6.2	1.8
RE DISCCART	555950	4198600	6.3	6.3	1.8
RE DISCCART	556000	4198600	6.46	6.46	1.8
RE DISCCART	556050	4198600	6.63	7.05	1.8
RE DISCCART	556100	4198600	6.88	6.88	1.8
RE DISCCART	556150	4198600	6.65	6.65	1.8
RE DISCCART	556200	4198600	6.81	6.81	1.8
RE DISCCART	556250	4198600	6.71	6.71	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556300	4198600	6.95	6.95	1.8
RE DISCCART	556350	4198600	7.62	7.62	1.8
RE DISCCART	556400	4198600	7.66	7.66	1.8
RE DISCCART	556450	4198600	8.17	8.17	1.8
RE DISCCART	556500	4198600	8.13	8.13	1.8
RE DISCCART	556550	4198600	8.11	8.11	1.8
RE DISCCART	556600	4198600	8.77	8.77	1.8
RE DISCCART	554950	4198650	3.73	3.73	1.8
RE DISCCART	555000	4198650	3.74	3.74	1.8
RE DISCCART	555050	4198650	3.8	3.8	1.8
RE DISCCART	555100	4198650	3.52	3.75	1.8
RE DISCCART	555150	4198650	3.62	3.62	1.8
RE DISCCART	555200	4198650	4.06	4.06	1.8
RE DISCCART	555250	4198650	4.16	4.16	1.8
RE DISCCART	555300	4198650	4.16	4.16	1.8
RE DISCCART	555350	4198650	4.05	4.47	1.8
RE DISCCART	555400	4198650	4.58	4.87	1.8
RE DISCCART	555450	4198650	5.37	5.37	1.8
RE DISCCART	555500	4198650	5.6	5.6	1.8
RE DISCCART	555550	4198650	5.84	5.84	1.8
RE DISCCART	555600	4198650	5.97	5.97	1.8
RE DISCCART	555650	4198650	5.98	5.98	1.8
RE DISCCART	555700	4198650	6.29	6.29	1.8
RE DISCCART	555750	4198650	6.09	6.09	1.8
RE DISCCART	555800	4198650	6.28	6.28	1.8
RE DISCCART	555850	4198650	6.33	6.33	1.8
RE DISCCART	555900	4198650	6.56	6.56	1.8
RE DISCCART	555950	4198650	7.06	7.06	1.8
RE DISCCART	556000	4198650	6.83	6.83	1.8
RE DISCCART	556050	4198650	7.06	7.06	1.8
RE DISCCART	556100	4198650	7.03	7.03	1.8
RE DISCCART	556150	4198650	6.84	6.84	1.8
RE DISCCART	556200	4198650	7.14	7.14	1.8
RE DISCCART	556250	4198650	6.9	6.9	1.8
RE DISCCART	556300	4198650	7.38	7.38	1.8
RE DISCCART	556350	4198650	7.43	7.71	1.8
RE DISCCART	556400	4198650	7.76	7.95	1.8
RE DISCCART	556450	4198650	8.42	8.42	1.8
RE DISCCART	556500	4198650	8.31	8.31	1.8
RE DISCCART	556550	4198650	8.61	8.61	1.8
RE DISCCART	556600	4198650	8.83	8.83	1.8
RE DISCCART	555000	4198700	4.23	4.23	1.8
RE DISCCART	555050	4198700	4.15	4.15	1.8
RE DISCCART	555100	4198700	3.69	3.69	1.8
RE DISCCART	555150	4198700	3.95	3.95	1.8
RE DISCCART	555200	4198700	4.35	4.35	1.8
RE DISCCART	555250	4198700	4.34	4.34	1.8
RE DISCCART	555300	4198700	4.34	4.34	1.8
RE DISCCART	555350	4198700	4.77	4.77	1.8
RE DISCCART	555400	4198700	4.98	4.98	1.8
RE DISCCART	555450	4198700	5.35	5.35	1.8
RE DISCCART	555500	4198700	5.7	5.7	1.8
RE DISCCART	555550	4198700	5.87	5.87	1.8
RE DISCCART	555600	4198700	6.06	6.06	1.8
RE DISCCART	555650	4198700	6.25	6.25	1.8
RE DISCCART	555700	4198700	6.35	6.35	1.8
RE DISCCART	555750	4198700	6.44	6.44	1.8
RE DISCCART	555800	4198700	6.53	6.53	1.8
RE DISCCART	555850	4198700	6.6	6.6	1.8
RE DISCCART	555900	4198700	6.72	6.72	1.8
RE DISCCART	555950	4198700	6.91	6.91	1.8
RE DISCCART	556000	4198700	6.89	6.89	1.8
RE DISCCART	556050	4198700	7.13	7.13	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556100	4198700	7.05	7.05	1.8
RE DISCCART	556150	4198700	6.89	6.89	1.8
RE DISCCART	556200	4198700	6.88	6.88	1.8
RE DISCCART	556250	4198700	7.07	7.07	1.8
RE DISCCART	556300	4198700	7.15	7.8	1.8
RE DISCCART	556350	4198700	7.34	8.45	1.8
RE DISCCART	556400	4198700	7.65	8.19	1.8
RE DISCCART	556450	4198700	8.01	8.72	1.8
RE DISCCART	556500	4198700	8.28	8.28	1.8
RE DISCCART	556550	4198700	8.55	8.55	1.8
RE DISCCART	556600	4198700	8.81	8.81	1.8
RE DISCCART	555050	4198750	4.07	4.07	1.8
RE DISCCART	555100	4198750	4.26	4.26	1.8
RE DISCCART	555150	4198750	4.45	4.61	1.8
RE DISCCART	555200	4198750	4.1	4.1	1.8
RE DISCCART	555250	4198750	4.72	4.72	1.8
RE DISCCART	555300	4198750	4.32	4.32	1.8
RE DISCCART	555350	4198750	4.78	4.78	1.8
RE DISCCART	555400	4198750	5.29	5.29	1.8
RE DISCCART	555450	4198750	5.17	5.17	1.8
RE DISCCART	555500	4198750	5.69	5.69	1.8
RE DISCCART	555550	4198750	5.84	5.84	1.8
RE DISCCART	555600	4198750	5.95	5.95	1.8
RE DISCCART	555650	4198750	6.18	6.18	1.8
RE DISCCART	555700	4198750	6.31	6.31	1.8
RE DISCCART	555750	4198750	6.54	6.54	1.8
RE DISCCART	555800	4198750	6.72	6.72	1.8
RE DISCCART	555850	4198750	6.95	6.95	1.8
RE DISCCART	555900	4198750	6.96	6.96	1.8
RE DISCCART	555950	4198750	7.51	7.51	1.8
RE DISCCART	556000	4198750	7.16	7.16	1.8
RE DISCCART	556050	4198750	7.91	7.91	1.8
RE DISCCART	556100	4198750	7.64	7.64	1.8
RE DISCCART	556150	4198750	7.4	7.4	1.8
RE DISCCART	556200	4198750	7.5	7.5	1.8
RE DISCCART	556250	4198750	7.3	7.73	1.8
RE DISCCART	556300	4198750	8.13	8.13	1.8
RE DISCCART	556350	4198750	8.08	8.08	1.8
RE DISCCART	556400	4198750	8.27	8.27	1.8
RE DISCCART	556450	4198750	8.55	8.55	1.8
RE DISCCART	556500	4198750	8.77	8.77	1.8
RE DISCCART	556550	4198750	9.17	9.17	1.8
RE DISCCART	556600	4198750	9.07	9.07	1.8
RE DISCCART	555050	4198800	4.08	4.08	1.8
RE DISCCART	555100	4198800	4.36	4.36	1.8
RE DISCCART	555150	4198800	4.4	4.4	1.8
RE DISCCART	555200	4198800	4.42	4.42	1.8
RE DISCCART	555250	4198800	4.46	4.46	1.8
RE DISCCART	555300	4198800	4.68	4.68	1.8
RE DISCCART	555350	4198800	4.52	4.52	1.8
RE DISCCART	555400	4198800	4.94	4.94	1.8
RE DISCCART	555450	4198800	5.2	5.2	1.8
RE DISCCART	555500	4198800	5.48	5.48	1.8
RE DISCCART	555550	4198800	5.39	5.82	1.8
RE DISCCART	555600	4198800	5.96	5.96	1.8
RE DISCCART	555650	4198800	6.15	6.15	1.8
RE DISCCART	555700	4198800	6.35	6.35	1.8
RE DISCCART	555750	4198800	6.62	6.62	1.8
RE DISCCART	555800	4198800	7.25	7.25	1.8
RE DISCCART	555850	4198800	6.87	6.87	1.8
RE DISCCART	555900	4198800	7.17	7.17	1.8
RE DISCCART	555950	4198800	7.75	7.75	1.8
RE DISCCART	556000	4198800	7.32	7.51	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556050	4198800	8.2	8.2	1.8
RE DISCCART	556100	4198800	7.86	7.86	1.8
RE DISCCART	556150	4198800	7.84	7.84	1.8
RE DISCCART	556200	4198800	7.88	7.88	1.8
RE DISCCART	556250	4198800	7.62	8.04	1.8
RE DISCCART	556300	4198800	7.8	7.8	1.8
RE DISCCART	556350	4198800	8.28	8.28	1.8
RE DISCCART	556400	4198800	8.43	8.43	1.8
RE DISCCART	556450	4198800	8.46	8.46	1.8
RE DISCCART	556500	4198800	8.63	8.63	1.8
RE DISCCART	556550	4198800	8.83	8.83	1.8
RE DISCCART	556600	4198800	9.05	9.05	1.8
RE DISCCART	555100	4198850	4.15	4.15	1.8
RE DISCCART	555150	4198850	4.31	4.31	1.8
RE DISCCART	555200	4198850	4.53	4.53	1.8
RE DISCCART	555250	4198850	4.61	4.61	1.8
RE DISCCART	555300	4198850	4.81	4.81	1.8
RE DISCCART	555350	4198850	4.87	4.87	1.8
RE DISCCART	555400	4198850	5.14	5.14	1.8
RE DISCCART	555450	4198850	5.22	5.22	1.8
RE DISCCART	555500	4198850	5.31	5.31	1.8
RE DISCCART	555550	4198850	5.59	5.59	1.8
RE DISCCART	555600	4198850	5.83	5.83	1.8
RE DISCCART	555650	4198850	6.04	6.3	1.8
RE DISCCART	555700	4198850	6.28	6.58	1.8
RE DISCCART	555750	4198850	6.7	6.7	1.8
RE DISCCART	555800	4198850	6.91	6.91	1.8
RE DISCCART	555850	4198850	7.08	7.08	1.8
RE DISCCART	555900	4198850	7.27	7.27	1.8
RE DISCCART	555950	4198850	7.89	7.89	1.8
RE DISCCART	556000	4198850	7.55	7.55	1.8
RE DISCCART	556050	4198850	8.34	8.34	1.8
RE DISCCART	556100	4198850	8.3	8.3	1.8
RE DISCCART	556150	4198850	8.22	8.22	1.8
RE DISCCART	556200	4198850	8.39	8.39	1.8
RE DISCCART	556250	4198850	7.88	7.88	1.8
RE DISCCART	556300	4198850	8.06	8.06	1.8
RE DISCCART	556350	4198850	8.17	8.17	1.8
RE DISCCART	556400	4198850	8.29	8.29	1.8
RE DISCCART	556450	4198850	8.6	8.6	1.8
RE DISCCART	556500	4198850	8.59	8.59	1.8
RE DISCCART	556550	4198850	8.65	9.32	1.8
RE DISCCART	556600	4198850	9.26	9.26	1.8
RE DISCCART	555150	4198900	4.49	4.49	1.8
RE DISCCART	555200	4198900	4.67	4.67	1.8
RE DISCCART	555250	4198900	4.67	4.67	1.8
RE DISCCART	555300	4198900	4.86	4.86	1.8
RE DISCCART	555350	4198900	4.55	4.55	1.8
RE DISCCART	555400	4198900	5.1	5.1	1.8
RE DISCCART	555450	4198900	5.76	5.76	1.8
RE DISCCART	555500	4198900	5.45	5.45	1.8
RE DISCCART	555550	4198900	5.43	5.71	1.8
RE DISCCART	555600	4198900	5.93	5.93	1.8
RE DISCCART	555650	4198900	5.99	6.22	1.8
RE DISCCART	555700	4198900	6.58	6.58	1.8
RE DISCCART	555750	4198900	6.4	6.8	1.8
RE DISCCART	555800	4198900	6.98	6.98	1.8
RE DISCCART	555850	4198900	7.15	7.15	1.8
RE DISCCART	555900	4198900	7.17	7.17	1.8
RE DISCCART	555950	4198900	7.9	7.9	1.8
RE DISCCART	556000	4198900	7.61	7.61	1.8
RE DISCCART	556050	4198900	7.94	7.94	1.8
RE DISCCART	556100	4198900	8.4	8.4	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556150	4198900	8.47	8.47	1.8
RE DISCCART	556200	4198900	8.46	9.3	1.8
RE DISCCART	556250	4198900	8.33	8.33	1.8
RE DISCCART	556300	4198900	8.29	8.29	1.8
RE DISCCART	556350	4198900	8.4	8.4	1.8
RE DISCCART	556400	4198900	8.32	8.32	1.8
RE DISCCART	556450	4198900	8.41	8.41	1.8
RE DISCCART	556500	4198900	8.7	9.42	1.8
RE DISCCART	556550	4198900	8.8	9.62	1.8
RE DISCCART	556600	4198900	9.21	9.63	1.8
RE DISCCART	555200	4198950	4.49	4.49	1.8
RE DISCCART	555250	4198950	4.61	4.61	1.8
RE DISCCART	555300	4198950	4.47	4.62	1.8
RE DISCCART	555350	4198950	4.75	4.75	1.8
RE DISCCART	555400	4198950	4.92	4.92	1.8
RE DISCCART	555450	4198950	4.96	4.96	1.8
RE DISCCART	555500	4198950	5.34	5.34	1.8
RE DISCCART	555550	4198950	5.96	5.96	1.8
RE DISCCART	555600	4198950	5.7	5.87	1.8
RE DISCCART	555650	4198950	5.91	6.11	1.8
RE DISCCART	555700	4198950	6.41	6.41	1.8
RE DISCCART	555750	4198950	6.26	6.26	1.8
RE DISCCART	555800	4198950	6.77	6.77	1.8
RE DISCCART	555850	4198950	6.83	6.83	1.8
RE DISCCART	555900	4198950	6.86	6.86	1.8
RE DISCCART	555950	4198950	7.62	7.62	1.8
RE DISCCART	556000	4198950	7.5	7.5	1.8
RE DISCCART	556050	4198950	8.11	8.11	1.8
RE DISCCART	556100	4198950	8.19	8.19	1.8
RE DISCCART	556150	4198950	8.45	8.45	1.8
RE DISCCART	556200	4198950	8.83	8.83	1.8
RE DISCCART	556250	4198950	8.63	8.63	1.8
RE DISCCART	556300	4198950	8.55	8.55	1.8
RE DISCCART	556350	4198950	8.46	8.89	1.8
RE DISCCART	556400	4198950	8.81	8.81	1.8
RE DISCCART	556450	4198950	8.98	8.98	1.8
RE DISCCART	556500	4198950	9.09	9.63	1.8
RE DISCCART	556550	4198950	9.21	9.85	1.8
RE DISCCART	556600	4198950	10.18	10.18	1.8
RE DISCCART	555250	4199000	4.29	4.73	1.8
RE DISCCART	555300	4199000	4.38	4.83	1.8
RE DISCCART	555350	4199000	4.51	4.93	1.8
RE DISCCART	555400	4199000	4.63	5.07	1.8
RE DISCCART	555450	4199000	5	5	1.8
RE DISCCART	555500	4199000	5.17	5.17	1.8
RE DISCCART	555550	4199000	5.44	5.44	1.8
RE DISCCART	555600	4199000	5.64	5.64	1.8
RE DISCCART	555650	4199000	5.9	5.9	1.8
RE DISCCART	555700	4199000	5.96	5.96	1.8
RE DISCCART	555750	4199000	6.04	6.04	1.8
RE DISCCART	555800	4199000	6.25	6.25	1.8
RE DISCCART	555850	4199000	6.47	6.47	1.8
RE DISCCART	555900	4199000	6.51	7.2	1.8
RE DISCCART	555950	4199000	6.94	7.5	1.8
RE DISCCART	556000	4199000	7.36	7.36	1.8
RE DISCCART	556050	4199000	7.72	7.72	1.8
RE DISCCART	556100	4199000	8.73	8.73	1.8
RE DISCCART	556150	4199000	8.46	8.46	1.8
RE DISCCART	556200	4199000	8.44	8.44	1.8
RE DISCCART	556250	4199000	8.71	8.71	1.8
RE DISCCART	556300	4199000	8.85	8.85	1.8
RE DISCCART	556350	4199000	9	9	1.8
RE DISCCART	556400	4199000	9.18	9.18	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556450	4199000	9.31	9.31	1.8
RE DISCCART	556500	4199000	9.57	10.55	1.8
RE DISCCART	556550	4199000	10.19	10.19	1.8
RE DISCCART	556600	4199000	10.31	10.31	1.8
RE DISCCART	555250	4199050	4.28	4.79	1.8
RE DISCCART	555300	4199050	4.44	4.88	1.8
RE DISCCART	555350	4199050	4.54	4.93	1.8
RE DISCCART	555400	4199050	4.63	4.63	1.8
RE DISCCART	555450	4199050	4.8	4.8	1.8
RE DISCCART	555500	4199050	5.04	5.04	1.8
RE DISCCART	555550	4199050	5.21	5.21	1.8
RE DISCCART	555600	4199050	5.86	5.86	1.8
RE DISCCART	555650	4199050	5.59	5.59	1.8
RE DISCCART	555700	4199050	5.96	5.96	1.8
RE DISCCART	555750	4199050	6.05	6.05	1.8
RE DISCCART	555800	4199050	6.42	6.42	1.8
RE DISCCART	555850	4199050	6.87	6.87	1.8
RE DISCCART	555900	4199050	6.83	6.83	1.8
RE DISCCART	555950	4199050	6.54	7.53	1.8
RE DISCCART	556000	4199050	7.82	7.82	1.8
RE DISCCART	556050	4199050	8.22	8.22	1.8
RE DISCCART	556100	4199050	8.39	8.39	1.8
RE DISCCART	556150	4199050	9.07	9.07	1.8
RE DISCCART	556200	4199050	9.11	9.11	1.8
RE DISCCART	556250	4199050	8.92	8.92	1.8
RE DISCCART	556300	4199050	9.23	9.23	1.8
RE DISCCART	556350	4199050	9.79	9.79	1.8
RE DISCCART	556400	4199050	10.1	10.1	1.8
RE DISCCART	556450	4199050	10.77	10.77	1.8
RE DISCCART	556500	4199050	10.89	10.89	1.8
RE DISCCART	556550	4199050	10.84	10.84	1.8
RE DISCCART	556600	4199050	10.88	10.88	1.8
RE DISCCART	555250	4199100	3.99	4.84	1.8
RE DISCCART	555300	4199100	4.3	4.85	1.8
RE DISCCART	555350	4199100	4.18	4.85	1.8
RE DISCCART	555400	4199100	4.34	4.93	1.8
RE DISCCART	555450	4199100	4.69	4.69	1.8
RE DISCCART	555500	4199100	5.13	5.13	1.8
RE DISCCART	555550	4199100	5.04	5.04	1.8
RE DISCCART	555600	4199100	5.25	5.25	1.8
RE DISCCART	555650	4199100	5.38	5.38	1.8
RE DISCCART	555700	4199100	5.5	6.07	1.8
RE DISCCART	555750	4199100	5.84	6.44	1.8
RE DISCCART	555800	4199100	6.32	6.32	1.8
RE DISCCART	555850	4199100	6.74	6.74	1.8
RE DISCCART	555900	4199100	6.68	7.2	1.8
RE DISCCART	555950	4199100	6.91	7.49	1.8
RE DISCCART	556000	4199100	7.26	7.73	1.8
RE DISCCART	556050	4199100	8.37	8.37	1.8
RE DISCCART	556100	4199100	8.71	9.02	1.8
RE DISCCART	556150	4199100	8.91	8.91	1.8
RE DISCCART	556200	4199100	9.12	9.12	1.8
RE DISCCART	556250	4199100	9.1	9.1	1.8
RE DISCCART	556300	4199100	9.41	9.41	1.8
RE DISCCART	556350	4199100	9.68	9.68	1.8
RE DISCCART	556400	4199100	10.04	10.04	1.8
RE DISCCART	556450	4199100	10.82	10.82	1.8
RE DISCCART	556500	4199100	10.96	10.96	1.8
RE DISCCART	556550	4199100	10.79	10.79	1.8
RE DISCCART	556600	4199100	10.92	10.92	1.8
RE DISCCART	555250	4199150	3.92	4.74	1.8
RE DISCCART	555300	4199150	4.04	4.84	1.8
RE DISCCART	555350	4199150	4.15	4.15	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555400	4199150	4.25	4.93	1.8
RE DISCCART	555450	4199150	4.45	5.04	1.8
RE DISCCART	555500	4199150	4.75	5.21	1.8
RE DISCCART	555550	4199150	4.98	4.98	1.8
RE DISCCART	555600	4199150	4.94	5.43	1.8
RE DISCCART	555650	4199150	5.11	5.73	1.8
RE DISCCART	555700	4199150	5.35	6.05	1.8
RE DISCCART	555750	4199150	5.74	6.34	1.8
RE DISCCART	555800	4199150	6.05	6.72	1.8
RE DISCCART	555850	4199150	6.45	7.01	1.8
RE DISCCART	555900	4199150	6.67	7.19	1.8
RE DISCCART	555950	4199150	6.86	7.93	1.8
RE DISCCART	556000	4199150	7.41	7.41	1.8
RE DISCCART	556050	4199150	7.72	7.72	1.8
RE DISCCART	556100	4199150	8.03	8.64	1.8
RE DISCCART	556150	4199150	8.66	9.06	1.8
RE DISCCART	556200	4199150	9.09	9.09	1.8
RE DISCCART	556250	4199150	8.96	8.96	1.8
RE DISCCART	556300	4199150	9.21	9.21	1.8
RE DISCCART	556350	4199150	9.51	9.51	1.8
RE DISCCART	556400	4199150	9.69	9.69	1.8
RE DISCCART	556450	4199150	10.77	10.77	1.8
RE DISCCART	556500	4199150	10.9	10.9	1.8
RE DISCCART	556550	4199150	10.97	11.08	1.8
RE DISCCART	556600	4199150	10.91	11.3	1.8
RE DISCCART	555300	4199200	3.78	4.75	1.8
RE DISCCART	555350	4199200	3.88	4.73	1.8
RE DISCCART	555400	4199200	4.04	4.94	1.8
RE DISCCART	555450	4199200	4.5	5.03	1.8
RE DISCCART	555500	4199200	4.79	5.14	1.8
RE DISCCART	555550	4199200	5.06	5.06	1.8
RE DISCCART	555600	4199200	4.98	5.38	1.8
RE DISCCART	555650	4199200	4.88	5.73	1.8
RE DISCCART	555700	4199200	5.32	6.01	1.8
RE DISCCART	555750	4199200	5.88	6.32	1.8
RE DISCCART	555800	4199200	6.05	6.61	1.8
RE DISCCART	555850	4199200	6.29	6.9	1.8
RE DISCCART	555900	4199200	7.26	7.26	1.8
RE DISCCART	555950	4199200	6.74	7.81	1.8
RE DISCCART	556000	4199200	7.35	7.35	1.8
RE DISCCART	556050	4199200	7.43	7.43	1.8
RE DISCCART	556100	4199200	8.09	8.09	1.8
RE DISCCART	556150	4199200	8.48	8.48	1.8
RE DISCCART	556200	4199200	8.97	8.97	1.8
RE DISCCART	556250	4199200	8.84	8.84	1.8
RE DISCCART	556300	4199200	9.3	9.3	1.8
RE DISCCART	556350	4199200	9.77	9.77	1.8
RE DISCCART	556400	4199200	9.71	9.71	1.8
RE DISCCART	556450	4199200	10.39	10.39	1.8
RE DISCCART	556500	4199200	10.38	11.13	1.8
RE DISCCART	556550	4199200	11.15	11.15	1.8
RE DISCCART	556600	4199200	10.8	11.39	1.8
RE DISCCART	555300	4199250	3.9	4.73	1.8
RE DISCCART	555350	4199250	3.76	4.83	1.8
RE DISCCART	555400	4199250	4.22	4.91	1.8
RE DISCCART	555450	4199250	4.65	4.93	1.8
RE DISCCART	555500	4199250	4.99	4.99	1.8
RE DISCCART	555550	4199250	4.84	5.24	1.8
RE DISCCART	555600	4199250	5.03	5.37	1.8
RE DISCCART	555650	4199250	5.06	5.65	1.8
RE DISCCART	555700	4199250	5.56	5.56	1.8
RE DISCCART	555750	4199250	5.68	6.22	1.8
RE DISCCART	555800	4199250	6.04	6.51	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555850	4199250	6.65	6.65	1.8
RE DISCCART	555900	4199250	6.85	6.85	1.8
RE DISCCART	555950	4199250	6.97	6.97	1.8
RE DISCCART	556000	4199250	7.16	7.16	1.8
RE DISCCART	556050	4199250	7.5	7.5	1.8
RE DISCCART	556100	4199250	7.73	7.73	1.8
RE DISCCART	556150	4199250	8.24	8.24	1.8
RE DISCCART	556200	4199250	8.55	8.55	1.8
RE DISCCART	556250	4199250	8.84	8.84	1.8
RE DISCCART	556300	4199250	9.21	9.21	1.8
RE DISCCART	556350	4199250	9.58	9.58	1.8
RE DISCCART	556400	4199250	9.83	9.83	1.8
RE DISCCART	556450	4199250	10.48	10.48	1.8
RE DISCCART	556500	4199250	10.64	11.38	1.8
RE DISCCART	556550	4199250	11.48	11.48	1.8
RE DISCCART	556600	4199250	11.56	11.56	1.8
RE DISCCART	555350	4199300	4.21	4.83	1.8
RE DISCCART	555400	4199300	4.21	4.94	1.8
RE DISCCART	555450	4199300	4.67	4.93	1.8
RE DISCCART	555500	4199300	4.94	5.01	1.8
RE DISCCART	555550	4199300	4.65	5.19	1.8
RE DISCCART	555600	4199300	5.12	5.33	1.8
RE DISCCART	555650	4199300	5.06	5.59	1.8
RE DISCCART	555700	4199300	5.48	5.48	1.8
RE DISCCART	555750	4199300	5.86	5.86	1.8
RE DISCCART	555800	4199300	6.02	6.36	1.8
RE DISCCART	555850	4199300	6.29	6.55	1.8
RE DISCCART	555900	4199300	6.38	6.73	1.8
RE DISCCART	555950	4199300	6.69	6.69	1.8
RE DISCCART	556000	4199300	6.97	6.97	1.8
RE DISCCART	556050	4199300	7.37	7.37	1.8
RE DISCCART	556100	4199300	7.78	7.78	1.8
RE DISCCART	556150	4199300	8.13	8.13	1.8
RE DISCCART	556200	4199300	8.53	8.53	1.8
RE DISCCART	556250	4199300	8.75	8.75	1.8
RE DISCCART	556300	4199300	9.33	9.33	1.8
RE DISCCART	556350	4199300	9.42	9.42	1.8
RE DISCCART	556400	4199300	9.77	9.77	1.8
RE DISCCART	556450	4199300	10.26	10.26	1.8
RE DISCCART	556500	4199300	10.63	11.11	1.8
RE DISCCART	556550	4199300	11.32	11.32	1.8
RE DISCCART	556600	4199300	12.12	12.12	1.8
RE DISCCART	555400	4199350	4.06	4.94	1.8
RE DISCCART	555450	4199350	4.31	4.9	1.8
RE DISCCART	555500	4199350	4.62	4.93	1.8
RE DISCCART	555550	4199350	4.52	5.14	1.8
RE DISCCART	555600	4199350	4.96	5.34	1.8
RE DISCCART	555650	4199350	5.05	5.53	1.8
RE DISCCART	555700	4199350	5.69	5.69	1.8
RE DISCCART	555750	4199350	5.77	5.77	1.8
RE DISCCART	555800	4199350	5.9	6.25	1.8
RE DISCCART	555850	4199350	6.13	6.13	1.8
RE DISCCART	555900	4199350	6.46	6.46	1.8
RE DISCCART	555950	4199350	6.5	6.5	1.8
RE DISCCART	556000	4199350	6.87	6.87	1.8
RE DISCCART	556050	4199350	7.46	7.46	1.8
RE DISCCART	556100	4199350	7.57	7.57	1.8
RE DISCCART	556150	4199350	8	8	1.8
RE DISCCART	556200	4199350	8.39	8.39	1.8
RE DISCCART	556250	4199350	8.55	8.55	1.8
RE DISCCART	556300	4199350	9.06	9.06	1.8
RE DISCCART	556350	4199350	9.34	9.34	1.8
RE DISCCART	556400	4199350	9.83	9.83	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556450	4199350	10.25	10.72	1.8
RE DISCCART	556500	4199350	10.63	11.21	1.8
RE DISCCART	556550	4199350	11.45	11.45	1.8
RE DISCCART	556600	4199350	11.24	11.78	1.8
RE DISCCART	555450	4199400	3.94	4.83	1.8
RE DISCCART	555500	4199400	4.02	4.98	1.8
RE DISCCART	555550	4199400	4.53	5.13	1.8
RE DISCCART	555600	4199400	4.86	4.86	1.8
RE DISCCART	555650	4199400	4.93	5.54	1.8
RE DISCCART	555700	4199400	5.47	5.47	1.8
RE DISCCART	555750	4199400	5.64	5.64	1.8
RE DISCCART	555800	4199400	5.96	5.96	1.8
RE DISCCART	555850	4199400	6.15	6.15	1.8
RE DISCCART	555900	4199400	6.35	6.35	1.8
RE DISCCART	555950	4199400	6.59	6.59	1.8
RE DISCCART	556000	4199400	6.87	6.87	1.8
RE DISCCART	556050	4199400	7.45	7.45	1.8
RE DISCCART	556100	4199400	7.6	7.6	1.8
RE DISCCART	556150	4199400	7.99	7.99	1.8
RE DISCCART	556200	4199400	8.25	8.25	1.8
RE DISCCART	556250	4199400	8.68	8.68	1.8
RE DISCCART	556300	4199400	9.2	9.2	1.8
RE DISCCART	556350	4199400	9.49	9.49	1.8
RE DISCCART	556400	4199400	9.77	10.23	1.8
RE DISCCART	556450	4199400	10.35	10.9	1.8
RE DISCCART	556500	4199400	10.7	11.43	1.8
RE DISCCART	556550	4199400	12.02	12.02	1.8
RE DISCCART	556600	4199400	11.2	11.52	1.8
RE DISCCART	555500	4199450	4.09	4.97	1.8
RE DISCCART	555550	4199450	4.7	4.7	1.8
RE DISCCART	555600	4199450	4.92	4.92	1.8
RE DISCCART	555650	4199450	5.04	5.04	1.8
RE DISCCART	555700	4199450	5.48	5.48	1.8
RE DISCCART	555750	4199450	5.76	5.76	1.8
RE DISCCART	555800	4199450	5.93	5.93	1.8
RE DISCCART	555850	4199450	6.24	6.24	1.8
RE DISCCART	555900	4199450	6.47	6.47	1.8
RE DISCCART	555950	4199450	6.82	6.82	1.8
RE DISCCART	556000	4199450	6.91	6.91	1.8
RE DISCCART	556050	4199450	7.03	7.62	1.8
RE DISCCART	556100	4199450	7.64	7.64	1.8
RE DISCCART	556150	4199450	7.99	8.2	1.8
RE DISCCART	556200	4199450	8.43	8.43	1.8
RE DISCCART	556250	4199450	8.82	8.82	1.8
RE DISCCART	556300	4199450	9.18	9.18	1.8
RE DISCCART	556350	4199450	9.59	9.59	1.8
RE DISCCART	556400	4199450	9.87	10.42	1.8
RE DISCCART	556450	4199450	10.57	11.11	1.8
RE DISCCART	556500	4199450	10.58	11.53	1.8
RE DISCCART	556550	4199450	11.14	11.53	1.8
RE DISCCART	556600	4199450	11.73	11.73	1.8
RE DISCCART	555500	4199500	4.22	5.13	1.8
RE DISCCART	555550	4199500	4.61	4.61	1.8
RE DISCCART	555600	4199500	4.87	4.87	1.8
RE DISCCART	555650	4199500	5.02	5.02	1.8
RE DISCCART	555700	4199500	5.39	5.39	1.8
RE DISCCART	555750	4199500	5.71	5.71	1.8
RE DISCCART	555800	4199500	6.18	6.18	1.8
RE DISCCART	555850	4199500	6.38	6.38	1.8
RE DISCCART	555900	4199500	6.61	6.61	1.8
RE DISCCART	555950	4199500	6.84	6.84	1.8
RE DISCCART	556000	4199500	7.02	7.02	1.8
RE DISCCART	556050	4199500	7.46	7.46	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556100	4199500	7.69	8.01	1.8
RE DISCCART	556150	4199500	8.08	8.31	1.8
RE DISCCART	556200	4199500	8.79	8.79	1.8
RE DISCCART	556250	4199500	8.94	8.94	1.8
RE DISCCART	556300	4199500	9.28	9.28	1.8
RE DISCCART	556350	4199500	9.52	9.52	1.8
RE DISCCART	556400	4199500	9.99	10.56	1.8
RE DISCCART	556450	4199500	10.69	11.36	1.8
RE DISCCART	556500	4199500	11.74	11.74	1.8
RE DISCCART	556550	4199500	11.19	11.53	1.8
RE DISCCART	556600	4199500	12.05	12.05	1.8
RE DISCCART	555550	4199550	4.76	5.21	1.8
RE DISCCART	555600	4199550	4.9	4.9	1.8
RE DISCCART	555650	4199550	4.9	5.44	1.8
RE DISCCART	555700	4199550	5.45	5.45	1.8
RE DISCCART	555750	4199550	5.74	5.74	1.8
RE DISCCART	555800	4199550	6	6	1.8
RE DISCCART	555850	4199550	6.34	6.34	1.8
RE DISCCART	555900	4199550	6.73	6.73	1.8
RE DISCCART	555950	4199550	6.92	6.92	1.8
RE DISCCART	556000	4199550	7.17	7.17	1.8
RE DISCCART	556050	4199550	7.65	7.65	1.8
RE DISCCART	556100	4199550	7.93	8.1	1.8
RE DISCCART	556150	4199550	8.17	8.38	1.8
RE DISCCART	556200	4199550	8.77	8.77	1.8
RE DISCCART	556250	4199550	8.97	8.97	1.8
RE DISCCART	556300	4199550	9.5	9.5	1.8
RE DISCCART	556350	4199550	9.56	9.56	1.8
RE DISCCART	556400	4199550	10	10.74	1.8
RE DISCCART	556450	4199550	11.29	11.29	1.8
RE DISCCART	556500	4199550	11.31	11.31	1.8
RE DISCCART	556550	4199550	11.37	11.37	1.8
RE DISCCART	556600	4199550	12.16	12.16	1.8
RE DISCCART	555600	4199600	4.8	5.57	1.8
RE DISCCART	555650	4199600	4.76	5.55	1.8
RE DISCCART	555700	4199600	5.18	5.42	1.8
RE DISCCART	555750	4199600	5.62	5.81	1.8
RE DISCCART	555800	4199600	6.19	6.19	1.8
RE DISCCART	555850	4199600	6.17	6.48	1.8
RE DISCCART	555900	4199600	6.68	6.68	1.8
RE DISCCART	555950	4199600	6.96	6.96	1.8
RE DISCCART	556000	4199600	7.24	7.24	1.8
RE DISCCART	556050	4199600	7.97	7.97	1.8
RE DISCCART	556100	4199600	7.94	8.21	1.8
RE DISCCART	556150	4199600	8.27	8.53	1.8
RE DISCCART	556200	4199600	8.94	8.94	1.8
RE DISCCART	556250	4199600	8.97	9.48	1.8
RE DISCCART	556300	4199600	9.25	9.25	1.8
RE DISCCART	556350	4199600	9.63	9.63	1.8
RE DISCCART	556400	4199600	9.94	11.45	1.8
RE DISCCART	556450	4199600	11.52	11.52	1.8
RE DISCCART	556500	4199600	11.38	11.38	1.8
RE DISCCART	556550	4199600	11.34	11.34	1.8
RE DISCCART	556600	4199600	11.94	11.94	1.8
RE DISCCART	555650	4199650	5.05	6.04	1.8
RE DISCCART	555700	4199650	5.34	5.34	1.8
RE DISCCART	555750	4199650	5.86	5.86	1.8
RE DISCCART	555800	4199650	6.08	6.08	1.8
RE DISCCART	555850	4199650	6	6.43	1.8
RE DISCCART	555900	4199650	6.69	6.69	1.8
RE DISCCART	555950	4199650	6.92	6.92	1.8
RE DISCCART	556000	4199650	7.16	7.16	1.8
RE DISCCART	556050	4199650	7.68	7.68	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556100	4199650	8	8	1.8
RE DISCCART	556150	4199650	8.34	8.46	1.8
RE DISCCART	556200	4199650	8.53	8.53	1.8
RE DISCCART	556250	4199650	9.21	9.21	1.8
RE DISCCART	556300	4199650	11.36	14.44	1.8
RE DISCCART	556350	4199650	9.78	15.21	1.8
RE DISCCART	556400	4199650	10.13	11.55	1.8
RE DISCCART	556450	4199650	10.97	11.53	1.8
RE DISCCART	556500	4199650	10.85	11.53	1.8
RE DISCCART	556550	4199650	11.51	11.51	1.8
RE DISCCART	556600	4199650	12.09	12.09	1.8
RE DISCCART	555700	4199700	5.41	5.41	1.8
RE DISCCART	555750	4199700	5.9	5.9	1.8
RE DISCCART	555800	4199700	6.27	6.27	1.8
RE DISCCART	555850	4199700	6.23	6.23	1.8
RE DISCCART	555900	4199700	6.61	6.61	1.8
RE DISCCART	555950	4199700	6.9	6.9	1.8
RE DISCCART	556000	4199700	7.34	7.34	1.8
RE DISCCART	556050	4199700	7.82	7.82	1.8
RE DISCCART	556100	4199700	8.19	8.19	1.8
RE DISCCART	556150	4199700	8.37	8.37	1.8
RE DISCCART	556200	4199700	8.73	8.73	1.8
RE DISCCART	556250	4199700	9.72	9.72	1.8
RE DISCCART	556300	4199700	9.71	15.21	1.8
RE DISCCART	556350	4199700	10.36	15.21	1.8
RE DISCCART	556400	4199700	10.64	11.53	1.8
RE DISCCART	556450	4199700	11.37	11.37	1.8
RE DISCCART	556500	4199700	11.3	11.3	1.8
RE DISCCART	556550	4199700	11.69	11.69	1.8
RE DISCCART	556600	4199700	12.37	12.37	1.8
RE DISCCART	555700	4199750	5.5	6.48	1.8
RE DISCCART	555750	4199750	5.96	5.96	1.8
RE DISCCART	555800	4199750	6.48	6.48	1.8
RE DISCCART	555850	4199750	6.27	6.27	1.8
RE DISCCART	555900	4199750	6.77	6.77	1.8
RE DISCCART	555950	4199750	7.05	7.05	1.8
RE DISCCART	556000	4199750	7.52	7.52	1.8
RE DISCCART	556050	4199750	7.76	7.76	1.8
RE DISCCART	556100	4199750	8.19	8.19	1.8
RE DISCCART	556150	4199750	8.58	8.58	1.8
RE DISCCART	556200	4199750	8.87	8.87	1.8
RE DISCCART	556250	4199750	9.49	9.49	1.8
RE DISCCART	556300	4199750	9.56	10.2	1.8
RE DISCCART	556350	4199750	10.3	11.53	1.8
RE DISCCART	556400	4199750	10.84	11.53	1.8
RE DISCCART	556450	4199750	11	11.53	1.8
RE DISCCART	556500	4199750	11.36	11.75	1.8
RE DISCCART	556550	4199750	12.35	12.35	1.8
RE DISCCART	556600	4199750	12.81	12.81	1.8
RE DISCCART	555750	4199800	6.01	6.01	1.8
RE DISCCART	555800	4199800	6.24	6.82	1.8
RE DISCCART	555850	4199800	6.35	6.35	1.8
RE DISCCART	555900	4199800	6.99	6.99	1.8
RE DISCCART	555950	4199800	7.1	7.1	1.8
RE DISCCART	556000	4199800	7.44	7.44	1.8
RE DISCCART	556050	4199800	7.53	7.9	1.8
RE DISCCART	556100	4199800	7.99	7.99	1.8
RE DISCCART	556150	4199800	8.52	8.52	1.8
RE DISCCART	556200	4199800	9.94	9.94	1.8
RE DISCCART	556250	4199800	9.51	9.51	1.8
RE DISCCART	556300	4199800	10.08	10.46	1.8
RE DISCCART	556350	4199800	10.73	11.69	1.8
RE DISCCART	556400	4199800	11.23	11.53	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556450	4199800	10.74	11.53	1.8
RE DISCCART	556500	4199800	11.53	11.53	1.8
RE DISCCART	556550	4199800	12.09	12.09	1.8
RE DISCCART	556600	4199800	12.56	12.56	1.8
RE DISCCART	555800	4199850	6.09	6.09	1.8
RE DISCCART	555850	4199850	6.5	6.5	1.8
RE DISCCART	555900	4199850	6.79	6.79	1.8
RE DISCCART	555950	4199850	6.95	6.95	1.8
RE DISCCART	556000	4199850	7.34	7.61	1.8
RE DISCCART	556050	4199850	7.6	7.94	1.8
RE DISCCART	556100	4199850	7.94	8.28	1.8
RE DISCCART	556150	4199850	8.58	8.58	1.8
RE DISCCART	556200	4199850	8.94	8.94	1.8
RE DISCCART	556250	4199850	9.44	9.44	1.8
RE DISCCART	556300	4199850	10.12	10.78	1.8
RE DISCCART	556350	4199850	10.97	11.62	1.8
RE DISCCART	556400	4199850	11.13	11.53	1.8
RE DISCCART	556450	4199850	11.06	11.53	1.8
RE DISCCART	556500	4199850	11.13	11.53	1.8
RE DISCCART	556550	4199850	11.61	11.61	1.8
RE DISCCART	556600	4199850	12.02	12.02	1.8
RE DISCCART	555800	4199900	6.48	11.41	1.8
RE DISCCART	555850	4199900	6	6.76	1.8
RE DISCCART	555900	4199900	7.01	7.01	1.8
RE DISCCART	555950	4199900	7.11	7.41	1.8
RE DISCCART	556000	4199900	7.33	7.75	1.8
RE DISCCART	556050	4199900	8.06	8.06	1.8
RE DISCCART	556100	4199900	8.35	8.35	1.8
RE DISCCART	556150	4199900	8.74	8.74	1.8
RE DISCCART	556200	4199900	9.1	9.1	1.8
RE DISCCART	556250	4199900	9.4	9.73	1.8
RE DISCCART	556300	4199900	9.94	10.44	1.8
RE DISCCART	556350	4199900	10.53	11.56	1.8
RE DISCCART	556400	4199900	11.36	11.36	1.8
RE DISCCART	556450	4199900	12.01	12.01	1.8
RE DISCCART	556500	4199900	11.59	11.59	1.8
RE DISCCART	556550	4199900	11.83	11.83	1.8
RE DISCCART	556600	4199900	12.67	12.67	1.8
RE DISCCART	555800	4199950	8.6	11.88	1.8
RE DISCCART	555850	4199950	6.6	12.09	1.8
RE DISCCART	555900	4199950	7.17	7.17	1.8
RE DISCCART	555950	4199950	7.48	7.48	1.8
RE DISCCART	556000	4199950	7.55	7.9	1.8
RE DISCCART	556050	4199950	7.91	8.4	1.8
RE DISCCART	556100	4199950	8.32	8.6	1.8
RE DISCCART	556150	4199950	8.8	8.8	1.8
RE DISCCART	556200	4199950	8.99	8.99	1.8
RE DISCCART	556250	4199950	9.09	9.72	1.8
RE DISCCART	556300	4199950	10.1	10.1	1.8
RE DISCCART	556350	4199950	10.26	11.38	1.8
RE DISCCART	556400	4199950	11.12	11.35	1.8
RE DISCCART	556450	4199950	11.73	11.73	1.8
RE DISCCART	556500	4199950	12.36	12.36	1.8
RE DISCCART	556550	4199950	12.2	12.2	1.8
RE DISCCART	556600	4199950	12.41	12.41	1.8
RE DISCCART	555800	4200000	9.71	11.97	1.8
RE DISCCART	555850	4200000	4.9	12.99	1.8
RE DISCCART	555900	4200000	7.25	7.25	1.8
RE DISCCART	555950	4200000	7.45	7.45	1.8
RE DISCCART	556000	4200000	7.61	7.99	1.8
RE DISCCART	556050	4200000	7.99	8.39	1.8
RE DISCCART	556100	4200000	8.25	8.78	1.8
RE DISCCART	556150	4200000	8.81	8.81	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556200	4200000	8.84	9.44	1.8
RE DISCCART	556250	4200000	9.36	9.8	1.8
RE DISCCART	556300	4200000	10.15	11.22	1.8
RE DISCCART	556350	4200000	11.15	11.15	1.8
RE DISCCART	556400	4200000	11.42	11.42	1.8
RE DISCCART	556450	4200000	11.45	11.45	1.8
RE DISCCART	556500	4200000	11.93	11.93	1.8
RE DISCCART	556550	4200000	12.45	12.45	1.8
RE DISCCART	556600	4200000	12.69	12.69	1.8
RE DISCCART	555750	4200050	6.49	6.49	1.8
RE DISCCART	555800	4200050	6.48	12.53	1.8
RE DISCCART	555850	4200050	12.12	12.12	1.8
RE DISCCART	555900	4200050	6.96	13.36	1.8
RE DISCCART	555950	4200050	7.63	7.63	1.8
RE DISCCART	556000	4200050	7.87	8.51	1.8
RE DISCCART	556050	4200050	8.32	8.32	1.8
RE DISCCART	556100	4200050	8.94	9.31	1.8
RE DISCCART	556150	4200050	8.92	8.92	1.8
RE DISCCART	556200	4200050	9.56	9.56	1.8
RE DISCCART	556250	4200050	9.8	10.64	1.8
RE DISCCART	556300	4200050	11.13	11.13	1.8
RE DISCCART	556350	4200050	11.44	11.44	1.8
RE DISCCART	556400	4200050	11.36	11.36	1.8
RE DISCCART	556450	4200050	11.41	11.41	1.8
RE DISCCART	556500	4200050	12.06	12.06	1.8
RE DISCCART	556550	4200050	12.06	12.06	1.8
RE DISCCART	556600	4200050	12.75	12.75	1.8
RE DISCCART	555700	4200100	5.9	6.38	1.8
RE DISCCART	555750	4200100	6.15	7.39	1.8
RE DISCCART	555800	4200100	6.72	6.72	1.8
RE DISCCART	555850	4200100	7.04	13.36	1.8
RE DISCCART	555900	4200100	12.87	12.87	1.8
RE DISCCART	555950	4200100	7.81	14.05	1.8
RE DISCCART	556000	4200100	8.27	8.52	1.8
RE DISCCART	556050	4200100	8.55	8.55	1.8
RE DISCCART	556100	4200100	9.59	9.82	1.8
RE DISCCART	556150	4200100	9.65	9.65	1.8
RE DISCCART	556200	4200100	9.94	9.94	1.8
RE DISCCART	556250	4200100	10.76	10.76	1.8
RE DISCCART	556300	4200100	10.27	10.27	1.8
RE DISCCART	556350	4200100	11.5	11.5	1.8
RE DISCCART	556400	4200100	11.69	11.69	1.8
RE DISCCART	556450	4200100	11.45	11.45	1.8
RE DISCCART	556500	4200100	11.65	11.65	1.8
RE DISCCART	556550	4200100	12.13	12.13	1.8
RE DISCCART	556600	4200100	12.53	13.01	1.8
RE DISCCART	555650	4200150	5.88	5.88	1.8
RE DISCCART	555700	4200150	6.49	6.49	1.8
RE DISCCART	555750	4200150	6.06	6.06	1.8
RE DISCCART	555800	4200150	6.7	6.7	1.8
RE DISCCART	555850	4200150	6.76	6.76	1.8
RE DISCCART	555900	4200150	8.36	14.05	1.8
RE DISCCART	555950	4200150	13.83	13.83	1.8
RE DISCCART	556000	4200150	8.62	14.62	1.8
RE DISCCART	556050	4200150	8.66	8.66	1.8
RE DISCCART	556100	4200150	9.88	9.88	1.8
RE DISCCART	556150	4200150	10.26	10.26	1.8
RE DISCCART	556200	4200150	10.11	10.11	1.8
RE DISCCART	556250	4200150	10.25	10.25	1.8
RE DISCCART	556300	4200150	11.1	11.1	1.8
RE DISCCART	556350	4200150	11.42	11.42	1.8
RE DISCCART	556400	4200150	11.57	11.57	1.8
RE DISCCART	556450	4200150	11.41	11.41	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556500	4200150	12.35	12.35	1.8
RE DISCCART	556550	4200150	13.22	13.22	1.8
RE DISCCART	556600	4200150	13.63	13.63	1.8
RE DISCCART	555600	4200200	4.76	8.73	1.8
RE DISCCART	555650	4200200	4.44	6.05	1.8
RE DISCCART	555700	4200200	5.76	5.76	1.8
RE DISCCART	555750	4200200	6.32	6.32	1.8
RE DISCCART	555800	4200200	6.28	6.28	1.8
RE DISCCART	555850	4200200	7.17	7.17	1.8
RE DISCCART	555900	4200200	7.63	7.63	1.8
RE DISCCART	555950	4200200	8.24	14.93	1.8
RE DISCCART	556000	4200200	10.43	15.1	1.8
RE DISCCART	556050	4200200	9.79	15.17	1.8
RE DISCCART	556100	4200200	10.16	10.16	1.8
RE DISCCART	556150	4200200	10.31	10.31	1.8
RE DISCCART	556200	4200200	10.27	10.27	1.8
RE DISCCART	556250	4200200	10.11	10.11	1.8
RE DISCCART	556300	4200200	11.5	11.5	1.8
RE DISCCART	556350	4200200	11.19	11.19	1.8
RE DISCCART	556400	4200200	11.56	11.56	1.8
RE DISCCART	556450	4200200	11.7	11.7	1.8
RE DISCCART	556500	4200200	12.19	12.19	1.8
RE DISCCART	556550	4200200	12.63	12.63	1.8
RE DISCCART	556600	4200200	12.81	12.96	1.8
RE DISCCART	555500	4200250	10.36	12.69	1.8
RE DISCCART	555550	4200250	4.64	13.3	1.8
RE DISCCART	555600	4200250	4.85	5.94	1.8
RE DISCCART	555650	4200250	4.74	5.97	1.8
RE DISCCART	555700	4200250	5.07	6.16	1.8
RE DISCCART	555750	4200250	6.19	6.19	1.8
RE DISCCART	555800	4200250	6.24	6.24	1.8
RE DISCCART	555850	4200250	6.24	6.91	1.8
RE DISCCART	555900	4200250	7.71	7.71	1.8
RE DISCCART	555950	4200250	8.26	15.05	1.8
RE DISCCART	556000	4200250	7.37	15.55	1.8
RE DISCCART	556050	4200250	9.27	15.58	1.8
RE DISCCART	556100	4200250	9.79	15.48	1.8
RE DISCCART	556150	4200250	9.97	9.97	1.8
RE DISCCART	556200	4200250	10.43	10.43	1.8
RE DISCCART	556250	4200250	10.46	10.89	1.8
RE DISCCART	556300	4200250	11.5	11.5	1.8
RE DISCCART	556350	4200250	11.14	11.14	1.8
RE DISCCART	556400	4200250	11.28	11.28	1.8
RE DISCCART	556450	4200250	11.35	11.35	1.8
RE DISCCART	556500	4200250	11.72	11.72	1.8
RE DISCCART	556550	4200250	12.12	12.51	1.8
RE DISCCART	556600	4200250	12.48	12.82	1.8
RE DISCCART	555450	4200300	8.55	13.66	1.8
RE DISCCART	555500	4200300	4	13.66	1.8
RE DISCCART	555550	4200300	4.54	13.14	1.8
RE DISCCART	555600	4200300	4.36	5.87	1.8
RE DISCCART	555650	4200300	4.7	5.93	1.8
RE DISCCART	555700	4200300	5.47	6.39	1.8
RE DISCCART	555750	4200300	6.03	6.03	1.8
RE DISCCART	555800	4200300	5.68	6.62	1.8
RE DISCCART	555850	4200300	6.26	6.84	1.8
RE DISCCART	555900	4200300	6.38	7.54	1.8
RE DISCCART	555950	4200300	7.83	7.83	1.8
RE DISCCART	556000	4200300	8.66	15.58	1.8
RE DISCCART	556050	4200300	10.27	15.83	1.8
RE DISCCART	556100	4200300	9.42	16.05	1.8
RE DISCCART	556150	4200300	10.47	10.47	1.8
RE DISCCART	556200	4200300	10.91	10.91	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556250	4200300	10.84	10.84	1.8
RE DISCCART	556300	4200300	11.49	11.49	1.8
RE DISCCART	556350	4200300	11.26	11.26	1.8
RE DISCCART	556400	4200300	11.1	11.1	1.8
RE DISCCART	556450	4200300	11.54	11.54	1.8
RE DISCCART	556500	4200300	11.84	11.84	1.8
RE DISCCART	556550	4200300	12.2	12.61	1.8
RE DISCCART	556600	4200300	13.03	13.03	1.8
RE DISCCART	555400	4200350	4.43	13.66	1.8
RE DISCCART	555450	4200350	4.64	13.66	1.8
RE DISCCART	555500	4200350	4.53	13.36	1.8
RE DISCCART	555550	4200350	4.23	5.64	1.8
RE DISCCART	555600	4200350	3.88	5.84	1.8
RE DISCCART	555650	4200350	4.95	5.96	1.8
RE DISCCART	555700	4200350	5.28	6.14	1.8
RE DISCCART	555750	4200350	5.42	6.47	1.8
RE DISCCART	555800	4200350	6.44	6.72	1.8
RE DISCCART	555850	4200350	7.07	7.07	1.8
RE DISCCART	555900	4200350	7.17	7.31	1.8
RE DISCCART	555950	4200350	7.76	7.76	1.8
RE DISCCART	556000	4200350	7.44	8.1	1.8
RE DISCCART	556050	4200350	8.36	16.21	1.8
RE DISCCART	556100	4200350	15	16.05	1.8
RE DISCCART	556150	4200350	9.79	16.76	1.8
RE DISCCART	556200	4200350	9.96	9.96	1.8
RE DISCCART	556250	4200350	10.57	11.37	1.8
RE DISCCART	556300	4200350	11.5	11.5	1.8
RE DISCCART	556350	4200350	11.74	11.74	1.8
RE DISCCART	556400	4200350	11.09	11.09	1.8
RE DISCCART	556450	4200350	11.97	11.97	1.8
RE DISCCART	556500	4200350	12.33	12.33	1.8
RE DISCCART	556550	4200350	12.43	12.43	1.8
RE DISCCART	556600	4200350	12.98	12.98	1.8
RE DISCCART	555400	4200400	3.56	11.67	1.8
RE DISCCART	555450	4200400	3.81	4.49	1.8
RE DISCCART	555500	4200400	4.12	4.95	1.8
RE DISCCART	555550	4200400	4.31	5.43	1.8
RE DISCCART	555600	4200400	4.54	5.83	1.8
RE DISCCART	555650	4200400	5.26	5.99	1.8
RE DISCCART	555700	4200400	5.05	6.37	1.8
RE DISCCART	555750	4200400	5.74	6.56	1.8
RE DISCCART	555800	4200400	5.79	6.84	1.8
RE DISCCART	555850	4200400	6.31	7.07	1.8
RE DISCCART	555900	4200400	7.35	7.35	1.8
RE DISCCART	555950	4200400	7.2	7.77	1.8
RE DISCCART	556000	4200400	7.29	10.25	1.8
RE DISCCART	556050	4200400	8.4	16.19	1.8
RE DISCCART	556100	4200400	8.78	16.89	1.8
RE DISCCART	556150	4200400	16.05	16.65	1.8
RE DISCCART	556200	4200400	9.52	17.29	1.8
RE DISCCART	556250	4200400	10.89	10.89	1.8
RE DISCCART	556300	4200400	11.46	11.46	1.8
RE DISCCART	556350	4200400	11.8	11.8	1.8
RE DISCCART	556400	4200400	11.05	12.01	1.8
RE DISCCART	556450	4200400	12.42	12.42	1.8
RE DISCCART	556500	4200400	12.24	12.24	1.8
RE DISCCART	556550	4200400	12.55	12.55	1.8
RE DISCCART	556600	4200400	12.97	12.97	1.8
RE DISCCART	555400	4200450	2.32	10.61	1.8
RE DISCCART	555450	4200450	4.34	4.34	1.8
RE DISCCART	555500	4200450	4.58	4.58	1.8
RE DISCCART	555550	4200450	4.3	4.85	1.8
RE DISCCART	555600	4200450	4.8	5.26	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555650	4200450	5.62	6.7	1.8
RE DISCCART	555700	4200450	5.72	6.95	1.8
RE DISCCART	555750	4200450	5.97	6.8	1.8
RE DISCCART	555800	4200450	5.86	6.97	1.8
RE DISCCART	555850	4200450	6.43	7.22	1.8
RE DISCCART	555900	4200450	7.05	7.51	1.8
RE DISCCART	555950	4200450	7.82	7.82	1.8
RE DISCCART	556000	4200450	7.46	8.56	1.8
RE DISCCART	556050	4200450	8.09	11.04	1.8
RE DISCCART	556100	4200450	9.81	16.76	1.8
RE DISCCART	556150	4200450	9.41	17.39	1.8
RE DISCCART	556200	4200450	12.25	17.39	1.8
RE DISCCART	556250	4200450	10.63	17.47	1.8
RE DISCCART	556300	4200450	11.53	11.53	1.8
RE DISCCART	556350	4200450	11.68	11.68	1.8
RE DISCCART	556400	4200450	11.14	12.47	1.8
RE DISCCART	556450	4200450	12.8	12.8	1.8
RE DISCCART	556500	4200450	12.76	12.76	1.8
RE DISCCART	556550	4200450	12.85	12.85	1.8
RE DISCCART	556600	4200450	13.28	13.28	1.8
RE DISCCART	555300	4200500	5.38	5.38	1.8
RE DISCCART	555350	4200500	2.19	5.64	1.8
RE DISCCART	555400	4200500	3.14	3.67	1.8
RE DISCCART	555450	4200500	4.13	4.13	1.8
RE DISCCART	555500	4200500	4.7	4.7	1.8
RE DISCCART	555550	4200500	5.12	5.12	1.8
RE DISCCART	555600	4200500	4.63	5.57	1.8
RE DISCCART	555650	4200500	5.04	6.66	1.8
RE DISCCART	555700	4200500	6.33	6.84	1.8
RE DISCCART	555750	4200500	6.81	6.83	1.8
RE DISCCART	555800	4200500	6.32	7.11	1.8
RE DISCCART	555850	4200500	7.12	7.12	1.8
RE DISCCART	555900	4200500	7.25	7.72	1.8
RE DISCCART	555950	4200500	7.58	7.58	1.8
RE DISCCART	556000	4200500	8.22	8.22	1.8
RE DISCCART	556050	4200500	8.84	8.84	1.8
RE DISCCART	556100	4200500	9.72	9.72	1.8
RE DISCCART	556150	4200500	9.26	17.39	1.8
RE DISCCART	556200	4200500	9.82	17.47	1.8
RE DISCCART	556250	4200500	11.84	17.47	1.8
RE DISCCART	556300	4200500	11.45	17.47	1.8
RE DISCCART	556350	4200500	11.4	11.86	1.8
RE DISCCART	556400	4200500	11.38	14.49	1.8
RE DISCCART	556450	4200500	13.23	15.41	1.8
RE DISCCART	556500	4200500	12.84	12.84	1.8
RE DISCCART	556550	4200500	13.12	13.3	1.8
RE DISCCART	556600	4200500	13.34	13.6	1.8
RE DISCCART	555250	4200550	2.8	5.13	1.8
RE DISCCART	555300	4200550	2.48	3.1	1.8
RE DISCCART	555350	4200550	2.8	3.49	1.8
RE DISCCART	555400	4200550	3.22	3.92	1.8
RE DISCCART	555450	4200550	3.52	4.28	1.8
RE DISCCART	555500	4200550	4.28	4.76	1.8
RE DISCCART	555550	4200550	4.17	5.34	1.8
RE DISCCART	555600	4200550	4.67	5.65	1.8
RE DISCCART	555650	4200550	5.31	6.25	1.8
RE DISCCART	555700	4200550	5.77	6.56	1.8
RE DISCCART	555750	4200550	6.43	6.98	1.8
RE DISCCART	555800	4200550	6.71	8.35	1.8
RE DISCCART	555850	4200550	7.22	7.22	1.8
RE DISCCART	555900	4200550	7.57	8.03	1.8
RE DISCCART	555950	4200550	8.18	8.18	1.8
RE DISCCART	556000	4200550	9	9	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556050	4200550	8.64	8.64	1.8
RE DISCCART	556100	4200550	9.23	9.23	1.8
RE DISCCART	556150	4200550	9.06	9.71	1.8
RE DISCCART	556200	4200550	10.06	17.47	1.8
RE DISCCART	556250	4200550	12.37	17.47	1.8
RE DISCCART	556300	4200550	11.3	17.47	1.8
RE DISCCART	556350	4200550	11.75	11.75	1.8
RE DISCCART	556400	4200550	12.29	12.29	1.8
RE DISCCART	556450	4200550	12.89	12.89	1.8
RE DISCCART	556500	4200550	13.33	13.33	1.8
RE DISCCART	556550	4200550	13.87	13.87	1.8
RE DISCCART	556600	4200550	14.28	14.28	1.8
RE DISCCART	555250	4200600	2.47	2.47	1.8
RE DISCCART	555300	4200600	2.4	3.31	1.8
RE DISCCART	555350	4200600	2.85	3.64	1.8
RE DISCCART	555400	4200600	3.47	4.02	1.8
RE DISCCART	555450	4200600	3.76	4.41	1.8
RE DISCCART	555500	4200600	4.2	4.89	1.8
RE DISCCART	555550	4200600	4.54	5.54	1.8
RE DISCCART	555600	4200600	4.74	5.85	1.8
RE DISCCART	555650	4200600	5.18	6.24	1.8
RE DISCCART	555700	4200600	5.61	6.81	1.8
RE DISCCART	555750	4200600	6.23	7.11	1.8
RE DISCCART	555800	4200600	6.7	7.3	1.8
RE DISCCART	555850	4200600	7.29	7.79	1.8
RE DISCCART	555900	4200600	8.11	8.11	1.8
RE DISCCART	555950	4200600	8.73	8.73	1.8
RE DISCCART	556000	4200600	8.78	8.78	1.8
RE DISCCART	556050	4200600	8.63	9.04	1.8
RE DISCCART	556100	4200600	9.27	9.27	1.8
RE DISCCART	556150	4200600	9.51	9.8	1.8
RE DISCCART	556200	4200600	9.88	10.65	1.8
RE DISCCART	556250	4200600	10.67	17.47	1.8
RE DISCCART	556300	4200600	17.07	17.14	1.8
RE DISCCART	556350	4200600	11.49	17.35	1.8
RE DISCCART	556400	4200600	11.98	12.28	1.8
RE DISCCART	556450	4200600	12.43	12.99	1.8
RE DISCCART	556500	4200600	13.08	13.34	1.8
RE DISCCART	556550	4200600	13.92	13.92	1.8
RE DISCCART	556600	4200600	14.52	14.52	1.8
RE DISCCART	555250	4200650	2.69	2.69	1.8
RE DISCCART	555300	4200650	2.59	3.34	1.8
RE DISCCART	555350	4200650	2.92	3.73	1.8
RE DISCCART	555400	4200650	3.37	4.04	1.8
RE DISCCART	555450	4200650	3.55	4.59	1.8
RE DISCCART	555500	4200650	4.15	4.89	1.8
RE DISCCART	555550	4200650	5.07	5.07	1.8
RE DISCCART	555600	4200650	5.24	5.76	1.8
RE DISCCART	555650	4200650	5.84	5.84	1.8
RE DISCCART	555700	4200650	5.94	6.72	1.8
RE DISCCART	555750	4200650	6.42	7.11	1.8
RE DISCCART	555800	4200650	7.26	7.26	1.8
RE DISCCART	555850	4200650	7.87	7.87	1.8
RE DISCCART	555900	4200650	7.84	8.3	1.8
RE DISCCART	555950	4200650	8.07	8.47	1.8
RE DISCCART	556000	4200650	8.83	8.83	1.8
RE DISCCART	556050	4200650	8.9	9.35	1.8
RE DISCCART	556100	4200650	8.73	9.85	1.8
RE DISCCART	556150	4200650	9.64	10.01	1.8
RE DISCCART	556200	4200650	10.25	10.82	1.8
RE DISCCART	556250	4200650	10.38	17.29	1.8
RE DISCCART	556300	4200650	10.97	17.35	1.8
RE DISCCART	556350	4200650	11.14	17.29	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556400	4200650	11.94	11.94	1.8
RE DISCCART	556450	4200650	12.36	12.99	1.8
RE DISCCART	556500	4200650	13.07	13.07	1.8
RE DISCCART	556550	4200650	13.33	13.69	1.8
RE DISCCART	556600	4200650	13.7	13.7	1.8
RE DISCCART	555250	4200700	2.69	2.69	1.8
RE DISCCART	555300	4200700	2.74	3.32	1.8
RE DISCCART	555350	4200700	2.69	3.64	1.8
RE DISCCART	555400	4200700	3.19	4.04	1.8
RE DISCCART	555450	4200700	3.35	4.53	1.8
RE DISCCART	555500	4200700	3.98	4.97	1.8
RE DISCCART	555550	4200700	4.68	5.42	1.8
RE DISCCART	555600	4200700	5.14	5.74	1.8
RE DISCCART	555650	4200700	5.53	6.22	1.8
RE DISCCART	555700	4200700	5.78	6.72	1.8
RE DISCCART	555750	4200700	6.31	7.03	1.8
RE DISCCART	555800	4200700	7.36	7.36	1.8
RE DISCCART	555850	4200700	7.38	7.86	1.8
RE DISCCART	555900	4200700	8.08	8.41	1.8
RE DISCCART	555950	4200700	8.08	8.73	1.8
RE DISCCART	556000	4200700	8.52	8.92	1.8
RE DISCCART	556050	4200700	8.51	9.64	1.8
RE DISCCART	556100	4200700	9.56	9.95	1.8
RE DISCCART	556150	4200700	9.7	10.1	1.8
RE DISCCART	556200	4200700	10.05	10.35	1.8
RE DISCCART	556250	4200700	11.1	11.97	1.8
RE DISCCART	556300	4200700	12.02	16.94	1.8
RE DISCCART	556350	4200700	15.93	16.72	1.8
RE DISCCART	556400	4200700	12.06	12.06	1.8
RE DISCCART	556450	4200700	12.47	12.98	1.8
RE DISCCART	556500	4200700	13.45	13.45	1.8
RE DISCCART	556550	4200700	13.86	13.86	1.8
RE DISCCART	556600	4200700	13.93	13.93	1.8
RE DISCCART	555250	4200750	3.3	3.3	1.8
RE DISCCART	555300	4200750	2.39	3.32	1.8
RE DISCCART	555350	4200750	2.63	3.7	1.8
RE DISCCART	555400	4200750	2.91	4.09	1.8
RE DISCCART	555450	4200750	3.41	4.48	1.8
RE DISCCART	555500	4200750	3.82	4.86	1.8
RE DISCCART	555550	4200750	4.23	5.24	1.8
RE DISCCART	555600	4200750	4.65	5.64	1.8
RE DISCCART	555650	4200750	5	6.03	1.8
RE DISCCART	555700	4200750	5.5	6.43	1.8
RE DISCCART	555750	4200750	6.21	6.72	1.8
RE DISCCART	555800	4200750	6.8	7.11	1.8
RE DISCCART	555850	4200750	6.98	7.53	1.8
RE DISCCART	555900	4200750	7.24	8.09	1.8
RE DISCCART	555950	4200750	7.48	8.44	1.8
RE DISCCART	556000	4200750	7.97	8.79	1.8
RE DISCCART	556050	4200750	8.44	9.32	1.8
RE DISCCART	556100	4200750	8.92	9.85	1.8
RE DISCCART	556150	4200750	9.73	10.1	1.8
RE DISCCART	556200	4200750	9.97	10.39	1.8
RE DISCCART	556250	4200750	9.98	12.12	1.8
RE DISCCART	556300	4200750	12.64	12.64	1.8
RE DISCCART	556350	4200750	12.39	16.49	1.8
RE DISCCART	556400	4200750	12.5	12.5	1.8
RE DISCCART	556450	4200750	13.23	13.23	1.8
RE DISCCART	556500	4200750	13.52	13.52	1.8
RE DISCCART	556550	4200750	14.13	14.13	1.8
RE DISCCART	556600	4200750	14.08	14.08	1.8
RE DISCCART	555250	4200800	3.38	3.38	1.8
RE DISCCART	555300	4200800	2.76	3.32	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555350	4200800	3.08	3.62	1.8
RE DISCCART	555400	4200800	3.26	3.93	1.8
RE DISCCART	555450	4200800	3.45	4.37	1.8
RE DISCCART	555500	4200800	3.87	4.76	1.8
RE DISCCART	555550	4200800	4.29	5.14	1.8
RE DISCCART	555600	4200800	4.79	5.53	1.8
RE DISCCART	555650	4200800	5.29	5.89	1.8
RE DISCCART	555700	4200800	5.77	6.18	1.8
RE DISCCART	555750	4200800	6.33	6.51	1.8
RE DISCCART	555800	4200800	6.48	6.84	1.8
RE DISCCART	555850	4200800	6.5	7.3	1.8
RE DISCCART	555900	4200800	7.03	7.79	1.8
RE DISCCART	555950	4200800	7.66	7.66	1.8
RE DISCCART	556000	4200800	7.89	8.37	1.8
RE DISCCART	556050	4200800	8.71	8.71	1.8
RE DISCCART	556100	4200800	8.94	8.94	1.8
RE DISCCART	556150	4200800	9.68	9.68	1.8
RE DISCCART	556200	4200800	10.08	10.08	1.8
RE DISCCART	556250	4200800	11.01	14.65	1.8
RE DISCCART	556300	4200800	11.26	15.16	1.8
RE DISCCART	556350	4200800	11.86	16.12	1.8
RE DISCCART	556400	4200800	12.35	15.95	1.8
RE DISCCART	556450	4200800	12.79	12.79	1.8
RE DISCCART	556500	4200800	13.04	13.04	1.8
RE DISCCART	556550	4200800	13.49	13.49	1.8
RE DISCCART	556600	4200800	13.87	13.87	1.8
RE DISCCART	555250	4200850	3.39	3.39	1.8
RE DISCCART	555300	4200850	3.5	3.5	1.8
RE DISCCART	555350	4200850	3.13	3.72	1.8
RE DISCCART	555400	4200850	3.15	3.9	1.8
RE DISCCART	555450	4200850	3.22	4.27	1.8
RE DISCCART	555500	4200850	3.78	4.61	1.8
RE DISCCART	555550	4200850	3.99	5.09	1.8
RE DISCCART	555600	4200850	4.62	5.39	1.8
RE DISCCART	555650	4200850	5.17	5.56	1.8
RE DISCCART	555700	4200850	5.48	5.93	1.8
RE DISCCART	555750	4200850	6.12	6.12	1.8
RE DISCCART	555800	4200850	6.3	6.7	1.8
RE DISCCART	555850	4200850	6.37	7.15	1.8
RE DISCCART	555900	4200850	6.82	7.54	1.8
RE DISCCART	555950	4200850	7.21	7.93	1.8
RE DISCCART	556000	4200850	7.91	7.91	1.8
RE DISCCART	556050	4200850	8.33	8.33	1.8
RE DISCCART	556100	4200850	8.99	8.99	1.8
RE DISCCART	556150	4200850	9.64	9.64	1.8
RE DISCCART	556200	4200850	9.93	12.53	1.8
RE DISCCART	556250	4200850	10.84	15.16	1.8
RE DISCCART	556300	4200850	12.3	15.16	1.8
RE DISCCART	556350	4200850	11.35	15.77	1.8
RE DISCCART	556400	4200850	11.8	15.69	1.8
RE DISCCART	556450	4200850	12.08	12.41	1.8
RE DISCCART	556500	4200850	12.6	13.13	1.8
RE DISCCART	556550	4200850	13.13	13.13	1.8
RE DISCCART	556600	4200850	13.38	13.38	1.8
RE DISCCART	555250	4200900	2.66	3.13	1.8
RE DISCCART	555300	4200900	2.97	3.27	1.8
RE DISCCART	555350	4200900	3.14	3.47	1.8
RE DISCCART	555400	4200900	3.24	3.79	1.8
RE DISCCART	555450	4200900	3.07	4.2	1.8
RE DISCCART	555500	4200900	3.33	4.47	1.8
RE DISCCART	555550	4200900	3.68	4.88	1.8
RE DISCCART	555600	4200900	4.09	5.14	1.8
RE DISCCART	555650	4200900	4.6	5.36	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555700	4200900	5.06	5.72	1.8
RE DISCCART	555750	4200900	5.56	6.01	1.8
RE DISCCART	555800	4200900	6.04	6.54	1.8
RE DISCCART	555850	4200900	6.14	7.06	1.8
RE DISCCART	555900	4200900	6.85	6.85	1.8
RE DISCCART	555950	4200900	7.31	7.31	1.8
RE DISCCART	556000	4200900	7.84	7.84	1.8
RE DISCCART	556050	4200900	8.41	8.41	1.8
RE DISCCART	556100	4200900	8.64	8.64	1.8
RE DISCCART	556150	4200900	9.36	9.36	1.8
RE DISCCART	556200	4200900	10.16	10.16	1.8
RE DISCCART	556250	4200900	10.73	14.88	1.8
RE DISCCART	556300	4200900	11.36	14.96	1.8
RE DISCCART	556350	4200900	11.03	15.17	1.8
RE DISCCART	556400	4200900	11.44	14.85	1.8
RE DISCCART	556450	4200900	11.57	12.03	1.8
RE DISCCART	556500	4200900	12.23	12.55	1.8
RE DISCCART	556550	4200900	12.75	12.75	1.8
RE DISCCART	556600	4200900	12.56	13	1.8
RE DISCCART	555100	4200950	3.89	3.89	1.8
RE DISCCART	555150	4200950	3.56	3.56	1.8
RE DISCCART	555200	4200950	3.96	3.96	1.8
RE DISCCART	555250	4200950	3.63	3.63	1.8
RE DISCCART	555300	4200950	3.77	3.77	1.8
RE DISCCART	555350	4200950	3.26	3.59	1.8
RE DISCCART	555400	4200950	3.47	3.47	1.8
RE DISCCART	555450	4200950	3.05	3.86	1.8
RE DISCCART	555500	4200950	3.47	4.24	1.8
RE DISCCART	555550	4200950	3.85	4.75	1.8
RE DISCCART	555600	4200950	4.24	5.05	1.8
RE DISCCART	555650	4200950	4.59	5.25	1.8
RE DISCCART	555700	4200950	5.3	5.3	1.8
RE DISCCART	555750	4200950	5.71	5.71	1.8
RE DISCCART	555800	4200950	6.03	6.03	1.8
RE DISCCART	555850	4200950	6.17	6.83	1.8
RE DISCCART	555900	4200950	6.63	6.63	1.8
RE DISCCART	555950	4200950	7.06	7.63	1.8
RE DISCCART	556000	4200950	7.54	8.01	1.8
RE DISCCART	556050	4200950	8.07	8.4	1.8
RE DISCCART	556100	4200950	8.52	8.99	1.8
RE DISCCART	556150	4200950	9.16	9.58	1.8
RE DISCCART	556200	4200950	9.51	10.13	1.8
RE DISCCART	556250	4200950	10.37	14.88	1.8
RE DISCCART	556300	4200950	10.4	14.96	1.8
RE DISCCART	556350	4200950	10.27	14.44	1.8
RE DISCCART	556400	4200950	10.95	14.24	1.8
RE DISCCART	556450	4200950	11.26	11.77	1.8
RE DISCCART	556500	4200950	11.89	11.89	1.8
RE DISCCART	556550	4200950	12.21	12.21	1.8
RE DISCCART	556600	4200950	12.64	12.64	1.8
RE DISCCART	555100	4201000	3.95	4.09	1.8
RE DISCCART	555150	4201000	4.01	4.01	1.8
RE DISCCART	555200	4201000	4.51	4.51	1.8
RE DISCCART	555250	4201000	3.93	3.93	1.8
RE DISCCART	555300	4201000	3.76	4.72	1.8
RE DISCCART	555350	4201000	3.56	3.56	1.8
RE DISCCART	555400	4201000	3.48	3.48	1.8
RE DISCCART	555450	4201000	3.41	3.41	1.8
RE DISCCART	555500	4201000	3.66	3.66	1.8
RE DISCCART	555550	4201000	3.82	4.64	1.8
RE DISCCART	555600	4201000	4.09	5.02	1.8
RE DISCCART	555650	4201000	4.91	4.91	1.8
RE DISCCART	555700	4201000	4.77	5.3	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555750	4201000	5.74	5.74	1.8
RE DISCCART	555800	4201000	5.6	6.17	1.8
RE DISCCART	555850	4201000	5.84	6.73	1.8
RE DISCCART	555900	4201000	6.7	7.14	1.8
RE DISCCART	555950	4201000	7.1	7.51	1.8
RE DISCCART	556000	4201000	7.61	7.91	1.8
RE DISCCART	556050	4201000	7.95	8.4	1.8
RE DISCCART	556100	4201000	8.58	8.89	1.8
RE DISCCART	556150	4201000	9.07	9.46	1.8
RE DISCCART	556200	4201000	9.62	10.11	1.8
RE DISCCART	556250	4201000	9.65	10.09	1.8
RE DISCCART	556300	4201000	9.96	9.96	1.8
RE DISCCART	556350	4201000	10.5	13.63	1.8
RE DISCCART	556400	4201000	11.54	13.7	1.8
RE DISCCART	556450	4201000	11.2	11.2	1.8
RE DISCCART	556500	4201000	11.59	11.59	1.8
RE DISCCART	556550	4201000	11.85	11.85	1.8
RE DISCCART	556600	4201000	11.65	12.54	1.8
RE DISCCART	555100	4201050	4.35	4.35	1.8
RE DISCCART	555150	4201050	4.05	4.05	1.8
RE DISCCART	555200	4201050	4.28	4.28	1.8
RE DISCCART	555250	4201050	4.56	4.56	1.8
RE DISCCART	555300	4201050	4.38	4.38	1.8
RE DISCCART	555350	4201050	3.05	3.94	1.8
RE DISCCART	555400	4201050	3.48	4.03	1.8
RE DISCCART	555450	4201050	3.52	4.14	1.8
RE DISCCART	555500	4201050	3.96	4.03	1.8
RE DISCCART	555550	4201050	3.94	4.73	1.8
RE DISCCART	555600	4201050	4.07	4.93	1.8
RE DISCCART	555650	4201050	4.52	5.14	1.8
RE DISCCART	555700	4201050	4.37	5.38	1.8
RE DISCCART	555750	4201050	5.09	5.63	1.8
RE DISCCART	555800	4201050	5.47	6.15	1.8
RE DISCCART	555850	4201050	5.74	6.65	1.8
RE DISCCART	555900	4201050	6.81	6.81	1.8
RE DISCCART	555950	4201050	6.96	7.29	1.8
RE DISCCART	556000	4201050	7.6	7.6	1.8
RE DISCCART	556050	4201050	8.05	8.28	1.8
RE DISCCART	556100	4201050	8.28	8.64	1.8
RE DISCCART	556150	4201050	9.08	9.4	1.8
RE DISCCART	556200	4201050	9.18	9.69	1.8
RE DISCCART	556250	4201050	9.27	9.68	1.8
RE DISCCART	556300	4201050	9.69	9.69	1.8
RE DISCCART	556350	4201050	9.93	9.93	1.8
RE DISCCART	556400	4201050	11.13	13	1.8
RE DISCCART	556450	4201050	10.79	10.79	1.8
RE DISCCART	556500	4201050	11.22	11.22	1.8
RE DISCCART	556550	4201050	11.44	11.44	1.8
RE DISCCART	556600	4201050	11.15	11.97	1.8
RE DISCCART	555100	4201100	4.21	4.41	1.8
RE DISCCART	555150	4201100	4.1	4.28	1.8
RE DISCCART	555200	4201100	4	4	1.8
RE DISCCART	555250	4201100	3.94	3.94	1.8
RE DISCCART	555300	4201100	3.03	3.63	1.8
RE DISCCART	555350	4201100	3.34	3.84	1.8
RE DISCCART	555400	4201100	3.45	4.03	1.8
RE DISCCART	555450	4201100	3.65	4.23	1.8
RE DISCCART	555500	4201100	3.94	4.53	1.8
RE DISCCART	555550	4201100	4.05	4.75	1.8
RE DISCCART	555600	4201100	4.08	5.02	1.8
RE DISCCART	555650	4201100	4.39	5.21	1.8
RE DISCCART	555700	4201100	4.19	5.37	1.8
RE DISCCART	555750	4201100	5.06	5.63	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555800	4201100	5.31	6.04	1.8
RE DISCCART	555850	4201100	5.47	6.54	1.8
RE DISCCART	555900	4201100	6.37	6.79	1.8
RE DISCCART	555950	4201100	6.72	6.92	1.8
RE DISCCART	556000	4201100	7.5	7.5	1.8
RE DISCCART	556050	4201100	8.02	8.02	1.8
RE DISCCART	556100	4201100	8.06	8.46	1.8
RE DISCCART	556150	4201100	9.07	9.07	1.8
RE DISCCART	556200	4201100	9.12	9.12	1.8
RE DISCCART	556250	4201100	9.08	9.08	1.8
RE DISCCART	556300	4201100	9.61	9.61	1.8
RE DISCCART	556350	4201100	12.73	14.19	1.8
RE DISCCART	556400	4201100	10.79	12.56	1.8
RE DISCCART	556450	4201100	10.5	11.76	1.8
RE DISCCART	556500	4201100	10.88	10.88	1.8
RE DISCCART	556550	4201100	10.92	10.92	1.8
RE DISCCART	556600	4201100	11	11	1.8
RE DISCCART	555100	4201150	4.01	4.01	1.8
RE DISCCART	555150	4201150	3.88	3.88	1.8
RE DISCCART	555200	4201150	3.92	3.92	1.8
RE DISCCART	555250	4201150	3.91	3.91	1.8
RE DISCCART	555300	4201150	3.1	3.74	1.8
RE DISCCART	555350	4201150	3.5	3.94	1.8
RE DISCCART	555400	4201150	3.65	4.14	1.8
RE DISCCART	555450	4201150	3.65	4.36	1.8
RE DISCCART	555500	4201150	4.15	4.63	1.8
RE DISCCART	555550	4201150	4.05	4.84	1.8
RE DISCCART	555600	4201150	4.05	5.09	1.8
RE DISCCART	555650	4201150	4.22	5.33	1.8
RE DISCCART	555700	4201150	4.04	5.58	1.8
RE DISCCART	555750	4201150	4.43	5.76	1.8
RE DISCCART	555800	4201150	5.09	6.04	1.8
RE DISCCART	555850	4201150	5.32	6.43	1.8
RE DISCCART	555900	4201150	5.83	6.58	1.8
RE DISCCART	555950	4201150	6.44	6.76	1.8
RE DISCCART	556000	4201150	7.09	7.09	1.8
RE DISCCART	556050	4201150	7.54	7.54	1.8
RE DISCCART	556100	4201150	7.85	7.85	1.8
RE DISCCART	556150	4201150	8.55	8.55	1.8
RE DISCCART	556200	4201150	9.11	9.11	1.8
RE DISCCART	556250	4201150	8.55	9.45	1.8
RE DISCCART	556300	4201150	8.79	14.81	1.8
RE DISCCART	556350	4201150	9.62	14.81	1.8
RE DISCCART	556400	4201150	10.08	12.2	1.8
RE DISCCART	556450	4201150	10.74	11.34	1.8
RE DISCCART	556500	4201150	10.65	10.65	1.8
RE DISCCART	556550	4201150	10.43	11.24	1.8
RE DISCCART	556600	4201150	10.48	11.23	1.8
RE DISCCART	555100	4201200	3.79	3.79	1.8
RE DISCCART	555150	4201200	3.95	3.95	1.8
RE DISCCART	555200	4201200	3.89	3.89	1.8
RE DISCCART	555250	4201200	4.04	4.04	1.8
RE DISCCART	555300	4201200	3.19	3.93	1.8
RE DISCCART	555350	4201200	3.68	4.03	1.8
RE DISCCART	555400	4201200	3.65	4.24	1.8
RE DISCCART	555450	4201200	3.83	4.44	1.8
RE DISCCART	555500	4201200	4.06	4.72	1.8
RE DISCCART	555550	4201200	4.12	4.93	1.8
RE DISCCART	555600	4201200	4.21	5.1	1.8
RE DISCCART	555650	4201200	4.27	5.34	1.8
RE DISCCART	555700	4201200	4.12	5.57	1.8
RE DISCCART	555750	4201200	4.72	5.84	1.8
RE DISCCART	555800	4201200	5.08	6.05	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555850	4201200	5.57	6.32	1.8
RE DISCCART	555900	4201200	6.58	6.58	1.8
RE DISCCART	555950	4201200	6.95	6.95	1.8
RE DISCCART	556000	4201200	7.19	7.19	1.8
RE DISCCART	556050	4201200	7.53	7.53	1.8
RE DISCCART	556100	4201200	7.72	7.72	1.8
RE DISCCART	556150	4201200	8.2	8.2	1.8
RE DISCCART	556200	4201200	8.99	8.99	1.8
RE DISCCART	556250	4201200	8.61	9.78	1.8
RE DISCCART	556300	4201200	8.52	9.61	1.8
RE DISCCART	556350	4201200	8.89	9.83	1.8
RE DISCCART	556400	4201200	10.76	11.73	1.8
RE DISCCART	556450	4201200	10.32	11.27	1.8
RE DISCCART	556500	4201200	10.54	10.54	1.8
RE DISCCART	556550	4201200	10.61	10.61	1.8
RE DISCCART	556600	4201200	10.18	11.03	1.8
RE DISCCART	555100	4201250	4.06	4.06	1.8
RE DISCCART	555150	4201250	3.95	3.95	1.8
RE DISCCART	555200	4201250	3.85	3.85	1.8
RE DISCCART	555250	4201250	4.24	4.24	1.8
RE DISCCART	555300	4201250	3.26	4.05	1.8
RE DISCCART	555350	4201250	3.74	4.15	1.8
RE DISCCART	555400	4201250	3.74	4.36	1.8
RE DISCCART	555450	4201250	3.78	4.59	1.8
RE DISCCART	555500	4201250	4.16	4.83	1.8
RE DISCCART	555550	4201250	4.39	4.98	1.8
RE DISCCART	555600	4201250	4.42	5.13	1.8
RE DISCCART	555650	4201250	4.49	5.38	1.8
RE DISCCART	555700	4201250	4.29	5.64	1.8
RE DISCCART	555750	4201250	4.72	5.83	1.8
RE DISCCART	555800	4201250	5.6	5.6	1.8
RE DISCCART	555850	4201250	5.72	5.72	1.8
RE DISCCART	555900	4201250	6.26	6.26	1.8
RE DISCCART	555950	4201250	7.17	7.17	1.8
RE DISCCART	556000	4201250	6.86	6.86	1.8
RE DISCCART	556050	4201250	7.34	7.34	1.8
RE DISCCART	556100	4201250	7.92	7.92	1.8
RE DISCCART	556150	4201250	7.93	7.93	1.8
RE DISCCART	556200	4201250	9.24	9.24	1.8
RE DISCCART	556250	4201250	8.97	9.11	1.8
RE DISCCART	556300	4201250	8.81	9.29	1.8
RE DISCCART	556350	4201250	9.48	9.48	1.8
RE DISCCART	556400	4201250	11.1	11.1	1.8
RE DISCCART	556450	4201250	10.07	10.07	1.8
RE DISCCART	556500	4201250	10.34	10.34	1.8
RE DISCCART	556550	4201250	10.34	10.83	1.8
RE DISCCART	556600	4201250	9.83	10.94	1.8
RE DISCCART	555100	4201300	3.71	3.71	1.8
RE DISCCART	555150	4201300	3.9	3.9	1.8
RE DISCCART	555200	4201300	3.93	3.93	1.8
RE DISCCART	555250	4201300	4.45	4.45	1.8
RE DISCCART	555300	4201300	3.84	4.12	1.8
RE DISCCART	555350	4201300	3.8	4.34	1.8
RE DISCCART	555400	4201300	4.03	4.43	1.8
RE DISCCART	555450	4201300	3.94	4.65	1.8
RE DISCCART	555500	4201300	4.16	4.84	1.8
RE DISCCART	555550	4201300	4.39	5.04	1.8
RE DISCCART	555600	4201300	4.46	5.2	1.8
RE DISCCART	555650	4201300	4.76	5.39	1.8
RE DISCCART	555700	4201300	4.44	5.63	1.8
RE DISCCART	555750	4201300	5.2	5.83	1.8
RE DISCCART	555800	4201300	5.51	5.51	1.8
RE DISCCART	555850	4201300	5.71	6.32	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555900	4201300	6.47	6.47	1.8
RE DISCCART	555950	4201300	7.03	7.03	1.8
RE DISCCART	556000	4201300	6.94	6.94	1.8
RE DISCCART	556050	4201300	7.25	7.25	1.8
RE DISCCART	556100	4201300	7.74	7.74	1.8
RE DISCCART	556150	4201300	8.01	8.01	1.8
RE DISCCART	556200	4201300	9.27	9.27	1.8
RE DISCCART	556250	4201300	9.09	9.09	1.8
RE DISCCART	556300	4201300	9.21	9.21	1.8
RE DISCCART	556350	4201300	9.76	13.5	1.8
RE DISCCART	556400	4201300	10.82	10.82	1.8
RE DISCCART	556450	4201300	10.05	10.05	1.8
RE DISCCART	556500	4201300	10.17	10.54	1.8
RE DISCCART	556550	4201300	10.29	10.74	1.8
RE DISCCART	556600	4201300	9.97	10.84	1.8
RE DISCCART	555100	4201350	4.47	4.47	1.8
RE DISCCART	555150	4201350	3.85	3.85	1.8
RE DISCCART	555200	4201350	4.39	4.39	1.8
RE DISCCART	555250	4201350	4.17	4.17	1.8
RE DISCCART	555300	4201350	4.06	4.06	1.8
RE DISCCART	555350	4201350	4.15	4.15	1.8
RE DISCCART	555400	4201350	4.23	4.23	1.8
RE DISCCART	555450	4201350	4.03	4.73	1.8
RE DISCCART	555500	4201350	4.26	4.93	1.8
RE DISCCART	555550	4201350	4.37	5.11	1.8
RE DISCCART	555600	4201350	4.64	5.24	1.8
RE DISCCART	555650	4201350	4.81	5.44	1.8
RE DISCCART	555700	4201350	4.59	5.66	1.8
RE DISCCART	555750	4201350	5.19	5.93	1.8
RE DISCCART	555800	4201350	5.43	6.12	1.8
RE DISCCART	555850	4201350	5.89	6.34	1.8
RE DISCCART	555900	4201350	6.7	6.7	1.8
RE DISCCART	555950	4201350	6.84	6.84	1.8
RE DISCCART	556000	4201350	6.78	7.04	1.8
RE DISCCART	556050	4201350	7.16	7.16	1.8
RE DISCCART	556100	4201350	7.44	7.44	1.8
RE DISCCART	556150	4201350	7.87	7.87	1.8
RE DISCCART	556200	4201350	8.42	8.42	1.8
RE DISCCART	556250	4201350	9.14	9.14	1.8
RE DISCCART	556300	4201350	9.82	9.85	1.8
RE DISCCART	556350	4201350	10.94	13.5	1.8
RE DISCCART	556400	4201350	10.39	10.39	1.8
RE DISCCART	556450	4201350	10.65	10.65	1.8
RE DISCCART	556500	4201350	10.02	10.43	1.8
RE DISCCART	556550	4201350	10.09	10.63	1.8
RE DISCCART	556600	4201350	10.17	10.8	1.8
RE DISCCART	555100	4201400	3.03	3.9	1.8
RE DISCCART	555150	4201400	4.82	4.82	1.8
RE DISCCART	555200	4201400	4.32	4.32	1.8
RE DISCCART	555250	4201400	4.11	4.11	1.8
RE DISCCART	555300	4201400	4.32	4.32	1.8
RE DISCCART	555350	4201400	4.46	4.46	1.8
RE DISCCART	555400	4201400	4.58	4.58	1.8
RE DISCCART	555450	4201400	4.11	4.73	1.8
RE DISCCART	555500	4201400	4.46	4.46	1.8
RE DISCCART	555550	4201400	4.79	5.28	1.8
RE DISCCART	555600	4201400	4.74	5.33	1.8
RE DISCCART	555650	4201400	4.94	5.43	1.8
RE DISCCART	555700	4201400	4.77	5.74	1.8
RE DISCCART	555750	4201400	5.56	5.56	1.8
RE DISCCART	555800	4201400	5.95	5.95	1.8
RE DISCCART	555850	4201400	6.03	6.35	1.8
RE DISCCART	555900	4201400	6.46	6.46	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555950	4201400	6.69	6.89	1.8
RE DISCCART	556000	4201400	6.79	7.14	1.8
RE DISCCART	556050	4201400	6.89	7.39	1.8
RE DISCCART	556100	4201400	7.18	7.77	1.8
RE DISCCART	556150	4201400	7.62	9.74	1.8
RE DISCCART	556200	4201400	8.34	8.34	1.8
RE DISCCART	556250	4201400	9.31	9.31	1.8
RE DISCCART	556300	4201400	9.46	9.46	1.8
RE DISCCART	556350	4201400	9.92	9.92	1.8
RE DISCCART	556400	4201400	10.06	10.06	1.8
RE DISCCART	556450	4201400	10.68	10.68	1.8
RE DISCCART	556500	4201400	10.21	10.21	1.8
RE DISCCART	556550	4201400	10.25	10.25	1.8
RE DISCCART	556600	4201400	10.38	10.74	1.8
RE DISCCART	555100	4201450	5.36	5.36	1.8
RE DISCCART	555150	4201450	3.6	5.5	1.8
RE DISCCART	555200	4201450	2.74	5.22	1.8
RE DISCCART	555250	4201450	4.93	4.93	1.8
RE DISCCART	555300	4201450	4.5	4.5	1.8
RE DISCCART	555350	4201450	4.62	4.62	1.8
RE DISCCART	555400	4201450	4.69	4.69	1.8
RE DISCCART	555450	4201450	4.25	4.73	1.8
RE DISCCART	555500	4201450	4.48	4.91	1.8
RE DISCCART	555550	4201450	4.55	5.13	1.8
RE DISCCART	555600	4201450	4.76	5.33	1.8
RE DISCCART	555650	4201450	5	5.48	1.8
RE DISCCART	555700	4201450	5.02	5.76	1.8
RE DISCCART	555750	4201450	5.47	5.95	1.8
RE DISCCART	555800	4201450	6.09	6.09	1.8
RE DISCCART	555850	4201450	5.87	6.41	1.8
RE DISCCART	555900	4201450	6.38	6.64	1.8
RE DISCCART	555950	4201450	6.36	6.89	1.8
RE DISCCART	556000	4201450	6.49	7.27	1.8
RE DISCCART	556050	4201450	6.72	7.54	1.8
RE DISCCART	556100	4201450	7.12	7.84	1.8
RE DISCCART	556150	4201450	7.53	8.22	1.8
RE DISCCART	556200	4201450	7.8	8.49	1.8
RE DISCCART	556250	4201450	9.28	9.28	1.8
RE DISCCART	556300	4201450	9.29	10.51	1.8
RE DISCCART	556350	4201450	9.49	9.49	1.8
RE DISCCART	556400	4201450	9.15	10.77	1.8
RE DISCCART	556450	4201450	10.36	10.36	1.8
RE DISCCART	556500	4201450	10.07	10.07	1.8
RE DISCCART	556550	4201450	10.23	10.23	1.8
RE DISCCART	556600	4201450	10.42	10.42	1.8
RE DISCCART	551150	4201500	47.29	101.49	1.8
RE DISCCART	555100	4201500	7.07	7.07	1.8
RE DISCCART	555150	4201500	7.25	7.25	1.8
RE DISCCART	555200	4201500	6.04	6.89	1.8
RE DISCCART	555250	4201500	3.09	8	1.8
RE DISCCART	555300	4201500	3.74	5.14	1.8
RE DISCCART	555350	4201500	4.89	4.89	1.8
RE DISCCART	555400	4201500	4.95	4.95	1.8
RE DISCCART	555450	4201500	4.35	4.73	1.8
RE DISCCART	555500	4201500	4.9	4.9	1.8
RE DISCCART	555550	4201500	4.77	5.09	1.8
RE DISCCART	555600	4201500	4.88	5.29	1.8
RE DISCCART	555650	4201500	5.15	5.48	1.8
RE DISCCART	555700	4201500	5.23	5.75	1.8
RE DISCCART	555750	4201500	5.48	6.02	1.8
RE DISCCART	555800	4201500	5.99	6.05	1.8
RE DISCCART	555850	4201500	5.63	6.4	1.8
RE DISCCART	555900	4201500	6.18	6.63	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555950	4201500	6.26	6.89	1.8
RE DISCCART	556000	4201500	6.16	7.23	1.8
RE DISCCART	556050	4201500	7	7.43	1.8
RE DISCCART	556100	4201500	6.85	7.83	1.8
RE DISCCART	556150	4201500	7.48	8.12	1.8
RE DISCCART	556200	4201500	8.06	8.41	1.8
RE DISCCART	556250	4201500	9.24	9.24	1.8
RE DISCCART	556300	4201500	9.2	9.2	1.8
RE DISCCART	556350	4201500	9.2	9.2	1.8
RE DISCCART	556400	4201500	9.28	10.61	1.8
RE DISCCART	556450	4201500	9.66	9.66	1.8
RE DISCCART	556500	4201500	10.08	10.08	1.8
RE DISCCART	556550	4201500	10.18	10.18	1.8
RE DISCCART	556600	4201500	10.35	10.35	1.8
RE DISCCART	551000	4201550	27.84	101.49	1.8
RE DISCCART	551050	4201550	31.13	101.49	1.8
RE DISCCART	551100	4201550	22.51	101.49	1.8
RE DISCCART	551150	4201550	31.17	101.49	1.8
RE DISCCART	555100	4201550	6.98	6.98	1.8
RE DISCCART	555150	4201550	7.18	7.18	1.8
RE DISCCART	555200	4201550	7.64	7.64	1.8
RE DISCCART	555250	4201550	8.04	8.04	1.8
RE DISCCART	555300	4201550	4.22	8.99	1.8
RE DISCCART	555350	4201550	3.03	5.23	1.8
RE DISCCART	555400	4201550	5.1	5.45	1.8
RE DISCCART	555450	4201550	4.71	4.71	1.8
RE DISCCART	555500	4201550	4.91	4.91	1.8
RE DISCCART	555550	4201550	5.08	5.08	1.8
RE DISCCART	555600	4201550	5.03	5.33	1.8
RE DISCCART	555650	4201550	5.54	5.83	1.8
RE DISCCART	555700	4201550	5.47	5.47	1.8
RE DISCCART	555750	4201550	5.81	5.81	1.8
RE DISCCART	555800	4201550	5.72	6.37	1.8
RE DISCCART	555850	4201550	5.66	6.53	1.8
RE DISCCART	555900	4201550	5.78	6.74	1.8
RE DISCCART	555950	4201550	6.29	6.94	1.8
RE DISCCART	556000	4201550	6.29	7.23	1.8
RE DISCCART	556050	4201550	6.73	7.45	1.8
RE DISCCART	556100	4201550	6.95	7.73	1.8
RE DISCCART	556150	4201550	7.44	8.02	1.8
RE DISCCART	556200	4201550	7.94	7.94	1.8
RE DISCCART	556250	4201550	8.98	8.98	1.8
RE DISCCART	556300	4201550	9.23	9.23	1.8
RE DISCCART	556350	4201550	9.55	9.55	1.8
RE DISCCART	556400	4201550	9.43	9.43	1.8
RE DISCCART	556450	4201550	9.75	9.75	1.8
RE DISCCART	556500	4201550	10.06	10.06	1.8
RE DISCCART	556550	4201550	10.36	10.36	1.8
RE DISCCART	556600	4201550	10.5	10.5	1.8
RE DISCCART	550950	4201600	55.3	101.49	1.8
RE DISCCART	551000	4201600	34.45	101.49	1.8
RE DISCCART	551050	4201600	17.83	101.49	1.8
RE DISCCART	551100	4201600	14.05	122.41	1.8
RE DISCCART	551150	4201600	30.09	101.49	1.8
RE DISCCART	555100	4201600	3.38	4.02	1.8
RE DISCCART	555150	4201600	7.57	7.57	1.8
RE DISCCART	555200	4201600	7.23	7.23	1.8
RE DISCCART	555250	4201600	7.38	8.99	1.8
RE DISCCART	555300	4201600	7.15	7.15	1.8
RE DISCCART	555350	4201600	4.48	5.28	1.8
RE DISCCART	555400	4201600	3.22	7.92	1.8
RE DISCCART	555450	4201600	3.62	6.08	1.8
RE DISCCART	555500	4201600	3.42	9.03	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555550	4201600	3.03	8.88	1.8
RE DISCCART	555600	4201600	2.95	6.54	1.8
RE DISCCART	555650	4201600	4.71	6.54	1.8
RE DISCCART	555700	4201600	6.31	6.31	1.8
RE DISCCART	555750	4201600	5.76	5.76	1.8
RE DISCCART	555800	4201600	5.98	6.75	1.8
RE DISCCART	555850	4201600	5.74	6.85	1.8
RE DISCCART	555900	4201600	6.45	6.8	1.8
RE DISCCART	555950	4201600	6.48	6.48	1.8
RE DISCCART	556000	4201600	6.4	7.13	1.8
RE DISCCART	556050	4201600	7.01	7.01	1.8
RE DISCCART	556100	4201600	7.18	7.18	1.8
RE DISCCART	556150	4201600	7.75	7.75	1.8
RE DISCCART	556200	4201600	8.12	8.12	1.8
RE DISCCART	556250	4201600	8.87	8.87	1.8
RE DISCCART	556300	4201600	8.95	8.95	1.8
RE DISCCART	556350	4201600	9.41	9.41	1.8
RE DISCCART	556400	4201600	9.83	9.83	1.8
RE DISCCART	556450	4201600	10.78	10.78	1.8
RE DISCCART	556500	4201600	10.91	10.91	1.8
RE DISCCART	556550	4201600	10.42	10.42	1.8
RE DISCCART	556600	4201600	10.67	10.67	1.8
RE DISCCART	551000	4201650	33.65	101.49	1.8
RE DISCCART	551050	4201650	12.92	101.49	1.8
RE DISCCART	551100	4201650	8.69	128.6	1.8
RE DISCCART	551150	4201650	29.47	101.49	1.8
RE DISCCART	551200	4201650	47.81	101.49	1.8
RE DISCCART	555100	4201650	3.36	4.03	1.8
RE DISCCART	555150	4201650	7.33	7.85	1.8
RE DISCCART	555200	4201650	7.17	7.17	1.8
RE DISCCART	555250	4201650	6.35	6.35	1.8
RE DISCCART	555300	4201650	4.94	5.9	1.8
RE DISCCART	555350	4201650	4.42	4.42	1.8
RE DISCCART	555400	4201650	4.86	8.32	1.8
RE DISCCART	555450	4201650	7.83	8.23	1.8
RE DISCCART	555500	4201650	8.46	9.03	1.8
RE DISCCART	555550	4201650	7.3	8.88	1.8
RE DISCCART	555600	4201650	5.75	8.14	1.8
RE DISCCART	555650	4201650	5.63	5.63	1.8
RE DISCCART	555700	4201650	4.41	6.9	1.8
RE DISCCART	555750	4201650	3.71	6.91	1.8
RE DISCCART	555800	4201650	4.33	7.46	1.8
RE DISCCART	555850	4201650	3.98	7.19	1.8
RE DISCCART	555900	4201650	3.47	7.53	1.8
RE DISCCART	555950	4201650	5.66	7.24	1.8
RE DISCCART	556000	4201650	6.64	6.64	1.8
RE DISCCART	556050	4201650	7.04	7.04	1.8
RE DISCCART	556100	4201650	7.24	7.24	1.8
RE DISCCART	556150	4201650	7.61	7.61	1.8
RE DISCCART	556200	4201650	8.16	8.16	1.8
RE DISCCART	556250	4201650	8.81	8.81	1.8
RE DISCCART	556300	4201650	9.17	9.17	1.8
RE DISCCART	556350	4201650	9.15	9.15	1.8
RE DISCCART	556400	4201650	9.58	9.58	1.8
RE DISCCART	556450	4201650	10.8	10.8	1.8
RE DISCCART	556500	4201650	10.51	10.51	1.8
RE DISCCART	556550	4201650	11.04	11.04	1.8
RE DISCCART	556600	4201650	11.19	11.19	1.8
RE DISCCART	551000	4201700	20.71	101.49	1.8
RE DISCCART	551050	4201700	6.32	122.41	1.8
RE DISCCART	551100	4201700	4.98	122.41	1.8
RE DISCCART	551150	4201700	20.92	101.49	1.8
RE DISCCART	551200	4201700	38.92	101.49	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555100	4201700	3.34	4.03	1.8
RE DISCCART	555150	4201700	3.11	4.13	1.8
RE DISCCART	555200	4201700	3.47	4.24	1.8
RE DISCCART	555250	4201700	3.77	4.22	1.8
RE DISCCART	555300	4201700	4.74	7.59	1.8
RE DISCCART	555350	4201700	4.49	4.49	1.8
RE DISCCART	555400	4201700	4.97	4.97	1.8
RE DISCCART	555450	4201700	5.08	5.08	1.8
RE DISCCART	555500	4201700	5.66	5.66	1.8
RE DISCCART	555550	4201700	5.75	5.75	1.8
RE DISCCART	555600	4201700	5.57	7.53	1.8
RE DISCCART	555650	4201700	5.18	5.18	1.8
RE DISCCART	555700	4201700	5.47	6.33	1.8
RE DISCCART	555750	4201700	5.28	6.55	1.8
RE DISCCART	555800	4201700	5.88	6.64	1.8
RE DISCCART	555850	4201700	6.13	6.74	1.8
RE DISCCART	555900	4201700	6.99	6.99	1.8
RE DISCCART	555950	4201700	6.85	6.85	1.8
RE DISCCART	556000	4201700	6.85	6.85	1.8
RE DISCCART	556050	4201700	4.25	8.23	1.8
RE DISCCART	556100	4201700	6.58	8.21	1.8
RE DISCCART	556150	4201700	8.02	8.02	1.8
RE DISCCART	556200	4201700	7.61	8.04	1.8
RE DISCCART	556250	4201700	5.76	9.47	1.8
RE DISCCART	556300	4201700	6.55	9.2	1.8
RE DISCCART	556350	4201700	8.23	9.32	1.8
RE DISCCART	556400	4201700	10.17	10.6	1.8
RE DISCCART	556450	4201700	7.77	10.93	1.8
RE DISCCART	556500	4201700	10.52	10.52	1.8
RE DISCCART	556550	4201700	11.25	11.36	1.8
RE DISCCART	556600	4201700	11.3	11.3	1.8
RE DISCCART	551000	4201750	7.8	101.49	1.8
RE DISCCART	551050	4201750	3.56	101.49	1.8
RE DISCCART	551100	4201750	3.45	122.41	1.8
RE DISCCART	551150	4201750	10.43	101.49	1.8
RE DISCCART	551200	4201750	29.23	101.49	1.8
RE DISCCART	555100	4201750	3.29	4.08	1.8
RE DISCCART	555150	4201750	3.4	4.13	1.8
RE DISCCART	555200	4201750	3.39	4.24	1.8
RE DISCCART	555250	4201750	3.55	4.34	1.8
RE DISCCART	555300	4201750	4.57	4.57	1.8
RE DISCCART	555350	4201750	4.48	4.48	1.8
RE DISCCART	555400	4201750	4.78	4.78	1.8
RE DISCCART	555450	4201750	4.95	7.42	1.8
RE DISCCART	555500	4201750	6.35	7.61	1.8
RE DISCCART	555550	4201750	6.85	6.85	1.8
RE DISCCART	555600	4201750	5.44	6.91	1.8
RE DISCCART	555650	4201750	4.98	5.63	1.8
RE DISCCART	555700	4201750	5.03	5.93	1.8
RE DISCCART	555750	4201750	5.63	6.21	1.8
RE DISCCART	555800	4201750	5.82	6.33	1.8
RE DISCCART	555850	4201750	6.26	6.53	1.8
RE DISCCART	555900	4201750	6.29	6.64	1.8
RE DISCCART	555950	4201750	6.97	6.97	1.8
RE DISCCART	556000	4201750	6.94	6.94	1.8
RE DISCCART	556050	4201750	5.16	7.54	1.8
RE DISCCART	556100	4201750	3.75	7.52	1.8
RE DISCCART	556150	4201750	4.65	7.72	1.8
RE DISCCART	556200	4201750	4.82	9.77	1.8
RE DISCCART	556250	4201750	8.81	8.92	1.8
RE DISCCART	556300	4201750	8.95	8.95	1.8
RE DISCCART	556350	4201750	9.19	9.19	1.8
RE DISCCART	556400	4201750	9.78	9.78	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556450	4201750	10.57	10.57	1.8
RE DISCCART	556500	4201750	7.93	11.68	1.8
RE DISCCART	556550	4201750	11.29	11.29	1.8
RE DISCCART	556600	4201750	11.25	11.25	1.8
RE DISCCART	551000	4201800	2.89	101.49	1.8
RE DISCCART	551050	4201800	0.63	101.49	1.8
RE DISCCART	551100	4201800	1.1	101.49	1.8
RE DISCCART	551150	4201800	4.54	101.49	1.8
RE DISCCART	551200	4201800	9.82	101.49	1.8
RE DISCCART	555100	4201800	3.05	4.03	1.8
RE DISCCART	555150	4201800	3.17	4.14	1.8
RE DISCCART	555200	4201800	3.3	4.27	1.8
RE DISCCART	555250	4201800	3.45	4.35	1.8
RE DISCCART	555300	4201800	4.85	4.85	1.8
RE DISCCART	555350	4201800	4.3	4.3	1.8
RE DISCCART	555400	4201800	4.68	4.68	1.8
RE DISCCART	555450	4201800	5.31	8	1.8
RE DISCCART	555500	4201800	7.47	7.47	1.8
RE DISCCART	555550	4201800	7.02	7.02	1.8
RE DISCCART	555600	4201800	5.21	5.21	1.8
RE DISCCART	555650	4201800	5.68	5.68	1.8
RE DISCCART	555700	4201800	5.93	6.68	1.8
RE DISCCART	555750	4201800	6.18	6.18	1.8
RE DISCCART	555800	4201800	6.18	6.18	1.8
RE DISCCART	555850	4201800	6.17	6.32	1.8
RE DISCCART	555900	4201800	6.23	6.53	1.8
RE DISCCART	555950	4201800	6.54	6.54	1.8
RE DISCCART	556000	4201800	6.54	6.95	1.8
RE DISCCART	556050	4201800	7.46	7.46	1.8
RE DISCCART	556100	4201800	7.23	7.52	1.8
RE DISCCART	556150	4201800	6.77	7.86	1.8
RE DISCCART	556200	4201800	7.84	8.2	1.8
RE DISCCART	556250	4201800	7.92	8.66	1.8
RE DISCCART	556300	4201800	8.87	8.87	1.8
RE DISCCART	556350	4201800	8.95	8.95	1.8
RE DISCCART	556400	4201800	9.64	9.64	1.8
RE DISCCART	556450	4201800	10.28	10.28	1.8
RE DISCCART	556500	4201800	11.15	11.15	1.8
RE DISCCART	556550	4201800	9.45	11.84	1.8
RE DISCCART	556600	4201800	11.3	11.3	1.8
RE DISCCART	551000	4201850	2.67	101.49	1.8
RE DISCCART	551050	4201850	0.55	101.49	1.8
RE DISCCART	551100	4201850	0.54	101.49	1.8
RE DISCCART	551150	4201850	0.52	101.49	1.8
RE DISCCART	551200	4201850	0.85	101.49	1.8
RE DISCCART	551250	4201850	2.28	101.49	1.8
RE DISCCART	555100	4201850	3.13	4	1.8
RE DISCCART	555150	4201850	3.19	4.14	1.8
RE DISCCART	555200	4201850	3.38	4.24	1.8
RE DISCCART	555250	4201850	3.86	3.86	1.8
RE DISCCART	555300	4201850	4.65	4.65	1.8
RE DISCCART	555350	4201850	4.47	4.47	1.8
RE DISCCART	555400	4201850	4.57	4.57	1.8
RE DISCCART	555450	4201850	4.98	7.62	1.8
RE DISCCART	555500	4201850	5.02	7.51	1.8
RE DISCCART	555550	4201850	6.47	6.47	1.8
RE DISCCART	555600	4201850	5.36	5.65	1.8
RE DISCCART	555650	4201850	5.56	5.56	1.8
RE DISCCART	555700	4201850	5.47	5.47	1.8
RE DISCCART	555750	4201850	5.52	5.83	1.8
RE DISCCART	555800	4201850	5.89	6.02	1.8
RE DISCCART	555850	4201850	5.95	6.27	1.8
RE DISCCART	555900	4201850	6.21	6.21	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555950	4201850	6.3	6.67	1.8
RE DISCCART	556000	4201850	6.57	6.57	1.8
RE DISCCART	556050	4201850	6.89	7.24	1.8
RE DISCCART	556100	4201850	9.24	9.89	1.8
RE DISCCART	556150	4201850	8.59	10.17	1.8
RE DISCCART	556200	4201850	7.59	9.7	1.8
RE DISCCART	556250	4201850	8.41	9.83	1.8
RE DISCCART	556300	4201850	8.84	8.84	1.8
RE DISCCART	556350	4201850	8.97	8.97	1.8
RE DISCCART	556400	4201850	9.08	9.08	1.8
RE DISCCART	556450	4201850	10.39	10.97	1.8
RE DISCCART	556500	4201850	11.24	11.24	1.8
RE DISCCART	556550	4201850	11.17	11.17	1.8
RE DISCCART	556600	4201850	10.54	10.54	1.8
RE DISCCART	551000	4201900	2.64	101.49	1.8
RE DISCCART	551050	4201900	0.52	101.49	1.8
RE DISCCART	551100	4201900	0.72	101.49	1.8
RE DISCCART	551150	4201900	0.49	101.49	1.8
RE DISCCART	551200	4201900	0.62	101.49	1.8
RE DISCCART	551250	4201900	1.14	101.49	1.8
RE DISCCART	551300	4201900	0.44	101.49	1.8
RE DISCCART	555100	4201900	3.05	3.84	1.8
RE DISCCART	555150	4201900	3.52	3.99	1.8
RE DISCCART	555200	4201900	4.03	4.03	1.8
RE DISCCART	555250	4201900	4.13	4.13	1.8
RE DISCCART	555300	4201900	4.45	4.45	1.8
RE DISCCART	555350	4201900	4.75	6.18	1.8
RE DISCCART	555400	4201900	4.63	4.85	1.8
RE DISCCART	555450	4201900	4.48	5	1.8
RE DISCCART	555500	4201900	4.39	5.03	1.8
RE DISCCART	555550	4201900	4.67	7.19	1.8
RE DISCCART	555600	4201900	5.7	5.7	1.8
RE DISCCART	555650	4201900	5.38	5.38	1.8
RE DISCCART	555700	4201900	5.33	5.61	1.8
RE DISCCART	555750	4201900	5.43	5.8	1.8
RE DISCCART	555800	4201900	5.89	5.89	1.8
RE DISCCART	555850	4201900	5.87	6.19	1.8
RE DISCCART	555900	4201900	6.1	6.1	1.8
RE DISCCART	555950	4201900	6.07	6.65	1.8
RE DISCCART	556000	4201900	6.54	6.54	1.8
RE DISCCART	556050	4201900	6.78	7.16	1.8
RE DISCCART	556100	4201900	8.44	8.44	1.8
RE DISCCART	556150	4201900	7.41	7.41	1.8
RE DISCCART	556200	4201900	10.62	11.68	1.8
RE DISCCART	556250	4201900	8.23	11.81	1.8
RE DISCCART	556300	4201900	7.55	8.85	1.8
RE DISCCART	556350	4201900	8.77	8.77	1.8
RE DISCCART	556400	4201900	8.96	8.96	1.8
RE DISCCART	556450	4201900	9.13	11.09	1.8
RE DISCCART	556500	4201900	10.57	10.57	1.8
RE DISCCART	556550	4201900	10.67	10.67	1.8
RE DISCCART	556600	4201900	10.89	10.89	1.8
RE DISCCART	551000	4201950	2.45	101.49	1.8
RE DISCCART	551050	4201950	0.48	101.49	1.8
RE DISCCART	551100	4201950	0.53	101.49	1.8
RE DISCCART	551150	4201950	0.49	101.49	1.8
RE DISCCART	551200	4201950	1.97	101.49	1.8
RE DISCCART	555100	4201950	3.85	3.85	1.8
RE DISCCART	555150	4201950	4.16	4.16	1.8
RE DISCCART	555200	4201950	4.35	4.35	1.8
RE DISCCART	555250	4201950	4.44	4.85	1.8
RE DISCCART	555300	4201950	4.39	4.39	1.8
RE DISCCART	555350	4201950	4.38	4.74	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	555400	4201950	4.35	4.82	1.8
RE DISCCART	555450	4201950	4.89	4.97	1.8
RE DISCCART	555500	4201950	5.04	5.04	1.8
RE DISCCART	555550	4201950	5.42	5.42	1.8
RE DISCCART	555600	4201950	5.36	5.36	1.8
RE DISCCART	555650	4201950	5.58	5.58	1.8
RE DISCCART	555700	4201950	5.65	5.65	1.8
RE DISCCART	555750	4201950	5.43	5.72	1.8
RE DISCCART	555800	4201950	5.65	5.65	1.8
RE DISCCART	555850	4201950	5.81	5.81	1.8
RE DISCCART	555900	4201950	5.83	6.27	1.8
RE DISCCART	555950	4201950	6.12	6.12	1.8
RE DISCCART	556000	4201950	6.15	6.83	1.8
RE DISCCART	556050	4201950	6.8	6.8	1.8
RE DISCCART	556100	4201950	7.01	7.01	1.8
RE DISCCART	556150	4201950	7.26	7.26	1.8
RE DISCCART	556200	4201950	7.32	8.27	1.8
RE DISCCART	556250	4201950	8.2	9.3	1.8
RE DISCCART	556300	4201950	8.72	9.28	1.8
RE DISCCART	556350	4201950	8.29	8.29	1.8
RE DISCCART	556400	4201950	8.79	8.79	1.8
RE DISCCART	556450	4201950	8.91	10.67	1.8
RE DISCCART	556500	4201950	10.84	10.84	1.8
RE DISCCART	556550	4201950	10.81	10.81	1.8
RE DISCCART	556600	4201950	11.3	11.3	1.8
RE DISCCART	551000	4202000	2.57	101.49	1.8
RE DISCCART	551050	4202000	0.85	101.49	1.8
RE DISCCART	551100	4202000	0.84	101.49	1.8
RE DISCCART	551150	4202000	0.42	101.49	1.8
RE DISCCART	551200	4202000	2.01	101.49	1.8
RE DISCCART	555100	4202000	4.18	4.18	1.8
RE DISCCART	555150	4202000	4.25	4.25	1.8
RE DISCCART	555200	4202000	4.6	4.6	1.8
RE DISCCART	555250	4202000	4.61	4.61	1.8
RE DISCCART	555300	4202000	4.76	4.76	1.8
RE DISCCART	555350	4202000	4.58	6.12	1.8
RE DISCCART	555400	4202000	4.53	7	1.8
RE DISCCART	555450	4202000	4.61	5.03	1.8
RE DISCCART	555500	4202000	5.06	5.06	1.8
RE DISCCART	555550	4202000	5.42	5.42	1.8
RE DISCCART	555600	4202000	5.27	7.14	1.8
RE DISCCART	555650	4202000	5.42	5.42	1.8
RE DISCCART	555700	4202000	5.51	5.51	1.8
RE DISCCART	555750	4202000	5.43	5.43	1.8
RE DISCCART	555800	4202000	5.52	5.52	1.8
RE DISCCART	555850	4202000	5.57	5.57	1.8
RE DISCCART	555900	4202000	5.61	6.18	1.8
RE DISCCART	555950	4202000	5.8	6.42	1.8
RE DISCCART	556000	4202000	6	6.62	1.8
RE DISCCART	556050	4202000	6.36	6.36	1.8
RE DISCCART	556100	4202000	6.71	6.71	1.8
RE DISCCART	556150	4202000	6.84	6.84	1.8
RE DISCCART	556200	4202000	7.16	7.88	1.8
RE DISCCART	556250	4202000	7.23	9.56	1.8
RE DISCCART	556300	4202000	7.79	9.25	1.8
RE DISCCART	556350	4202000	8.12	8.52	1.8
RE DISCCART	556400	4202000	8.4	8.4	1.8
RE DISCCART	556450	4202000	10.44	10.44	1.8
RE DISCCART	556500	4202000	11.18	11.18	1.8
RE DISCCART	556550	4202000	10.02	10.02	1.8
RE DISCCART	556600	4202000	11.17	11.17	1.8
RE DISCCART	551050	4202050	2.42	101.49	1.8
RE DISCCART	551100	4202050	0.45	101.49	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	551150	4202050	0.45	101.49	1.8
RE DISCCART	551200	4202050	0.52	101.49	1.8
RE DISCCART	555100	4202050	4.33	4.33	1.8
RE DISCCART	555150	4202050	4.45	4.45	1.8
RE DISCCART	555200	4202050	4.81	4.81	1.8
RE DISCCART	555250	4202050	4.69	4.69	1.8
RE DISCCART	555300	4202050	4.81	4.81	1.8
RE DISCCART	555350	4202050	4.48	4.91	1.8
RE DISCCART	555400	4202050	4.52	5.07	1.8
RE DISCCART	555450	4202050	4.67	5.22	1.8
RE DISCCART	555500	4202050	5.03	5.03	1.8
RE DISCCART	555550	4202050	5.48	5.48	1.8
RE DISCCART	555600	4202050	5.25	6.47	1.8
RE DISCCART	555650	4202050	5.48	5.48	1.8
RE DISCCART	555700	4202050	5.58	5.58	1.8
RE DISCCART	555750	4202050	5.26	5.26	1.8
RE DISCCART	555800	4202050	5.44	5.44	1.8
RE DISCCART	555850	4202050	5.56	5.56	1.8
RE DISCCART	555900	4202050	5.32	6.05	1.8
RE DISCCART	555950	4202050	5.53	6.34	1.8
RE DISCCART	556000	4202050	6.07	6.52	1.8
RE DISCCART	556050	4202050	6.16	6.53	1.8
RE DISCCART	556100	4202050	6.6	6.6	1.8
RE DISCCART	556150	4202050	6.95	6.95	1.8
RE DISCCART	556200	4202050	7.38	7.62	1.8
RE DISCCART	556250	4202050	7.8	8.43	1.8
RE DISCCART	556300	4202050	8.09	9.11	1.8
RE DISCCART	556350	4202050	8.2	8.2	1.8
RE DISCCART	556400	4202050	8.46	8.46	1.8
RE DISCCART	556450	4202050	9.15	10.43	1.8
RE DISCCART	556500	4202050	10.95	10.95	1.8
RE DISCCART	556550	4202050	9.92	9.92	1.8
RE DISCCART	556600	4202050	8.07	11.73	1.8
RE DISCCART	551100	4202100	0.44	101.49	1.8
RE DISCCART	551150	4202100	0.41	101.49	1.8
RE DISCCART	551200	4202100	0.52	101.49	1.8
RE DISCCART	555100	4202100	4.75	4.75	1.8
RE DISCCART	555150	4202100	4.68	4.68	1.8
RE DISCCART	555200	4202100	4.78	4.78	1.8
RE DISCCART	555250	4202100	4.59	4.59	1.8
RE DISCCART	555300	4202100	4.92	4.92	1.8
RE DISCCART	555350	4202100	4.5	4.94	1.8
RE DISCCART	555400	4202100	4.8	5.23	1.8
RE DISCCART	555450	4202100	4.76	5.33	1.8
RE DISCCART	555500	4202100	4.98	6.05	1.8
RE DISCCART	555550	4202100	5.37	5.37	1.8
RE DISCCART	555600	4202100	5.15	7.3	1.8
RE DISCCART	555650	4202100	5.4	5.4	1.8
RE DISCCART	555700	4202100	5.48	5.48	1.8
RE DISCCART	555750	4202100	5.23	5.23	1.8
RE DISCCART	555800	4202100	5.39	5.39	1.8
RE DISCCART	555850	4202100	5.21	5.73	1.8
RE DISCCART	555900	4202100	5.4	5.4	1.8
RE DISCCART	555950	4202100	5.59	6.13	1.8
RE DISCCART	556000	4202100	5.82	6.31	1.8
RE DISCCART	556050	4202100	6.07	6.42	1.8
RE DISCCART	556100	4202100	6.56	6.56	1.8
RE DISCCART	556150	4202100	6.72	6.72	1.8
RE DISCCART	556200	4202100	7.3	7.3	1.8
RE DISCCART	556250	4202100	7.27	8.12	1.8
RE DISCCART	556300	4202100	7.78	9.08	1.8
RE DISCCART	556350	4202100	8	8.44	1.8
RE DISCCART	556400	4202100	8.37	8.45	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556450	4202100	9.92	10.31	1.8
RE DISCCART	556500	4202100	9.25	9.25	1.8
RE DISCCART	556550	4202100	10.03	10.03	1.8
RE DISCCART	556600	4202100	10.09	13.55	1.8
RE DISCCART	555100	4202150	4.09	4.09	1.8
RE DISCCART	555150	4202150	4.15	4.15	1.8
RE DISCCART	555200	4202150	4.24	4.24	1.8
RE DISCCART	555250	4202150	4.11	4.11	1.8
RE DISCCART	555300	4202150	5.01	5.01	1.8
RE DISCCART	555350	4202150	4.83	11.37	1.8
RE DISCCART	555400	4202150	5.67	11.37	1.8
RE DISCCART	555450	4202150	5.26	11.37	1.8
RE DISCCART	555500	4202150	5.27	5.27	1.8
RE DISCCART	555550	4202150	5.16	5.16	1.8
RE DISCCART	555600	4202150	5.52	5.52	1.8
RE DISCCART	555650	4202150	5.49	7.85	1.8
RE DISCCART	555700	4202150	5.76	7.35	1.8
RE DISCCART	555750	4202150	5.26	5.26	1.8
RE DISCCART	555800	4202150	5.55	5.55	1.8
RE DISCCART	555850	4202150	5.63	5.99	1.8
RE DISCCART	555900	4202150	5.35	8.32	1.8
RE DISCCART	555950	4202150	5.6	6.06	1.8
RE DISCCART	556000	4202150	5.59	6.33	1.8
RE DISCCART	556050	4202150	6.18	6.43	1.8
RE DISCCART	556100	4202150	6.54	6.54	1.8
RE DISCCART	556150	4202150	6.53	6.78	1.8
RE DISCCART	556200	4202150	7.29	7.29	1.8
RE DISCCART	556250	4202150	7.25	7.99	1.8
RE DISCCART	556300	4202150	8.73	8.73	1.8
RE DISCCART	556350	4202150	8.03	8.42	1.8
RE DISCCART	556400	4202150	8.27	8.59	1.8
RE DISCCART	556450	4202150	7.96	8.77	1.8
RE DISCCART	556500	4202150	8.84	9.33	1.8
RE DISCCART	556550	4202150	9.48	9.48	1.8
RE DISCCART	556600	4202150	11.84	11.93	1.8
RE DISCCART	555100	4202200	4.17	4.17	1.8
RE DISCCART	555150	4202200	4.22	4.22	1.8
RE DISCCART	555200	4202200	4.09	4.09	1.8
RE DISCCART	555250	4202200	4.22	4.22	1.8
RE DISCCART	555300	4202200	4.8	4.8	1.8
RE DISCCART	555350	4202200	4.97	11.37	1.8
RE DISCCART	555400	4202200	6.31	11.37	1.8
RE DISCCART	555450	4202200	5.69	11.37	1.8
RE DISCCART	555500	4202200	5.43	5.43	1.8
RE DISCCART	555550	4202200	5.39	5.39	1.8
RE DISCCART	555600	4202200	5.42	5.42	1.8
RE DISCCART	555650	4202200	5.71	7.31	1.8
RE DISCCART	555700	4202200	5.66	7.1	1.8
RE DISCCART	555750	4202200	5.05	5.33	1.8
RE DISCCART	555800	4202200	4.86	5.33	1.8
RE DISCCART	555850	4202200	5.05	5.43	1.8
RE DISCCART	555900	4202200	5.19	8.32	1.8
RE DISCCART	555950	4202200	5.76	6.02	1.8
RE DISCCART	556000	4202200	5.94	6.39	1.8
RE DISCCART	556050	4202200	6.53	6.53	1.8
RE DISCCART	556100	4202200	6.62	6.62	1.8
RE DISCCART	556150	4202200	6.44	6.44	1.8
RE DISCCART	556200	4202200	6.91	6.91	1.8
RE DISCCART	556250	4202200	8.01	8.01	1.8
RE DISCCART	556300	4202200	8.86	8.86	1.8
RE DISCCART	556350	4202200	8.18	8.18	1.8
RE DISCCART	556400	4202200	8.44	8.44	1.8
RE DISCCART	556450	4202200	8.65	8.65	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556500	4202200	9	10.41	1.8
RE DISCCART	556550	4202200	9.3	9.3	1.8
RE DISCCART	556600	4202200	10.3	10.3	1.8
RE DISCCART	555100	4202250	4.37	4.37	1.8
RE DISCCART	555150	4202250	4.53	5.11	1.8
RE DISCCART	555200	4202250	4.58	4.58	1.8
RE DISCCART	555250	4202250	4.66	4.66	1.8
RE DISCCART	555300	4202250	4.85	6.66	1.8
RE DISCCART	555350	4202250	4.71	8.71	1.8
RE DISCCART	555400	4202250	6.05	6.05	1.8
RE DISCCART	555450	4202250	6.11	7.84	1.8
RE DISCCART	555500	4202250	5.51	5.51	1.8
RE DISCCART	555550	4202250	5.61	5.61	1.8
RE DISCCART	555600	4202250	5.65	5.65	1.8
RE DISCCART	555650	4202250	5.76	5.76	1.8
RE DISCCART	555700	4202250	5.59	8.04	1.8
RE DISCCART	555750	4202250	4.95	5.22	1.8
RE DISCCART	555800	4202250	4.92	5.33	1.8
RE DISCCART	555850	4202250	5.15	5.53	1.8
RE DISCCART	555900	4202250	5.28	5.74	1.8
RE DISCCART	555950	4202250	6.02	6.02	1.8
RE DISCCART	556000	4202250	5.69	6.2	1.8
RE DISCCART	556050	4202250	6.51	6.51	1.8
RE DISCCART	556100	4202250	6.27	6.27	1.8
RE DISCCART	556150	4202250	6.56	6.56	1.8
RE DISCCART	556200	4202250	8.27	8.84	1.8
RE DISCCART	556250	4202250	8.03	8.03	1.8
RE DISCCART	556300	4202250	8.82	8.82	1.8
RE DISCCART	556350	4202250	8.05	8.05	1.8
RE DISCCART	556400	4202250	8.46	8.46	1.8
RE DISCCART	556450	4202250	9.44	9.44	1.8
RE DISCCART	556500	4202250	9.64	10.53	1.8
RE DISCCART	556550	4202250	10.11	10.11	1.8
RE DISCCART	556600	4202250	10.01	10.01	1.8
RE DISCCART	555100	4202300	2.18	5.05	1.8
RE DISCCART	555150	4202300	1.96	5.26	1.8
RE DISCCART	555200	4202300	2.08	5.28	1.8
RE DISCCART	555250	4202300	2.21	5.24	1.8
RE DISCCART	555300	4202300	2.45	5.38	1.8
RE DISCCART	555350	4202300	2.18	8.71	1.8
RE DISCCART	555400	4202300	2.89	8.24	1.8
RE DISCCART	555450	4202300	5.44	5.44	1.8
RE DISCCART	555500	4202300	5.72	7.19	1.8
RE DISCCART	555550	4202300	5.18	8.06	1.8
RE DISCCART	555600	4202300	6.01	6.01	1.8
RE DISCCART	555650	4202300	5.95	5.95	1.8
RE DISCCART	555700	4202300	5.97	7.51	1.8
RE DISCCART	555750	4202300	5.1	5.33	1.8
RE DISCCART	555800	4202300	5.17	5.17	1.8
RE DISCCART	555850	4202300	5.41	5.41	1.8
RE DISCCART	555900	4202300	5.54	5.54	1.8
RE DISCCART	555950	4202300	5.94	5.94	1.8
RE DISCCART	556000	4202300	6.29	6.29	1.8
RE DISCCART	556050	4202300	6.78	6.78	1.8
RE DISCCART	556100	4202300	6.59	6.59	1.8
RE DISCCART	556150	4202300	6.88	6.88	1.8
RE DISCCART	556200	4202300	7.75	10.83	1.8
RE DISCCART	556250	4202300	7.9	7.9	1.8
RE DISCCART	556300	4202300	8.63	8.86	1.8
RE DISCCART	556350	4202300	3.79	9.58	1.8
RE DISCCART	556400	4202300	8.87	8.87	1.8
RE DISCCART	556450	4202300	9.13	9.13	1.8
RE DISCCART	556500	4202300	10.04	10.04	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556550	4202300	6.42	10.81	1.8
RE DISCCART	556600	4202300	9.82	9.82	1.8
RE DISCCART	555100	4202350	3.42	3.73	1.8
RE DISCCART	555150	4202350	3.75	3.75	1.8
RE DISCCART	555200	4202350	4.12	4.12	1.8
RE DISCCART	555250	4202350	4.31	4.31	1.8
RE DISCCART	555300	4202350	4.66	4.66	1.8
RE DISCCART	555350	4202350	5.39	5.39	1.8
RE DISCCART	555400	4202350	3.75	5.59	1.8
RE DISCCART	555450	4202350	2.01	5.22	1.8
RE DISCCART	555500	4202350	3.36	5.1	1.8
RE DISCCART	555550	4202350	3.21	7.02	1.8
RE DISCCART	555600	4202350	5.68	7.97	1.8
RE DISCCART	555650	4202350	5.83	5.83	1.8
RE DISCCART	555700	4202350	6.16	8.59	1.8
RE DISCCART	555750	4202350	5.5	5.5	1.8
RE DISCCART	555800	4202350	5.76	8.99	1.8
RE DISCCART	555850	4202350	5.82	9.81	1.8
RE DISCCART	555900	4202350	6.37	8.82	1.8
RE DISCCART	555950	4202350	6.58	6.58	1.8
RE DISCCART	556000	4202350	6.43	7.61	1.8
RE DISCCART	556050	4202350	7	7	1.8
RE DISCCART	556100	4202350	6.95	6.95	1.8
RE DISCCART	556150	4202350	7.51	7.51	1.8
RE DISCCART	556200	4202350	10.01	11	1.8
RE DISCCART	556250	4202350	6.9	10.9	1.8
RE DISCCART	556300	4202350	8.52	8.65	1.8
RE DISCCART	556350	4202350	8.89	8.89	1.8
RE DISCCART	556400	4202350	9.15	9.15	1.8
RE DISCCART	556450	4202350	3.69	10.89	1.8
RE DISCCART	556500	4202350	6.28	10.89	1.8
RE DISCCART	556550	4202350	10.19	10.19	1.8
RE DISCCART	556600	4202350	8.79	8.79	1.8
RE DISCCART	555100	4202400	3.21	3.53	1.8
RE DISCCART	555150	4202400	3.34	3.34	1.8
RE DISCCART	555200	4202400	3.63	3.63	1.8
RE DISCCART	555250	4202400	4.27	4.27	1.8
RE DISCCART	555300	4202400	4.05	4.05	1.8
RE DISCCART	555350	4202400	4.37	4.37	1.8
RE DISCCART	555400	4202400	4.21	4.21	1.8
RE DISCCART	555450	4202400	4.86	4.86	1.8
RE DISCCART	555500	4202400	5.45	5.45	1.8
RE DISCCART	555550	4202400	4.06	6.3	1.8
RE DISCCART	555600	4202400	5.26	5.26	1.8
RE DISCCART	555650	4202400	4.25	6.16	1.8
RE DISCCART	555700	4202400	2.32	8.59	1.8
RE DISCCART	555750	4202400	2.67	8.27	1.8
RE DISCCART	555800	4202400	2.47	9.81	1.8
RE DISCCART	555850	4202400	3.31	9.81	1.8
RE DISCCART	555900	4202400	5.3	8.82	1.8
RE DISCCART	555950	4202400	6.91	7.31	1.8
RE DISCCART	556000	4202400	7.31	7.31	1.8
RE DISCCART	556050	4202400	7.16	7.16	1.8
RE DISCCART	556100	4202400	7.41	7.41	1.8
RE DISCCART	556150	4202400	4.1	11.04	1.8
RE DISCCART	556200	4202400	3.6	11.04	1.8
RE DISCCART	556250	4202400	6.39	9.89	1.8
RE DISCCART	556300	4202400	8.77	8.77	1.8
RE DISCCART	556350	4202400	8.84	8.84	1.8
RE DISCCART	556400	4202400	8.77	8.77	1.8
RE DISCCART	556450	4202400	8.97	8.97	1.8
RE DISCCART	556500	4202400	9.16	9.16	1.8
RE DISCCART	556550	4202400	9.69	9.69	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	556600	4202400	8.07	8.43	1.8
RE DISCCART	554439	4197648	2.67	113.66	1.8
RE DISCCART	554439	4197648	2.67	113.66	1.8
RE DISCCART	554439	4197648	2.67	113.66	1.8
RE DISCCART	554961	4196985	4.53	113.66	1.8
RE DISCCART	555373	4201175	3.62	4.06	1.8
RE DISCCART	555373	4201175	3.62	4.06	1.8
RE DISCCART	555752	4198581	5.68	5.68	1.8
RE DISCCART	555839	4199848	6.42	6.42	1.8
RE DISCCART	555839	4199848	6.42	6.42	1.8
RE DISCCART	555848	4199677	6.16	6.16	1.8
RE DISCCART	555848	4199677	6.16	6.16	1.8
RE DISCCART	555864	4200773	6.9	7.6	1.8
RE DISCCART	555864	4200773	6.9	7.6	1.8
RE DISCCART	555909	4198423	5.4	5.4	1.8
RE DISCCART	555909	4198423	5.4	5.4	1.8
RE DISCCART	555936	4201656	3.57	7.53	1.8
RE DISCCART	555936	4201656	3.57	7.53	1.8
RE DISCCART	555936	4201656	3.57	7.53	1.8
RE DISCCART	556012	4198519	5.9	5.9	1.8
RE DISCCART	556012	4198519	5.9	5.9	1.8
RE DISCCART	556039	4198685	7.05	7.05	1.8
RE DISCCART	556071	4199075	7.82	8.1	1.8
RE DISCCART	556071	4199075	7.82	8.1	1.8
RE DISCCART	556073	4199832	7.77	7.77	1.8
RE DISCCART	556139	4198868	8.19	8.19	1.8
RE DISCCART	556157	4198615	6.59	6.59	1.8
RE DISCCART	556157	4198615	6.59	6.59	1.8
RE DISCCART	556168	4198587	6.47	6.47	1.8
RE DISCCART	556201	4199005	8.63	8.63	1.8
RE DISCCART	556201	4199005	8.63	8.63	1.8
RE DISCCART	556232	4199726	8.94	9.29	1.8
RE DISCCART	556248	4198749	7.34	7.34	1.8
RE DISCCART	556253	4199006	8.81	8.81	1.8
RE DISCCART	556267	4198993	8.73	8.73	1.8
RE DISCCART	556323	4198606	7.01	7.47	1.8
RE DISCCART	556329	4199445	9.27	9.27	1.8
RE DISCCART	556401	4199005	9.21	9.21	1.8
RE DISCCART	556846	4200082	14.68	14.68	1.8
RE DISCCART	556289	4198041	5.47	5.47	1.8
RE DISCCART	556279	4197900	5.39	5.39	1.8
RE DISCCART	555894	4198971	6.94	6.94	1.8
RE DISCCART	554032	4197846	5.21	113.66	1.8
RE DISCCART	555890	4200868	6.89	7.39	1.8
RE DISCCART	555937	4200908	6.92	7.56	1.8
RE DISCCART	556302	4199802	10.15	10.15	1.8
RE DISCCART	555714	4201694	5.36	6.52	1.8
RE DISCCART	554273	4196633	20.54	113.66	1.8
RE DISCCART	556457	4198803	8.37	8.66	1.8
RE DISCCART	555826	4198935	6.75	6.75	1.8
RE DISCCART	556054	4199440	7.36	7.36	1.8
RE DISCCART	555692	4199207	5.36	5.93	1.8
RE DISCCART	554235	4197643	3.38	113.66	1.8
RE DISCCART	556413	4197826	4.93	4.93	1.8
RE DISCCART	555243	4198689	4.27	4.27	1.8
RE DISCCART	551749	4199663	4.92	150.1	1.8
RE DISCCART	556699	4200136	13.76	13.76	1.8
RE DISCCART	556367	4198914	8.35	8.35	1.8
RE DISCCART	556371	4198729	7.89	7.89	1.8
RE DISCCART	554018	4197818	5.55	113.66	1.8
RE DISCCART	553876	4197753	17.36	113.66	1.8
RE DISCCART	555846	4197900	3.69	3.69	1.8
RE DISCCART	555873	4197850	3.64	3.64	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	554907	4198399	2.61	2.61	1.8
RE DISCCART	555109	4198399	3.55	3.55	1.8
RE DISCCART	555297	4198399	4.07	4.07	1.8
RE DISCCART	555502	4198395	4.35	4.35	1.8
RE DISCCART	555691	4198392	5.26	5.26	1.8
RE DISCCART	555906	4198389	5.95	5.95	1.8
RE DISCCART	556104	4198392	6.44	6.93	1.8
RE DISCCART	556299	4198392	7.3	7.3	1.8
RE DISCCART	556501	4198395	7.42	8.45	1.8
RE DISCCART	556928	4199151	12.53	12.53	1.8
RE DISCCART	556925	4199611	13.77	13.77	1.8
RE DISCCART	555240	4198745	4.56	4.56	1.8
RE DISCCART	555248	4198745	4.69	4.69	1.8
RE DISCCART	555891	4200852	6.88	7.39	1.8
RE DISCCART	552150	4198870	33.14	150.1	1.8
RE DISCCART	552200	4198870	33.22	150.1	1.8
RE DISCCART	552250	4198870	33.44	150.1	1.8
RE DISCCART	552150	4198920	33.96	150.1	1.8
RE DISCCART	552200	4198920	33.94	150.1	1.8
RE DISCCART	552250	4198920	37.75	150.1	1.8
RE DISCCART	552300	4198920	38.15	150.1	1.8
RE DISCCART	552350	4198920	34.49	150.1	1.8
RE DISCCART	552050	4198970	30.82	150.1	1.8
RE DISCCART	552100	4198970	31.52	150.1	1.8
RE DISCCART	552150	4198970	33.79	150.1	1.8
RE DISCCART	552200	4198970	34.37	150.1	1.8
RE DISCCART	552250	4198970	34.75	150.1	1.8
RE DISCCART	552300	4198970	34.02	150.1	1.8
RE DISCCART	552350	4198970	34.65	150.1	1.8
RE DISCCART	552400	4198970	34.47	150.1	1.8
RE DISCCART	552050	4199020	32.47	150.1	1.8
RE DISCCART	552100	4199020	34.58	150.1	1.8
RE DISCCART	552150	4199020	34.16	150.1	1.8
RE DISCCART	552200	4199020	34.71	150.1	1.8
RE DISCCART	552250	4199020	34.77	150.1	1.8
RE DISCCART	552300	4199020	39.01	150.1	1.8
RE DISCCART	552350	4199020	34.99	150.1	1.8
RE DISCCART	552400	4199020	35.22	150.1	1.8
RE DISCCART	552450	4199020	41.35	150.1	1.8
RE DISCCART	552500	4199020	104.47	145.07	1.8
RE DISCCART	552050	4199070	33.01	150.1	1.8
RE DISCCART	552100	4199070	34.57	150.1	1.8
RE DISCCART	552150	4199070	34.43	150.1	1.8
RE DISCCART	552200	4199070	35.54	150.1	1.8
RE DISCCART	552250	4199070	35.81	150.1	1.8
RE DISCCART	552300	4199070	35.78	150.1	1.8
RE DISCCART	552350	4199070	35.54	150.1	1.8
RE DISCCART	552400	4199070	38.78	150.1	1.8
RE DISCCART	552450	4199070	55.78	150.1	1.8
RE DISCCART	552500	4199070	102.95	145.07	1.8
RE DISCCART	551950	4199120	34.48	150.1	1.8
RE DISCCART	552000	4199120	37.26	150.1	1.8
RE DISCCART	552050	4199120	36.26	150.1	1.8
RE DISCCART	552100	4199120	40.66	150.1	1.8
RE DISCCART	552150	4199120	44.73	150.1	1.8
RE DISCCART	552200	4199120	44.46	150.1	1.8
RE DISCCART	552250	4199120	41.94	150.1	1.8
RE DISCCART	552300	4199120	36.55	150.1	1.8
RE DISCCART	552350	4199120	36.07	150.1	1.8
RE DISCCART	552400	4199120	62.14	150.1	1.8
RE DISCCART	552450	4199120	88.3	150.1	1.8
RE DISCCART	552500	4199120	110.19	145.07	1.8
RE DISCCART	551950	4199170	41.91	150.1	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	552000	4199170	39.14	150.1	1.8
RE DISCCART	552050	4199170	48.85	150.1	1.8
RE DISCCART	552100	4199170	48.75	150.1	1.8
RE DISCCART	552150	4199170	52.82	150.1	1.8
RE DISCCART	552200	4199170	61.07	150.1	1.8
RE DISCCART	552250	4199170	58.29	150.1	1.8
RE DISCCART	552300	4199170	40.43	150.1	1.8
RE DISCCART	552350	4199170	43.98	150.1	1.8
RE DISCCART	552400	4199170	76.89	150.1	1.8
RE DISCCART	552450	4199170	109.26	149.89	1.8
RE DISCCART	551950	4199220	36.45	150.1	1.8
RE DISCCART	552000	4199220	41.21	150.1	1.8
RE DISCCART	552050	4199220	53.37	150.1	1.8
RE DISCCART	552100	4199220	50.34	150.1	1.8
RE DISCCART	552150	4199220	60.73	150.1	1.8
RE DISCCART	552200	4199220	60.02	150.1	1.8
RE DISCCART	552250	4199220	48.17	150.1	1.8
RE DISCCART	552300	4199220	37.78	150.1	1.8
RE DISCCART	552350	4199220	59.68	150.1	1.8
RE DISCCART	552400	4199220	91.35	150.1	1.8
RE DISCCART	552450	4199220	122.07	145.07	1.8
RE DISCCART	552000	4199270	38.42	150.1	1.8
RE DISCCART	552050	4199270	45.8	150.1	1.8
RE DISCCART	552100	4199270	51.95	150.1	1.8
RE DISCCART	552150	4199270	50.55	150.1	1.8
RE DISCCART	552200	4199270	46.96	150.1	1.8
RE DISCCART	552250	4199270	37.93	150.1	1.8
RE DISCCART	552300	4199270	53.59	150.1	1.8
RE DISCCART	552350	4199270	76.35	150.1	1.8
RE DISCCART	552400	4199270	104.87	150.1	1.8
RE DISCCART	552450	4199270	135.6	145.07	1.8
RE DISCCART	552100	4199320	45.9	150.1	1.8
RE DISCCART	552150	4199320	41.61	150.1	1.8
RE DISCCART	552200	4199320	41.55	150.1	1.8
RE DISCCART	552250	4199320	56.58	150.1	1.8
RE DISCCART	552300	4199320	79.6	150.1	1.8
RE DISCCART	552350	4199320	102.85	150.1	1.8
RE DISCCART	552400	4199320	125.29	145.07	1.8
RE DISCCART	554952	4199839	3.58	6.01	1.8
RE DISCCART	555002	4199839	3.76	5.79	1.8
RE DISCCART	554702	4199789	2.8	3.49	1.8
RE DISCCART	554752	4199789	2.62	3.95	1.8
RE DISCCART	554802	4199789	1.52	5.1	1.8
RE DISCCART	554852	4199789	3.05	3.05	1.8
RE DISCCART	554902	4199789	1.44	3.64	1.8
RE DISCCART	554952	4199789	1.51	3.48	1.8
RE DISCCART	555002	4199789	3.13	3.85	1.8
RE DISCCART	554652	4199739	3.34	3.87	1.8
RE DISCCART	554702	4199739	3.32	4.27	1.8
RE DISCCART	554752	4199739	3.46	3.95	1.8
RE DISCCART	554802	4199739	3.28	3.28	1.8
RE DISCCART	554852	4199739	3.5	3.5	1.8
RE DISCCART	554902	4199739	3.42	3.42	1.8
RE DISCCART	554952	4199739	1.62	3.95	1.8
RE DISCCART	554652	4199689	3.27	3.85	1.8
RE DISCCART	554702	4199689	3.33	3.85	1.8
RE DISCCART	554752	4199689	3.45	4.03	1.8
RE DISCCART	554802	4199689	3.51	3.51	1.8
RE DISCCART	554852	4199689	3.37	3.37	1.8
RE DISCCART	554902	4199689	3.35	3.35	1.8
RE DISCCART	554602	4199639	3.13	3.84	1.8
RE DISCCART	554652	4199639	3.16	3.85	1.8
RE DISCCART	554702	4199639	3.27	3.95	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	554752	4199639	3.34	4.1	1.8
RE DISCCART	554802	4199639	3.44	3.44	1.8
RE DISCCART	554852	4199639	2.95	3.65	1.8
RE DISCCART	554902	4199639	3.41	4.23	1.8
RE DISCCART	554602	4199589	3.22	4.76	1.8
RE DISCCART	554652	4199589	3.23	4.49	1.8
RE DISCCART	554702	4199589	3.22	4.48	1.8
RE DISCCART	554752	4199589	3.54	3.54	1.8
RE DISCCART	554802	4199589	3.14	3.14	1.8
RE DISCCART	554852	4199589	2.84	3.7	1.8
RE DISCCART	554552	4199539	3.46	4.38	1.8
RE DISCCART	554602	4199539	3.36	3.84	1.8
RE DISCCART	554652	4199539	3.3	3.86	1.8
RE DISCCART	554702	4199539	3.35	4.37	1.8
RE DISCCART	554752	4199539	3.39	3.93	1.8
RE DISCCART	554802	4199539	3.3	3.3	1.8
RE DISCCART	554852	4199539	3.31	3.31	1.8
RE DISCCART	554552	4199489	2.59	3.88	1.8
RE DISCCART	554602	4199489	3.18	3.85	1.8
RE DISCCART	554652	4199489	3.15	3.84	1.8
RE DISCCART	554702	4199489	3.23	3.89	1.8
RE DISCCART	554752	4199489	3	3.88	1.8
RE DISCCART	554802	4199489	2.92	3.58	1.8
RE DISCCART	554552	4199439	2.97	4.75	1.8
RE DISCCART	554602	4199439	3.06	5.31	1.8
RE DISCCART	554652	4199439	3.18	4.75	1.8
RE DISCCART	554702	4199439	3.19	4.47	1.8
RE DISCCART	554752	4199439	2.8	4.23	1.8
RE DISCCART	554802	4199439	2.69	3.84	1.8
RE DISCCART	554552	4199389	2.79	5.08	1.8
RE DISCCART	554602	4199389	3.02	5.69	1.8
RE DISCCART	554652	4199389	3.22	5.57	1.8
RE DISCCART	554702	4199389	3.45	4.86	1.8
RE DISCCART	554752	4199389	3.38	4.13	1.8
RE DISCCART	554552	4199339	2.96	4.87	1.8
RE DISCCART	554602	4199339	2.99	5.4	1.8
RE DISCCART	554652	4199339	3.41	5.08	1.8
RE DISCCART	554702	4199339	3.64	4.52	1.8
RE DISCCART	554752	4199339	2.99	4.18	1.8
RE DISCCART	554552	4199289	3.12	4.67	1.8
RE DISCCART	554602	4199289	3.6	5.26	1.8
RE DISCCART	554652	4199289	3.52	4.61	1.8
RE DISCCART	554702	4199289	3.36	4.46	1.8
RE DISCCART	553050	4198150	7.47	145.07	1.8
RE DISCCART	553100	4198150	14.39	59.92	1.8
RE DISCCART	552950	4198200	3.5	150.1	1.8
RE DISCCART	553000	4198200	6.13	145.07	1.8
RE DISCCART	553050	4198200	10.52	145.07	1.8
RE DISCCART	553100	4198200	20.51	59.92	1.8
RE DISCCART	552950	4198250	19.6	145.07	1.8
RE DISCCART	553000	4198250	13.54	145.07	1.8
RE DISCCART	553050	4198250	16.96	145.07	1.8
RE DISCCART	553100	4198250	24.08	59.92	1.8
** BOUNDARY	BND1				
RE DISCCART	552589.3	4200716.7	1.87	150.1	1.8
RE DISCCART	552598.1	4200679.4	2.44	150.1	1.8
RE DISCCART	552614.3	4200667.8	1.7	150.1	1.8
RE DISCCART	552637.5	4200674	2.97	150.1	1.8
RE DISCCART	552647.8	4200688.4	2.93	150.1	1.8
RE DISCCART	552658.4	4200703.4	2.74	150.1	1.8
RE DISCCART	552683.2	4200734.4	2.8	150.1	1.8
RE DISCCART	552704.8	4200763	2.77	150.1	1.8
RE DISCCART	552709	4200767.4	2.89	150.1	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	552735.8	4200795.5	2.96	150.1	1.8
RE DISCCART	552793.6	4200815.7	3.18	150.1	1.8
RE DISCCART	552831	4200828.8	2.55	150.1	1.8
RE DISCCART	552887.7	4200849.5	2.31	150.1	1.8
RE DISCCART	552951.7	4200872.9	2.21	150.1	1.8
RE DISCCART	552982	4200882.6	2.63	150.1	1.8
RE DISCCART	553077.2	4200913.3	2.89	150.1	1.8
RE DISCCART	553172.4	4200943.9	2.78	6.51	1.8
RE DISCCART	553267.6	4200974.6	2.56	4.9	1.8
RE DISCCART	553362.8	4201005.3	2.44	4.98	1.8
RE DISCCART	553404.3	4201018.6	3.17	5.64	1.8
RE DISCCART	553460.1	4201010.5	1.24	6.02	1.8
RE DISCCART	553546.7	4200998	0.42	0.42	1.8
RE DISCCART	553556.6	4200990.3	0.42	0.42	1.8
RE DISCCART	553635.6	4200929.1	1.16	1.16	1.8
RE DISCCART	553714.7	4200867.9	1.61	1.61	1.8
RE DISCCART	553793.7	4200806.6	1.21	1.72	1.8
RE DISCCART	553872.8	4200745.4	1.6	1.6	1.8
RE DISCCART	553951.9	4200684.2	1.69	6.35	1.8
RE DISCCART	553963.2	4200675.4	1.65	6.35	1.8
RE DISCCART	554048.8	4200676.9	1.18	6.03	1.8
RE DISCCART	554148.8	4200678.7	1.68	5.79	1.8
RE DISCCART	554198.2	4200679.6	1.57	6.2	1.8
RE DISCCART	554198.2	4200730.2	1.97	6.02	1.8
RE DISCCART	554198.2	4200751.6	1.89	6.21	1.8
RE DISCCART	554119.5	4200750.2	0.73	4.72	1.8
RE DISCCART	554019.5	4200748.5	1.46	4.5	1.8
RE DISCCART	553952.6	4200747.3	0.48	4.53	1.8
RE DISCCART	553983.3	4200759.8	0.38	4.5	1.8
RE DISCCART	554075.9	4200797.4	1.75	1.75	1.8
RE DISCCART	554088.1	4200802.4	1.82	1.82	1.8
RE DISCCART	554174.9	4200805.6	1.7	1.7	1.8
RE DISCCART	554200.3	4200806.6	1.47	6.21	1.8
RE DISCCART	554196.1	4200836.2	2.12	2.12	1.8
RE DISCCART	554151.4	4200836.8	1.94	1.94	1.8
RE DISCCART	554051.4	4200838	1.69	1.69	1.8
RE DISCCART	554020.4	4200838.3	1.68	1.68	1.8
RE DISCCART	553973.2	4200888.7	1.99	1.99	1.8
RE DISCCART	553904.9	4200961.7	1.91	1.91	1.8
RE DISCCART	553895.5	4200971.7	1.91	1.91	1.8
RE DISCCART	553823.5	4201019.3	1.89	1.89	1.8
RE DISCCART	553740.1	4201074.4	1.84	1.84	1.8
RE DISCCART	553656.7	4201129.6	1.86	1.86	1.8
RE DISCCART	553573.3	4201184.7	1.79	1.79	1.8
RE DISCCART	553508.1	4201227.8	1.85	1.85	1.8
RE DISCCART	553490.8	4201241.2	1.85	1.85	1.8
RE DISCCART	553411.6	4201302.2	1.71	1.71	1.8
RE DISCCART	553332.5	4201363.3	1.44	1.44	1.8
RE DISCCART	553332.4	4201363.3	1.44	1.44	1.8
RE DISCCART	553265.5	4201437.6	1.5	1.5	1.8
RE DISCCART	553199.1	4201511.4	1.91	1.91	1.8
RE DISCCART	553198.8	4201512.1	1.91	1.91	1.8
RE DISCCART	553150.9	4201599.9	2.8	2.8	1.8
RE DISCCART	553148.2	4201604.8	2.65	2.65	1.8
RE DISCCART	553241.4	4201619	2.24	2.75	1.8
RE DISCCART	553288.2	4201626	2.42	2.77	1.8
RE DISCCART	553340.9	4201626.1	2.35	2.63	1.8
RE DISCCART	553440.9	4201626.3	2.24	2.66	1.8
RE DISCCART	553471.3	4201626.4	1.92	3.17	1.8
RE DISCCART	553506.7	4201686.3	2.4	2.66	1.8
RE DISCCART	553542.8	4201747.1	2.58	2.58	1.8
RE DISCCART	553570.8	4201738.6	2.24	2.48	1.8
RE DISCCART	553603.9	4201728.5	1.86	1.86	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	553668	4201741.7	2.08	2.48	1.8
RE DISCCART	553765.9	4201761.8	2.63	2.63	1.8
RE DISCCART	553833	4201775.6	2.6	2.6	1.8
RE DISCCART	553856.5	4201796.5	2.66	2.66	1.8
RE DISCCART	553931.3	4201863	2.52	53.61	1.8
RE DISCCART	554006	4201929.5	2.34	53.61	1.8
RE DISCCART	554080.7	4201995.9	2.68	53.61	1.8
RE DISCCART	554094.6	4202008.3	2.7	53.61	1.8
RE DISCCART	554139.4	4202076.2	3.03	53.61	1.8
RE DISCCART	554194.4	4202159.7	3.01	53.61	1.8
RE DISCCART	554225.1	4202206.4	2.58	5.26	1.8
RE DISCCART	554269.3	4202207.1	1.74	1.74	1.8
RE DISCCART	554369.3	4202208.9	1.6	1.89	1.8
RE DISCCART	554433.7	4202210	3.07	3.18	1.8
RE DISCCART	554434	4202185.5	1.89	1.89	1.8
RE DISCCART	554434.1	4202174.4	1.72	1.72	1.8
RE DISCCART	554434.4	4202136.5	1.77	1.77	1.8
RE DISCCART	554434.6	4202111.9	1.67	1.67	1.8
RE DISCCART	554434.9	4202087.4	1.79	1.79	1.8
RE DISCCART	554435	4202074.4	1.83	1.83	1.8
RE DISCCART	554435.3	4202038.4	1.96	1.96	1.8
RE DISCCART	554435.6	4202013.9	1.9	1.9	1.8
RE DISCCART	554435.9	4201974.4	1.94	1.94	1.8
RE DISCCART	554436.2	4201940.4	1.92	1.92	1.8
RE DISCCART	554436.5	4201915.8	1.94	1.94	1.8
RE DISCCART	554436.8	4201874.4	1.84	1.84	1.8
RE DISCCART	554437.1	4201842.3	1.93	1.93	1.8
RE DISCCART	554437.4	4201817.8	1.92	1.92	1.8
RE DISCCART	554437.7	4201774.4	1.93	1.93	1.8
RE DISCCART	554437.8	4201768.8	1.93	1.93	1.8
RE DISCCART	554438.1	4201744.3	1.92	1.92	1.8
RE DISCCART	554438.3	4201719.8	1.94	1.94	1.8
RE DISCCART	554438.5	4201695.2	1.95	1.95	1.8
RE DISCCART	554438.7	4201674.4	1.94	1.94	1.8
RE DISCCART	554438.7	4201670.7	1.93	1.93	1.8
RE DISCCART	554439	4201646.2	1.89	1.89	1.8
RE DISCCART	554439.4	4201597.2	2.14	2.14	1.8
RE DISCCART	554439.7	4201574.4	2.3	2.3	1.8
RE DISCCART	554439.7	4201572.7	2.28	2.28	1.8
RE DISCCART	554440.3	4201499.2	2.33	2.33	1.8
RE DISCCART	554440.6	4201474.6	2.44	2.44	1.8
RE DISCCART	554440.6	4201474.4	2.44	2.44	1.8
RE DISCCART	554441.2	4201401.1	2.34	2.34	1.8
RE DISCCART	554441.5	4201376.6	2.33	4.28	1.8
RE DISCCART	554441.5	4201374.4	2.26	4.28	1.8
RE DISCCART	554441.9	4201327.6	3.05	4.4	1.8
RE DISCCART	554442.2	4201303.1	1.98	4.49	1.8
RE DISCCART	554442.4	4201278.5	1.95	4.65	1.8
RE DISCCART	554442.4	4201274.4	1.85	4.65	1.8
RE DISCCART	554442.6	4201254	2.28	4.37	1.8
RE DISCCART	554435.3	4201238.3	3.23	3.32	1.8
RE DISCCART	554409.4	4201204	2.21	3.46	1.8
RE DISCCART	554412.4	4201184.9	2.72	2.99	1.8
RE DISCCART	554417.9	4201150.4	2.85	2.85	1.8
RE DISCCART	554451.6	4201143.2	2.98	2.98	1.8
RE DISCCART	554482	4201146.3	2.98	2.98	1.8
RE DISCCART	554486.5	4201146.8	2.92	2.92	1.8
RE DISCCART	554530.5	4201149.8	3.01	3.01	1.8
RE DISCCART	554558.8	4201157.6	3.12	3.12	1.8
RE DISCCART	554580.8	4201158.3	3.08	3.08	1.8
RE DISCCART	554598	4201158.8	3.09	3.09	1.8
RE DISCCART	554671.6	4201167.4	3.64	3.64	1.8
RE DISCCART	554671.6	4201158.7	3.52	3.52	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	554672.1	4201058.7	3.65	3.65	1.8
RE DISCCART	554672.5	4200958.7	3.49	3.49	1.8
RE DISCCART	554672.8	4200908.3	2.35	3.22	1.8
RE DISCCART	554623.2	4200907.8	1.83	2.35	1.8
RE DISCCART	554610.9	4200907.7	1.81	2.34	1.8
RE DISCCART	554523.2	4200907.4	1.86	4.79	1.8
RE DISCCART	554427.2	4200907.1	1.69	5.5	1.8
RE DISCCART	554423.2	4200907	1.62	5.69	1.8
RE DISCCART	554323.2	4200904.1	1.55	6.24	1.8
RE DISCCART	554323.1	4200904	1.55	6.24	1.8
RE DISCCART	554322.3	4200886.9	2.32	6.24	1.8
RE DISCCART	554405	4200887.3	2.36	5.72	1.8
RE DISCCART	554505	4200887.8	2.79	5.24	1.8
RE DISCCART	554605	4200888.3	3.24	3.24	1.8
RE DISCCART	554699.1	4200888.7	3.06	3.53	1.8
RE DISCCART	554699.2	4200882.8	3.53	3.53	1.8
RE DISCCART	554700.5	4200782.9	3.99	4.46	1.8
RE DISCCART	554701	4200744.2	3.99	5.06	1.8
RE DISCCART	554640.5	4200734.1	3.84	3.84	1.8
RE DISCCART	554601.7	4200727.7	3.75	3.75	1.8
RE DISCCART	554599.8	4200666.9	3.89	3.89	1.8
RE DISCCART	554598.1	4200613.7	3.89	6.02	1.8
RE DISCCART	554551.3	4200612.5	3.04	5.75	1.8
RE DISCCART	554482.9	4200610.7	2.3	4.2	1.8
RE DISCCART	554482.6	4200642.3	2.97	4.02	1.8
RE DISCCART	554482.3	4200675	2.98	3.85	1.8
RE DISCCART	554415.1	4200671.7	2.61	4.32	1.8
RE DISCCART	554382.5	4200670.1	2.29	4.82	1.8
RE DISCCART	554383.4	4200602.8	2.89	4.06	1.8
RE DISCCART	554383.7	4200584.7	2.73	4.24	1.8
RE DISCCART	554465.7	4200586	0.93	4.49	1.8
RE DISCCART	554478.3	4200586.2	1.9	4.38	1.8
RE DISCCART	554482.7	4200541.1	2.21	5.1	1.8
RE DISCCART	554478.2	4200499.3	2.1	5.7	1.8
RE DISCCART	554476.9	4200487.1	2.14	5.69	1.8
RE DISCCART	554459.9	4200447.3	1.71	6.01	1.8
RE DISCCART	554457.4	4200411.8	1.76	5.84	1.8
RE DISCCART	554456.9	4200402.9	1.66	5.84	1.8
RE DISCCART	554455	4200370	1.65	5.59	1.8
RE DISCCART	554454	4200330.7	1.7	4.73	1.8
RE DISCCART	554456.8	4200303.1	1.76	4.46	1.8
RE DISCCART	554457.9	4200292.3	1.71	4.48	1.8
RE DISCCART	554465.7	4200266.5	1.81	4.43	1.8
RE DISCCART	554471.1	4200239.8	2.08	4.2	1.8
RE DISCCART	554478.7	4200205.7	2.43	4.48	1.8
RE DISCCART	554480	4200200.3	2.56	4.48	1.8
RE DISCCART	554504.5	4200198.8	3.02	3.74	1.8
RE DISCCART	554529.1	4200197.4	2.92	5.1	1.8
RE DISCCART	554574.2	4200194.8	2.43	5.4	1.8
RE DISCCART	554578.1	4200194.6	2.49	5.4	1.8
RE DISCCART	554615.9	4200167.8	2.86	6.02	1.8
RE DISCCART	554640.2	4200168.1	2.96	6.04	1.8
RE DISCCART	554664.5	4200168.3	2.88	6.02	1.8
RE DISCCART	554665.7	4200168.3	2.88	6.02	1.8
RE DISCCART	554688.8	4200168.5	3.17	5.91	1.8
RE DISCCART	554713.1	4200168.7	3.26	5.32	1.8
RE DISCCART	554737.5	4200168.9	3.33	3.68	1.8
RE DISCCART	554765.7	4200169.1	3.08	4.43	1.8
RE DISCCART	554834.7	4200169.7	3.85	3.85	1.8
RE DISCCART	554835.5	4200145.1	2.83	2.83	1.8
RE DISCCART	554835.7	4200138.7	2.69	3.1	1.8
RE DISCCART	554837.6	4200071	2.51	4.2	1.8
RE DISCCART	554838.4	4200046.4	2.57	4	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	554838.6	4200038.7	2.57	4	1.8
RE DISCCART	554840.5	4199972.3	2.57	3.88	1.8
RE DISCCART	554841.3	4199947.7	2.57	5.21	1.8
RE DISCCART	554841.5	4199938.8	2.66	4.03	1.8
RE DISCCART	554843.4	4199873.6	2.67	5.79	1.8
RE DISCCART	554844.2	4199849	3.13	3.13	1.8
RE DISCCART	554843.2	4199838.9	2.43	5.74	1.8
RE DISCCART	554840.4	4199811.2	1.31	3.78	1.8
RE DISCCART	554822.6	4199806	1.62	3.24	1.8
RE DISCCART	554804.9	4199800.7	1.52	3.56	1.8
RE DISCCART	554787.1	4199795.5	1.61	3.85	1.8
RE DISCCART	554770.5	4199795.2	2	3.9	1.8
RE DISCCART	554745.1	4199794.7	2.05	3.98	1.8
RE DISCCART	554724.2	4199794.3	2.12	3.86	1.8
RE DISCCART	554703.2	4199793.9	2.88	2.88	1.8
RE DISCCART	554682.2	4199793.5	2.79	2.79	1.8
RE DISCCART	554676.4	4199783.3	2.59	3.22	1.8
RE DISCCART	554670.6	4199773.1	2.83	2.83	1.8
RE DISCCART	554658.9	4199752.8	3.22	3.22	1.8
RE DISCCART	554647.3	4199732.4	3.13	4.09	1.8
RE DISCCART	554635.7	4199712	2.71	4.14	1.8
RE DISCCART	554626.7	4199696.5	2.98	3.86	1.8
RE DISCCART	554624	4199691.7	2.87	3.86	1.8
RE DISCCART	554612.4	4199671.3	2.8	3.9	1.8
RE DISCCART	554600.7	4199651	2.92	3.84	1.8
RE DISCCART	554589.1	4199630.6	2.9	4.04	1.8
RE DISCCART	554577.5	4199610.2	3.02	4.48	1.8
RE DISCCART	554577.2	4199609.7	3.01	4.48	1.8
RE DISCCART	554565.8	4199589.9	3.11	4.46	1.8
RE DISCCART	554532.3	4199553	2.72	4.51	1.8
RE DISCCART	554534.1	4199525.7	2.63	4.51	1.8
RE DISCCART	554537.6	4199471.9	2.58	4.2	1.8
RE DISCCART	554542.4	4199426.1	2.72	4.86	1.8
RE DISCCART	554544	4199411.1	2.55	5.06	1.8
RE DISCCART	554546.9	4199345.5	2.61	5.02	1.8
RE DISCCART	554548.3	4199326.3	2.56	4.76	1.8
RE DISCCART	554548.8	4199318.8	2.76	4.76	1.8
RE DISCCART	554548.3	4199287.2	3.09	4.53	1.8
RE DISCCART	554552.5	4199247.5	2.87	3.9	1.8
RE DISCCART	554573.4	4199248.7	2.83	7.03	1.8
RE DISCCART	554673.2	4199254.6	3.19	3.89	1.8
RE DISCCART	554701.6	4199256.2	3.29	4.15	1.8
RE DISCCART	554690	4199226.6	4.07	4.07	1.8
RE DISCCART	554669.9	4199192.2	5.14	5.75	1.8
RE DISCCART	554652.6	4199162.6	6.62	7.68	1.8
RE DISCCART	554620.2	4199105.4	8.31	10.77	1.8
RE DISCCART	554607.7	4199083.4	7.49	10.77	1.8
RE DISCCART	554586.5	4199042.6	2.66	11.94	1.8
RE DISCCART	554557.9	4199039.9	2.69	11.94	1.8
RE DISCCART	554483.2	4199032.7	2.83	4.16	1.8
RE DISCCART	554484.2	4199007.8	1.98	11.94	1.8
RE DISCCART	554485.2	4198983.4	2.17	11.94	1.8
RE DISCCART	554473.9	4198938	1.91	11.4	1.8
RE DISCCART	554460.3	4198912.6	1.9	10.44	1.8
RE DISCCART	554445	4198884	2.29	4.16	1.8
RE DISCCART	554413.4	4198824.3	2.55	4.46	1.8
RE DISCCART	554401.2	4198801.2	2.58	4.46	1.8
RE DISCCART	554370.7	4198737.7	2.61	4.16	1.8
RE DISCCART	554369.5	4198734.5	2.63	4.16	1.8
RE DISCCART	554358	4198704.5	2.69	7.38	1.8
RE DISCCART	554367.5	4198693.1	2.85	7.38	1.8
RE DISCCART	554384.8	4198688.2	3.18	4.16	1.8
RE DISCCART	554366.9	4198658.1	3.26	7.38	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	554362.3	4198650.5	3.34	7.38	1.8
RE DISCCART	554308.8	4198576.8	3.18	3.85	1.8
RE DISCCART	554254.5	4198502	3.13	4.96	1.8
RE DISCCART	554250.1	4198495.8	3.08	4.84	1.8
RE DISCCART	554192	4198414.5	3.17	5.03	1.8
RE DISCCART	554166.6	4198378.9	3.11	5.19	1.8
RE DISCCART	554125.1	4198340.7	3.57	5.68	1.8
RE DISCCART	554051.6	4198273	3.07	65.41	1.8
RE DISCCART	554043.5	4198265.5	2.76	65.41	1.8
RE DISCCART	553961.9	4198300.9	2.91	65.41	1.8
RE DISCCART	553961	4198301.3	2.91	65.41	1.8
RE DISCCART	553910.4	4198350.4	2.98	65.41	1.8
RE DISCCART	553928.9	4198372.2	3	65.41	1.8
RE DISCCART	553985.8	4198439.6	3.19	4.46	1.8
RE DISCCART	553976.9	4198447.4	3.03	4.46	1.8
RE DISCCART	553901.9	4198513.6	3.36	4.46	1.8
RE DISCCART	553861.1	4198549.7	3.19	4.46	1.8
RE DISCCART	553830.3	4198516.2	3.14	4.79	1.8
RE DISCCART	553775.6	4198456.7	3.01	5.09	1.8
RE DISCCART	553761.4	4198469.6	2.7	5.09	1.8
RE DISCCART	553692.5	4198532.2	2.98	53.5	1.8
RE DISCCART	553687.9	4198527	3.08	53.84	1.8
RE DISCCART	553639.1	4198471.9	3.03	53.91	1.8
RE DISCCART	553627.5	4198482	3.05	53.91	1.8
RE DISCCART	553620.5	4198473.6	2.99	54.13	1.8
RE DISCCART	553569.5	4198411.4	3	65.41	1.8
RE DISCCART	553554.7	4198424.3	3.23	145.07	1.8
RE DISCCART	553523.6	4198451.3	3.83	145.07	1.8
RE DISCCART	553489.8	4198417.9	3.59	145.07	1.8
RE DISCCART	553478.5	4198417.9	3.65	145.07	1.8
RE DISCCART	553472.4	4198417.9	3.72	145.07	1.8
RE DISCCART	553470.1	4198380.6	5.71	145.07	1.8
RE DISCCART	553463.3	4198399.1	8.48	145.07	1.8
RE DISCCART	553448.9	4198408.5	10.28	145.07	1.8
RE DISCCART	553429.2	4198409.5	10.74	145.07	1.8
RE DISCCART	553422.3	4198409.9	11.11	145.07	1.8
RE DISCCART	553340.5	4198452.9	18.97	145.07	1.8
RE DISCCART	553339.9	4198453.2	18.95	145.07	1.8
RE DISCCART	553288.5	4198484.1	20.69	145.07	1.8
RE DISCCART	553251.6	4198499.8	21.64	145.07	1.8
RE DISCCART	553239.2	4198505	22.97	145.07	1.8
RE DISCCART	553154.9	4198524.3	19.8	150.1	1.8
RE DISCCART	553151.6	4198525.1	19.08	150.1	1.8
RE DISCCART	553090.6	4198532.1	20.7	150.1	1.8
RE DISCCART	553055.5	4198529.6	24.83	150.1	1.8
RE DISCCART	552976.6	4198524	23.55	150.1	1.8
RE DISCCART	552956.5	4198518	21.14	150.1	1.8
RE DISCCART	552860.7	4198489.4	16.28	150.1	1.8
RE DISCCART	552800.8	4198471.5	12.89	150.1	1.8
RE DISCCART	552764.3	4198463.2	16.72	150.1	1.8
RE DISCCART	552757.8	4198461.7	16.89	150.1	1.8
RE DISCCART	552684.4	4198461.9	15.3	150.1	1.8
RE DISCCART	552665	4198466.6	14.14	150.1	1.8
RE DISCCART	552583.7	4198486.2	11.65	150.1	1.8
RE DISCCART	552571.9	4198497.6	12.5	150.1	1.8
RE DISCCART	552535.9	4198532.3	11.49	150.1	1.8
RE DISCCART	552500	4198567.1	13.07	150.1	1.8
RE DISCCART	552464	4198602.1	15.56	150.1	1.8
RE DISCCART	552450.8	4198610.2	15.46	150.1	1.8
RE DISCCART	552428.4	4198584.3	13.49	150.1	1.8
RE DISCCART	552421.4	4198576.2	12.44	150.1	1.8
RE DISCCART	552404.8	4198519.3	11.37	150.1	1.8
RE DISCCART	552375	4198515.8	11.4	150.1	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	552362.6	4198514.3	11.51	150.1	1.8
RE DISCCART	552275.1	4198510.3	12.74	150.1	1.8
RE DISCCART	552259.7	4198509.6	10.4	150.1	1.8
RE DISCCART	552203.9	4198505.3	4.44	150.1	1.8
RE DISCCART	552175.4	4198507.1	5.97	150.1	1.8
RE DISCCART	552075.6	4198513.4	5.78	150.1	1.8
RE DISCCART	551975.8	4198519.6	5.69	150.1	1.8
RE DISCCART	551876	4198525.9	1.38	150.1	1.8
RE DISCCART	551870.3	4198526.3	1.03	150.1	1.8
RE DISCCART	551859.9	4198547.7	1.12	150.1	1.8
RE DISCCART	551844.5	4198564.2	1.08	150.1	1.8
RE DISCCART	551819.8	4198576.2	0.87	150.1	1.8
RE DISCCART	551814.5	4198592	0.57	150.1	1.8
RE DISCCART	551813.2	4198595.6	0.62	150.1	1.8
RE DISCCART	551808.5	4198609.5	0.93	150.1	1.8
RE DISCCART	551803.5	4198635.5	1.06	150.1	1.8
RE DISCCART	551796.7	4198658.5	1.07	150.1	1.8
RE DISCCART	551787.4	4198669.5	0.53	150.1	1.8
RE DISCCART	551778	4198680.5	0.36	150.1	1.8
RE DISCCART	551774.3	4198685.2	0.46	150.1	1.8
RE DISCCART	551748.6	4198718.5	1.08	150.1	1.8
RE DISCCART	551698.8	4198743.5	1.04	150.1	1.8
RE DISCCART	551696.7	4198742.8	0.89	150.1	1.8
RE DISCCART	551684.8	4198738.3	0.72	150.1	1.8
RE DISCCART	551653.9	4198750.4	0.9	150.1	1.8
RE DISCCART	551637.4	4198772.4	0.93	150.1	1.8
RE DISCCART	551621.3	4198793.5	1.14	150.1	1.8
RE DISCCART	551612.1	4198805.5	0.97	150.1	1.8
RE DISCCART	551585.6	4198836.3	0.66	150.1	1.8
RE DISCCART	551566.9	4198876	1.95	150.1	1.8
RE DISCCART	551566.7	4198876.3	1.95	150.1	1.8
RE DISCCART	551540.5	4198924.4	0.47	150.1	1.8
RE DISCCART	551565.8	4198956.4	0.53	150.1	1.8
RE DISCCART	551565.3	4198960.8	0.36	150.1	1.8
RE DISCCART	551554.6	4199060.2	1.13	150.1	1.8
RE DISCCART	551553.4	4199071	1.18	150.1	1.8
RE DISCCART	551544.8	4199102.1	0.28	150.1	1.8
RE DISCCART	551552.8	4199125.9	0.99	150.1	1.8
RE DISCCART	551570	4199133.9	1.15	150.1	1.8
RE DISCCART	551582.1	4199137.8	1.1	150.1	1.8
RE DISCCART	551590.5	4199140.5	0.94	150.1	1.8
RE DISCCART	551613	4199139.8	1.28	150.1	1.8
RE DISCCART	551630.2	4199138.5	1.6	150.1	1.8
RE DISCCART	551638.1	4199130.6	1.61	150.1	1.8
RE DISCCART	551638.8	4199106.1	1.6	150.1	1.8
RE DISCCART	551638.4	4199090.3	1.84	150.1	1.8
RE DISCCART	551638.1	4199073.7	1.61	150.1	1.8
RE DISCCART	551635.4	4199045.9	1.74	150.1	1.8
RE DISCCART	551638.1	4199030.7	1.95	150.1	1.8
RE DISCCART	551648	4199030.7	1.7	150.1	1.8
RE DISCCART	551661.9	4199038	1.66	150.1	1.8
RE DISCCART	551673.6	4199046.4	1.64	150.1	1.8
RE DISCCART	551673.8	4199046.6	1.66	150.1	1.8
RE DISCCART	551691.7	4199069.1	1.73	150.1	1.8
RE DISCCART	551702.4	4199082.5	1.55	150.1	1.8
RE DISCCART	551703.6	4199098.5	1.02	150.1	1.8
RE DISCCART	551715.5	4199105.5	1.01	150.1	1.8
RE DISCCART	551732.4	4199116.5	1.1	150.1	1.8
RE DISCCART	551735.6	4199118.6	1.24	150.1	1.8
RE DISCCART	551749.3	4199127.5	3.15	150.1	1.8
RE DISCCART	551757.7	4199142.5	4.92	150.1	1.8
RE DISCCART	551766.2	4199157.5	6.62	150.1	1.8
RE DISCCART	551767.5	4199177	2.13	150.1	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	551768.7	4199196.5	1.79	150.1	1.8
RE DISCCART	551760.7	4199202.8	1.23	150.1	1.8
RE DISCCART	551756.7	4199205.9	0.85	150.1	1.8
RE DISCCART	551743.9	4199239.6	0.42	150.1	1.8
RE DISCCART	551791.2	4199255	3.32	150.1	1.8
RE DISCCART	551797.7	4199261.4	3	150.1	1.8
RE DISCCART	551800.6	4199264.2	3.14	150.1	1.8
RE DISCCART	551815.3	4199278.5	4.16	150.1	1.8
RE DISCCART	551814.7	4199302.2	2.77	150.1	1.8
RE DISCCART	551814.2	4199325.8	2.32	150.1	1.8
RE DISCCART	551813.6	4199349.5	2.54	150.1	1.8
RE DISCCART	551816.3	4199353	2.58	150.1	1.8
RE DISCCART	551818.4	4199355.5	2.58	150.1	1.8
RE DISCCART	551839.1	4199357.8	7.09	150.1	1.8
RE DISCCART	551859.8	4199360.2	11.51	150.1	1.8
RE DISCCART	551880.5	4199362.5	15.15	150.1	1.8
RE DISCCART	551907.7	4199383.2	19.77	150.1	1.8
RE DISCCART	551939	4199406.9	24.77	150.1	1.8
RE DISCCART	551958.5	4199421.7	30.85	150.1	1.8
RE DISCCART	551987.4	4199443.7	43.72	150.1	1.8
RE DISCCART	551997.5	4199451.3	46.78	150.1	1.8
RE DISCCART	552017.1	4199466.2	49.88	150.1	1.8
RE DISCCART	552036.6	4199481	49.62	150.1	1.8
RE DISCCART	552067	4199504.2	42.76	150.1	1.8
RE DISCCART	552075.6	4199510.6	39.18	150.1	1.8
RE DISCCART	552095.1	4199525.4	31.86	150.1	1.8
RE DISCCART	552134.1	4199555	29.26	150.1	1.8
RE DISCCART	552146.7	4199564.6	30.69	150.1	1.8
RE DISCCART	552153.6	4199569.8	31.29	150.1	1.8
RE DISCCART	552173.1	4199584.6	33.2	150.1	1.8
RE DISCCART	552192.6	4199599.4	36.02	150.1	1.8
RE DISCCART	552212.1	4199614.2	39.88	150.1	1.8
RE DISCCART	552226.4	4199625.1	42.75	150.1	1.8
RE DISCCART	552231.6	4199629	44.2	150.1	1.8
RE DISCCART	552251.1	4199643.8	48.41	150.1	1.8
RE DISCCART	552270.7	4199658.7	55	150.1	1.8
RE DISCCART	552290.2	4199673.5	65.24	150.1	1.8
RE DISCCART	552306	4199685.5	74	150.1	1.8
RE DISCCART	552309.7	4199688.3	76.43	150.1	1.8
RE DISCCART	552348.7	4199717.9	97.31	150.1	1.8
RE DISCCART	552368.2	4199732.7	106.52	150.1	1.8
RE DISCCART	552385.7	4199746	115.8	150.1	1.8
RE DISCCART	552387.7	4199747.5	117.03	150.1	1.8
RE DISCCART	552374	4199767.5	112.23	150.1	1.8
RE DISCCART	552360.2	4199787.5	114.46	150.1	1.8
RE DISCCART	552346.5	4199807.5	114.07	150.1	1.8
RE DISCCART	552332.7	4199827.5	115.91	150.1	1.8
RE DISCCART	552332.4	4199827.8	115.9	150.1	1.8
RE DISCCART	552319	4199847.5	116.34	150.1	1.8
RE DISCCART	552305.2	4199867.5	116.76	122.8	1.8
RE DISCCART	552291.5	4199887.5	114.7	122.8	1.8
RE DISCCART	552277.7	4199907.5	112.5	122.8	1.8
RE DISCCART	552275.8	4199910.3	111.67	122.8	1.8
RE DISCCART	552264	4199927.5	104.97	150.1	1.8
RE DISCCART	552250.2	4199947.5	106.3	122.8	1.8
RE DISCCART	552236.5	4199967.5	112.65	120.03	1.8
RE DISCCART	552222.7	4199987.5	118.82	120.03	1.8
RE DISCCART	552219.2	4199992.7	119.47	119.47	1.8
RE DISCCART	552209	4200007.5	117.15	120.03	1.8
RE DISCCART	552195.2	4200027.5	110.91	120.03	1.8
RE DISCCART	552181.5	4200047.5	100.38	120.03	1.8
RE DISCCART	552167.7	4200067.5	106.66	120.03	1.8
RE DISCCART	552162.5	4200075.1	109.3	120.03	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	552154	4200087.5	112.66	113.48	1.8
RE DISCCART	552140.2	4200107.5	113.88	113.88	1.8
RE DISCCART	552126.5	4200127.5	113.27	114.18	1.8
RE DISCCART	552112.7	4200147.5	111.82	114.7	1.8
RE DISCCART	552105.9	4200157.5	111.1	114.7	1.8
RE DISCCART	552099	4200167.5	110.55	114.7	1.8
RE DISCCART	552085.2	4200187.5	110.43	110.79	1.8
RE DISCCART	552071.5	4200207.5	109.91	123.81	1.8
RE DISCCART	552057.7	4200227.5	110.08	123.81	1.8
RE DISCCART	552049.2	4200239.9	108.64	123.81	1.8
RE DISCCART	552044	4200247.5	107.52	123.81	1.8
RE DISCCART	552030.2	4200267.5	104.18	134.46	1.8
RE DISCCART	552016.5	4200287.5	107.98	134.46	1.8
RE DISCCART	552002.7	4200307.5	112.14	134.46	1.8
RE DISCCART	551992.6	4200322.3	117.74	123.81	1.8
RE DISCCART	551989	4200327.5	119.3	121.85	1.8
RE DISCCART	551969.1	4200341	120.05	120.05	1.8
RE DISCCART	551949.3	4200354.5	119.14	134.46	1.8
RE DISCCART	551929.4	4200368	118.7	134.46	1.8
RE DISCCART	551911.5	4200380.1	121.46	134.46	1.8
RE DISCCART	551909.5	4200381.5	121.71	134.46	1.8
RE DISCCART	551889.7	4200395	123.22	134.46	1.8
RE DISCCART	551849.9	4200422	118.33	134.46	1.8
RE DISCCART	551830	4200435.5	113.31	134.46	1.8
RE DISCCART	551828.8	4200436.3	112.86	134.46	1.8
RE DISCCART	551810.2	4200449	114.71	134.46	1.8
RE DISCCART	551790.3	4200462.5	116.63	134.46	1.8
RE DISCCART	551774	4200481.2	119.97	134.46	1.8
RE DISCCART	551757.8	4200499.8	123.7	131.57	1.8
RE DISCCART	551755.2	4200502.8	124.11	131.57	1.8
RE DISCCART	551741.5	4200518.5	126.25	131.57	1.8
RE DISCCART	551725.3	4200537.2	127.19	131.57	1.8
RE DISCCART	551709	4200555.8	125.42	131.57	1.8
RE DISCCART	551692.8	4200574.5	122.04	131.57	1.8
RE DISCCART	551689.5	4200578.2	121.11	131.57	1.8
RE DISCCART	551676.5	4200593.2	117.8	131.57	1.8
RE DISCCART	551660.2	4200611.8	111.6	131.57	1.8
RE DISCCART	551644	4200630.5	103.55	134.46	1.8
RE DISCCART	551627.7	4200649.2	105.67	131.57	1.8
RE DISCCART	551623.8	4200653.6	105.74	131.57	1.8
RE DISCCART	551611.5	4200667.8	106.73	131.57	1.8
RE DISCCART	551595.2	4200686.5	103.99	131.57	1.8
RE DISCCART	551579	4200705.2	104.76	131.57	1.8
RE DISCCART	551562.7	4200723.8	98.69	131.57	1.8
RE DISCCART	551558.1	4200729	97.09	131.57	1.8
RE DISCCART	551546.4	4200742.5	95.08	131.57	1.8
RE DISCCART	551530.2	4200761.2	91.56	131.57	1.8
RE DISCCART	551513.9	4200779.8	87.25	131.57	1.8
RE DISCCART	551497.7	4200798.5	91.94	131.57	1.8
RE DISCCART	551492.5	4200804.5	93.37	131.57	1.8
RE DISCCART	551481.4	4200817.2	95.72	128.6	1.8
RE DISCCART	551465.2	4200835.8	93.99	128.6	1.8
RE DISCCART	551448.9	4200854.5	92.96	128.6	1.8
RE DISCCART	551432.7	4200873.2	91.59	122.41	1.8
RE DISCCART	551426.8	4200879.9	91.08	122.41	1.8
RE DISCCART	551416.4	4200891.8	89.88	122.41	1.8
RE DISCCART	551400.1	4200910.5	86.75	122.41	1.8
RE DISCCART	551383.9	4200929.2	85.75	122.41	1.8
RE DISCCART	551367.6	4200947.8	87.33	89.62	1.8
RE DISCCART	551361.1	4200955.3	87.03	88.87	1.8
RE DISCCART	551351.4	4200966.5	85.86	88.87	1.8
RE DISCCART	551335.1	4200985.2	82.43	89.62	1.8
RE DISCCART	551318.9	4201003.8	80.09	89.62	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	551302.6	4201022.5	80.79	82.27	1.8
RE DISCCART	551297.8	4201012.8	75.92	122.41	1.8
RE DISCCART	551291.6	4201000.2	68.71	128.6	1.8
RE DISCCART	551280.7	4200977.8	56.55	131.57	1.8
RE DISCCART	551258.7	4200933.2	52.86	134.46	1.8
RE DISCCART	551253.7	4200923	55.28	134.46	1.8
RE DISCCART	551247.8	4200910.8	56.58	134.46	1.8
RE DISCCART	551236.8	4200888.5	51.79	134.46	1.8
RE DISCCART	551215.4	4200882	43.17	134.46	1.8
RE DISCCART	551194.1	4200875.5	35.99	134.46	1.8
RE DISCCART	551177.9	4200870.6	31.49	134.46	1.8
RE DISCCART	551172.7	4200869	30.25	134.46	1.8
RE DISCCART	551151.4	4200862.5	23.42	134.46	1.8
RE DISCCART	551130	4200856	18.05	134.46	1.8
RE DISCCART	551108.7	4200849.5	14.82	134.46	1.8
RE DISCCART	551092.3	4200855.5	12	134.46	1.8
RE DISCCART	551082.7	4200859	10.96	134.46	1.8
RE DISCCART	551075.9	4200861.5	10.42	134.46	1.8
RE DISCCART	551053.5	4200852.8	9.91	134.46	1.8
RE DISCCART	551031.2	4200844.2	8.93	134.46	1.8
RE DISCCART	551008.8	4200835.5	5	134.46	1.8
RE DISCCART	550995.7	4200824.5	1.46	134.46	1.8
RE DISCCART	550992.9	4200822.2	1.14	134.46	1.8
RE DISCCART	550982.7	4200813.5	0.72	134.46	1.8
RE DISCCART	550980.4	4200833.2	0.49	134.46	1.8
RE DISCCART	550978.2	4200852.8	0.52	134.46	1.8
RE DISCCART	550975.9	4200872.5	0.52	134.46	1.8
RE DISCCART	550965.7	4200887.5	0.49	134.46	1.8
RE DISCCART	550962.3	4200896	0.44	134.46	1.8
RE DISCCART	550948.9	4200929.5	1.32	134.46	1.8
RE DISCCART	550938.7	4200939	1.11	134.46	1.8
RE DISCCART	550928.5	4200948.5	0.9	134.46	1.8
RE DISCCART	550907.6	4200952.5	0.53	134.46	1.8
RE DISCCART	550893.1	4200955.3	0.55	134.46	1.8
RE DISCCART	550886.8	4200956.5	0.56	134.46	1.8
RE DISCCART	550865.9	4200960.5	1.59	134.46	1.8
RE DISCCART	550825.3	4200967.5	8.87	134.46	1.8
RE DISCCART	550800.3	4200986	1.02	134.46	1.8
RE DISCCART	550791.5	4200992.5	0.47	134.46	1.8
RE DISCCART	550776.3	4201010	0.53	134.46	1.8
RE DISCCART	550761	4201027.5	0.55	134.46	1.8
RE DISCCART	550732.8	4201059.5	0.57	134.46	1.8
RE DISCCART	550732.8	4201059.5	0.57	134.46	1.8
RE DISCCART	550718.7	4201075.5	0.9	134.46	1.8
RE DISCCART	550698.7	4201079.9	0.61	134.46	1.8
RE DISCCART	550678.8	4201084.3	0.59	131.57	1.8
RE DISCCART	550658.8	4201088.7	0.6	131.57	1.8
RE DISCCART	550641.9	4201092.5	0.86	131.57	1.8
RE DISCCART	550638.9	4201093.1	0.95	131.57	1.8
RE DISCCART	550618.9	4201097.5	1.25	131.57	1.8
RE DISCCART	550576.5	4201117.5	0.61	131.57	1.8
RE DISCCART	550568.6	4201136.8	0.61	128.6	1.8
RE DISCCART	550565.3	4201144.9	0.62	128.6	1.8
RE DISCCART	550560.8	4201156.2	0.64	128.6	1.8
RE DISCCART	550552.9	4201175.5	0.64	122.41	1.8
RE DISCCART	550542.3	4201196.5	0.62	122.41	1.8
RE DISCCART	550522.7	4201235.3	0.62	101.49	1.8
RE DISCCART	550521.1	4201238.5	0.62	101.49	1.8
RE DISCCART	550510.5	4201259.5	0.62	101.49	1.8
RE DISCCART	550504.7	4201280.9	0.61	101.49	1.8
RE DISCCART	550499	4201302.3	0.6	101.49	1.8
RE DISCCART	550493.2	4201323.7	0.6	101.49	1.8
RE DISCCART	550491.6	4201329.8	0.56	101.49	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	550487.5	4201345.1	0.63	101.49	1.8
RE DISCCART	550481.7	4201366.5	0.6	101.49	1.8
RE DISCCART	550473.3	4201387.3	0.61	101.49	1.8
RE DISCCART	550464.8	4201408	0.49	101.49	1.8
RE DISCCART	550458.3	4201424	0.53	101.49	1.8
RE DISCCART	550456.4	4201428.7	0.4	101.49	1.8
RE DISCCART	550447.9	4201449.5	0.42	101.49	1.8
RE DISCCART	550443.2	4201472.1	0.34	101.49	1.8
RE DISCCART	550438.4	4201494.7	0.37	101.49	1.8
RE DISCCART	550433.7	4201517.3	0.4	101.49	1.8
RE DISCCART	550433	4201520.4	0.35	101.49	1.8
RE DISCCART	550428.9	4201539.9	0.43	101.49	1.8
RE DISCCART	550424.2	4201562.5	0.59	101.49	1.8
RE DISCCART	550428.2	4201580	1.48	101.49	1.8
RE DISCCART	550432.1	4201597.5	3.98	101.49	1.8
RE DISCCART	550436.5	4201601.9	4.71	101.49	1.8
RE DISCCART	550431.9	4201616	4.94	101.49	1.8
RE DISCCART	550423.7	4201641.4	4.96	101.49	1.8
RE DISCCART	550400.4	4201692.2	4.17	101.49	1.8
RE DISCCART	550414.4	4201702.8	11.49	74.02	1.8
RE DISCCART	550429.4	4201714.1	26.46	73.33	1.8
RE DISCCART	550463.9	4201666.8	15.67	74.02	1.8
RE DISCCART	550463.9	4201649.9	11.61	101.49	1.8
RE DISCCART	550469.2	4201652	12.55	101.49	1.8
RE DISCCART	550472.4	4201653.3	13.14	101.49	1.8
RE DISCCART	550496.6	4201652	15.59	101.49	1.8
RE DISCCART	550513.9	4201664.1	20.84	74.02	1.8
RE DISCCART	550541.5	4201671	26.46	74.02	1.8
RE DISCCART	550563.9	4201672.7	30.4	74.02	1.8
RE DISCCART	550564.2	4201672.8	30.47	74.02	1.8
RE DISCCART	550579.4	4201676.2	33.78	74.02	1.8
RE DISCCART	550562.2	4201715.8	39.75	70.3	1.8
RE DISCCART	550560.4	4201750.3	42.83	70.3	1.8
RE DISCCART	550560.4	4201756.9	42.27	70.3	1.8
RE DISCCART	550560.4	4201856.9	47.13	70.3	1.8
RE DISCCART	550560.4	4201857.3	47.15	70.3	1.8
RE DISCCART	550577.7	4201865.9	45.94	70.3	1.8
RE DISCCART	550595.3	4201877.1	43.43	70.3	1.8
RE DISCCART	550610.1	4201890.5	40.2	70.3	1.8
RE DISCCART	550627.9	4201901.3	38.41	70.3	1.8
RE DISCCART	550642.9	4201910.5	36.04	70.3	1.8
RE DISCCART	550643.8	4201911.1	35.79	70.3	1.8
RE DISCCART	550657.7	4201920.8	32.87	70.3	1.8
RE DISCCART	550673.3	4201935.8	30.88	73.21	1.8
RE DISCCART	550689.4	4201950.6	31.66	70.3	1.8
RE DISCCART	550705.9	4201955.3	31.48	70.3	1.8
RE DISCCART	550719.3	4201964	29	74.02	1.8
RE DISCCART	550724.8	4201967.5	29.43	73.86	1.8
RE DISCCART	550732.7	4201972.5	20.25	101.49	1.8
RE DISCCART	550746.7	4201986.5	6.03	101.49	1.8
RE DISCCART	550764.2	4201992	4.41	101.49	1.8
RE DISCCART	550781.8	4201997.5	0.49	101.49	1.8
RE DISCCART	550791.2	4201983.7	0.49	101.49	1.8
RE DISCCART	550800.6	4201969.8	0.62	101.49	1.8
RE DISCCART	550800.9	4201969.4	0.63	101.49	1.8
RE DISCCART	550810.1	4201956	0.85	101.49	1.8
RE DISCCART	550822.6	4201944	0.94	101.49	1.8
RE DISCCART	550835.2	4201932.1	1.22	101.49	1.8
RE DISCCART	550847.8	4201920.1	1.34	101.49	1.8
RE DISCCART	550861.6	4201905.7	2.06	101.49	1.8
RE DISCCART	550869.7	4201897.2	1.78	101.49	1.8
RE DISCCART	550875.5	4201891.2	3	101.49	1.8
RE DISCCART	550889.3	4201876.7	5.15	101.49	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	550906.3	4201881.5	2.21	101.49	1.8
RE DISCCART	550923.3	4201886.2	1.85	101.49	1.8
RE DISCCART	550944.7	4201897.2	1.12	101.49	1.8
RE DISCCART	550955.9	4201902.2	0.95	101.49	1.8
RE DISCCART	550986.4	4201915.7	1.07	101.49	1.8
RE DISCCART	550984.2	4201849.1	1.99	101.49	1.8
RE DISCCART	550983	4201813.5	2.23	101.49	1.8
RE DISCCART	550983	4201749.1	8.69	101.49	1.8
RE DISCCART	550983	4201742.2	11.05	101.49	1.8
RE DISCCART	550977.7	4201719.8	18.09	101.49	1.8
RE DISCCART	550967.1	4201675.2	32.75	101.49	1.8
RE DISCCART	550961.8	4201652.8	41.45	101.49	1.8
RE DISCCART	550961.5	4201651.6	41.95	101.49	1.8
RE DISCCART	550956.4	4201630.5	49.07	101.49	1.8
RE DISCCART	550951.1	4201608.2	54.16	101.49	1.8
RE DISCCART	550945.8	4201585.8	57.08	101.49	1.8
RE DISCCART	550940.5	4201563.5	57.82	101.49	1.8
RE DISCCART	550949.5	4201560.8	53.14	101.49	1.8
RE DISCCART	550985.1	4201549.9	32.04	101.49	1.8
RE DISCCART	551007.4	4201543.1	29.76	101.49	1.8
RE DISCCART	551029.7	4201536.3	37.57	101.49	1.8
RE DISCCART	551045.1	4201531.6	40.37	101.49	1.8
RE DISCCART	551052	4201529.5	40.88	101.49	1.8
RE DISCCART	551074.4	4201522.7	37.49	101.49	1.8
RE DISCCART	551096.7	4201515.9	31.02	101.49	1.8
RE DISCCART	551119	4201509.1	35.95	101.49	1.8
RE DISCCART	551140.8	4201502.5	43.67	101.49	1.8
RE DISCCART	551141.3	4201502.3	43.81	101.49	1.8
RE DISCCART	551163.6	4201495.5	53	101.49	1.8
RE DISCCART	551169.5	4201519.1	47.81	101.49	1.8
RE DISCCART	551175.5	4201542.7	41.44	101.49	1.8
RE DISCCART	551181.4	4201566.4	38.58	101.49	1.8
RE DISCCART	551182.1	4201569.4	38.69	101.49	1.8
RE DISCCART	551187.4	4201590	43.89	101.49	1.8
RE DISCCART	551193.3	4201613.6	48.13	101.49	1.8
RE DISCCART	551199.3	4201637.3	49.26	101.49	1.8
RE DISCCART	551205.2	4201660.9	46.74	101.49	1.8
RE DISCCART	551206.6	4201666.4	45.74	101.49	1.8
RE DISCCART	551211.2	4201684.5	42.05	101.49	1.8
RE DISCCART	551223	4201731.7	28.39	101.49	1.8
RE DISCCART	551229	4201755.4	17.19	101.49	1.8
RE DISCCART	551231	4201763.3	14.75	101.49	1.8
RE DISCCART	551234.9	4201779	9.87	101.49	1.8
RE DISCCART	551240.9	4201802.6	5.29	122.41	1.8
RE DISCCART	551246.8	4201826.3	4.17	122.41	1.8
RE DISCCART	551252.8	4201849.9	2.63	101.49	1.8
RE DISCCART	551262.8	4201853.7	2.69	101.49	1.8
RE DISCCART	551281.3	4201860.7	3.88	101.49	1.8
RE DISCCART	551312.3	4201874.5	4.75	101.49	1.8
RE DISCCART	551341.7	4201890	3.05	101.49	1.8
RE DISCCART	551354.2	4201893.6	3.07	101.49	1.8
RE DISCCART	551377.9	4201900.4	4.52	101.49	1.8
RE DISCCART	551408.9	4201905.5	2.82	101.49	1.8
RE DISCCART	551440	4201905.5	4.82	101.49	1.8
RE DISCCART	551452.5	4201902.6	4.73	101.49	1.8
RE DISCCART	551498.6	4201891.7	2.87	122.41	1.8
RE DISCCART	551541.1	4201860.6	4.31	122.41	1.8
RE DISCCART	551550.3	4201853.8	5.63	122.41	1.8
RE DISCCART	551572.8	4201862.4	4.98	122.41	1.8
RE DISCCART	551602.9	4201805.4	1.66	128.6	1.8
RE DISCCART	551611.4	4201789.3	1.65	131.57	1.8
RE DISCCART	551623.6	4201768.6	1.55	134.46	1.8
RE DISCCART	551635.9	4201747.8	1.59	134.46	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	551651.9	4201729.4	1.58	134.46	1.8
RE DISCCART	551658	4201722.5	1.6	134.46	1.8
RE DISCCART	551668	4201711	1.74	134.46	1.8
RE DISCCART	551684	4201692.6	1.7	134.46	1.8
RE DISCCART	551700	4201674.2	1.71	134.46	1.8
RE DISCCART	551711.4	4201658.7	0.73	134.46	1.8
RE DISCCART	551721.2	4201645.1	0.62	134.46	1.8
RE DISCCART	551734	4201627.5	0.73	134.46	1.8
RE DISCCART	551745.3	4201612	0.52	134.46	1.8
RE DISCCART	551752.2	4201595.6	0.72	134.46	1.8
RE DISCCART	551759.2	4201579.2	0.83	134.46	1.8
RE DISCCART	551766.1	4201562.9	0.79	134.46	1.8
RE DISCCART	551765.8	4201557.2	0.77	134.46	1.8
RE DISCCART	551765.1	4201540.3	0.7	134.46	1.8
RE DISCCART	551764.2	4201517.6	0.73	134.46	1.8
RE DISCCART	551756.6	4201500	0.48	134.46	1.8
RE DISCCART	551749.1	4201482.4	0.5	134.46	1.8
RE DISCCART	551741.5	4201464.8	0.42	134.46	1.8
RE DISCCART	551740.4	4201462.1	0.42	134.46	1.8
RE DISCCART	551734	4201445.4	0.47	134.46	1.8
RE DISCCART	551726.5	4201426.1	0.45	134.46	1.8
RE DISCCART	551718.9	4201406.8	0.76	134.46	1.8
RE DISCCART	551734.9	4201400.3	0.59	134.46	1.8
RE DISCCART	551755.1	4201388.5	0.47	134.46	1.8
RE DISCCART	551755.6	4201388.2	0.47	134.46	1.8
RE DISCCART	551781.4	4201379.6	0.45	134.46	1.8
RE DISCCART	551817.3	4201381.8	0.43	134.46	1.8
RE DISCCART	551818.6	4201398.7	0.45	134.46	1.8
RE DISCCART	551819.8	4201415.7	0.35	134.46	1.8
RE DISCCART	551819.9	4201418	0.36	134.46	1.8
RE DISCCART	551822.4	4201453.5	0.33	134.46	1.8
RE DISCCART	551823.6	4201472.3	0.4	134.46	1.8
RE DISCCART	551825.5	4201493.1	0.46	134.46	1.8
RE DISCCART	551827.4	4201513.8	0.43	134.46	1.8
RE DISCCART	551827.1	4201517.7	0.42	134.46	1.8
RE DISCCART	551826.1	4201531.5	0.5	134.46	1.8
RE DISCCART	551824.9	4201549.1	0.36	134.46	1.8
RE DISCCART	551823.6	4201566.7	0.31	134.46	1.8
RE DISCCART	551819.8	4201578.9	0.47	134.46	1.8
RE DISCCART	551816.1	4201591.2	0.54	134.46	1.8
RE DISCCART	551806.2	4201610	0.48	134.46	1.8
RE DISCCART	551804.3	4201613.5	0.46	134.46	1.8
RE DISCCART	551796.4	4201628.7	0.38	134.46	1.8
RE DISCCART	551786.5	4201647.5	1.26	134.46	1.8
RE DISCCART	551772.5	4201665.8	1.65	134.46	1.8
RE DISCCART	551758.4	4201684.2	1.39	134.46	1.8
RE DISCCART	551749.1	4201696.5	1.62	134.46	1.8
RE DISCCART	551709.4	4201749	1.56	134.46	1.8
RE DISCCART	551694.3	4201779.6	1.59	134.46	1.8
RE DISCCART	551684.3	4201800	1.82	128.6	1.8
RE DISCCART	551665.7	4201840.3	1.6	128.6	1.8
RE DISCCART	551667.7	4201853.5	0	128.6	1.8
RE DISCCART	551683.6	4201852.9	0	128.6	1.8
RE DISCCART	551684.9	4201849.5	0	128.6	1.8
RE DISCCART	551694.8	4201823.8	1.56	128.6	1.8
RE DISCCART	551717.3	4201777.5	1.45	134.46	1.8
RE DISCCART	551729.9	4201770.2	1.43	134.46	1.8
RE DISCCART	551733.3	4201764.7	1.41	134.46	1.8
RE DISCCART	551743.1	4201748.4	1.65	134.46	1.8
RE DISCCART	551756.4	4201731.2	1.59	134.46	1.8
RE DISCCART	551765	4201719.3	1.67	134.46	1.8
RE DISCCART	551778.1	4201712.9	1.3	134.46	1.8
RE DISCCART	551784.1	4201697.4	1.53	134.46	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

```

RE DISCCART 551793.8 4201688.2 1.4 134.46 1.8
RE DISCCART 551797.5 4201684.7 1.33 134.46 1.8
RE DISCCART 551801.8 4201660 1.66 134.46 1.8
RE DISCCART 551818.1 4201642.3 1.42 134.46 1.8
RE DISCCART 551830.4 4201620.5 0.63 134.46 1.8
RE DISCCART 551842.4 4201603.6 0.53 134.46 1.8
RE DISCCART 551846.8 4201597.4 0.57 134.46 1.8
RE DISCCART 551852.2 4201574.2 1.02 134.46 1.8
RE DISCCART 551853.6 4201546.9 0.38 134.46 1.8
RE DISCCART 551850.8 4201519.7 0.65 134.46 1.8
RE DISCCART 551852.3 4201505.9 0.43 134.46 1.8
RE DISCCART 551853.6 4201493.8 0.48 134.46 1.8
RE DISCCART 551846.8 4201469.2 1.3 134.46 1.8
RE DISCCART 551842.7 4201440.6 0.75 134.46 1.8
RE DISCCART 551841.2 4201409.6 0.46 134.46 1.8
RE DISCCART 551841 4201407.2 0.44 134.46 1.8
RE DISCCART 551839.8 4201389.6 0.47 134.46 1.8
RE DISCCART 551838.7 4201365.3 0.45 134.46 1.8
RE DISCCART 551840.9 4201349.9 0.47 134.46 1.8
RE DISCCART 551842.6 4201331.9 0.65 134.46 1.8
RE DISCCART 551853.8 4201310.2 0.7 134.46 1.8
RE DISCCART 551854.5 4201309 0.7 134.46 1.8
RE DISCCART 551862.3 4201290.7 0.66 134.46 1.8
RE DISCCART 551881.3 4201268.3 0.77 134.46 1.8
RE DISCCART 551894.4 4201255.2 1.45 134.46 1.8
RE DISCCART 551911.4 4201240.8 1.3 134.46 1.8
RE DISCCART 551918.3 4201235.8 1.08 134.46 1.8
RE DISCCART 551928.4 4201228.4 1.02 134.46 1.8
RE DISCCART 551944.5 4201211.1 1.72 134.46 1.8
RE DISCCART 551962.2 4201201.1 0.83 134.46 1.8
RE DISCCART 551974.4 4201194.1 0.57 134.46 1.8
RE DISCCART 551986 4201177.8 1.67 134.46 1.8
RE DISCCART 551993.6 4201172.2 1.47 134.46 1.8
RE DISCCART 552005.8 4201163.1 0.79 134.46 1.8
RE DISCCART 552069.6 4201107.2 1.89 134.46 1.8
RE DISCCART 552126 4201057.6 2.39 134.46 1.8
RE DISCCART 552144.8 4201041.3 2.37 134.46 1.8
RE DISCCART 552170.1 4201019.1 3.23 134.46 1.8
RE DISCCART 552173.4 4200997.1 3.24 150.1 1.8
RE DISCCART 552211 4200974.2 7.89 148.45 1.8
RE DISCCART 552254.1 4200948 3.32 150.1 1.8
RE DISCCART 552277 4200904.1 3.4 150.1 1.8
RE DISCCART 552281.6 4200895.3 3.31 150.1 1.8
RE DISCCART 552355.9 4200882.9 2.63 150.1 1.8
RE DISCCART 552368 4200874.5 3.47 150.1 1.8
RE DISCCART 552450.1 4200817.3 2.31 150.1 1.8
RE DISCCART 552460.3 4200810.2 2.54 150.1 1.8
RE DISCCART 552531.2 4200758.8 2.8 150.1 1.8
** BOUNDARY BND2
RE DISCCART 554621.5 4199048.5 2.64 11.94 1.8
RE DISCCART 554682.2 4199049.8 2.58 11.65 1.8
RE DISCCART 554649.2 4199028.5 2.51 11.94 1.8
RE DISCCART 554636.8 4199020.6 2.51 11.94 1.8
RE DISCCART 554619.7 4199003.1 2.46 11.94 1.8
RE DISCCART 554599.9 4198969.0 2.37 11.94 1.8
RE DISCCART 554595.0 4198949.6 2.43 11.94 1.8
RE DISCCART 554594.9 4198948.2 2.44 11.94 1.8
RE DISCCART 554590.8 4198886.0 2.52 11.25 1.8
RE DISCCART 554589.6 4198848.4 2.72 4.02 1.8
RE DISCCART 554587.7 4198789.0 2.86 4.16 1.8
RE DISCCART 554566.7 4198754.3 2.64 4.23 1.8
RE DISCCART 554514.9 4198668.7 2.54 4.09 1.8
RE DISCCART 554463.1 4198583.2 3.1 4.03 1.8

```

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	554459.2	4198576.7	3.4	3.98	1.8
RE DISCCART	554430.3	4198529.0	3.75	3.91	1.8
RE DISCCART	554400.0	4198520.8	2.95	3.99	1.8
RE DISCCART	554397.3	4198516.3	3.03	3.99	1.8
RE DISCCART	554344.7	4198431.2	2.15	3.85	1.8
RE DISCCART	554326.5	4198401.8	2.15	4.08	1.8
RE DISCCART	554293.9	4198345.1	2.35	4.17	1.8
RE DISCCART	554265.6	4198295.8	2.38	3.85	1.8
RE DISCCART	554244.6	4198258.1	2.34	113.66	1.8
RE DISCCART	554195.9	4198170.8	2.35	113.66	1.8
RE DISCCART	554168.1	4198121.1	2.26	113.66	1.8
RE DISCCART	554184.7	4198100.8	3.01	113.66	1.8
RE DISCCART	554180.7	4198089.4	3.28	113.66	1.8
RE DISCCART	554176.7	4198092.3	5.16	113.66	1.8
RE DISCCART	554146.8	4198113.8	8.29	113.66	1.8
RE DISCCART	554134.5	4198134.4	7.07	113.66	1.8
RE DISCCART	554127.4	4198163.7	6.31	113.66	1.8
RE DISCCART	554125.4	4198172.5	6.13	113.66	1.8
RE DISCCART	554122.0	4198187.6	5.96	113.66	1.8
RE DISCCART	554113.6	4198209.5	5.22	113.66	1.8
RE DISCCART	554092.2	4198233.1	4.17	113.62	1.8
RE DISCCART	554079.3	4198257.3	3.37	65.41	1.8
RE DISCCART	554080.6	4198258.5	3.37	65.41	1.8
RE DISCCART	554149.7	4198320.3	3.38	3.38	1.8
RE DISCCART	554154.6	4198325.7	3.35	3.85	1.8
RE DISCCART	554192.3	4198367.2	3.42	3.85	1.8
RE DISCCART	554217.5	4198403.2	3.22	3.85	1.8
RE DISCCART	554275.0	4198485.0	2.73	3.85	1.8
RE DISCCART	554275.6	4198486.0	2.74	3.85	1.8
RE DISCCART	554333.5	4198566.1	3.01	3.85	1.8
RE DISCCART	554387.3	4198640.7	3.22	7.38	1.8
RE DISCCART	554391.3	4198647.6	3.19	7.38	1.8
RE DISCCART	554416.3	4198690.3	3.48	4.16	1.8
RE DISCCART	554444.4	4198732.3	3.66	3.66	1.8
RE DISCCART	554500.0	4198815.5	4.7	5.03	1.8
RE DISCCART	554503.7	4198821.1	4.81	5.16	1.8
RE DISCCART	554546.6	4198903.9	9.11	9.11	1.8
RE DISCCART	554592.6	4198992.7	11.08	11.49	1.8
** BOUNDARY	BND3				
RE DISCCART	552026.4	4198484.6	1.46	150.1	1.8
RE DISCCART	552017.0	4198473.2	1.18	150.1	1.8
RE DISCCART	552012.3	4198460.3	1.05	150.1	1.8
RE DISCCART	551998.7	4198451.9	1.41	150.1	1.8
RE DISCCART	551980.0	4198447.5	1.36	150.1	1.8
RE DISCCART	551959.5	4198444.6	1.18	150.1	1.8
RE DISCCART	551944.9	4198440.1	1.07	150.1	1.8
RE DISCCART	551944.6	4198439.9	1.07	150.1	1.8
RE DISCCART	551935.2	4198434.7	1.09	150.1	1.8
RE DISCCART	551928.2	4198423.3	1.14	150.1	1.8
RE DISCCART	551916.5	4198420.7	1.1	150.1	1.8
RE DISCCART	551905.1	4198414.8	1.1	150.1	1.8
RE DISCCART	551895.2	4198416.3	1.1	150.1	1.8
RE DISCCART	551890.4	4198422.9	1.07	150.1	1.8
RE DISCCART	551890.4	4198430.6	1.09	150.1	1.8
RE DISCCART	551895.5	4198438.3	1.12	150.1	1.8
RE DISCCART	551906.3	4198450.1	1.15	150.1	1.8
RE DISCCART	551907.7	4198451.5	1.14	150.1	1.8
RE DISCCART	551907.7	4198458.9	1.08	150.1	1.8
RE DISCCART	551904.0	4198476.1	1.11	150.1	1.8
RE DISCCART	551890.7	4198494.3	2.17	150.1	1.8
RE DISCCART	551878.5	4198505.9	1.04	150.1	1.8
RE DISCCART	551910.2	4198506.4	5.26	150.1	1.8
RE DISCCART	551912.2	4198506.3	5.29	150.1	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	552011.9	4198498.1	4.83	150.1	1.8
RE DISCCART	552026.1	4198496.9	4.51	150.1	1.8
RE DISCCART	552096.3	4198482.2	2.11	150.1	1.8
RE DISCCART	552110.2	4198480.1	2.18	150.1	1.8
RE DISCCART	552196.3	4198467.2	0.47	150.1	1.8
RE DISCCART	552209.1	4198466.0	0.77	150.1	1.8
RE DISCCART	552249.4	4198462.0	7.64	150.1	1.8
RE DISCCART	552307.1	4198447.3	11.18	150.1	1.8
RE DISCCART	552320.3	4198444.0	10.88	150.1	1.8
RE DISCCART	552389.1	4198423.9	11.06	150.1	1.8
RE DISCCART	552403.6	4198421.5	11.54	150.1	1.8
RE DISCCART	552471.6	4198410.1	11.22	150.1	1.8
RE DISCCART	552502.6	4198411.9	10.95	150.1	1.8
RE DISCCART	552518.4	4198412.8	11.21	150.1	1.8
RE DISCCART	552548.0	4198413.8	11.52	150.1	1.8
RE DISCCART	552579.2	4198415.4	11.84	150.1	1.8
RE DISCCART	552602.5	4198416.3	12.45	150.1	1.8
RE DISCCART	552634.3	4198417.5	12.93	150.1	1.8
RE DISCCART	552685.1	4198417.0	13.88	150.1	1.8
RE DISCCART	552702.5	4198418.0	14.7	150.1	1.8
RE DISCCART	552717.8	4198419.0	13.45	150.1	1.8
RE DISCCART	552768.6	4198419.0	10.36	150.1	1.8
RE DISCCART	552801.3	4198427.6	11.78	150.1	1.8
RE DISCCART	552880.8	4198448.6	25.61	150.1	1.8
RE DISCCART	552896.8	4198456.5	25.98	150.1	1.8
RE DISCCART	552912.4	4198464.2	27.32	150.1	1.8
RE DISCCART	552978.7	4198488.0	24.42	150.1	1.8
RE DISCCART	552990.7	4198489.5	25.7	150.1	1.8
RE DISCCART	553058.6	4198498.3	24.46	150.1	1.8
RE DISCCART	553089.8	4198493.5	26.3	150.1	1.8
RE DISCCART	553151.4	4198484.1	21.89	150.1	1.8
RE DISCCART	553187.8	4198474.5	20.82	150.05	1.8
RE DISCCART	553231.9	4198462.9	19.53	145.07	1.8
RE DISCCART	553281.6	4198440.8	18.09	145.07	1.8
RE DISCCART	553294.4	4198435.2	17.79	145.07	1.8
RE DISCCART	553342.7	4198406.2	16.27	145.07	1.8
RE DISCCART	553369.1	4198392.5	15.69	144.9	1.8
RE DISCCART	553377.5	4198388.1	15.54	59.92	1.8
RE DISCCART	553414.2	4198367.5	14.59	59.92	1.8
RE DISCCART	553455.5	4198342.3	8.72	65.41	1.8
RE DISCCART	553463.8	4198337.3	6.49	65.41	1.8
RE DISCCART	553446.4	4198305.0	9.33	65.41	1.8
RE DISCCART	553433.5	4198275.4	11.2	65.41	1.8
RE DISCCART	553425.5	4198255.6	12.14	65.41	1.8
RE DISCCART	553423.9	4198251.6	12.51	65.41	1.8
RE DISCCART	553405.8	4198247.1	21.74	53.91	1.8
RE DISCCART	553388.4	4198236.8	23.45	53.91	1.8
RE DISCCART	553370.5	4198238.8	26.88	53.91	1.8
RE DISCCART	553338.3	4198260.4	40.53	53.91	1.8
RE DISCCART	553334.8	4198262.8	42.01	53.5	1.8
RE DISCCART	553325.9	4198269.1	43.66	53.29	1.8
RE DISCCART	553314.5	4198264.8	46.19	46.35	1.8
RE DISCCART	553295.1	4198291.5	43.6	53.91	1.8
RE DISCCART	553263.5	4198267.6	46.95	53.91	1.8
RE DISCCART	553231.8	4198243.6	38.8	53.91	1.8
RE DISCCART	553217.6	4198261.9	42.19	53.91	1.8
RE DISCCART	553213.6	4198254.3	40.36	53.91	1.8
RE DISCCART	553194.5	4198233.9	34.32	59.92	1.8
RE DISCCART	553194.2	4198233.4	34.1	59.92	1.8
RE DISCCART	553180.9	4198215.8	30.35	59.92	1.8
RE DISCCART	553169.1	4198227.2	31.15	59.92	1.8
RE DISCCART	553154.2	4198210.6	28.43	59.92	1.8
RE DISCCART	553140.1	4198223.1	28.87	59.92	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

RE DISCCART	553126.4	4198208.1	24.66	59.92	1.8
RE DISCCART	553116.9	4198197.6	22.32	59.92	1.8
RE DISCCART	553068.8	4198242.6	17.57	145.07	1.8
RE DISCCART	553053.2	4198255.0	17.04	145.07	1.8
RE DISCCART	553049.1	4198258.2	16.85	145.07	1.8
RE DISCCART	553026.9	4198266.4	16.51	145.07	1.8
RE DISCCART	553002.9	4198267.3	16.36	145.07	1.8
RE DISCCART	552984.7	4198266.0	16.12	145.07	1.8
RE DISCCART	552956.8	4198258.4	18.72	145.07	1.8
RE DISCCART	552953.5	4198257.5	19.25	145.07	1.8
RE DISCCART	552936.8	4198198.2	3.03	150.1	1.8
RE DISCCART	552902.8	4198206.5	2.76	150.1	1.8
RE DISCCART	552869.5	4198214.7	2.9	150.1	1.8
RE DISCCART	552834.7	4198213.3	3.99	150.1	1.8
RE DISCCART	552836.2	4198194.7	3.39	150.1	1.8
RE DISCCART	552833.1	4198182.9	3.64	150.1	1.8
RE DISCCART	552829.8	4198170.6	3.51	150.1	1.8
RE DISCCART	552823.5	4198163.6	3.08	150.1	1.8
RE DISCCART	552788.3	4198151.9	3.36	150.1	1.8
RE DISCCART	552778.3	4198138.8	2.93	150.1	1.8
RE DISCCART	552774.0	4198127.0	2.08	150.1	1.8
RE DISCCART	552762.6	4198129.2	1.23	150.1	1.8
RE DISCCART	552757.5	4198130.1	1.09	150.1	1.8
RE DISCCART	552750.3	4198145.2	2.4	150.1	1.8
RE DISCCART	552742.1	4198147.5	1.98	150.1	1.8
RE DISCCART	552726.1	4198138.3	1.15	150.1	1.8
RE DISCCART	552690.7	4198147.4	1.12	150.1	1.8
RE DISCCART	552694.8	4198161.5	1.04	150.1	1.8
RE DISCCART	552697.9	4198172.6	0.46	150.1	1.8
RE DISCCART	552690.2	4198179.5	0.99	150.1	1.8
RE DISCCART	552692.7	4198201.0	0.61	150.1	1.8
RE DISCCART	552703.2	4198222.9	1.01	150.1	1.8
RE DISCCART	552714.5	4198232.5	0.67	150.1	1.8
RE DISCCART	552719.9	4198248.9	1.06	150.1	1.8
RE DISCCART	552723.6	4198260.0	0.62	150.1	1.8
RE DISCCART	552704.1	4198284.1	0.58	150.1	1.8
RE DISCCART	552653.2	4198310.7	0.63	150.1	1.8
RE DISCCART	552652.5	4198311.1	0.6	150.1	1.8
RE DISCCART	552641.3	4198314.0	0.45	150.1	1.8
RE DISCCART	552630.6	4198309.7	0.53	150.1	1.8
RE DISCCART	552628.2	4198314.0	0.45	150.1	1.8
RE DISCCART	552628.2	4198328.2	0.43	150.1	1.8
RE DISCCART	552621.6	4198343.2	0.7	150.1	1.8
RE DISCCART	552616.7	4198360.2	0.82	150.1	1.8
RE DISCCART	552610.2	4198371.2	0.41	150.1	1.8
RE DISCCART	552603.7	4198378.9	0.61	150.1	1.8
RE DISCCART	552602.0	4198381.0	0.66	150.1	1.8
RE DISCCART	552589.4	4198389.7	0.86	150.1	1.8
RE DISCCART	552507.6	4198395.3	2.63	150.1	1.8
RE DISCCART	552501.9	4198395.7	2.52	150.1	1.8
RE DISCCART	552449.6	4198390.0	0.86	150.1	1.8
RE DISCCART	552409.0	4198399.2	1.76	150.1	1.8
RE DISCCART	552362.8	4198409.6	1.25	150.1	1.8
RE DISCCART	552328.5	4198414.9	0.6	150.1	1.8
RE DISCCART	552314.8	4198413.3	0.53	150.1	1.8
RE DISCCART	552310.9	4198414.7	0.61	150.1	1.8
RE DISCCART	552300.0	4198418.6	0.39	150.1	1.8
RE DISCCART	552273.5	4198428.6	0.8	150.1	1.8
RE DISCCART	552249.7	4198441.9	2.18	150.1	1.8
RE DISCCART	552232.7	4198457.7	1.04	150.1	1.8
RE DISCCART	552223.2	4198458.7	1.07	150.1	1.8
RE DISCCART	552152.1	4198466.2	0.77	150.1	1.8
RE DISCCART	552123.8	4198470.3	0.66	150.1	1.8

Attachment 1 Example Modeling Input Offroad Sources.inp

```

RE DISCCART 552078.5 4198476.8 1.05 150.1 1.8
** BOUNDARY BND4
RE DISCCART 552992.6 4198243.4 12.1 145.07 1.8
RE DISCCART 552984.6 4198255.3 15.28 145.07 1.8
RE DISCCART 553002.9 4198259.3 15.99 145.07 1.8
RE DISCCART 553026.7 4198256.1 15.82 145.07 1.8
RE DISCCART 553052.9 4198244.2 16.81 145.07 1.8
RE DISCCART 553063.4 4198234.6 16.88 145.07 1.8
RE DISCCART 553137.0 4198167.2 21.51 59.92 1.8
RE DISCCART 553136.9 4198167.1 21.47 59.92 1.8
RE DISCCART 553110.8 4198139.4 13.82 59.92 1.8
RE DISCCART 553064.3 4198180.4 11.79 145.07 1.8
RE FINISHED

```

```

ME STARTING
ME SURFFILE "Y:\Tina Misc\air modeling\emeryville\Tina's task\110-CVRN CSTN model
runs\onsite\10012009-09302010.SFC"
** SURFFILE "Y:\Tina Misc\air modeling\emeryville\Tina's task\110-CVRN CSTN model
runs\onsite\10012009-09302010.SFC"
ME PROFFILE "Y:\Tina Misc\air modeling\emeryville\Tina's task\110-CVRN CSTN model
runs\onsite\10012009-09302010.PFL"
** PROFFILE "Y:\Tina Misc\air modeling\emeryville\Tina's task\110-CVRN CSTN model
runs\onsite\10012009-09302010.PFL"
ME SURFDATA 23230 2009
ME UAIRDATA 23230 2009
ME PROFBASE 4
ME STARTEND 2009 10 1 1 2010 9 30 24
ME FINISHED

```

```

OU STARTING
OU RECTABLE 1 FIRST
OU FILEFORM FIX
OU PLOTFILE 1 EXISH2 FIRST EXISH2\1\FIRST.plt 10000
OU PLOTFILE 1 NEWH2 FIRST NEWH2\1\FIRST.plt 10001
OU PLOTFILE 1 SRU FIRST SRU\1\FIRST.plt 10002
OU PLOTFILE 1 TKC FIRST TKC\1\FIRST.plt 10003
OU PLOTFILE 1 TI FIRST TI\1\FIRST.plt 10004
OU PLOTFILE PERIOD EXISH2 EXISH2\PERIOD.plt 10005
OU PLOTFILE PERIOD NEWH2 NEWH2\PERIOD.plt 10006
OU PLOTFILE PERIOD SRU SRU\PERIOD.plt 10007
OU PLOTFILE PERIOD TKC TKC\PERIOD.plt 10008
OU PLOTFILE PERIOD TI TI\PERIOD.plt 10009
OU FINISHED

```

```

** *****
** It is recommended that the user not edit any data below this line
** *****

```

```

** TERRFILE C:\PROJ\CHEVRON\CONSTR~1\27826958.TIF 2 0 WGS84 10 0 546802.9
4184951.5 546650.5 4211672.4 568192.1 4211824.1 568414.9 4185102.8
** TERRFILE C:\PROJ\CHEVRON\CONSTR~1\11401156.TIF 2 0 WGS84 10 0 539282.4
4182727.4 539134.8 4213567.8 568674.0 4213763.2 568933.1 4182922.3
** AMPTYPE NED
** AMPDATUM 3
** AMPZONE 10
** AMPHEMISPHERE N

** PROJECTION UTM
** DATUM NAR-C
** UNITS METER
** ZONE 10
** HEMISPHERE N

```

```
Attachment 1 Example Modeling Input Offroad Sources.inp
** ORIGINLON 0
** ORIGINLAT 0
** PARALLEL1 0
** PARALLEL2 0
** AZIMUTH 0
** SCALEFACT 0
** FALSEEAST 0
** FALSENORTH 0

** POSTFMT UNIFORM
** TEMPLATE Regulatory,0
** AERMODEXE AERMOD_EPA_12345.exe
** AERMAPEXE AERMAP_EPA_11103.EXE
```


APPENDIX 4.3 - CHRA

Attachment 2

Table A4.3-CHRA-Attachment 2-1
Construction Dispersion Factors for the Cancer Risk MEISR¹
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m3/g/s)
EXISH2	0.23537
GAS	1.13469
NEWH2	0.39999
SRU	0.1645
TI	0.25162
TKC	0.21359
TKD	4.46087
WAT	0.23393
CAS_G31T	0.27408
CAS_G31W	0.25831
ETC_6	0.01523
ETC_7	0.02665
ETC_8	0.07678
ETC_9	0.19562
EWC_6	0.01189
EWC_7	0.02473
EWC_8	0.07104
EWC_9	0.14255
G31_G91W	0.22471
ITC_IDL	0.40197
ITC_IDLN	0.42839
ITCD	1.92405
ITCD_IDL	4.48065
ITCG	2.35773
ITCG_IDL	1.23988
ITCH_1	0.35157
ITCH_2	0.28305
ITCH_IDL	0.44647
ITCHIDLN	1.10478
ITCHN	0.38546
ITCP_1	0.31649
ITCP_2	0.28305
ITCP_IDL	0.14828
ITCPIDLN	1.10478
ITCPN	0.38546
ITCT_1	0.31649
ITCT_2	0.28305
ITCT_IDL	0.25079

Table A4.3-CHRA-Attachment 2-1
Construction Dispersion Factors for the Cancer Risk MEISR¹
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m3/g/s)
ITCTIDLN	1.10478
ITCTN	0.38546
ITCW	0.49756
IWC_1	0.20664
IWCDOM	0.5958
IWCGAS	2.84927
IWCH	0.33064
IWCH_C	0.33064
IWCP	0.29805
IWCP_C	0.29805
IWCT	0.29805
IWCT_C	0.29805
RAMPST	0.17888
RAMPSW	0.18257

Notes:

1. The location of the MEISR is (552,950 4198,200).

Abbreviations:

µg: microgram

g: gram

m: meter

s: second

Table A4.3-CHRA-Attachment 2-2
Construction Dispersion Factors for the Chronic Non-Cancer Hazard
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m3/g/s)
EXISH2	0.37645
GAS	3.19728
NEWH2	0.20635
SRU	0.55044
TI	0.45722
TKC	0.40812
TKD	0.58189
WAT	0.38553
CAS_G31T	0.10081
CAS_G31W	0.10053
ETC_6	0.01602
ETC_7	0.03272
ETC_8	0.07168
ETC_9	0.06291
EWC_6	0.01605
EWC_7	0.03096
EWC_8	0.06799
EWC_9	0.04195
G31_G91W	0.07331
ITC_IDL	0.06611
ITC_IDLN	0.12207
ITCD	0.16651
ITCD_IDL	0.64755
ITCG	0.72133
ITCG_IDL	3.33336
ITCH_1	0.14729
ITCH_2	0.07364
ITCH_IDL	0.24709
ITCHIDLN	0.18683
ITCHN	0.10576
ITCP_1	0.24642
ITCP_2	0.07364
ITCP_IDL	0.84292
ITCPIDLN	0.18683
ITCPN	0.10576
ITCT_1	0.24642
ITCT_2	0.07364
ITCT_IDL	0.43252
ITCTIDLN	0.18683

Table A4.3-CHRA-Attachment 2-2
Construction Dispersion Factors for the Chronic Non-Cancer Hazard
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m3/g/s)
ITCTN	0.10576
ITCW	0.21426
IWC_1	0.07961
IWCDOM	0.12564
IWCGAS	0.74724
IWCH	0.13093
IWCH_C	0.13093
IWCP	0.2171
IWCP_C	0.2171
IWCT	0.2171
IWCT_C	0.2171
RAMPST	0.01865
RAMPSTW	0.01552

Notes:

1. The location of the MEISR is (551,749 4199,663).

Abbreviations:

µg: microgram

g: gram

m: meter

s: second

Table A4.3-CHRA-Attachment 2-3
Construction Dispersion Factors for the Acute Non-Cancer Hazard MEISR¹
Chevron Modernization Project
Richmond, California

Source Group	1-hour Dispersion Factor (ug/m ³ /g/s)
EXISH2	93.93583
GAS	285.02124
NEWH2	114.98927
SRU	42.568
TI	78.31923
TKC	73.05639
TKD	570.49776
WAT	69.74981
CAS_G31T	256.66425
CAS_G31W	341.24171
ETC_6	11.73246
ETC_7	16.10308
ETC_8	125.08552
ETC_9	263.58347
EWC_6	13.09939
EWC_7	14.33069
EWC_8	126.49874
EWC_9	443.22818
G31_G91W	601.85568
ITC_IDL	560.61287
ITC_IDLN	377.7659
ITCD	57.56376
ITCD_IDL	762.28416
ITCG	122.41309
ITCG_IDL	366.28665
ITCH_1	97.24075
ITCH_2	521.9443
ITCH_IDL	139.04769
ITCHIDLN	194.56059
ITCHN	180.79436
ITCP_1	72.73995
ITCP_2	521.9443
ITCP_IDL	55.08189
ITCPIDLN	194.56059
ITCPN	180.79436
ITCT_1	72.73995
ITCT_2	522.09814
ITCT_IDL	149.99346

Table A4.3-CHRA-Attachment 2-3
Construction Dispersion Factors for the Acute Non-Cancer Hazard MEISR¹
Chevron Modernization Project
Richmond, California

Source Group	1-hour Dispersion Factor (ug/m ³ /g/s)
ITCTIDLN	194.56059
ITCTN	180.79436
ITCW	43.44739
IWC_1	10475.90908
IWCDOM	849.38269
IWCGAS	410.266
IWCH	650.91236
IWCH_C	650.91236
IWCP	453.3403
IWCP_C	453.3403
IWCT	453.3403
IWCT_C	453.3403
RAMPST	12.16503
RAMPSTW	13.04941

Notes:

1. The location of the MEISR is (554,552 4199,489).

Abbreviations:

µg: microgram

g: gram

m: meter

s: second

Table A4.3-CHRA-Attachment 2-4
Construction Dispersion Factors for the PM_{2.5} Concentration MEISR¹
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m3/g/s)
EXISH2	0.37645
GAS	3.19728
NEWH2	0.20635
SRU	0.55044
TI	0.45722
TKC	0.40812
TKD	0.58189
WAT	0.38553
CAS_G31T	0.10081
CAS_G31W	0.10053
ETC_6	0.01602
ETC_7	0.03272
ETC_8	0.07168
ETC_9	0.06291
EWC_6	0.01605
EWC_7	0.03096
EWC_8	0.06799
EWC_9	0.04195
G31_G91W	0.07331
ITC_IDL	0.06611
ITC_IDLN	0.12207
ITCD	0.16651
ITCD_IDL	0.64755
ITCG	0.72133
ITCG_IDL	3.33336
ITCH_1	0.14729
ITCH_2	0.07364
ITCH_IDL	0.24709
ITCHIDLN	0.18683
ITCHN	0.10576
ITCP_1	0.24642
ITCP_2	0.07364
ITCP_IDL	0.84292
ITCPIDLN	0.18683
ITCPN	0.10576
ITCT_1	0.24642
ITCT_2	0.07364
ITCT_IDL	0.43252
ITCTIDLN	0.18683

Table A4.3-CHRA-Attachment 2-4
Construction Dispersion Factors for the PM_{2.5} Concentration MEISR¹
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m3/g/s)
ITCTN	0.10576
ITCW	0.21426
IWC_1	0.07961
IWCDOM	0.12564
IWCGAS	0.74724
IWCH	0.13093
IWCH_C	0.13093
IWCP	0.2171
IWCP_C	0.2171
IWCT	0.2171
IWCT_C	0.2171
RAMPST	0.01865
RAMPSTW	0.01552

Notes:

1. The location of the MEISR is (551,749 4199,663).

Abbreviations:

µg: microgram

g: gram

m: meter

s: second

APPENDIX 4.3 - CST

CST: Construction Criteria Air Pollutant, Toxic Air Contaminant, and Greenhouse Gas Emissions

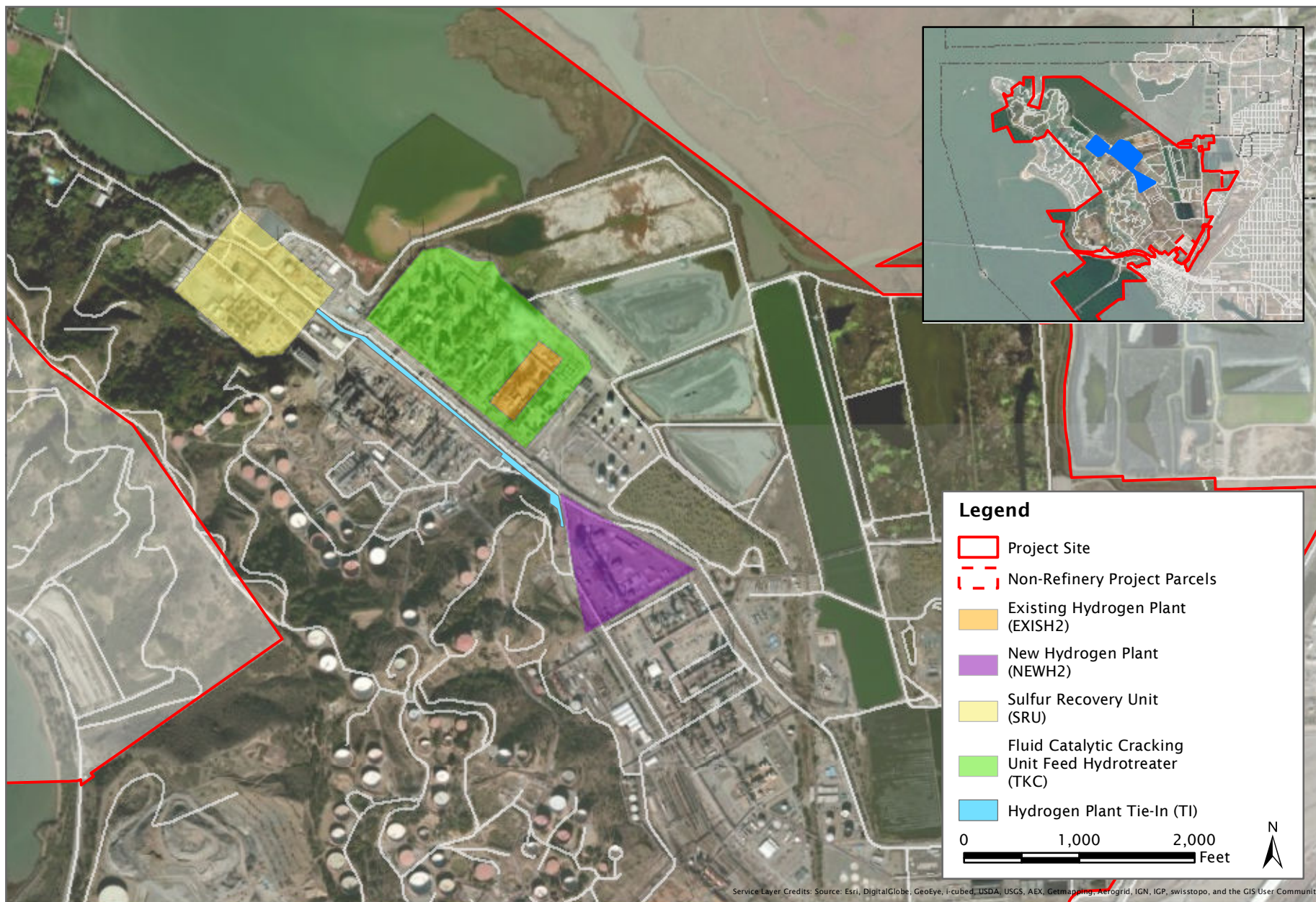
APPENDIX 4.3-CST

CONSTRUCTION CRITERIA AIR POLLUTANT, TOXIC AIR CONTAMINANT, AND GREENHOUSE GAS EMISSIONS

This appendix describes the methods, data, and assumptions used to estimate criteria air pollutants (CAPs), greenhouse gas (GHG), and toxic air contaminant (TAC) emissions from completed and future construction activities associated with the Modernization Project. Operational refinery emissions are discussed in *Appendix 4.3-OP*. Emissions associated with transporting feedstock to and products from the Facility via ship are considered in *Appendix 4.3-SHP*. Emissions associated material transport by rail and truck to and from the Facility are discussed in *Appendix 4.3-TRANS*.

A detailed discussion of construction phases is presented in Table A4.3-CST-1 and is also summarized in *Chapter 3, Project Description*, of this EIR, and Figures A4.3-CST-1 and A4.3-CST-2 show the locations of the construction phases. The phase names reflect the associated Project component: Hydrogen Plant Replacement (also referred to as new hydrogen plant), existing hydrogen plant dismantling (also referred to as existing hydrogen plant), Sulfur Removal Improvements (previously referred to as “hydrogen purity”), Project Design Features (existing storage tank domed roof installation, Project water reuse, and light emitting diode [LED] lighting)¹ (Chevron Data Transmittal #47A (Rev #6), 2014), and related piping and other ancillary equipment (hydrogen plant tie-in). These construction phases involve emission-generating sources such as off-road construction equipment, delivery trucks, flatbed trucks, haul trucks, worker commuting vehicles, worker transport vehicles, paving and coating activities, and fugitive dust.

¹ Construction associated with LED lighting is expected to be negligible. Also the emissions associated with the Fluid Catalytic Cracker Cooling Water Tower Motor Upgrade was not quantified due to the short duration of the activity (Chevron Data Transmittal #36O (Rev #3), 2014, Attachment 9).



U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-CST\AQ-CST-1_Construction Phases and Areas (1).mxd

Source: Chevron Transmittals

Figure A4.3-CST-1
Chevron Refinery Modernization Project EIR
Construction Phases and Areas (1)



U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-CST\AQ-CST-3_Modelled Receptor Locations.mxd

Source: Chevron (T38r1)

Figure A4.3-CST-3
Chevron Refinery Modernization Project EIR
Facility Boundary

1.1 CONSTRUCTION CRITERIA POLLUTANT EMISSIONS

1.1.1 Source Identification, Physical Scope, and Temporal Scenarios for Construction Emissions

This section discusses the emissions estimation of CAPs and GHGs associated with the construction of the Modernization Project. There are four general types of construction CAP sources:

- Off-road construction equipment
- On-road mobile sources
- Architectural coatings and paving
- Fugitive dust sources

There are two general types of construction GHG sources:

- Off-road construction equipment
- On-road mobile sources

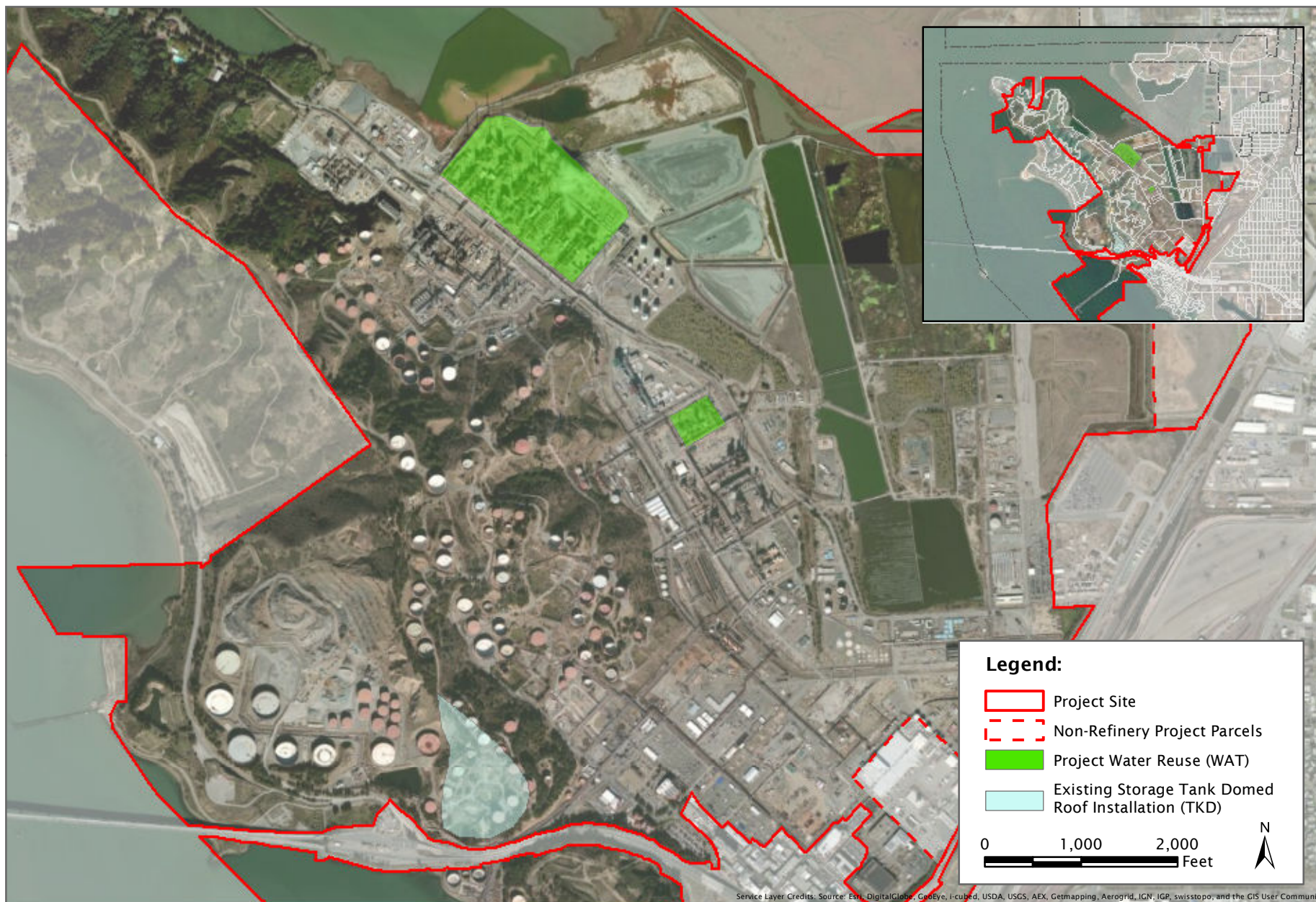
Table A4.3-CST-2 presents examples for each source category, and describes the types and location of CAP and GHG emissions.

1.1.1.1 Definition of On-Site and Off-Site Activity

In this section, any construction activity that occurs within the Facility boundary shown in Figure A4.3-CST-3 is defined as on-site activity. Similarly, any activity that occurs outside of the Facility boundary is defined as off-site activity. “On-site” and “off-site” are terms that refer to the location where emissions occur, are not to be confused with the terms “on-road” and “off-road,” which refer to types of engine emission sources. The location of TAC emissions is important for the health risk assessment (HRA), as will be discussed later in this section.

1.1.1.2 Physical Domain for CAP and GHG Emissions Inventory

To evaluate criteria pollutant and mass emission impacts, the sum of emissions from on-site and off-site activity was compared to the California Environmental Quality Act (CEQA) Significance Thresholds for construction. The GHG emissions were also estimated by summing the emissions from on-site and off-site activity. On-road vehicle travel associated with the construction will occur both on site and off site. For the CAP and GHG emissions inventory, because the actual off-site destinations of these vehicles were unknown, the emissions associated with off-site, on-road vehicle travel were calculated assuming a truck trip length of 20 miles per one-way trip, and a worker trip length of 12.4 miles per one-way trip,



U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-CST\AQ-CST-2_Construction Phases and Areas (2).mxd

Source: Chevron Transmittals

Figure A4.3-CST-2
Chevron Refinery Modernization Project EIR
Construction Phases and Areas (2) - Project Design Features

based on CalEEMod™ default values (ENVIRON, 2013). This is a reasonable assumption for evaluating the emissions of criteria pollutants at a regional level.

1.1.1.3 Temporal Scenarios: Completed Construction and Future Construction

Chevron began construction of certain portions of the Modernization Project in 2008, but halted construction in 2009 following an injunction from the California Court of Appeal. This portion of the construction, which is already completed, is referred to as “completed construction” in this appendix.

The remaining part of the Modernization Project to be built will be referred to as “future construction” in this appendix. For this analysis, future construction is assumed to begin in 2014 and continue through 2015 (Chevron Data Transmittal #360 (Rev #3), 2014).² According to Chevron, the existing hydrogen plant dismantling will occur after the new hydrogen plant starts to operate (Chevron Data Transmittal #360 (Rev #3), 2014). Therefore, dismantling of existing hydrogen plant was assumed to occur in 2016. Activity data were provided separately for the “completed construction” and the “future construction” periods. Both construction periods were included in the analysis.

1.1.2 Overview of Construction Emissions Estimation

The California Air Resources Board (CARB) 2011 In-Use Off-Road Equipment Inventory Model (OFFROAD 2011), and EMission FACtor Model (EMFAC2011), together with construction schedule and activity data provided by Chevron were used to calculate emissions. When site-specific data were not available, default assumptions consistent with CalEEMod™ were used. This methodology is consistent with CalEEMod™ and is capable of incorporating the detailed activity data Chevron provided.

Tables A4.3-CST-3a, b, and c show the emission calculation methodologies for construction emission sources. More details regarding emissions estimation of construction CAPs and GHGs are provided below, with a discussion of activity data followed by emission factors.

² Chevron Data Transmittal #360 (Rev#3), 2014 provides equipment data for eight consecutive quarters. Because the exact start date of future construction is uncertain, the emissions analysis conservatively uses emission factors for 2014 for the first four quarters of construction, and 2015 emission factors for the last four quarters of construction. A construction start date later than January 2014 would lead to lower emissions than predicted here as the emissions profile of the construction fleet is cleaner, due to the implementation of regulations requiring lower emissions engines.

1.1.3 On-Site Construction Activity: Emission Sources

1.1.3.1 Off-Road Equipment

1.1.3.1.1 On-Site Off-Road Activity Data

For construction off-road equipment (e.g., excavators, graders, cranes, manlifts, etc.), activity data provided by Chevron included equipment counts by equipment type and construction area, for each quarter/month of each construction year³ (Chevron Data Transmittals #20 (Rev #1), 2013; #36O (Rev #3), 2014). In the absence of site-specific information, equipment load factors and horsepower ratings were based on CalEEMod™ default values. This equipment was assumed to operate for every workday of the quarter/month. In addition, the number of operating hours per work day was also provided by Chevron (Chevron Data Transmittal #20 (Rev #1), 2013; #36O (Rev #3), 2014).

Tables A4.3-CST-4a and b show the equipment list and activity data provided by Chevron for off-road equipment.

1.1.3.1.2 On-Site Off-Road Emission Factors

Emission factors for off-road equipment are based on CARB's OFFROAD 2011, and engine tier standard specified in 13 California Code of Regulations (CCR) 2423(b)(1) (CARB, 2007). The model includes emission factors for oxides of nitrogen (NO_x), particulate matter, carbon monoxide (CO), hydrocarbons, total organic gases (TOGs), nitrous oxide (N₂O), methane (CH₄), and carbon dioxide (CO₂). The particulate matter emission factor is used to estimate particulate matter—both respirable particulates (PM₁₀) and fine particulates (PM_{2.5}), and the hydrocarbon and TOG emission factors are used to estimate reactive organic gas (ROG) emissions. Hydrocarbon emission factors from the United States Environmental Protection Agency (EPA)/CARB tier standards were used to calculate ROG emissions for completed construction, while TOG emission factors were used to calculate ROG emissions for future construction.⁴

Tables A4.3-CST-5a and b summarize the emission factors used for off-road equipment in this analysis. Details on assumptions associated with these emission factors are described below.

³ For the components of the Modernization projects, activity data was provided for each quarter of each construction year. For the project design features, activity data was provided for each month of each construction year.

⁴ The tier standards regulate hydrocarbons rather than TOG, while the OFFROAD 2011 model presents TOG rather than hydrocarbons. Therefore, emission factors were picked in order to calculate ROG emissions.

1.1.3.1.2.1 Fuel Assumptions—Completed and Future Construction

Off-road equipment emissions were evaluated assuming that all off-road equipment uses diesel fuel, even though Chevron has indicated that some off-road equipment may use gasoline or other alternative fuel. This approach is conservative from a HRA standpoint because diesel equipment usually contributes higher health risks for exposed populations than equipment using gasoline or other alternative fuel with the same level of activity. This approach may slightly underestimate ROG emissions to the extent that gasoline is used, and underestimate NO_x emissions to the extent that biodiesel is used. This impact is not expected to be significant, as little alternative fueled equipment is reasonably foreseeable.

1.1.3.1.2.2 Off-Road Engine Tier Assumptions—Completed Construction

Comprehensive engine tier information for construction equipment used during completed construction was not available. A review by Chevron of available equipment data for completed construction, which consisted of records for 132⁵ pieces of off-road equipment used for 2008-2009 construction activities, showed that approximately 9% were Tier 1, 42% were Tier 2, 20% were Tier 3, and 29% were not subject to tier standards, either because they were pre-1996 vintage (i.e., built before tier standards came into effect on January 1, 1996), or less than 100 horsepower (Chevron Data Transmittal #36O (Rev #3), 2014). ENVIRON used this information to calculate weighted emission factors for all equipment types. For the purposes of estimating conservative weighted emission factors, ENVIRON utilized fleet mix data for calendar year 2009 from the OFFROAD 2011 model. ENVIRON assigned the weighting associated with the 29% of engines not subject to tier standards to the weighted emission factors for engines with a model year earlier than 1996 in OFFROAD 2011. These calculations assume that the available tier data are representative of the overall distribution of engine tier levels across all construction equipment used during completed construction. They also assume that the same distribution applies to each equipment category (e.g., excavators, bulldozers, cranes, etc.)

1.1.3.1.2.3 Off-Road Engine Tier Assumptions—Future Construction

Future construction emissions were estimated assuming default emission factors and load factors from the CARB OFFROAD 2011 (CARB, 2011a), or from CalEEMod™ default for years 2014, 2015, and 2016 were used. 2014 is a conservative assumption for the predicted start date for future construction, as a

⁵ Approximately 200 pieces of off-road equipment were used during completed construction, so this comprises approximately two-thirds of all equipment used during the completed construction.

later construction start date would result in incrementally cleaner engines, as new engine requirements are phased in.

1.1.3.1.3 On-Site Off-Road Emissions

Table A4.3-CST-6 summarizes both completed and future CAP and GHG emissions from off-road construction equipment.

1.1.3.2 On-Road Mobile Sources

The following sections describe quantification of on-road mobile source emissions emitted on site; later sections will describe on-road mobile source emissions that are emitted off site.

1.1.3.2.1 On-Site On-Road Activity Data

Activity data used to estimate emissions from on-road vehicles include trip counts, trip lengths, vehicle counts, operating schedule, and vehicle type. Table A4.3-CST-7a shows the on-site on-road vehicle activity data for vehicles that travel exclusively on site, provided by Chevron for completed and future construction (Chevron Data Transmittals #20 (Rev #1), 2013; #36O (Rev #3), 2014). There are four general types of vehicles with exclusive on-site on-road activity:

- On-site cars, pickup trucks, and buses that transport workers from the worker parking lot to the construction areas. Emissions were estimated using vehicle counts and operating schedules. Activity data were provided by Chevron and include vehicle count by vehicle type and construction area for each quarter/month of each construction year.⁶ In addition, the number of operating hours per work day was also provided by Chevron (Chevron Data Transmittals #20 (Rev #1), 2013; #36O (Rev #3), 2014). An on-site speed limit of 25 miles per hour (mph) was conservatively assumed to calculate the travel lengths of these vehicles. This is substantially higher than the Facility speed limit of 15 mph and will result in a conservative estimate of travel lengths.⁷
- On-site delivery trucks and flatbeds that transport equipment and materials within the Facility boundary, e.g., from Facility laydown area to the

⁶ For the components of the Modernization Project, activity data were provided for each quarter of each construction year. For the Project Design Features, activity data were provided for each month of each construction year.

⁷ The daily travel length (in miles per day) is calculated by multiplying the assumed travel speed (in mph) by operating hours per work day (in hours per day). Therefore, for a fixed operating hours per work day, the higher the travel speed, the higher the daily travel length. As a result, using 25-mph speed will increase the daily travel length by 67% compared to that calculated using 15-mph speed.

construction areas. Emissions were estimated using vehicle counts and operating schedules. Activity data were provided by Chevron and include vehicle count by vehicle type and construction area for each quarter/month of each construction year.⁸ In addition, the number of operating hours per work day was also provided by Chevron (Chevron Data Transmittals #20 (Rev #1), 2013; #36O (Rev #3), 2014). An on-site speed limit of 25 mph was conservatively assumed to calculate the travel lengths of these vehicles.

- On-site soil hauling trucks (i.e., dump and belly dump trucks) that collect and transport soil within the Facility boundary. Travel paths for these soil hauling vehicles were not well defined, and therefore were modeled over the same spatial areas as off-road equipment at the construction areas.⁹ Emissions were estimated using truck counts and operating schedules. Activity data were provided by Chevron and include vehicle count by vehicle type and construction area for each quarter/month of each construction year.¹⁰ In addition, the number of operating hours per work day was also provided by Chevron (Chevron Data Transmittals #20 (Rev #1), 2013; #36O (Rev #3), 2014).
- Other types of on-site trucks including utility vehicles and vacuum trucks. Travel paths for utility vehicles, and vacuum vehicles were not well defined, and therefore were modeled together with the off-road equipment at the construction areas. Emissions were estimated using truck counts and operating schedules. Activity data were provided by Chevron and include vehicle count by vehicle type and construction area for each quarter/month of each construction year.¹¹ In addition, the number of operating hours per work day was also provided by Chevron (Chevron Data Transmittals #20 (Rev #1), 2013; #36O (Rev #3), 2014).

In addition, there are three general types of vehicles that have both on-site and off-site on-road activity. The on-site portion of the activity was calculated as described below:¹²

⁸ For the components of the Modernization Project, activity data were provided for each quarter of each construction year. For the Project Design Features, activity data were provided for each month of each construction year.

⁹ As a result, these two truck types are shown in Tables 4.3-CST-4a and 4b.

¹⁰ For the components of the Modernization Project, activity data were provided for each quarter of each construction year. For the Project Design Features, activity data were provided for each month of each construction year.

¹¹ For the components of the Modernization Project, activity data were provided for each quarter of each construction year. For the Project Design Features, activity data were provided for each month of each construction year.

¹² Emissions from off-site activity for these vehicles are discussed later in this section.

- Worker commuting vehicles that travel between the Facility boundary and the worker parking lot: Emissions were estimated based on trip counts and trip lengths. The activity data for the on-site worker commuting trips provided by Chevron included one-way vehicle trip counts for the peak day of each quarter/month of each construction year.¹³ The peak day trips were conservatively assumed for every workday of the quarter/month. On-site trip lengths were measured on an aerial photograph based on the trip routes from the Facility boundary to the worker parking lot.
- Delivery trucks that travel between the Facility boundary and the laydown area, which transport construction materials and equipment from off-site vendors to the Facility: Emissions were estimated based on trip counts and trip lengths. The activity for the on-site portion of the delivery trucks provided by Chevron included one-way vehicle trip counts for the peak day of each quarter/month of each construction year.¹⁴ The peak day trips were conservatively assumed for every workday of the quarter/month. Trip lengths were measured on an aerial photograph based on the trip routes from the Facility boundary to the laydown area.¹⁵
- Soil hauling trucks that travel between the Facility boundary and the construction areas, which haul soil from an external source to the Facility or from the Facility to an off-site disposal location: Emissions were estimated based on trip counts and trip lengths. The activity for the on-site portion of the soil hauling trucks were calculated based on the amount of contaminated soil hauled for off-site site disposal and the amount of clean fill imported from off-site location by construction phase (Chevron Data Transmittal #32, 2012) divided by the amount of fill that is carried in a single truck load of 20 tons.¹⁶ On-site trip lengths were measured from an aerial photograph based on the trip routes from the Facility boundary to the construction areas.

¹³ For the construction of components of the Modernization Project, activity data were provided for each quarter of each construction year. For the construction associated with Project Design Features, activity data were provided for each month of each construction year.

¹⁴ For the construction of components of the Modernization Project, activity data were provided for each quarter of each construction year. For the construction associated with Project Design Features, activity data were provided for each month of each construction year.

¹⁵ Modeled travel path for the delivery trucks between facility boundary and the laydown area is different from the actual path. In addition, the modeled path is slightly shorter than the actual path. However the impact to emissions due to this discrepancy is expected to be very small, because the trip length between the facility boundary and the laydown area is a very small percentage of the total trip length of 20 miles.

¹⁶ The only exception is for the existing hydrogen plant demolition/dismantling, for which the number of hauling trips were provided directly by Chevron (Chevron Data Transmittal #360 (Rev #3), 2014).

Table A4.3-CST-7b shows the on-road vehicle activity data for vehicles that travel both on site and off site, provided by Chevron for future and completed construction (Chevron Data Transmittals #20 (Rev #1), 2013; #32, 2012; #360 (Rev #3), 2014).

1.1.3.2.2 On-Road Idling Emissions

On-road construction trucks including all delivery trucks, flatbeds, and soil haul trucks were assumed to idle for 10 minutes at each of four stopping points along their respective on-site travel routes. Specifically, the delivery trucks that travel both on site and off site were assumed to idle at Facility Gate 31 when entering the Facility; at the entrance to the Facility laydown area; at the exit of the laydown area; and finally at Facility Gate 31 when leaving the Facility. The delivery trucks that travel exclusively on site were assumed to idle at the Facility laydown area; at the staging area of each construction area; at the staging area again; and finally at the Facility laydown area. The soil haul trucks were assumed to idle at Facility Gate 31 when entering the Facility; at the staging area of each construction area; at the staging area again; and finally at Facility Gate 31 when leaving the facility.

This assumption of idling for 10 minutes doubles the maximum allowable¹⁷ idling scenario under CARB's Heavy-Duty Vehicle Idling Emission Reduction Program¹⁸ requirement. This method allows for the exceptions to the idling limit under CARB's rules, such as for actively moving lines. This approach will also yield conservative results as it is unlikely that a construction truck will idle at all four points mentioned above during a round trip.

1.1.3.2.3 On-Site On-Road Emission Factors (Completed and Future Construction)

Table A4.3-CST-8 shows the fleet-mix and fuel-mix assumed for on-road vehicle emission calculations. The emission factors for on-road vehicles were obtained from EMFAC2011. Specifically, the 2008-2016 annual emission rates for EMFAC vehicle classes including Light Duty Automobile, Light Duty Truck 1, Light Duty Truck 2, all other buses, Light Heavy-duty Truck 1, Light Heavy-duty Truck 2, Medium Heavy-duty Truck, and Heavy Heavy-duty Truck were downloaded for Contra Costa County. EMFAC2011 includes emission factors for NO_x, PM₁₀, PM_{2.5},

¹⁷ Exceptions to the idling rule are detailed in 13 CCR Title 13, Chapter 10 Section 2485(d), and include but are not limited to idling periods when: the vehicle is queuing at a distance greater than 100 feet from any zoned residential area with at least one residential unit; the vehicle must remain motionless due to official traffic signals or traffic/weather conditions beyond the control of the driver; and when buses have passengers onboard.

¹⁸ The program requirement is available online at: <http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm>.

ROG, TOG¹⁹, CO, CH₄, N₂O, and CO₂. All buses, delivery trucks, flatbeds and soil hauling trucks were conservatively assumed to be diesel-fueled vehicles. In addition, all on-site cars were assumed to be gasoline vehicles. All the other vehicles including on-site pickups and worker commuting vehicles used EMFAC2011 default fleet fuel mix. To reflect the variability of travel speeds anticipated, “All Speeds” option was chosen in EMFAC2011 to estimate emission factors. Emission factors for years 2008 and 2009 were used for completed construction. Emission factors for years 2014 and 2015 were used for future construction except for the existing hydrogen plant dismantling.²⁰ According to Chevron, the existing hydrogen plant dismantling will occur after the new hydrogen plant starts to operate (Chevron Data Transmittal #360 (Rev #3), 2014). Therefore, emission factors for year 2016 were used for existing hydrogen plant dismantling.

Tables A4.3-CST-9a and 9b summarize the emission factors used for on-road vehicles in this analysis.

1.1.3.2.4 On-Site On-Road Emissions

Table A4.3-CST-10 summarizes both completed and future CAP and GHG emissions from on-road mobile source emissions, from both on-site and off-site travel.

1.1.3.3 Paving and Architectural Coating

According to Chevron there will be approximately 7.5 acres of new paving at the new Hydrogen Plant, and 1.4 acres of new paving at the Sulfur Recovery Unit to complete construction of the Modernization Project (Chevron Data Transmittal #10, 2011). In addition, minimal touch-up painting is expected for the equipment, piping and structural steel (which come to the Facility pre-painted), if any paint damage occurs during installation. Emissions from both paving and architectural coating were included in the emission inventory for future construction; however, no paving or coating was associated with completed construction. Table A4.3-CST-3c shows the calculation methodology for emissions from paving and coating.

¹⁹ The TOG class includes all organic gases emitted into the atmosphere. The ROG class is same as the EPA’s volatile organic compounds definition, and does not contain compounds that are exempt from regulation. Thus, TOG may contain more hydrocarbons than ROG from the same source.

²⁰ Chevron Data Transmittal #360 (Rev#3), 2014 provides equipment data for eight consecutive quarters. Because the exact start date of future construction is uncertain, the emissions analysis conservatively uses emission factors for 2014 for the first four quarters of construction, and 2015 emission factors for the last four quarters of construction.

1.1.3.3.1 Paving/Coating Activity Data

The number of acres to be paved and the gallons of paint to be used for architectural coating were provided by Chevron (Chevron Data Transmittal #10, 2011). Table A4.3-CST-11 shows the activity data used for the emission estimation for paving and architectural coating.

1.1.3.3.2 Paving/Coating Emission Factors

CalEEMod™ default emission factors for paving and non-residential painting/coating were used. Table A4.3-CST-11 presents the calculated emissions for paving and architectural coating.

1.1.3.3.3 Paving/Coating Emissions

Table A4.3-CST-11 summarizes ROG emissions from paving and coating activities associated with future construction.

Table A4.3-CST-12 summarizes total CAP and GHG emissions during completed and future construction, both on site and off site.

1.1.3.4 On-Site Fugitive Dust Emissions

For both completed and future construction, fugitive dust emissions associated with material movement were estimated for construction grading and truck loading based on the given equipment types and soil movement information, consistent with the CalEEMod™ methodology, as described in Table A4.3-CST-3b. The CalEEMod™ methodology uses emissions factors described in EPA AP-42 and are described in Table A4.3-CST-3b. Similarly, the fugitive dust emissions from mobile sources driving on paved roads were calculated for on-site and off-site vehicles using the CalEEMod™ methodology described in EPA AP-42 and presented in Table A4.3-CST-3b.

Table A4.3-CST-13a, b, and c summarize on-site and off-site fugitive dust emissions during completed and future construction by source category. Table A4.3-CST-14 summarizes total fugitive dust emissions during completed and future construction.

1.1.4 Off-Site Construction Activity: Emission Sources

1.1.4.1 On-Road Mobile Sources

1.1.4.1.1 Off-Site On-Road Activity Data

There are three general types of vehicles with off-site on-road activity:

- Delivery trucks that transport construction materials and equipment from off-site vendors to the Facility: Emissions were estimated based on trip counts

and trip lengths. The activity data provided by Chevron included one-way vehicle trip counts for the peak day of each quarter/month of each construction year.²¹ The peak day trips were conservatively assumed for every workday of the quarter/month. Trip lengths were calculated by subtracting the on-site portion of the delivery truck trip routes from the default one-way total trip length of 20 miles.

- Soil hauling trucks that transport soil from an external source to the Facility or from the Facility to an off-site disposal location: Emissions were estimated based on trip counts and trip lengths. The activity data were calculated based on the amount of contaminated soil hauled for off-site site disposal and the amount of clean fill imported from off-site location by construction phase (Chevron Data Transmittal #32, 2012) divided by the amount of fill that is carried in a single truck load of 20 tons.²² Trip lengths were calculated by subtracting the on-site portion of the delivery truck trip routes from the default one-way total trip length of 20 miles.
- Worker commuting vehicles travel from off site to the Facility: Emissions were estimated based on trip counts and trip lengths. The activity data provided by Chevron included one-way vehicle trip counts for the peak day of each quarter/month of each construction year.²³ The peak day trips were conservatively assumed for every workday of the quarter/month. Trip lengths were calculated by subtracting the on-site portion of the delivery truck trip routes from the one-way total trip length of 12.4 miles.

Table A4.3-CST-7b shows the activity data for off-site on-road construction delivery trucks, soil hauling trucks, and worker commuting vehicles provided by Chevron for future and completed construction.

1.1.4.1.2 Off-Site On-Road Emission Factors

Because the vehicles that travel off site also travel on site, the emission factor values and assumptions used for the on-site on-road mobile source emissions from these vehicles (shown in Tables 4.3-CST-9a and 9b) were also used for their off-site on-road mobile source emissions.

²¹ For the components of the Modernization Project, activity data were provided for each quarter of each construction year. For the Project Design Features, activity data were provided for each month of each construction year.

²² The only exception is for the existing hydrogen plant demolition/dismantling, the number of hauling trips were provided directly by Chevron (Chevron Data Transmittal #36O (Rev #3), 2014).

²³ For the construction of components of the Modernization Project, activity data were provided for each quarter of each construction year. For the construction associated with Project Design Features, activity data were provided for each month of each construction year.

1.1.4.2 Off-Site Fugitive Dust Emissions

As mentioned above, the fugitive dust emissions from mobile sources driving on paved roads were calculated for both on-site and off-site vehicles. The emission factors were calculated using the same factors used in CalEEMod from EPA AP-42 and are described in Table A4.3-CST-3b. Table A4.3-CST-14 summarizes total fugitive dust emissions during completed and future construction.

1.1.5 Total Construction CAP and GHG Emissions

Table A4.3-CST-12 summarizes construction CAP and GHG emissions by year for completed construction (2008-2009), for future construction (2014-2016). It also shows the calculated average daily CAP emission rates for future construction only, and for the sum of completed and future construction activity.

1.2 CONSTRUCTION TOXIC AIR CONTAMINANT EMISSIONS

1.2.1 Source Identification, Physical Scope and Temporal Scenarios for Construction Emissions

This section discusses the emissions estimation of TACs associated with the construction of the Modernization Project. Emissions of TACs are estimated to use in a HRA to assess the health impacts of the construction. This is further described in *Appendix 4.3-CHRA*. Table A4.3-CST-15 summarizes the scope of the TAC emission inventory, the details for which are presented in the subsections below.

There are two general types of construction TAC emission sources:

- Off-road construction equipment , and
- On-road mobile sources.

It was assumed that no TAC emissions are generated from fugitive dust, paving or architectural coating.

1.2.1.1 Physical Domain for TAC Emissions Inventory

Only emissions that are used in the HRA are estimated. Because of this, while the physical domain for the TAC emissions inventory includes all on-site construction TAC sources, the physical extent of off-site TAC emissions included for the HRA is smaller than the extent of off-site emissions included for the criteria pollutant inventory.

As further discussed in *Appendix 4.3-CHRA*, the number of Modernization Project-related construction trucks and worker commuting vehicles on highways is very small relative to highway background traffic; because of this, their

emissions will not have a significant health impact on the sensitive population located along the highways. Accordingly, receptors that are exposed only due to their proximity to a highway that may be used by trucks going to and from the Chevron construction sites were not included in the HRA, and thus the portion of emissions from worker commuting vehicles and construction trucks that occurs on the highways were also not included in the TAC inventory used in the HRA. The TAC inventory does include Modernization Project-related truck and worker commuting emissions associated with travel along Richmond Parkway, Castro Street, and on the highway on- and off-ramps.

1.2.1.2 Temporal Scenarios: Completed Construction and Future Construction

As described in the criteria pollutant emissions section, emission inventories were developed for both completed construction (i.e., completed in 2008-2009) and future construction (2014-2016).

1.2.2 Identification of TACs Generated by the Modernization Project

The TAC emissions inventory includes chemicals emitted from sources that are included for consideration in HRAs consistent with Bay Area Air Quality Management District (BAAQMD) Regulation 2, Rule 5. The TAC emissions inventory for construction is based on diesel particulate matter (DPM) emissions from the off-road construction equipment and the diesel on-road vehicles, and gasoline TOGs from the gasoline on-road vehicles. $PM_{2.5}$ concentrations were also calculated as part of the HRA for comparison to BAAQMD CEQA thresholds for ambient concentrations of $PM_{2.5}$.

Diesel exhaust, a complex mixture that includes hundreds of individual constituents (OEHHA, 1998), is identified by the State of California as a known carcinogen (Cal/EPA, 2011). Under California regulatory guidelines, DPM is used as a surrogate measure of carcinogen exposure for the mixture of chemicals that make up diesel exhaust as a whole. The California Environmental Protection Agency (Cal/EPA) and other proponents of using the surrogate approach to quantifying cancer risks associated with the diesel mixture indicate that this method is preferred over the use of a component-based approach. A component-based approach involves estimating risks for each of the individual components of a mixture. Critics of the component-based approach believe it will underestimate the risks associated with diesel as a whole mixture because the identity of all chemicals in the mixture may not be known and/or exposure and health effects information for all chemicals identified within the mixture may not be available. Furthermore, Cal/EPA has concluded that “potential cancer risk from inhalation exposure to whole diesel exhaust will outweigh the multi-

pathway cancer risk from the speciated components” (OEHHA, 2003). The PM_{10} emissions from the off-road construction equipment and the diesel on-road vehicles were assumed to be equivalent to DPM in the emissions estimation.

TACs from exhaust and evaporative TOGs emissions from gasoline-fueled vehicles were evaluated based on the speciation profiles presented in the BAAQMD guidelines, which include: acetaldehyde, acrolein, benzene, 1,3-butadiene, ethylbenzene, formaldehyde, hexane, methanol, methyl ethyl ketone, naphthalene, propylene, styrene, toluene, and xylenes (BAAQMD, 2012).

1.2.3 TAC Emissions from On-Site Construction Sources

On-site construction sources of TAC emissions are diesel off-road construction equipment, and diesel and gasoline on-road vehicles. These sources do not have emission factors specifically for DPM in their respective emission factor databases (OFFROAD and EMFAC). DPM is a subset of the PM_{10} from diesel exhaust. PM_{10} emissions from on-site diesel off-road equipment and on-road vehicles that were calculated for the CAP inventory for on-site construction sources were used as conservative, surrogate estimates for DPM. The PM_{10} emissions were also used as surrogates for $PM_{2.5}$, when a $PM_{2.5}$ emission factor was not available. Exhaust and evaporative TOG emissions from on-site gasoline-fueled vehicles were estimated using EMFAC2011 TOG emission factors. Refer to the CAP on-site construction inventory section and Tables 4.3-CST-4a, 4b, 5a, 5b, 7a, 7b, 8, 9a, and 9b for details on the emission factors, activity data and assumptions used to estimate PM_{10} , $PM_{2.5}$, and TOG.²⁴

Table A4.3-CST-16 summarizes total off-road construction equipment DPM and $PM_{2.5}$. As discussed earlier, the same emission factor was used to estimate both pollutants; hence, the estimates are numerically equal. Table A4.3-CST-17 summarizes DPM and $PM_{2.5}$ for all on-road vehicles, and TOG emissions from gasoline on-road vehicles for both on-site and off-site activities.

1.2.4 TAC Emissions from Off-Site Construction Sources

Off-site construction sources of TAC emissions are the same as the off-site sources of CAP emissions discussed in the CAP inventory section: delivery trucks, soil hauling trucks, and worker commuting vehicles. As described previously for the on-site construction sources, PM_{10} emissions from on-road vehicles that were

²⁴ Modeled travel path for the delivery trucks between facility boundary and the laydown area is different from the actual path. In addition, the modeled path is slightly shorter than the actual path. Therefore the TAC emissions were slightly underestimated due to this discrepancy. However, the modeled travel path is much closer to the maximally exposed individual sensitive receptor location than the actual path. Therefore, the impact of this discrepancy is minimal.

calculated for the CAP inventory for off-site sources were used as surrogates for DPM and PM_{2.5}. Exhaust and evaporative TOG emissions from gasoline-fueled vehicles are based on EMFAC2011 TOG emission factors. However, for the HRA, only a subset of the off-site emissions estimated for the CAP inventory were included in the TAC inventory. As described previously, for emissions estimation and dispersion modeling of TACs, off-site on-road mobile source emissions were modeled along the off-site segments of Richmond Parkway, Castro Street, and the highway ramps only.

Table A4.3-CST-17 summarizes DPM and PM_{2.5} for all on-road vehicles, and TOG emissions from gasoline on-road vehicles for both on-site and off-site activities.

1.2.5 Calculation of Maximum Hourly Emission Rates for Acute Non-Cancer Hazard Analysis

Maximum hourly TAC emissions were also calculated for acute non-cancer hazard evaluation. Because of the uncertainty of source test methodology for the diesel exhaust speciation, especially for the measurement of acrolein, maximum hourly TAC emissions for gasoline TOGs were included in this estimation.²⁵ As discussed above, gasoline TOGs are generated by on-site and off-site worker trips. Because the activity data for the worker trips provided by Chevron included one-way vehicle trip counts or trip count for the peak day of each quarter/month of each construction year,²⁶ peak day gasoline TOG emissions were calculated for both on-site and off-site worker trips for each quarter of each construction year. Then maximum hourly emissions were calculated by dividing the peak day emissions by 10 hours of construction per day. These peak hour emissions were then used in air dispersion modeling. More details on emissions by modeled source group are provided in *Appendix 4.3-CHRA*.

1.2.6 Conversion of Emission Rate Units for Use in Air Dispersion Modeling

For air dispersion modeling, emissions need to be spatially allocated based on where and how they will be emitted. More details on emissions apportionment is provided in *Appendix 4.3-CHRA*.

²⁵ This methodology was approved by the BAAQMD on August 12, 2013.

²⁶ For the construction of components of the Modernization Project, activity data were provided for each quarter of each construction year. For the construction associated with Project Design Features, activity data were provided for each month of each construction year.

1.3 CONSTRUCTION CRITERIA POLLUTANT AND TOXIC AIR CONTAMINANT EMISSIONS FOR MODERNIZATION PROJECT MITIGATION MEASURES

Chevron has proposed potential construction of a 2 megawatts (mW) ground-mounted photovoltaic solar facility on approximately 13 acres of Chevron property, located adjacent to Castro Street as a greenhouse gas mitigation measure (Chevron Data Transmittal #43, 2013). In addition, Chevron may install up to 14 tank domes to off-site any potential Modernization Project ROG emissions increases. The section below discusses methodology used to quantify emissions from construction of these mitigation measures.

1.3.1 Emissions from Construction of the 2 mW Solar Facility

Activity data provided by Chevron were used to calculate emissions from off-road construction equipment and on-road mobiles for the construction of the 2 mW solar facility (Chevron Data Transmittal #69 (Rev #1), 2014). Methodology used for emissions calculation was consistent with the methodology described in *Section 1.1* and *1.2*. It was conservatively assumed that the construction of the solar facility start in January of 2014. Tables 4.3-CST-18 and 4.3-CST-19 present the criteria pollutants, GHG, and TAC emissions from construction of the solar facility respectively.

1.3.2 Emissions from Construction of 14 Tank Domes

Emissions from construction of the 14 tank domes were assumed to be missions from installation of the one tank dome as one of the Modernization Project Design Features times 14 (Chevron Data Transmittal #36O (Rev #3), 2014). This approach is conservative for two reasons: (1) The Project Design Feature was assumed to be constructed in 2014, while the first of the 14 tanks will be constructed in 2016; and (2) the construction schedule of the tank domes is one at a time and two per year (Chevron Data Transmittal #36O (Rev #3), 2014). Therefore it will take approximately 7 years to construct all 14 tank domes. This approach however did not assume cleaner construction equipment and therefore resulted in conservative emissions. Tables 4.3-CST-20 and 4.3-CST-21 present the criteria pollutants, GHG and TAC emissions from construction of the 14 tank domes respectively.

1.4 REFERENCES—APPENDIX 4.3-CST

Bay Area Air District Quality Management District (BAAQMD). 2011. *Adopted Air Quality CEQA Thresholds of Significance*. May

- Bay Area Air Quality Management District (BAAQMD). 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*.
- California Air Resource Board (ARB). 2006. EMFAC2007. November. Vehicle Categories. <http://www.arb.ca.gov/msei/vehicle-categories.xlsx>
- California Air Resource Board (CARB). 2007. California Code of Regulations (CCR), Title 13, Division 3, Chapter 9, Section 2423. Accessed February 27, 2014. <http://www.abatetech.com/CCR-2423.pdf>.
- California Air Resources Board (ARB). 2011a. *In-Use Off-Road Equipment Inventory Model*. Accessed February 27, 2014. http://www.arb.ca.gov/msei/categories.htm#off_road_motor_vehicles.
- California Air Resources Board (ARB). 2011b. *EMFAC2011*. September. <http://www.arb.ca.gov/msei/modeling.htm>
- California Air Resources Board (CARB). 2014. *ARB and USEPA Offroad Compression-Ignition (Diesel) Engine Standards*. http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Std.xls
- California Environmental Protection Agency (Cal/EPA). 2011. *OEHHA/CARB Consolidated Table of Approved Risk Assessment Health Values*. Accessed February 14. <http://www.arb.ca.gov/toxics/healthval/contable.pdf>.
- Chevron Data Transmittal #5 (Rev #3): Cumulative Projects Traffic & Construction, 2014.
- Chevron Data Transmittal #10: Miscellaneous, 2011.
- Chevron Data Transmittal #20 (Rev #1): Actual Construction Period Equipment Counts, 2013.
- Chevron Data Transmittal #31 (Rev #3): Project Locations, 2012.
- Chevron Data Transmittal #32: Soil Excavation & Fill Volumes, 2012.
- Chevron Data Transmittal #36O (Rev #3) Attachment 9: Construction Equipment Information, 2014.
- Chevron Data Transmittal #38 (Rev #1): APNs, 2013
- Chevron Data Transmittal #43: Solar Installation Location, 2013.

Chevron Data Transmittal #47A (Rev #6): PDF Descriptions: Domes, LED, 2014.

Chevron Data Transmittal #69 (Rev #1): GHG Mitigation, 2014.

ENVIRON. 2013. *California Emissions Estimator Model (CalEEMod™)*. Accessed February 27, 2014. <http://www.caleemod.com/8787>.

Office of Environmental Health Hazard Assessment (OEHHA). 1998. *Findings of the Scientific Review Panel on The Report on Diesel Exhaust*, as adopted at the Panel's April 22, 1998, meeting.

Office of Environmental Health Hazard Assessment (OEHHA). 2003. *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.

U.S. Environmental Protection Agency (USEPA). 2006. *AP-42 - Aggregate Handling and Storage Piles (Section 13.2.4)*.
<http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0204.pdf>

U.S. Environmental Protection Agency (USEPA). 2010. *Conversion Factors for Hydrocarbon Emission Components*. July.
<http://www.epa.gov/oms/models/nonrdmdl/nonrdmdl2010/420r10015.pdf>

U.S. Environmental Protection Agency (USEPA). 2011. *AP-42 - Paved Road (Section 13.2.1)*. <http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf>

Table A4.3-CST-1
Modernization Project Components
Chevron Modernization Project
Richmond, California

	Project Component	Construction Complete	Construction Remaining	Equipment Dimensions
Hydrogen Plant Replacement Description				
Replace Existing Hydrogen Plant with a More Efficient Hydrogen Plant That Produces More and Higher Quality ("more pure") Hydrogen	1. Hydrogen Recovery Vessels	Vessels are set in place. Piping, instrumentation, and electrical wiring have been procured and are on site.	Abovegrade ancillary piping, instrumentation, electrical wiring.	60 feet high
	2. Train 1 Steam Reformer Furnace	Furnace is set in place. Piping, instrumentation, and electrical wiring have been procured and are on site.	Abovegrade ancillary piping, instrumentation, electrical wiring.	162 feet high
	3. Train 2 Steam Reformer Furnace	Furnace is set in place. Piping, instrumentation, and electrical wiring have been procured and are on site.	Abovegrade ancillary piping, instrumentation, electrical wiring.	162 feet high
	4. Pressure Swing Adsorption Recovery Unit	Unit is set in place. Piping, instrumentation, and electrical wiring have been procured and are on site.	Abovegrade ancillary piping, instrumentation, electrical wiring.	60 feet high
	5. Flare	Foundation has been installed. The flare, piping, instrumentation, and electrical wiring have been procured and are on site.	Set flare in place; install ancillary piping, instrumentation, and electrical wiring (all above grade).	195 feet high
	6. Cooling Water Tower	Foundation has been installed. The cooling water tower, piping, instrumentation, and electrical wiring have been procured and are on site.	Set cooling water tower in place; install ancillary piping, instrumentation, and electrical wiring (all above grade).	43 feet high
	7. Steam Turbine Generator (provides electric power to the hydrogen plant)	None. The generator, piping, instrumentation, and electrical wiring have been procured and are on site.	Foundation completion. Set equipment in place. Abovegrade piping, instrumentation, and electrical wiring.	17 mW net output
	8. Upgrade Hydrogen Booster Compressors	None. Equipment to upgrade the compressors has been procured and is on site.	Abovegrade modifications to compressors to process higher pressures from new hydrogen plant.	No change in dimensions. Thicker wall to handle higher hydrogen pressure.
	9. Upgrade Richmond Lube Oil Plant Area Compressors	None. Equipment to upgrade the compressors has been procured and is on site.	Abovegrade modifications to compressors to process higher-purity, lower-density hydrogen than present.	No change in dimensions. Thicker wall to handle higher hydrogen pressure.
	10. Upgrade Distillation and Reforming Area Compressors	None. Equipment to upgrade the compressors has been procured and is on site.	Abovegrade modifications to compressors to process higher-purity, lower-density hydrogen than present.	Internal changes only. No change in dimensions.
	11. Upgrade Isomax Area Compressors	35% Complete (FCC FHT area).	Complete turbine and compressor upgrades in remainder of facility. Abovegrade and belowgrade modifications to process higher-purity, lower-density hydrogen than present.	No change in dimensions rotating equipment. New 40-foot-tall structure for lubrication of machinery.
	12. Process Piping And Fittings	Small portion of process piping and fittings. Piping and fittings have been procured and are on site.	Majority of process piping and fittings.	Various lengths and diameters
	13. New Control Room	Control Room building has been constructed.	Interior walls, utility connections, electrical wiring, finish work (walls, floors, décor).	9,450 square feet
	14. Modify/Upgrade Electrical and Communications Infrastructure	None. Transmitters have been procured and are on site.	Smart transmitters for process monitoring.	N/A
Reverse Osmosis Plant Expansion	15. Two Reverse Osmosis Trains, One Pump, One Water Storage Tank, and Piping	None	All	Reverse osmosis trains: 500 gpm each Tank: 20,000 barrels Piping: 1,000 feet
Boiler Feed Water Optimization and Condensate Recovery	16. Piping and Two Pumps	25%	75% – piping installation	Pumps:500 gpm Piping: 2,500 feet
Decommission Existing Hydrogen Plant	17. Dismantle Existing Hydrogen Plant	None	All	N/A
Sulfur Removal Improvements				
Modify and Install Equipment to Remove and Recover Additional Quantities Of Sulfur From the Sour Gas System.	18. Upgrade Sulfur Recovery Units	All equipment has been procured and is on site. Minor process piping and oxygen skid are installed.	Two heat exchanger modifications per unit. Additional piping upgrades and furnace modifications for oxygen injection per unit. Installation of new emissions control and containment equipment (e.g., wet electrostatic precipitator).	475 x 150 feet (existing—no change proposed)
	19. Upgrade Sour Water Concentrator	100%	None	400 gpm
FCC FHT – Modifications	20. Add, Modify, or Replace Four Sumps, Two Vessels, Two Heat Exchanges, and Process Piping to Improve FCC FHT Reliability	100%	None	No change in dimensions
FCC FHT – Feed Rate Increase	21. Add, Replace, or Modify Seven Heat Exchangers, Modify or Replace Nine Pumps, and Modify One Distillation Column Internal Components	None. Heat exchangers and pumps are still in the design phase and have not been procured.	Complete design and procurement of new, replacement, and modified equipment. Install new heat exchangers and modify existing heat exchangers. Install new pumps, and modify existing pumps. Make modifications to distillation column internal components (trays).	N/A; design incomplete
	22. Process Piping and Fittings	None. Piping and fittings have not been procured.	Install process piping and fittings.	N/A; design incomplete
Sulfur Removal – Amine Contractor and Regenerator	23. Recycle Hydrogen Amine Contactor	None. Piping and instrumentation has been procured and are on site.	Set contactor in place; connect ancillary piping, instrumentation, and electrical wiring.	100 feet high 0.3 MM standard cubic feet per minute
	24. Amine Regenerator	None. Piping and instrumentation has been procured and are on site.	Set regenerator in place; connect ancillary piping, instrumentation, and electrical wiring.	120 feet high
	25. Rich Amine Storage Tank	None. Piping, instrumentation and wiring has been procured and is on site.	Set tank in place; connect ancillary piping, instrumentation, and electrical wiring (all above grade).	35 feet diameter x 24 feet high
	26. Fresh Amine Storage Tank	None. Piping and instrumentation has been procured and is on site.	Set tank in place; connect ancillary piping, instrumentation, and electrical wiring (all above grade).	25 feet diameter x 20 feet high
	27. Fresh Caustic Storage Tank	None. Piping and instrumentation has been procured and is on site.	Set tank in place; connect ancillary piping, instrumentation, and electrical wiring (all above grade).	40 feet high
	28. Spent Caustic Storage Tank	None. Piping and instrumentation has been procured and is on site.	Set tank in place; connect ancillary piping, instrumentation, and electrical wiring (all above grade).	40 feet high
	29. Acid Gas Scrubber	None. Scrubber, piping, and instrumentation have been procured and are on site.	Set scrubber in place; connect ancillary piping, instrumentation, and electrical wiring (all above grade).	70 feet high
	30. Liquid Oxygen Storage Tank and Vaporizer	Liquid oxygen tanks and vaporizer have been set in place. Piping and connections have been procured and are on site.	Abovegrade piping and connections.	50 feet high
	31. Process Piping and Fittings	A small portion (5%) of required piping and fittings has been installed. The remainder of piping and fittings has been procured and are on site.	Install remainder of piping and fittings.	D: 2–16 inches L: (see columns to left)
	32. New Power Recovery Turbine	None on mechanical equipment. Foundations for new equipment complete. 10% complete overall.	Complete piping and install mechanical equipment and structural components.	920 recovered horsepower
	33. Low Nitrogen Oxide Burners	None installed. Equipment procured only.	Modify furnaces in TKN and Poly units to handle new burners. Install filters to and equipment.	Replacement of burners: 3 feet x 2 feet per burner
	34. New Truck Loading/ Unloading Rack for Bisulfite, Caustic, and Amine	None. Loading arms and ancillary piping have been procured and are on site.	Complete foundations and install new loading arms and ancillary piping.	20-foot-high arm
Related Piping and Other Ancillary Equipment	35. Off-Plot Interconnecting Piping and Pipe Racks	P and O racks are 100% complete. W, Q, and V racks are 50% complete. Structural steel and piping has been procured and is on site. Approximately 7,000 ft of piping for	Remainder of W, Q, and V racks (above ground with some minor soil excavation for steel support footings. Approximately 41,000 linear feet of piping for P, O, U, V, and W	D: 2–16 inches L: (see columns to left)
Project Design Features				
	36. Marin Clean Energy Participation	N/A	N/A	N/A
	37. Marine Engines Upgrades	None	Upgrade main ship and auxiliary engines to IMO Tier 3 standards.	N/A
	38. LED Lighting	None	Replace existing lighting with LED lights.	N/A
	39. Water Reuse: South Isomax	None	Heat exchanger, process piping, and fittings.	N/A; design incomplete
	40. Water Reuse: Distillation and Reforming	None	Two electric pumps, process piping, and fittings.	N/A; design incomplete
	41. Storage Tank Dome	None	Installation of spherical, geodesic tank dome on T-1491.	D: 90 ft
	42. FCC Cooling Water Tower Motor Upgrade	None	Replace existing constant speed motors and gearbox drive system with adjustable speed direct drive motors and drive system.	N/A; design incomplete

Abbreviations:
FCC FHT = fluidized catalytic cracker feed hydrotreater
gpm = gallons per minute
Mw = megawatts

Table A4.3-CST-2
Summary of Construction Criteria Air Pollutants and Greenhouse Gas Emission Sources
Chevron Modernization Project
Richmond, California

Source Category	Examples	CAP Emitted with CEQA Mass Thresholds GHG Emitted	Emitting Location
Off-road construction equipment (diesel engines)	excavators, bulldozers, cranes	NOx, PM ₁₀ , PM _{2.5} , ROG, N ₂ O, CH ₄ , CO ₂	on site
On-road mobile sources (diesel and gasoline engines)	trucks, cars, pickups, and buses	NOx, PM ₁₀ , PM _{2.5} , ROG, N ₂ O, CH ₄ , CO ₂	on site and off site
Architectural coatings and paving	paints, asphalt	ROG	on site
Fugitive dust	soil movement, mobile source movement	PM ₁₀ , PM _{2.5}	on site and off site

Abbreviations:

CAP = criteria air pollutants
 CEQA = California Environmental Quality Act
 GHG = greenhouse gas
 NOx = oxides of nitrogen
 PM₁₀ = respirable particulates (less than 10 microns in diameter)
 PM_{2.5} = fine particulates (less than 2.5 microns in diameter)
 ROG = reactive organic gas

Table A4.3-CST-3a
Methodology of Emissions Calculations Associated with Construction Activities - Exhaust, Brakewear and Tirewear Emissions
Chevron Modernization Project
Richmond, California

Source	Emission Category	Methodology and Formula	Reference
Off-Road Equipment ¹	Exhaust	$E_c = \sum_i (EF_{Ci} * HP_i * LF_i * Hr_i * C11 * C)$	ARB/USEPA Engine Standards , and ARB In-use Off-road Equipment Inventory Model
On-Road Mobile Sources ²	Exhaust - Running	$E_R = \sum_i (EF_{Ri} * VMT_i * C)$, $VMT_i = \text{Trip Length}_i * \text{Trip Number}_i$ where	EMFAC2011
	Brakewear and Tirewear - Running	$E_w = \sum_i (EF_{wi} * VMT_i * C)$, where $VMT_i = \text{Trip Length}_i * \text{Trip Number}_i$	EMFAC2011
	Exhaust - Startup	$E_s = \sum_i (EF_{Si} * \text{Trip Number}_i)$	EMFAC2011
	Exhaust - Idling	$E_i = \sum_i (EF_{Ii} * \text{Trip Number}_i)$	EMFAC2011

Notes:

1. E_c : off-road equipment exhaust emissions (lb).

EF_{Ci} : emission factor (g/hp-hr) for equipment i.

a. Completed construction: Weighted EF based on engine log for completed construction. See Transmittal #360.

b. Future construction: ARB In-use Off-road Equipment Inventory Model default EF.

HP_i : equipment horsepower for equipment i (hp). CalEEModTM default equipment horsepower that was confirmed by Chevron.

LF_i : equipment load factor for equipment i (unitless). ARB In-use Off-road Equipment Inventory Model default equipment load factor.

Hr_i : equipment hours for equipment i (hr). Provided by Chevron. See Transmittals #20 and #360.

C: unit conversion factor (lb/g).

2. On-road mobile sources include all construction-related onsite and offsite trips. Emissions associated with mobile sources were calculated using the following formulas:

E_R : running exhaust emissions (lb).

EF_{Ri} : running emission factor (g/mile) for vehicle i. From EMFAC2011 online "Emission Rates Database", for all model years of vehicle classes LHD1, LHD2, T6, T7, LDA, LDT1, LDT2, and All Other Buses in Contra Costa County in 2008, 2009, 2014, 2015, and 2016.

Assumed "AllSpeeds"

VMT_i : vehicle miles traveled for vehicle i

The calculation involves the following data and assumptions:

(1) 1) All soil hauling trucks are heavy-heavy duty trucks (EMFAC Category T7). Construction delivery trucks and flatbeds are a mix of LHD1, LHD2, T6, and T7 based on data provided by Chevron. See Transmittals #20 and #360.

(2) Onsite cars are LDA.

(3) Onsite pickups are LDT1.

(4) Onsite buses are All Other Buses.

(5) Worker commuting vehicles are a mix of LDA (50%), LDT1 (25%), and LDT2 (25%). The split is based on CalEEModTM default assumptions for construction workers.

(7) Trip Length: The one-way trip length depends on which construction area the trip serves. For the offsite portion of the trip, a one-way length used for local risk impacts analysis is assumed to be the length of the roadway to the highway ramps, and the one-way length used for criteria pollutant impact analysis is assumed to be 20 miles for trucks and 12.4 miles for worker trips, the CalEEModTM default.

Trip Number: Chevron provided vehicle trip data.

E_w : running brakewear and tirewear emissions (lb).

EF_{wi} : brakewear and tirewear emission factor (g/mile) for vehicle i. From EMFAC2011 online "Emission Rates Database", for all model years of vehicle classes LHD1, LHD2, T6, T7, LDA, LDT1, LDT2, and All Other Buses in Contra Costa County in 2008, 2009, 2014, 2015, and 2016.

Assumed "AllSpeeds"

VMT_i : vehicle miles traveled for vehicle i

The calculation involves the same data and assumptions as used in E_R calculations.

E_s : vehicle startup emissions (lb).

EF_{Si} : vehicle startup emission factor (g/trip) for vehicle i. From EMFAC2011, which reports startup emissions in tons/day. The emission factor (g/trip) is calculated to by dividing the emissions by the total number of trips per day for each vehicle category.

E_i : vehicle idling emissions (lb).

EF_{Ii} : vehicle idling emission factor (g/trip) for vehicle i. From EMFAC2011, which reports emission factors in g/hr-vehicle. The emission factor is calculated to assume an average idling time per trip. It was assumed that a 10-minute idling happens for a one-way trip, at each potential idling point.

C: unit conversion factor (lb/g).

Abbreviations:

ARB: California Air Resources Board

CalEEModTM: California Emissions Estimator Model

DPF: Diesel Particulate Filter

EF: Emission Factor

EMFAC: Emission FACTor Model

g: gram

HP: Horsepower

lb: pound

LF: Load Factor

mi: mile

min: minute

USEPA: United States Environmental Protection Agency

VMT: vehicle miles traveled

References:

ARB. ARB and USEPA Offroad Compression-Ignition (Diesel) Engine Standards.

Available at: http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls

CalEEModTM User's Guide. 2013, February. Available at: <http://www.caleemod.com/>

ARB. 2011. In-use Off-road Equipment Inventory Model. September. Available at: http://www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles

ARB. 2011. EMFAC2011. September. Available at: <http://www.arb.ca.gov/msei/modeling.htm>

Chevron Data Transmittal #20 Rev #1. Sent to ENVIRON on June 28, 2013.

Chevron Data Transmittal #31 Rev #3. Sent to ENVIRON on October 4, 2012.

Chevron Data Transmittal #32. Sent to ENVIRON on September 13, 2012.

Chevron Data Transmittal #360. Sent to ENVIRON on February 1, 2014.

Table A4.3-CST-3b
Methodology of Emissions Calculations Associated with Construction Activities - Fugitive Dust Emissions
Chevron Modernization Project
Richmond, California

Source	Emission Category	Methodology and Formula	Reference
Material Movement	Grading ¹	$E_{PM10} = \Sigma(EF_{PM10} * VMT)$, where $EF_{PM10} = 0.051 * (S)^{2.0} * F_{PM10}$	USEPA AP-42
		$E_{PM2.5} = \Sigma(EF_{PM2.5} * VMT)$, where $EF_{PM2.5} = 0.04 * (S)^{2.5} * F_{PM2.5}$	USEPA AP-42
	Truck Loading ²	$E_{PM10} = \Sigma(EF_{PM10} * TP)$, where $EF_{PM10} = k_{PM10} * 0.0032 * (U/5)^{1.3} * [1/((M/2)^{1.4})]$	USEPA AP-42
		$E_{PM2.5} = \Sigma(EF_{PM2.5} * TP)$, where $EF_{PM2.5} = k_{PM2.5} * 0.0032 * (U/5)^{1.3} * [1/((M/2)^{1.4})]$	USEPA AP-42
Mobile Source Driving on Paved Road ³		$E_i = \Sigma(EF_{PM10} * VTM)$, where $EF = [k*(sL)*0.91*(W)*1.02][1-P/(4N)]$	USEPA AP-42
		$E_i = \Sigma(EF_{PM2.5} * VTM)$, where $EF = [k*(sL)*0.91*(W)*1.02][1-P/(4N)]$	USEPA AP-42

Notes:

1. Fugitive dust emissions from grading equipment passes are estimated using the methodology described in Section 11.9, Western Surface Coal Mining, of the USEPA AP-42. Ec: off-road equipment exhaust emissions (lb). AP-42 estimates the emission factor of PM₁₀ applying a scaling factor to that of PM₁₅. Similarly, the emission factor of PM_{2.5} is scaled from that of total suspended particulates (TSP). In this table, ENVIRON combined the PM₁₅ /TSP EF calculation and scaling into a single equation for calculating PM₁₀/PM_{2.5}.

EF: emission factor (lb/VMT)

S: mean vehicle speed in mph. AP-42 default of 7.1 mph was used in the absence of project-specific data.

F: PM scaling factor. The AP-42 default value is 0.031 for PM_{2.5} and 0.6 for PM₁₀.

The grading dust emissions were then calculated by multiplying the emission factors with the total vehicle miles traveled (VMT) for the grading equipment (i.e., grader).

$VMT = As/Wb \times 43,560 \text{ (sqft/acre)} / 5,280 \text{ (ft/mile)}$

Where:

As: the acreage of the grading side. The acres is based on the equipment list and days in grading phase according to the anticipated maximum number of acres a given piece of equipment can pass over in an 8-hour workday. ENVIRON uses 0.5 acres/8-hr day for grader as suggested by SCAQMD.

Wb: Blade width of the grading equipment. ENVIRON uses a default blade width of 12 ft based on Caterpillar's 140 Motor Grader.

2. Processes such as truck dumping on the pile or loading out from the pile to a truck with a front-end loader also cause fugitive dust emissions. ENVIRON calculates the truck loading emissions using the methodology described in Section 13.2.4 of USEPA AP-42. As shown in the formula in the table, the emission factor is based on the material moisture content and mean wind speed:

EF: emission factor (lb/ton)

TP: throughput of load and unload material. From Transmittal #32.

k: particle size multiplier. The AP-42 default value for PM₁₀ is 0.35 and that for PM_{2.5} is 0.053.

U: mean wind speed. Project specific mean wind speed of 8.6 mph was used.

M: material moisture content (%). The moisture content of cover (12%) was used in this calculation.

2. ENVIRON calculates the fugitive dust emissions from mobile source driving on paved road using the methodology described in Section 13.2.1 of USEPA AP-42.

EF: emission factor

k: particle size multiplier (lb/VMT). ENVIRON used the PM₁₀ and PM_{2.5} particle size multiplier from Section 13.2.1-1 of USEPA AP-42.

sL: road surface silt loading (g/m²). ENVIRON used 0.2 g/m² (Ubiquitous Baseline) from AP-42.

W: average weight (tons) of the vehicles traveling the road. Based on ARB's EMFAC model.

P: number of "wet" days with at least 0.01 in of precipitation during the averaging period, ENVIRON used 60 days based on climate data from (<http://www.wrcc.dri.edu/>) for Richmond station (047414)

N: number of days in the averaging period. (365 days)

Abbreviations:

ARB: Air Resources Board

EF: Emission Factor

EMFAC: Emissions FACTor model.

g: gram

PM: Particulate Matter

TP: throughput

TSP: Total Suspended Particulates

USEPA: United States Environmental Protection Agency

VMT: vehicle miles traveled

References:

ARB. 2006. EMFAC2007. November. Vehicle categories available at: <http://www.arb.ca.gov/msei/vehicle-categories.xlsx>

CalEEMod™ User's Guide. 2013, February. Available at: <http://www.caleemod.com/>

USEPA. 2011. AP-42 - Paved Road (Section 13.2.1). Available at: <http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf>

USEPA. 2006. AP-42 - Aggregate Handling and Storage Piles. (Section 13.2.4). Available at: <http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0204.pdf>

Chevron Data Transmittal #20 Rev #1. Sent to ENVIRON on June 28, 2013.

Chevron Data Transmittal #32. Sent to ENVIRON on September 13, 2012.

Chevron Data Transmittal #36O. Sent to ENVIRON on February 1, 2014.

Table A4.3-CST-3c

**Methodology of Emissions Calculations Associated with Construction Activities - Paving and Architectural Coating
Chevron Modernization Project
Richmond, California**

Source	Emission Category	Methodology and Formula	Reference
Paving ^{1,3}	Off-Gas	$E_p = EF_p \times \text{Acreage of Paving}$	CalEEMod TM
Architectural Coating ^{2,3}	Off-Gas	$E_A = EF_A \times \text{Paint Usage}$	CalEEMod TM

Notes:

1. E_p : paving emissions (lb).
 EF_p : emission factor (lb/acre). CalEEModTM default emission factor for paving is 2.62 lb/acre.
2. E_A : architectural coating emissions (lb).
 EF_A : emission factor (lb/gallon). CalEEModTM default emission factor for non-residential painting/coating is EF_A (lb/gal) = $C_{voc}(g/L) / 454(g/lb) \times 3.785(L/Gal)$. The default VOC content of 250 g/L is ARB's statewide limit as indicated in CalEEModTM User's Guide.
3. The number of acres to be paved and the gallons of paint to be used for architectural coating was provided by Chevron.

Abbreviations:

ARB: California Air Resources Board
 CalEEModTM: California Emissions Estimator Model
 EF: Emission Factor
 g: gram
 gal: gallon
 l: liter
 lb: pound
 VOC: volatile organic compound

References:

CalEEModTM User's Guide. 2013, February. Available at: <http://www.caleemod.com/>
 Chevron Data Transmittal #10. Sent to ENVIRON on September 16, 2011.

Table A4.3-CST-4a
Construction Phasing Schedule and Equipment List - Completed Construction1
Chevron Modernization Project
Richmond, California

Construction Phase	Given Equipment Type	Mapped Equipment Type in ARB In-use Offroad Equipment Inventory Model	Horsepower ²	Load Factor ³	Daily Use (Hours)	2008		2009	
						Quantity	Days of Operation ⁴	Quantity	Days of Operation ⁴
Hydrogen Plant Tie-In	Air Plants	Other General Industrial Equipment	106	0.3417	8	3	66	3	173
	Backhoe	Tractors/Loaders/Backhoes	108	0.3685	8	1	66	1	173
	Compactors	Other General Industrial Equipment	8	0.3417	3	2	66	2	173
	Concrete trucks/Pumper	Off-Highway Trucks	479	0.3819	4	2	66	2	173
	Dots / Forklifts	Forklifts	145	0.2010	8	0	0	3	129
	Dump Trucks	Off-Highway Trucks	479	0.3819	8	1	66	1	173
	Excavators	Excavators	168	0.3819	8	1	66	0	0
	JLG's / Manlifts	Aerial Lifts	60	0.3082	7	2	66	4	173
	Light plants	Other General Industrial Equipment	50	0.3417	2	5	66	5	173
	Pile Drivers	Cranes	399	0.2881	8	1	66	0	0
	Power Generators	Other General Industrial Equipment	549	0.3417	8	10	66	16/16/6	64/65/44
	Smaller cranes 50 -200 ton	Cranes	399	0.2881	8	0	0	2	173
	Utility	Off-Highway Trucks	479	0.3819	4	1	66	1	173
	Vacuum Trucks	Off-Highway Trucks	479	0.3819	1	1	66	1	173
	Welding Machines	Other General Industrial Equipment	45	0.3417	9	5	66	8	173
Hydrogen Plant Replacement	Air Plants	Other General Industrial Equipment	106	0.3417	8	2	66	2	173
	Backhoe	Tractors/Loaders/Backhoes	108	0.3685	8	2	66	0	0
	Belly Dumps	Off-Highway Trucks	479	0.3819	8	20	66	0	0
	Compactors	Other General Industrial Equipment	8	0.3417	3	0	0	1	64
	Concrete trucks/Pumper	Off-Highway Trucks	479	0.3819	4	5	66	10/5/1	64/65/44
	Dots / Forklifts	Forklifts	145	0.2010	8	3	66	4/6/6	64/65/44
	Dump Trucks	Off-Highway Trucks	479	0.3819	8	10/3	66/66	0	0
	Excavators	Excavators	168	0.3819	8	2/1	66/66	0	0
	Grader	Graders	162	0.4087	4	1	66	0	0
	JLG's / Manlifts	Aerial Lifts	60	0.3082	7	6	66	6	173
	Large crane 300 - 600 ton	Cranes	399	0.2881	8	0	0	1	173
	Light plants	Other General Industrial Equipment	50	0.3417	2	10	66	20	173
	Pile Drivers	Cranes	399	0.2881	8	2	132	1	64
	Power Generators	Other General Industrial Equipment	549	0.3417	8	10	66	10/10/20	64/65/44
	Rollers	Rollers	84	0.3752	4	2	66	1	64
	Smaller cranes 50 -200 ton	Cranes	399	0.2881	8	2	66	2/3/3	64/65/44
	Utility	Off-Highway Trucks	479	0.3819	4	2	66	2	173
	Vacuum Trucks	Off-Highway Trucks	479	0.3819	1	1	66	1	173
	Water (Sump) Pumps	Other General Industrial Equipment	53	0.3417	8	2	66	2	64
	Welding Machines	Other General Industrial Equipment	45	0.3417	9	15	66	20	173
Sulfur Removal Improvements	Air Plants	Other General Industrial Equipment	106	0.3417	8	2	132	2	129
	Backhoe	Tractors/Loaders/Backhoes	108	0.3685	8	1	66	0	0
	Compactors	Other General Industrial Equipment	8	0.3417	3	1	66	2	64
	Concrete trucks/Pumper	Off-Highway Trucks	479	0.3819	4	1/2	66/66	2	129
	Dots / Forklifts	Forklifts	145	0.2010	8	2	66	4/4/3	64/65/44
	Dump Trucks	Off-Highway Trucks	479	0.3819	8	3	66	0	0
	JLG's / Manlifts	Aerial Lifts	60	0.3082	7	4/6	66/66	6	129
	Light plants	Other General Industrial Equipment	50	0.3417	2	6	132	6	129
	Pile Drivers	Cranes	399	0.2881	8	1	132	0	0
	Power Generators	Other General Industrial Equipment	549	0.3417	8	3/8	66/66	13	129
	Smaller cranes 50 -200 ton	Cranes	399	0.2881	8	1	66	1	129
	Utility	Off-Highway Trucks	479	0.3819	4	1	132	1	129
	Vacuum Trucks	Off-Highway Trucks	479	0.3819	1	1	132	1	129
	Welding Machines	Other General Industrial Equipment	45	0.3417	9	10/25	66/66	30	129

Notes:

1. This table is developed based on the equipment count by equipment type and construction phase for each quarter of the year , provided by Chevron. See Transmittal #20. For equipment quantities and days of operation separated by "/", their order corresponds with each other. For example "10/3" for equipment quantities and "66/66" for days of operation (as seen for dump truck under the hydrogen plant replacement phase) for year 2008, it means 10 pieces of equipment operate for 66 days followed by 3 pieces of equipment operate for another 66 days.
2. CalEEModTM default equipment horsepower was used.
3. Load factor was from the ARB In-Use Off-Road Equipment Emissions Inventory Model.
4. Chevron did not provide the actual days of operation information. It was conservatively assumed that the equipment operates every workday of the quarter when the construction phase happens., except that all construction ceased by September 1, 2009.

Abbreviations:

ARB: California Air Resources Board
CalEEModTM: California Emissions Estimator Model

References:

CalEEModTM User's Guide. 2013, February. Available at: <http://www.caleemod.com/>
ARB. 2011. In-use Offroad Equipment Inventory Model. September. Available at: http://www.arb.ca.gov/msse/categories.htm#offroad_motor_vehicles
Chevron Data Transmittal #20 Rev #1. Sent to ENVIRON on June 28, 2013.

Table A4.3-CST-4b
Construction Phasing Schedule and Equipment List - Future Construction1
Chevron Modernization Project
Richmond, California

Construction Phase	Given Equipment Type	Mapped Equipment Type in ARB In-use Offroad Equipment Inventory Model	Horsepower ²	Load Factor ³	Daily Use (Hours)	2014 ⁵		2015 ⁵		2016 ⁵	
						Quantity	Days of Operation ⁴	Quantity	Days of Operation ⁴	Quantity	Days of Operation ⁴
Existing Hydrogen Plant Demolition	Air Plants	Other General Industrial Equipment	106	0.3417	8			0	0	2	261
	Drots / Forklifts	Forklifts	145	0.2010	8			0	0	1	261
	Dump trucks	Off-Highway Trucks	479	0.3819	4			0	0	2	261
	Excavators	Excavators	168	0.3819	8			0	0	4/6	64/197
	JLG's / Manlifts	Aerial Lifts	60	0.3082	8			0	0	4	261
	Large crane 300 - 600 ton	Cranes	399	0.2881	8			0	0	2	197
	Light plants	Other General Industrial Equipment	50	0.3417	2			0	0	2	64
	Power generators	Other General Industrial Equipment	549	0.3417	8			0	0	2	261
	Smaller cranes 50 – 200 ton	Cranes	399	0.2881	8			0	0	1	261
	Utility	Off-Highway Trucks	479	0.3819	4			0	0	1	261
Hydrogen Plant Tie-In	Vacuum Trucks	Off-Highway Trucks	479	0.3819	1			0	0	1	129
	Air Plants	Other General Industrial Equipment	106	0.3417	8	4/5/5	64/65/66	0	0		
	Backhoe	Tractors/Loaders/Backhoes	108	0.3685	8	2	64	0	0		
	Compactors	Other General Industrial Equipment	8	0.3417	3	2	64	0	0		
	Concrete trucks/Pumper	Off-Highway Trucks	479	0.3819	4	1	129	0	0		
	Drots / Forklifts	Forklifts	145	0.2010	8	3/4/4	64/65/66	0	0		
	Dump trucks	Off-Highway Trucks	479	0.3819	8	2	64	0	0		
	Excavators	Excavators	168	0.3819	8	1	64	0	0		
	JLG's / Manlifts	Aerial Lifts	60	0.3082	7	6	195	0	0		
	Light plants	Other General Industrial Equipment	50	0.3417	2	5	195	0	0		
	Power generators	Other General Industrial Equipment	549	0.3417	8	10	195	0	0		
	Smaller cranes 50 – 200 ton	Cranes	399	0.2881	8	5	195	0	0		
	Utility	Off-Highway Trucks	479	0.3819	4	2	195	0	0		
	Vacuum Trucks	Off-Highway Trucks	479	0.3819	1	1	64	0	0		
	Water (Sump) Pumps	Other General Industrial Equipment	53	0.3417	8	2	64	0	0		
	Welding machines	Other General Industrial Equipment	45	0.3417	9	12/12/6	64/65/66	0	0		
Hydrogen Plant Replacement	Air Plants	Other General Industrial Equipment	106	0.3417	8	4	261	4	64		
	Backhoe	Tractors/Loaders/Backhoes	108	0.3685	8	2	64	0	0		
	Concrete trucks/Pumper	Off-Highway Trucks	479	0.3819	4	5/5/5/1	64/65/66/66	1	64		
	Drots / Forklifts	Forklifts	145	0.2010	8	4/5/6/6	64/65/66/66	6	64		
	Dump trucks	Off-Highway Trucks	479	0.3819	8	2	64	0	0		
	Excavators	Excavators	168	0.3819	8	2	64	0	0		
	JLG's / Manlifts	Aerial Lifts	60	0.3082	7	6/8/10/10	64/65/66/66	10	64		
	Large crane 300 - 600 ton	Cranes	399	0.2881	8	1	64	0	0		
	Light plants	Other General Industrial Equipment	50	0.3417	2	10/20/20/20	64/65/66/66	20	64		
	Pile drivers	Cranes	399	0.2881	8	1	64	0	0		
	Power generators	Other General Industrial Equipment	549	0.3417	8	15/20/20/15	64/65/66/66	15	64		
	Smaller cranes 50 – 200 ton	Cranes	399	0.2881	8	2/2/2/1	64/65/66/66	1	64		
	Utility	Off-Highway Trucks	479	0.3819	4	2	261	2	64		
	Vacuum Trucks	Off-Highway Trucks	479	0.3819	1	1	261	1	64		
	Water (Sump) Pumps	Other General Industrial Equipment	53	0.3417	8	2	195	0	0		
	Welding machines	Other General Industrial Equipment	45	0.3417	9	20	261	10	64		
Sulfur Removal Improvements	Air Plants	Other General Industrial Equipment	106	0.3417	8	6/6/5/4	64/65/66/66	4	261		
	Backhoe	Tractors/Loaders/Backhoes	108	0.3685	8	3/2	64/65	0	0		
	Compactors	Other General Industrial Equipment	8	0.3417	3	3/2/2/2	64/65/66/66	0	0		
	Concrete trucks/Pumper	Off-Highway Trucks	479	0.3819	4	3/2/2/2	64/65/66/66	0	0		
	Drots / Forklifts	Forklifts	145	0.2010	8	6/6/6/5	64/65/66/66	5	261		
	Dump trucks	Off-Highway Trucks	479	0.3819	8	3/2	64/65	0	0		
	Excavators	Excavators	168	0.3819	8	3	64	0	0		
	JLG's / Manlifts	Aerial Lifts	60	0.3082	7	2/4/3/4	64/65/66/66	5	261		
	Large crane 300 - 600 ton	Cranes	399	0.2881	8	0	0	2	64		
	Light plants	Other General Industrial Equipment	50	0.3417	2	10/10/9/8	64/65/66/66	8/4/4/4	64/65/66/66		
	Pile drivers	Cranes	399	0.2881	8	1	64	0	0		
	Power generators	Other General Industrial Equipment	549	0.3417	8	4	261	4	261		
	Smaller cranes 50 – 200 ton	Cranes	399	0.2881	8	3/3/2/3	64/65/66/66	3/3/3/2	64/65/66/66		
	Utility	Off-Highway Trucks	479	0.3819	4	2	261	2	261		
	Vacuum Trucks	Off-Highway Trucks	479	0.3819	1	2/3/2/2	64/65/66/66	0	0		
	Water (Sump) Pumps	Other General Industrial Equipment	53	0.3417	8	2	261	0	0		
	Welding machines	Other General Industrial Equipment	45	0.3417	9	8/8/8/10	64/65/66/66	10	261		
Existing Storage Tank Domed Roof Installation	Drots / Forklifts	Forklifts	145	0.2010	3	0.667	64	0	0		
	JLG's / Manlifts	Aerial Lifts	60	0.3082	4	0.667	64	0	0		
	Power generators	Other General Industrial Equipment	549	0.3417	6	0.667	64	0	0		
	Smaller cranes 50 – 200 ton	Cranes	399	0.2881	3	0.667	64	0	0		
	Utility	Off-Highway Trucks	479	0.3819	2	1.333	64	0	0		
	Welding machines	Other General Industrial Equipment	45	0.3417	6	1.333	64	0	0		
	Drots / Forklifts	Forklifts	145	0.2010	6	0.667	64	0	0		
Project Water Reuse	JLG's / Manlifts	Aerial Lifts	60	0.3082	5	0.667	64	0	0		
	Power generators	Other General Industrial Equipment	549	0.3417	6	0.667	64	0	0		
	Smaller cranes 50 – 200 ton	Cranes	399	0.2881	6	0.667	64	0	0		
	Utility	Off-Highway Trucks	479	0.3819	2	0.667	64	0	0		
	Welding machines	Other General Industrial Equipment	45	0.3417	7	1.333	64	0	0		

Notes:
1. This table is developed based on the equipment count by equipment type and construction phase for each quarter of the year for the Project components and for each month of the year for the Project Design Features (PDFs), provided by Chevron. See Transmittal #360.
2. CalEEModTM default equipment horsepower was used.
3. Load factor was from the ARB In-Use Off-Road Equipment Emissions Inventory Model.
4. Chevron did not provide the actual days of operation information. It was conservatively assumed that the equipment operates every workday of the quarter for the Project components when the construction phase happens. For the PDFs, the by-month construction count was converted to a quarterly equipment count.
5. Transmittal #360 provides equipment data for 8 consecutive quarters. Because the exact start date of future construction is uncertain, the emissions analysis conservatively uses emission factors for 2014 for the first 4 quarters of construction, and 2015 emission factors for the last 4 quarters of construction.
6. According to Chevron, the existing hydrogen plant dismantling will occur after the new hydrogen plant starts to operate.

Abbreviations:
ARB: California Air Resources Board
CalEEModTM: California Emissions Estimator Model

References:
CalEEModTM User's Guide. 2013, February. Available at: <http://www.caleemod.com/>
ARB. 2011. In-use Offroad Equipment Inventory Model. September. Available at: http://www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles
Chevron Data Transmittal #31 Rev. #3. Sent to ENVIRON on September 18, 2012.
Chevron Data Transmittal #360. Sent to ENVIRON on February 1, 2014.

Table A4.3-CST-5a
Construction Equipment Emission Factors - Completed Construction
Chevron Modernization Project
Richmond, California

Year ¹	Equipment ²	Equipment Type in ARB In-use Offroad Equipment Inventory	Emission Factor (g/hp-hr)									
			CO ³	HC ³	TOG ⁵	ROG ⁶	NOx ⁵	PM ₁₀ ⁵	PM _{2.5} ^{5,7}	CH ₄ ⁸	N ₂ O ⁴	CO ₂ ⁹
2008	Air Plants	Other General Industrial Equipment	4.045	0.790	0.859	0.845	6.694	0.479	0.479	0.066	0.030	568.299
2008	Backhoe	Tractors/Loaders/Backhoes	3.804	0.740	0.804	0.792	6.316	0.444	0.444	0.062	0.031	568.299
2008	Belly Dumps	Off-Highway Trucks	2.300	0.665	0.723	0.711	6.179	0.293	0.293	0.056	0.031	568.299
2008	Compactors	Other General Industrial Equipment	5.878	1.634	1.777	1.748	6.030	0.682	0.682	0.138	0.034	568.299
2008	Concrete trucks/Pumper	Off-Highway Trucks	2.300	0.665	0.723	0.711	6.179	0.293	0.293	0.056	0.031	568.299
2008	Dots / Forklifts	Forklifts	3.551	0.691	0.751	0.739	6.688	0.379	0.379	0.058	0.031	568.299
2008	Dump Trucks	Off-Highway Trucks	2.300	0.665	0.723	0.711	6.179	0.293	0.293	0.056	0.031	568.299
2008	Excavators	Excavators	3.149	0.625	0.680	0.669	6.060	0.329	0.329	0.053	0.031	568.299
2008	Grader	Graders	3.873	0.657	0.715	0.703	6.379	0.355	0.355	0.055	0.031	568.299
2008	JLG's / Manlifts	Aerial Lifts	3.404	0.839	0.912	0.897	7.264	0.493	0.493	0.071	0.031	568.299
2008	Large crane 300 - 600 ton	Cranes	4.772	0.689	0.749	0.737	6.552	0.309	0.309	0.058	0.031	568.299
2008	Light plants	Other General Industrial Equipment	5.878	1.727	1.878	1.849	6.109	0.605	0.605	0.145	0.034	568.299
2008	Pile Drivers	Cranes	4.772	0.689	0.749	0.737	6.552	0.309	0.309	0.058	0.031	568.299
2008	Power Generators	Other General Industrial Equipment	1.615	1.358	1.477	1.453	5.126	0.434	0.434	0.114	0.031	568.299
2008	Rollers	Rollers	3.899	0.792	0.861	0.847	6.652	0.468	0.468	0.067	0.031	568.299
2008	Smaller cranes 50 -200 ton	Cranes	4.772	0.689	0.749	0.737	6.552	0.309	0.309	0.058	0.031	568.299
2008	Utility	Off-Highway Trucks	2.300	0.665	0.723	0.711	6.179	0.293	0.293	0.056	0.031	568.299
2008	Vacuum Trucks	Off-Highway Trucks	2.300	0.665	0.723	0.711	6.179	0.293	0.293	0.056	0.031	568.299
2008	Water (Sump) Pumps	Other General Industrial Equipment	4.045	0.956	1.040	1.023	8.009	0.597	0.597	0.080	0.030	568.299
2008	Welding Machines	Other General Industrial Equipment	5.878	1.634	1.777	1.748	6.030	0.682	0.682	0.138	0.034	568.299
2009	Air Plants	Other General Industrial Equipment	4.045	0.790	0.859	0.845	6.694	0.479	0.479	0.066	0.030	568.299
2009	Backhoe	Tractors/Loaders/Backhoes	3.804	0.740	0.804	0.792	6.316	0.444	0.444	0.062	0.031	568.299
2009	Belly Dumps	Off-Highway Trucks	2.300	0.665	0.723	0.711	6.179	0.293	0.293	0.056	0.031	568.299
2009	Compactors	Other General Industrial Equipment	5.878	1.634	1.777	1.748	6.030	0.682	0.682	0.138	0.034	568.299
2009	Concrete trucks/Pumper	Off-Highway Trucks	2.300	0.665	0.723	0.711	6.179	0.293	0.293	0.056	0.031	568.299
2009	Dots / Forklifts	Forklifts	3.551	0.691	0.751	0.739	6.688	0.379	0.379	0.058	0.031	568.299
2009	Dump Trucks	Off-Highway Trucks	2.300	0.665	0.723	0.711	6.179	0.293	0.293	0.056	0.031	568.299
2009	Excavators	Excavators	3.149	0.625	0.680	0.669	6.060	0.329	0.329	0.053	0.031	568.299
2009	Grader	Graders	3.873	0.657	0.715	0.703	6.379	0.355	0.355	0.055	0.031	568.299
2009	JLG's / Manlifts	Aerial Lifts	3.404	0.839	0.912	0.897	7.264	0.493	0.493	0.071	0.031	568.299
2009	Large crane 300 - 600 ton	Cranes	4.772	0.689	0.749	0.737	6.552	0.309	0.309	0.058	0.031	568.299
2009	Light plants	Other General Industrial Equipment	5.878	1.727	1.878	1.849	6.109	0.605	0.605	0.145	0.034	568.299
2009	Pile Drivers	Cranes	4.772	0.689	0.749	0.737	6.552	0.309	0.309	0.058	0.031	568.299
2009	Power Generators	Other General Industrial Equipment	1.615	1.358	1.477	1.453	5.126	0.434	0.434	0.114	0.031	568.299
2009	Rollers	Rollers	3.899	0.792	0.861	0.847	6.652	0.468	0.468	0.067	0.031	568.299
2009	Smaller cranes 50 -200 ton	Cranes	4.772	0.689	0.749	0.737	6.552	0.309	0.309	0.058	0.031	568.299
2009	Utility	Off-Highway Trucks	2.300	0.665	0.723	0.711	6.179	0.293	0.293	0.056	0.031	568.299
2009	Vacuum Trucks	Off-Highway Trucks	2.300	0.665	0.723	0.711	6.179	0.293	0.293	0.056	0.031	568.299
2009	Water (Sump) Pumps	Other General Industrial Equipment	4.045	0.956	1.040	1.023	8.009	0.597	0.597	0.080	0.030	568.299
2009	Welding Machines	Other General Industrial Equipment	5.878	1.634	1.777	1.748	6.030	0.682	0.682	0.138	0.034	568.299

Notes:

1. Completed construction occurred in years 2008 and 2009.
2. These equipment types were provided in Transmittal #20.
3. The provided equipment types were mapped to the closest equipment types in the ARB In-use Off-road Equipment Inventory Model.
4. Emission factors from the ARB In-use Off-road Equipment Inventory Model for year 2009 were used.
5. Emission factors were a weighted average of Tier 1, Tier 2, Tier 3, and Tier 0 engines based on the engine log in Transmittal #360 and engine tier standard specified in 13 CCR 2423(b)(1). For Tier 0 engines, the emission factors for engines with a model year earlier than 1996 for year 2009 in the ARB In-use Off-road Equipment Inventory Model were weighted because Tier standard was taken effect on January 1, 1996.
6. ROG emission factors were calculated by multiplying the HC emission factors by 1.053/0.984 based on USEPA conversion factor. TOG emission factors were calculated by multiplying the HC emission factors by 1.07/0.984 based on USEPA conversion factor.
7. PM₁₀ emission factor was conservatively used as a surrogate for PM_{2.5} emission factor.
8. CH₄ emission factor is TOG emission factor multiplied by 0.0774.
9. CalEEMod™, 2011.1.

Abbreviations:

ARB: California Air Resources Board
CO: carbon monoxide
CO₂: carbon dioxide
CH₄: methane
g: gram
hp: horsepower
HC: hydrocarbon
hr: hour
N₂O: nitrous oxide
NOx: nitrogen oxides
PM₁₀: coarse particulate matter
PM_{2.5}: fine particulate matter
ROG: reactive organic gas
USEPA: United States Environmental Protection Agency

References:

ARB. 2011. In-use Offroad Equipment Inventory Model. September. Available at: http://www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles
CalEEMod™ User's Guide. 2011, February. Available at: <http://www.caleemod.com/>
Chevron Data Transmittal #20 Rev #1. Sent to ENVIRON on February 23, 2011.
Chevron Data Transmittal #360. Sent to ENVIRON on February 1, 2014.
USEPA. 2010. Conversion Factors for Hydrocarbon Emission Components. July. Available at: <http://www.epa.gov/oms/models/nonrdmdl/nonrdmdl2010/420r10015.pdf>

Table A4.3-CST-5b
Construction Equipment Emission Factors - Future Construction
Chevron Modernization Project
Richmond, California

Year ¹	Equipment ²	OFFROAD Equipment ³	Emission Factor (g/hp-hr)								
			CO ⁴	TOG ⁵	ROG ⁶	NOx ⁷	PM ₁₀ ⁸	PM _{2.5} ⁸	CH ₄ ⁹	N ₂ O ⁹	CO ₂ ⁹
2014	Air Plants	Other General Industrial Equipment	4.090	0.939	0.924	6.723	0.574	0.574	0.073	0.030	968.299
2014	Backhoe	Tractors/Loaders/Backhoes	3.827	0.693	0.682	5.581	0.438	0.438	0.054	0.031	968.299
2014	Compactors	Other General Industrial Equipment	6.288	1.810	1.781	5.584	0.544	0.544	0.140	0.034	968.299
2014	Concrete trucks/Pumper	Off-Highway Trucks	2.075	0.468	0.461	4.686	0.180	0.180	0.036	0.031	968.299
2014	Crate / Forklifts	Forklifts	3.521	0.688	0.677	6.352	0.345	0.345	0.053	0.031	968.299
2014	Dump trucks	Off-Highway Trucks	2.075	0.468	0.461	4.686	0.180	0.180	0.036	0.031	968.299
2014	Excavators	Excavators	3.154	0.464	0.457	4.657	0.229	0.229	0.036	0.031	968.299
2014	JLG's / Manlifts	Aerial Lifts	3.220	0.241	0.237	3.373	0.161	0.161	0.019	0.031	968.299
2014	Large crane 300-800 ton	Cranes	4.177	0.575	0.566	6.264	0.260	0.260	0.044	0.031	968.299
2014	Light plants	Other General Industrial Equipment	6.288	1.810	1.781	5.584	0.544	0.544	0.140	0.034	968.299
2014	Pile drivers	Cranes	4.177	0.575	0.566	6.264	0.260	0.260	0.044	0.031	968.299
2014	Power generators	Other General Industrial Equipment	1.489	0.304	0.300	3.622	0.115	0.115	0.024	0.031	968.299
2014	Smaller cranes 50 - 200 ton	Cranes	4.177	0.575	0.566	6.264	0.260	0.260	0.044	0.031	968.299
2014	Utility	Off-Highway Trucks	2.075	0.468	0.461	4.686	0.180	0.180	0.036	0.031	968.299
2014	Vacuum Trucks	Off-Highway Trucks	2.075	0.468	0.461	4.686	0.180	0.180	0.036	0.031	968.299
2014	Water (Sump) Pumps	Other General Industrial Equipment	4.090	0.939	0.924	6.723	0.574	0.574	0.073	0.030	968.299
2014	Welding machines	Other General Industrial Equipment	6.288	1.810	1.781	5.584	0.544	0.544	0.140	0.034	968.299
2015	Air Plants	Other General Industrial Equipment	4.081	0.905	0.891	6.502	0.553	0.553	0.070	0.030	968.299
2015	Air Plants (compressed air)	Other General Industrial Equipment	4.081	0.905	0.891	6.502	0.553	0.553	0.070	0.030	968.299
2015	Concrete Trucks/Pumper	Off-Highway Trucks	2.037	0.458	0.450	4.528	0.173	0.173	0.035	0.031	968.299
2015	Crate / Forklifts	Forklifts	3.520	0.673	0.662	6.135	0.335	0.335	0.052	0.031	968.299
2015	JLG's / Manlifts	Aerial Lifts	3.218	0.227	0.223	3.113	0.143	0.143	0.018	0.031	968.299
2015	Large crane 300-800 ton	Cranes	4.110	0.565	0.556	6.124	0.253	0.253	0.044	0.031	968.299
2015	Light plants	Other General Industrial Equipment	6.325	1.779	1.751	5.524	0.532	0.532	0.138	0.034	968.299
2015	Power generators	Other General Industrial Equipment	1.491	0.299	0.294	3.365	0.109	0.109	0.023	0.031	968.299
2015	Smaller cranes 50 - 200 ton	Cranes	4.110	0.565	0.556	6.124	0.253	0.253	0.044	0.031	968.299
2015	Utility	Off-Highway Trucks	2.037	0.458	0.450	4.528	0.173	0.173	0.035	0.031	968.299
2015	Vacuum Trucks	Off-Highway Trucks	2.037	0.458	0.450	4.528	0.173	0.173	0.035	0.031	968.299
2015	Welding machines	Other General Industrial Equipment	6.325	1.779	1.751	5.524	0.532	0.532	0.138	0.034	968.299
2016	Air Plants (compressed air)	Other General Industrial Equipment	4.045	0.851	0.838	6.144	0.518	0.518	0.066	0.030	968.299
2016	Crate / Forklifts	Forklifts	3.473	0.631	0.621	5.675	0.310	0.310	0.049	0.031	968.299
2016	Dump trucks	Off-Highway Trucks	1.885	0.418	0.412	4.048	0.153	0.153	0.032	0.031	968.299
2016	Excavators	Excavators	3.158	0.425	0.419	4.081	0.201	0.201	0.033	0.031	968.299
2016	JLG's / Manlifts	Aerial Lifts	3.201	0.197	0.194	2.722	0.112	0.112	0.015	0.031	968.299
2016	Large crane 300-800 ton	Cranes	3.834	0.527	0.519	5.649	0.233	0.233	0.041	0.031	968.299
2016	Light plants	Other General Industrial Equipment	6.259	1.690	1.664	5.407	0.506	0.506	0.131	0.034	968.299
2016	Power generators	Other General Industrial Equipment	1.491	0.289	0.284	3.102	0.100	0.100	0.022	0.031	968.299
2016	Smaller cranes 50 - 200 ton	Cranes	3.834	0.527	0.519	5.649	0.233	0.233	0.041	0.031	968.299
2016	Utility	Off-Highway Trucks	1.885	0.418	0.412	4.048	0.153	0.153	0.032	0.031	968.299
2016	Vacuum Trucks	Off-Highway Trucks	1.885	0.418	0.412	4.048	0.153	0.153	0.032	0.031	968.299

Notes:
1. Future construction occurred in years 2014-2016.
2. These equipment types were provided in Transmittal #360.
3. The provided equipment types were mapped to the closest equipment types in the ARB In-use Off-road Equipment Inventory Model.
4. Emission factors from the ARB In-use Off-road Equipment Inventory Model were used.
5. ROG emission factors were calculated by multiplying the TOG emission factors by 1.0531-07 based on USEPA conversion factor.
6. PM₁₀ emission factor was conservatively used as a surrogate for PM_{2.5} emission factor.
7. CH₄ emission factor is TOG emission factor multiplied by 0.0774, based on ARB recommendation.
8. CO₂Eq factor is TOG emission factor multiplied by 0.0774, based on ARB recommendation.

Abbreviations:
ARB: California Air Resources Board
CO: carbon monoxide
CO₂: carbon dioxide
CH₄: methane
g: gram
hp: horsepower
H₂: hydrogen
hr: hour
NO_x: nitrogen oxides
NO₂: nitrogen dioxide
PM₁₀: coarse particulate matter
PM_{2.5}: fine particulate matter
ROG: reactive organic gas
USEPA: United States Environmental Protection Agency

References:
ARB. 2011. In-use Off-road Equipment Inventory Model. September. Available at: http://www.arb.ca.gov/inuse/categories.html#offroad_motor_vehicles
Chevron Data Transmittal #360. Sent to ENVIRON on June 28, 2013 and October 16, 2013.
USEPA. 2010. Conversion Factors for Hydrocarbon Emission Components. July. Available at: <http://www.epa.gov/osm/models/hom/hom/hom/hom201042010015.pdf>

Table A4.3-CST-6
Off-Road Construction Equipment Emissions
Chevron Modernization Project
Richmond, California

	Year	Construction Phase	ROG	NOx	CO	PM ₁₀	PM _{2.5}	CH ₄	N ₂ O	CO ₂	CO ₂ e
						Exhaust	Exhaust				
						lbs					
Completed Construction	2008	Hydrogen Plant Tie-In	4,112	18,163	7,254	1,364	1,364	324	101	1,869,434	1,907,629
		Hydrogen Plant Replacement	10,474	71,606	29,968	4,027	4,027	826	366	6,745,899	6,876,681
		Sulfur Removal Improvements	6,382	30,373	14,852	2,265	2,265	503	164	2,991,893	3,053,291
	2009	Hydrogen Plant Tie-In	14,283	61,865	25,241	4,710	4,710	1,127	345	6,371,807	6,502,466
		Hydrogen Plant Replacement	16,211	75,103	35,020	5,556	5,556	1,279	409	7,501,156	7,654,740
		Sulfur Removal Improvements	11,465	46,759	21,663	3,847	3,847	904	263	4,800,118	4,900,609
Future Construction	2014	Existing Storage Tank Domed Roof Installation	120	1,082	596	46	46	9	7	136,210	138,704
		Hydrogen Plant Tie-In	5,811	53,954	30,207	2,444	2,444	458	365	6,740,240	6,863,127
		Hydrogen Plant Replacement	11,505	100,364	54,514	4,523	4,523	907	731	13,439,164	13,684,820
		Sulfur Removal Improvements	6,666	56,622	32,883	2,883	2,883	526	354	6,517,076	6,637,939
		Project Water Reuse	133	1,198	713	53	53	11	8	142,394	145,014
	2015	Hydrogen Plant Replacement	1,980	17,457	9,746	776	776	156	138	2,544,149	2,590,231
		Sulfur Removal Improvements	5,021	40,479	25,841	2,079	2,079	396	267	4,895,192	4,986,149
	2016	Existing Hydrogen Plant Demolition	2,839	28,612	18,249	1,268	1,268	224	209	3,873,030	3,942,389

Abbreviations:

ARB: California Air Resources Board
CO - carbon monoxide
CO₂ - carbon dioxide
CO₂e - carbon dioxide equivalent
CH₄ - methane
lb - pound
N₂O - nitrous oxide
NOx - nitrogen oxides
PM₁₀ - coarse particulate matter
PM_{2.5} - fine particulate matter
ROG - reactive organic gas

Table A4.3-CST-7a
Vehicle Activities - Onsite Cars, Pickups, Buses, Delivery Trucks, and Flatbeds1
Chevron Modernization Project
Richmond, California

	Construction Year	Construction Phase	Onsite Onroad Vehicle Type ²	Quantity	VMT (miles/vehicle-day)	Daily Use (Hours)	Days of Operation ^{3,4}
Completed Construction	2008	Hydrogen Plant Tie-In	Buses	1	50	2	66
			Cars	6	50	2	66
			Delivery Trucks	2	175	7	66
			Flatbeds	2	100	4	66
			Pickups	8	100	4	66
		Hydrogen Plant Replacement	Buses	3	50	2	66
			Cars	10	50	2	66
			Delivery Trucks	8	175	7	66
			Flatbeds	3	100	4	66
			Pickups	20	100	4	66
		Sulfur Removal Improvements	Buses	2	50	2	132
			Cars	8	50	2	132
			Delivery Trucks	5	175	7	132
			Flatbeds	2	100	4	132
			Pickups	8/12	100	4	66/66
	2009	Hydrogen Plant Tie-In	Buses	1	50	2	173
			Cars	6	50	2	173
			Delivery Trucks	2	175	7	173
			Flatbeds	2	100	4	173
			Pickups	8	100	4	173
		Hydrogen Plant Replacement	Buses	3/5/5	50	2	64/65/44
			Cars	10	50	2	173
			Delivery Trucks	8	175	7	173
			Flatbeds	3	100	4	173
			Pickups	20/30/30	100	4	64/65/44
		Sulfur Removal Improvements	Buses	2	50	2	129
			Cars	8	50	2	129
			Delivery Trucks	5	175	7	129
			Flatbeds	2	100	4	129
			Pickups	12	100	4	129
Future Construction	2014	Hydrogen Plant Tie-In	Buses	2/3/3	50	2	64/65/66
			Cars	5	50	2	195
			Delivery Trucks	2/3/3	175	7	64/65/66
			Flatbeds	3	100	4	195
			Pickups	4	100	4	195
		Hydrogen Plant Replacement	Buses	5	50	2	261
			Cars	5	50	2	261
			Delivery Trucks	8/8/8/2	175	7	64/65/66/66
			Flatbeds	3	100	4	261
			Pickups	8	100	4	261
		Sulfur Removal Improvements	Buses	5/5/4/4	50	2	64/65/66/66
			Cars	9/9/8/5	50	2	64/65/66/66
			Delivery Trucks	3/5/5/4	175	7	64/65/66/66
			Flatbeds	4/4/2/2	100	4	64/65/66/66
			Pickups	10/10/10/7	100	4	64/65/66/66
		Existing Storage Tank Domed Roof Installation	Buses	0.67	25	1	64
			Cars	1.33	25	1	64
			Delivery Trucks	2	50	2	64
			Pickups	1.33	50	2	64
			Flatbeds	1	50	2	64
		Project Water Reuse	Buses	0.67	50	2	64
			Cars	1.33	25	1	64
			Delivery Trucks	0.67	50	2	64
			Pickups	1.33	50	2	64
	2015	Hydrogen Plant Replacement	Buses	5	50	2	64
			Cars	5	50	2	64
			Delivery Trucks	2	175	7	64
			Flatbeds	3	100	4	64
			Pickups	8	100	4	64
		Sulfur Removal Improvements	Buses	4	50	2	261
			Cars	5	50	2	261
			Delivery Trucks	4/1/1/1	175	7	64/65/66/66
			Flatbeds	2	100	4	261
			Pickups	4	100	4	261
	2016	Existing Hydrogen Plant Demolition	Delivery Trucks	1	25	1	261
			Pickups	6	100	4	261

Notes:

1. This table is developed based on the vehicle type and schedule information provided by Chevron. See Transmittals #20 and #36O.
2. As shown in Table 4.3-CST-3a, Vehicle Miles Travelled (VMT) is needed to calculate onroad vehicle emissions. Since Chevron provided the hours of daily use, it was assumed that the VMT per vehicle per day can be calculated by multiplying the daily hours by the onroad vehicle speed (miles/hour). An onsite vehicle speed of 25 miles/hour was used for the calculation.
3. As specified in Table 4.3-CST-3a, emission factors of onroad vehicles were derived from EMFAC2011.
- The calculation involves the following data and assumptions:
- (1) Consturction delivery trucks, and flatbeds are a mix of LHD1, LHD2, T6, and T7 based on data provided by Chevron. See Transmittals #20 and #36O.
- (2) Onsite cars are LDA.
- (3) Onsite pickups are LDT1.
- (4) Onsite buses are All Other Buses.
4. Since emission factors derived from EMFAC2011 vary by construction year, due to fleet renovation, year of construction will have an impact on the onroad vehicle emissions. Therefore total number of working days per construction year are presented in this table.

Abbreviations:

ARB: California Air Resources Board
EMFAC: EMission FACtor Model
VMT: Vehicles Mile Travelled

References:

ARB. 2011. EMFAC2011. September. Available at: <http://www.arb.ca.gov/msei/modeling.htm>
Chevron Data Transmittal #20 Rev #1. Sent on ENVIRON on June 28, 2013.
Chevron Data Transmittla #36O. Sent to ENVIRON on February 1, 2014.

Table A4.3-CST-7b
Vehicle Activities - Construction Delivery Trucks, Soil Hauling Trucks and Worker Commuting Vehicles¹
Chevron Modernization Project
Richmond, California

	Construction Year	Onsite or Offsite	Category	Destinations	Number of One-Way Trips ^{2,3}	Idling Time per Trip (minute) ⁴
Completed Construction	2008	Offsite	Delivery Truck	Main Gate	6,600	10
			Soil Hauling Truck	Gate 31	2,630	10
			Worker	Worker Parking Lot	115,896	0
		Onsite	Delivery Truck	Hydrogen Plant	4,620	10
			Delivery Truck	TKC and Tie-in Areas	1,320	10
			Delivery Truck	SRU Area	660	10
			Soil Hauling Truck	Hydrogen Plant	1,800	10
			Soil Hauling Truck	TKC and Tie-in Areas	20	10
			Soil Hauling Truck	SRU Area	810	10
			Worker	Worker Parking Lot	115,896	0
	2009	Offsite	Delivery Truck	Gate 31	5,568	10
			Worker	Worker Parking Lot	228,866	0
		Onsite	Delivery Truck	Hydrogen Plant	3,480	10
			Delivery Truck	TKC and Tie-in Areas	696	10
			Delivery Truck	SRU Area	1,392	10
			Worker	Worker Parking Lot	228,866	0
Future Construction	2014	Offsite	Delivery Truck	Main Gate	5,958	10
			Soil Hauling Truck	Gate 31	100	10
			Worker	Worker Parking Lot	404,457	0
		Onsite	Delivery Truck	Hydrogen Plant	2,856	10
			Delivery Truck	TKC and Tie-in Areas	0	10
			Delivery Truck	SRU Area	2,334	10
			Delivery Truck	Water Reuse	427	10
			Delivery Truck	Existing Storage Tank Domed Roof Installation	341	10
			Soil Hauling Truck	Hydrogen Plant	100	10
			Worker	Worker Parking Lot	404,457	0
	2015	Offsite	Delivery Truck	Main Gate	1,044	10
			Worker	Worker Parking Lot	113,800	0
		Onsite	Delivery Truck	SRU Area	1,044	10
			Worker	Worker Parking Lot	113,800	0
	2016	Offsite	Soil Hauling Truck	Gate 31	600	10
			Worker	Worker Parking Lot	5,220	0
		Onsite	Soil Hauling Truck	Hydrogen Plant	600	10
			Worker	Worker Parking Lot	5,220	0

Notes:

1. This table is developed based on the vehicle type and schedule information provided by Chevron. See Transmittals #20, #32, and #36O.
2. As specified in Table 4.3-CST-7b emission factors of onroad vehicles were derived from EMFAC2011. The calculation involves the following data and assumptions:
 (1) All soil hauling trucks are heavy-heavy duty trucks (EMFAC Category T7).
 (2) Construction delivery trucks are a mix of LHD1, LHD2, T6, and T7 based on data provided by Chevron. See Transmittals #20 and #36O.
3. Offsite worker vehicles are a mix of LDA (50%), LDT1 (25%), and LDT2 (25%). The split is based on CalEEMod™ default assumptions.
4. Since emission factors derived from EMFAC2011 vary by construction year, due to fleet renovation, year of construction will have an impact on the onroad vehicle emissions. Therefore total number of trips per construction year are presented in this table.
5. ENVIRON assumes that a 10-minute idling happens for a one-way trip, at each potential idling point.

Abbreviations:

ARB: California Air Resources Board
 EMFAC: Emission FACTor Model

References:

ARB. 2011. EMFAC2011. September. Available at: <http://www.arb.ca.gov/msei/modeling.htm>
 Chevron Data Transmittal #20 Rev #1. Sent to ENVIRON on June 28, 2013.
 Chevron Data Transmittal #32. Sent to ENVIRON on September 13, 2012.
 Chevron Data Transmittal #36O. Sent to ENVIRON on February 1, 2014.

Table A4.3-CST-8
On-Road Vehicle Fleet-mix and Fuel-mix
Chevron Modernization Project
Richmond, California

Vehicle Type	Construction Phase	EMFAC Class	Fuel Type	Fuel-mix	Fleet-mix	Notes
Buses (Exclusively Onsite)	Completed and Future Construction	All Other Buses	Diesel	100%	100%	a
Cars (Exclusively Onsite)	Completed and Future Construction	LDA	Gasoline	100%	100%	b
Delivery Trucks (Exclusively Onsite)	Completed Construction	T6	Diesel	100%	40%	c,h
		T7	Diesel	100%	50%	c,h
		LHD1/LHD2	Diesel	100%	10%	c
	Future Construction Project components except Existing Hydrogen Plant Demolition	T6	Diesel	100%	40%	c,h
		T7	Diesel	100%	10%	c,h
		LHD1/LHD2	Diesel	100%	50%	c
	Future Construction Existing Hydrogen Plant Demolition	T6	Diesel	100%	50%	c,h
		T7	Diesel	100%	20%	c,h
		LHD1/LHD2	Diesel	100%	30%	c
	Future Construction Project design features	T6	Diesel	100%	50%	c,h
		T7	Diesel	100%	0%	c,h
		LHD1/LHD2	Diesel	100%	50%	c
Pickups (Exclusively Onsite)	Completed and Future Construction	LDT1	Diesel	0.15%	100%	d
			Gasoline	99.85%		
Flatbeds (Exclusively Onsite)	Completed Construction	T6	Diesel	100%	40%	e,h
		T7	Diesel	100%	50%	e,h
		LHD1/LHD2	Diesel	100%	10%	e
	Future Construction Project components	T6	Diesel	100%	40%	e,h
		T7	Diesel	100%	10%	e,h
		LHD1/LHD2	Diesel	100%	50%	e
	Future Construction Project design features	T6	Diesel	100%	50%	e,h
		T7	Diesel	100%	0%	e,h
		LHD1/LHD2	Diesel	100%	50%	e
Soil Hauling Trucks (both Onsite and Offsite)	Completed and Future Construction	T7	Diesel	100%	100%	f,h
Delivery Trucks (both Onsite and Offsite)	Completed Construction	T6	Diesel	100%	40%	f,h
		T7	Diesel	100%	50%	f,h
		LHD1/LHD2	Diesel	100%	10%	f
	Future Construction Project components	T6	Diesel	100%	40%	f,h
		T7	Diesel	100%	10%	f,h
		LHD1/LHD2	Diesel	100%	50%	f
	Future Construction Project design features	T6	Diesel	100%	20%	f,h
		T7	Diesel	100%	80%	f,h
		LHD1/LHD2	Diesel	100%	0%	f
Worker (both Onsite and Offsite)	Completed and Future Construction	LDA	Gasoline	100%	50%	g
		LDT1	Diesel	0.15%	25%	g
		LDT1	Gasoline	99.85%		g
		LDT2	Diesel	0.05%	25%	g
		LDT2	Gasoline	99.95%		g

Notes:
a. Onsite buses were mapped to EMFAC category "All Other Buses" and assumed 100% diesel vehicles to be conservative for the health risk analysis.
b. Information on onsite cars and pickups were provided separately. Onsite cars were assigned to EMFAC category "LDA" and assumed 100% gasoline vehicles. As EMFAC2011 indicates that less than 0.5% of the total vehicle miles travelled (VMT) is made by diesel LDA for the Contra Costa county, assuming 100% gasoline LDA will have minimal impact on the estimated health risks.
c. As suggested by Chevron, it was assumed that onsite delivery trucks are a mix of T6, T7, and LHD1/LHD2. It was further assumed that all vehicles are diesel vehicles to be conservative for the health risk analysis. See Transmittals #20 and #36O.
d. Information on onsite cars and pickups were provided separately. Onsite pickups were assigned to EMFAC category "LDT1" and assumed 98.85% diesel vehicles and 0.15% gasoline vehicles. This fuel split was based on EMFAC2011 run for the Contra Costa county for the construction years. The % diesel vehicles was calculated by dividing the VMT made by diesel LDT1 by total VMT made by all LDT1. The % gasoline vehicles was calculated by subtracting the resulted % diesel vehicles from 100%.
e. As suggested by Chevron, it was assumed that onsite flatbeds are a mix of T6, T7, and LHD1/LHD2. It was further assumed that all vehicles are diesel vehicles to be conservative for the health risk analysis. See Transmittals #20 and #36O.
f. It was assumed that soil hauling trucks that travel both onsite and offsite are heavy-heavy duty trucks (EMFAC Category T7). As suggested by Chevron, it was assumed that delivery trucks that travel both onsite and offsite are a mix of T6, T7, and LHD1/LHD2. It was further assumed that all vehicles are diesel vehicles to be conservative for the health risk analysis. See Transmittals #20 and #36O.
g. It was assumed that worker commuting vehicles are a mix of LDA (50%), LDT1 (25%), and LDT2 (25%). The split is based on CalEEMod™ default assumptions. In addition, the fuel-mix percentage for these three categories were derived the same way as described in notes b and d.
h. EMFAC2011 splits the medium-heavy duty trucks (EMFAC Category T6) and the heavy-heavy duty trucks (EMFAC Category T7) to various sub-categories. However the EMFAC2011 online database has an option of generating emission factors for EMFAC2007 categories where sub-categories are grouped. The emission factors for the T6 and T7 categories used for this analysis were generated by that option.

Abbreviations:
ARB: California Air Resources Board
CalEEMod™: California Emissions Estimator Model
EMFAC: Emission FACtor Model
VMT: Vehicle Miles Travelled

References:
ARB. 2011. EMFAC2011. September. Available at: <http://www.arb.ca.gov/msei/modeling.htm>
CalEEMod™ Users Guide. 2013, February. Available at: <http://www.caleemod.com/>

Table A4.3-CST-9a
Construction On-Road Vehicle Emission Factors - Completed Construction
Chevron Modernization Project
Richmond, California

Year	EMFAC Class	Fuel Type	Emission Type	CO	NOx	PM ₁₀	PM _{2.5}	ROG	TOG	CH ₄	N ₂ O	CO ₂	Unit
2008	All Other Buses	D	Brake Wear			0.130	0.056						g/mile
2008	All Other Buses	D	Running Exhaust	2.219	11.194	0.522	0.481	0.773	0.880	0.036	0.040	1198	g/mile
2008	All Other Buses	D	Tire Wear			0.012	0.003						g/mile
2008	LDA	G	Brake Wear			0.037	0.016						g/mile
2008	LDA	G	Running Evaporative					0.136	0.136				g/mile
2008	LDA	G	Running Exhaust	3.126	0.310	0.005	0.004	0.121	0.154	0.030	0.013	338	g/mile
2008	LDA	G	Startup	6.706	0.431	0.006	0.006	0.640	0.685	0.037	0.018	73	g/trip
2008	LDA	G	Tire Wear			0.008	0.002						g/mile
2008	LDT1	D	Brake Wear			0.037	0.016						g/mile
2008	LDT1	D	Running Exhaust	0.748	1.432	0.141	0.129	0.167	0.191	0.052	0.012	371	g/mile
2008	LDT1	D	Tire Wear			0.008	0.002						g/mile
2008	LDT1	G	Brake Wear			0.037	0.016						g/mile
2008	LDT1	G	Running Evaporative					6.092	6.518				g/mile
2008	LDT1	G	Running Exhaust	7.035	0.706	0.009	0.008	0.293	0.352	0.052	0.029	387	g/mile
2008	LDT1	G	Startup	11.764	0.605	0.010	0.009	0.997	1.067	0.062	0.025	85	g/trip
2008	LDT1	G	Tire Wear			0.008	0.002						g/mile
2008	LDT2	D	Brake Wear			0.037	0.016						g/mile
2008	LDT2	D	Running Exhaust	0.682	1.539	0.139	0.127	0.171	0.195	0.031	0.012	368	g/mile
2008	LDT2	D	Tire Wear			0.008	0.002						g/mile
2008	LDT2	G	Brake Wear			0.037	0.016						g/mile
2008	LDT2	G	Running Evaporative					3.785	4.045				g/mile
2008	LDT2	G	Running Exhaust	3.162	0.456	0.004	0.003	0.103	0.136	0.031	0.019	462	g/mile
2008	LDT2	G	Startup	7.184	0.680	0.005	0.004	0.596	0.637	0.035	0.028	99	g/trip
2008	LDT2	G	Tire Wear			0.008	0.002						g/mile
2008	LHD	D	Brake Wear			0.079	0.034						g/mile
2008	LHD	D	Idling Exhaust	0.002	0.008	9.53E-05	8.77E-05	2.92E-04	3.32E-04	1.36E-05	0.000	0.479	g/minute
2008	LHD	D	Running Exhaust	1.163	5.617	0.063	0.058	0.249	0.283	0.028	0.017	528	g/mile
2008	LHD	D	Tire Wear			0.012	0.003						g/mile
2008	T6	D	Brake Wear			0.130	0.056						g/mile
2008	T6	D	Idling Exhaust	0.002	0.008	9.53E-05	8.77E-05	2.92E-04	3.32E-04	1.36E-05	0.000	0.479	g/minute
2008	T6	D	Running Exhaust	1.458	9.224	0.342	0.314	0.479	0.545	0.022	0.040	1191	g/mile
2008	T6	D	Tire Wear			0.012	0.003						g/mile
2008	T7	D	Brake Wear			0.060	0.026						g/mile
2008	T7	D	Idling Exhaust	0.756	1.736	0.022	0.020	0.162	0.184	0.008	0.000	115	g/minute
2008	T7	D	Running Exhaust	3.499	15.672	0.526	0.483	0.793	0.903	0.037	0.059	1758	g/mile
2008	T7	D	Tire Wear			0.035	0.009						g/mile
2009	All Other Buses	D	Brake Wear			0.130	0.056						g/mile
2009	All Other Buses	D	Running Exhaust	2.063	10.538	0.495	0.456	0.715	0.814	0.033	0.040	1197	g/mile
2009	All Other Buses	D	Tire Wear			0.012	0.003						g/mile
2009	LDA	G	Brake Wear			0.037	0.016						g/mile
2009	LDA	G	Running Evaporative					0.132	0.132				g/mile
2009	LDA	G	Running Exhaust	2.981	0.289	0.004	0.004	0.116	0.146	0.028	0.012	338	g/mile
2009	LDA	G	Startup	6.217	0.403	0.006	0.005	0.586	0.627	0.033	0.017	73	g/trip
2009	LDA	G	Tire Wear			0.008	0.002						g/mile
2009	LDT1	D	Brake Wear			0.037	0.016						g/mile
2009	LDT1	D	Running Exhaust	0.737	1.450	0.142	0.131	0.168	0.192	0.051	0.012	373	g/mile
2009	LDT1	D	Tire Wear			0.008	0.002						g/mile
2009	LDT1	G	Brake Wear			0.037	0.016						g/mile
2009	LDT1	G	Running Evaporative					5.651	6.046				g/mile
2009	LDT1	G	Running Exhaust	6.461	0.647	0.008	0.007	0.263	0.318	0.051	0.027	388	g/mile
2009	LDT1	G	Startup	11.037	0.571	0.009	0.008	0.926	0.991	0.061	0.024	85	g/trip
2009	LDT1	G	Tire Wear			0.008	0.002						g/mile
2009	LDT2	D	Brake Wear			0.037	0.016						g/mile
2009	LDT2	D	Running Exhaust	0.674	1.543	0.134	0.124	0.168	0.191	0.029	0.012	368	g/mile
2009	LDT2	D	Tire Wear			0.008	0.002						g/mile
2009	LDT2	G	Brake Wear			0.037	0.016						g/mile
2009	LDT2	G	Running Evaporative					3.535	3.778				g/mile
2009	LDT2	G	Running Exhaust	3.032	0.429	0.003	0.003	0.096	0.127	0.029	0.018	462	g/mile
2009	LDT2	G	Startup	6.882	0.649	0.004	0.004	0.558	0.596	0.034	0.027	99	g/trip
2009	LDT2	G	Tire Wear			0.008	0.002						g/mile
2009	LHD	D	Brake Wear			0.079	0.034						g/mile
2009	LHD	D	Idling Exhaust	0.002	0.007	8.72E-05	8.02E-05	2.73E-04	3.11E-04	1.27E-05	0.000	0.483	g/minute
2009	LHD	D	Running Exhaust	1.219	5.624	0.064	0.059	0.259	0.295	0.029	0.017	528	g/mile
2009	LHD	D	Tire Wear			0.012	0.003						g/mile
2009	T6	D	Brake Wear			0.130	0.056						g/mile
2009	T6	D	Idling Exhaust	0.002	0.007	8.72E-05	8.02E-05	2.73E-04	3.11E-04	1.27E-05	0.000	0.483	g/minute
2009	T6	D	Running Exhaust	1.419	8.901	0.325	0.299	0.470	0.535	0.022	0.040	1193	g/mile
2009	T6	D	Tire Wear			0.012	0.003						g/mile
2009	T7	D	Brake Wear			0.060	0.026						g/mile
2009	T7	D	Idling Exhaust	0.747	1.694	0.020	0.018	0.156	0.177	0.007	0.000	115	g/minute
2009	T7	D	Running Exhaust	3.366	14.768	0.512	0.471	0.762	0.867	0.035	0.059	1758	g/mile
2009	T7	D	Tire Wear			0.035	0.009						g/mile

Notes:

- a. Input include: Contra Costa County; all speed; vehicle categories; fuel type; and calendar year.
b. Emission factor for category LHD is averaged emission factors for LHD1 and LHD2.
c. EMFAC2011 splits the medium-heavy duty trucks (EMFAC Category T6) and the heavy-heavy duty trucks (EMFAC Category T7) to various sub-categories. However the EMFAC2011 online database has an option of generating emission factors for EMFAC2007 categories where sub-categories are grouped. The emission factors for the T6 and T7 categories used for this analysis were generated by that option.
d. CO₂ emission factor incorporates Pavley standards.

Abbreviations:

ARB: California Air Resources Board
EMFAC: Emission Factor Model
CO: carbon monoxide
CO₂: carbon dioxide
CH₄: methane
g: gram
N₂O: nitrous oxide
NOx: nitrogen oxides
PM₁₀: coarse particulate matter
PM_{2.5}: fine particulate matter
ROG: reactive organic gas
TOG: total organic gas

References:

ARB. 2011. EMFAC2011. September. Available at: <http://www.arb.ca.gov/msei/modeling.htm>

Table A4.3-CST-9b
Construction On-Road Vehicle Emission Factors - Future Construction
Chevron Modernization Project
Richmond, California

Year	EMFAC Class	Fuel Type	Emission Type	CO	NOx	PM ₁₀	PM _{2.5}	ROG	TOG	CH ₄	N ₂ O	CO ₂	Unit
2014	All Other Buses	D	Brake Wear			0.130	0.056						g/mile
2014	All Other Buses	D	Running Exhaust	1.063	8.189	0.204	0.187	0.361	0.411	0.017	0.040	1183	g/mile
2014	All Other Buses	D	Tire Wear			0.012	0.003						g/mile
2014	LDA	G	Brake Wear			0.037	0.016						g/mile
2014	LDA	G	Running Evaporative					0.067	0.067				g/mile
2014	LDA	G	Running Exhaust	1.471	0.140	0.002	0.002	0.046	0.062	0.015	0.006	300	g/mile
2014	LDA	G	Startup	3.275	0.211	0.003	0.003	0.267	0.285	0.014	0.009	67	g/trip
2014	LDA	G	Tire Wear			0.008	0.002						g/mile
2014	LDT1	D	Brake Wear			0.037	0.016						g/mile
2014	LDT1	D	Running Exhaust	0.392	0.826	0.073	0.067	0.087	0.099	0.029	0.012	322	g/mile
2014	LDT1	D	Tire Wear			0.008	0.002						g/mile
2014	LDT1	G	Brake Wear			0.037	0.016						g/mile
2014	LDT1	G	Running Evaporative					3.437	3.673				g/mile
2014	LDT1	G	Running Exhaust	3.575	0.375	0.005	0.004	0.118	0.151	0.029	0.016	356	g/mile
2014	LDT1	G	Startup	7.193	0.381	0.006	0.005	0.564	0.603	0.030	0.016	78	g/trip
2014	LDT1	G	Tire Wear			0.008	0.002						g/mile
2014	LDT2	D	Brake Wear			0.037	0.016						g/mile
2014	LDT2	D	Running Exhaust	0.294	0.758	0.046	0.042	0.057	0.065	0.020	0.012	320	g/mile
2014	LDT2	D	Tire Wear			0.008	0.002						g/mile
2014	LDT2	G	Brake Wear			0.037	0.016						g/mile
2014	LDT2	G	Running Evaporative					2.086	2.228				g/mile
2014	LDT2	G	Running Exhaust	1.927	0.248	0.002	0.002	0.052	0.073	0.020	0.010	428	g/mile
2014	LDT2	G	Startup	4.482	0.403	0.003	0.003	0.331	0.354	0.022	0.017	94	g/trip
2014	LDT2	G	Tire Wear			0.008	0.002						g/mile
2014	LHD	D	Brake Wear			0.079	0.034						g/mile
2014	LHD	D	Idling Exhaust	0.002	0.006	0.000	0.000	0.000	0.000	7.84E-06	0.000	0.493	g/minute
2014	LHD	D	Running Exhaust	1.218	4.435	0.056	0.051	0.243	0.277	0.023	0.017	517	g/mile
2014	LHD	D	Tire Wear			0.012	0.003						g/mile
2014	T6	D	Brake Wear			0.130	0.056						g/mile
2014	T6	D	Idling Exhaust	0.002	0.006	0.000	0.000	0.000	0.000	7.84E-06	0.000	0.493	g/minute
2014	T6	D	Running Exhaust	0.914	5.639	0.167	0.154	0.287	0.327	0.013	0.040	1170	g/mile
2014	T6	D	Tire Wear			0.012	0.003						g/mile
2014	T7	D	Brake Wear			0.060	0.026						g/mile
2014	T7	D	Idling Exhaust	0.555	1.203	0.006	0.006	0.106	0.121	0.005	0.000	115	g/minute
2014	T7	D	Running Exhaust	1.537	8.620	0.161	0.148	0.336	0.383	0.016	0.060	1734	g/mile
2014	T7	D	Tire Wear			0.035	0.009						g/mile
2015	All Other Buses	D	Brake Wear			0.130	0.056						g/mile
2015	All Other Buses	D	Running Exhaust	0.718	6.704	0.108	0.099	0.225	0.256	0.010	0.040	1162	g/mile
2015	All Other Buses	D	Tire Wear			0.012	0.003						g/mile
2015	LDA	G	Brake Wear			0.037	0.016						g/mile
2015	LDA	G	Running Evaporative					0.060	0.060				g/mile
2015	LDA	G	Running Exhaust	1.281	0.123	0.002	0.002	0.038	0.052	0.014	0.005	289	g/mile
2015	LDA	G	Startup	2.881	0.183	0.003	0.003	0.226	0.242	0.014	0.008	64	g/trip
2015	LDA	G	Tire Wear			0.008	0.002						g/mile
2015	LDT1	D	Brake Wear			0.037	0.016						g/mile
2015	LDT1	D	Running Exhaust	0.349	0.749	0.064	0.059	0.077	0.087	0.029	0.012	309	g/mile
2015	LDT1	D	Tire Wear			0.008	0.002						g/mile
2015	LDT1	G	Brake Wear			0.037	0.016						g/mile
2015	LDT1	G	Running Evaporative					3.106	3.318				g/mile
2015	LDT1	G	Running Exhaust	3.200	0.340	0.004	0.004	0.100	0.130	0.029	0.014	345	g/mile
2015	LDT1	G	Startup	6.605	0.351	0.005	0.005	0.510	0.545	0.030	0.015	76	g/trip
2015	LDT1	G	Tire Wear			0.008	0.002						g/mile
2015	LDT2	D	Brake Wear			0.037	0.016						g/mile
2015	LDT2	D	Running Exhaust	0.270	0.712	0.041	0.038	0.052	0.059	0.018	0.012	313	g/mile
2015	LDT2	D	Tire Wear			0.008	0.002						g/mile
2015	LDT2	G	Brake Wear			0.037	0.016						g/mile
2015	LDT2	G	Running Evaporative					1.844	1.970				g/mile
2015	LDT2	G	Running Exhaust	1.720	0.219	0.002	0.002	0.044	0.064	0.018	0.009	416	g/mile
2015	LDT2	G	Startup	4.040	0.358	0.003	0.003	0.293	0.313	0.022	0.015	91	g/trip
2015	LDT2	G	Tire Wear			0.008	0.002						g/mile
2015	LHD	D	Brake Wear			0.079	0.034						g/mile
2015	LHD	D	Idling Exhaust	0.002	0.005	0.000	0.000	0.000	0.000	6.42E-06	0.000	0.495	g/minute
2015	LHD	D	Running Exhaust	1.206	4.191	0.054	0.049	0.236	0.269	0.023	0.017	511	g/mile
2015	LHD	D	Tire Wear			0.012	0.003						g/mile
2015	T6	D	Brake Wear			0.130	0.056						g/mile
2015	T6	D	Idling Exhaust	0.002	0.005	0.000	0.000	0.000	0.000	6.42E-06	0.000	0.495	g/minute
2015	T6	D	Running Exhaust	0.736	4.618	0.122	0.112	0.222	0.253	0.010	0.039	1155	g/mile
2015	T6	D	Tire Wear			0.012	0.003						g/mile
2015	T7	D	Brake Wear			0.060	0.026						g/mile
2015	T7	D	Idling Exhaust	0.573	1.104	0.005	0.005	0.106	0.121	0.005	0.000	114	g/minute
2015	T7	D	Running Exhaust	1.311	7.348	0.117	0.107	0.291	0.331	0.014	0.060	1711	g/mile
2015	T7	D	Tire Wear			0.035	0.009						g/mile
2016	All Other Buses	D	Brake Wear			0.130	0.056						g/mile
2016	All Other Buses	D	Running Exhaust	0.602	5.672	0.084	0.077	0.183	0.208	0.008	0.040	1147	g/mile
2016	All Other Buses	D	Tire Wear			0.012	0.003						g/mile
2016	LDA	G	Brake Wear			0.037	0.016						g/mile
2016	LDA	G	Running Evaporative					0.054	0.054				g/mile
2016	LDA	G	Running Exhaust	1.130	0.110	0.002	0.002	0.031	0.044	0.012	0.005	278	g/mile
2016	LDA	G	Startup	2.548	0.159	0.003	0.003	0.193	0.207	0.010	0.007	62	g/trip
2016	LDA	G	Tire Wear			0.008	0.002						g/mile
2016	LDT1	D	Brake Wear			0.037	0.016						g/mile
2016	LDT1	D	Running Exhaust	0.299	0.655	0.053	0.049	0.064	0.073	0.029	0.012	294	g/mile
2016	LDT1	D	Tire Wear			0.008	0.002						g/mile
2016	LDT1	G	Brake Wear			0.037	0.016						g/mile
2016	LDT1	G	Running Evaporative					2.809	3.001				g/mile
2016	LDT1	G	Running Exhaust	2.878	0.309	0.004	0.004	0.084	0.112	0.029	0.013	334	g/mile
2016	LDT1	G	Startup	6.070	0.323	0.005	0.005	0.462	0.494	0.029	0.013	74	g/trip
2016	LDT1	G	Tire Wear			0.008	0.002						g/mile
2016	LDT2	D	Brake Wear			0.037	0.016						g/mile
2016	LDT2	D	Running Exhaust	0.237	0.642	0.034	0.032	0.043	0.050	0.018	0.012	303	g/mile
2016	LDT2	D	Tire Wear			0.008	0.002						g/mile
2016	LDT2	G	Brake Wear			0.037	0.016						g/mile
2016	LDT2	G	Running Evaporative					1.630	1.741				g/mile
2016	LDT2	G	Running Exhaust	1.540	0.194	0.002	0.002	0.038	0.055	0.018	0.008	403	g/mile
2016	LDT2	G	Startup	3.635	0.317	0.003	0.003	0.259	0.277	0.011	0.013	89	g/trip
2016	LDT2	G	Tire Wear			0.008	0.002						g/mile
2016	LHD	D	Brake Wear			0.079	0.034						g/mile
2016	LHD	D	Idling Exhaust	0.002	0.005	0.000	0.000	0.000	0.000	6.23E-06	0.000	0.493	g/minute
2016	LHD	D	Running Exhaust	1.183	3.923	0.051	0.047	0.227	0.258	0.023	0.017	505	g/mile
2016	LHD	D	Tire Wear			0.012	0.003						g/mile
2016	T6	D	Brake Wear			0.130	0.056						g/mile
2016	T6	D	Idling Exhaust	0.002	0.005	0.000	0.000	0.000	0.000	6.23E-06	0.000	0.493	g/minute
2016	T6	D	Running Exhaust	0.659	3.926	0.104	0.096	0.195	0.222	0.009	0.039	1141	g/mile
2016	T6	D	Tire Wear			0.012	0.003						g/mile
2016	T7	D	Brake Wear			0.060	0.026						g/mile
2016	T7	D	Idling Exhaust	0.555	1.001	0.003	0.002	0.100	0.114	0.005	0.000	113	g/minute
2016	T7	D	Running Exhaust	1.130	6.281	0.088	0.081	0.251	0.286	0.012	0.060	1690	g/mile
2016	T7	D	Tire Wear			0.035	0.009						g/mile

Notes:

a. Input include: Contra Costa County; all speed; vehicle categories; fuel type; and calendar year.

b. Emission factor for category LHD is averaged emission factors for LHD1 and LHD2.

c. EMFAC2011 splits the medium-heavy duty trucks (EMFAC Category T6) and the heavy-heavy duty trucks (EMFAC Category T7) to various sub-categories. However the EMFAC2011 online database has an option of generating emission factors for EMFAC2007 categories where sub-categories are grouped. The emission factors for the T6 and T7 categories used for this analysis were generated by that option.

d. CO2 emission factor incorporates Pavley standards.

Abbreviations:

ARB: California Air Resources Board

EMFAC: Emission Factor Model

CO: carbon monoxide

CO₂: carbon dioxide

CH₄: methane

g: gram

N₂O: nitrous oxide

NOx: nitrogen oxides

PM₁₀: coarse particulate matter

PM_{2.5}: fine particulate matter

ROG: reactive organic gas

Table A4.3-CST-10
On-Road Construction Mobile Emissions
Chevron Modernization Project
Richmond, California

	Year	Onsite or Offsite	Vehicle Type	ROG	NOx	CO	PM ₁₀ Exhaust ²	PM _{2.5} Exhaust ² lbs	CH ₄	N ₂ O	CO ₂	CO ₂ e
Completed Construction	2008	Onsite ³	Worker	5,346	1,244	6,015	91	56	47	27	442,207	451,551
			Delivery Trucks, Flatbeds, and Soil Hauling Trucks	1,150	15,992	5,105	443	368	54	31	1,459,964	1,470,737
		Offsite ³	Worker	8,372	1,385	12,770	156	70	112	58	1,184,447	1,204,622
			Delivery Trucks, and Soil Hauling Trucks	259	5,104	1,069	214	174	12	20	587,370	593,723
	2009	Onsite ³	Worker	11,592	2,596	12,624	196	119	104	57	980,919	1,000,635
			Delivery Trucks, Flatbeds, and Soil Hauling Trucks	1,945	27,075	8,768	753	622	92	55	2,575,621	2,594,663
		Offsite ³	Worker	15,386	2,538	23,695	305	137	210	105	2,338,789	2,375,880
			Delivery Trucks, and Soil Hauling Trucks	142	2,748	567	121	97	7	11	336,479	340,115
Future Construction	2014	Onsite ³	Worker	5,347	3,325	5,743	208	123	52	37	1,039,023	1,051,493
			Delivery Trucks, Flatbeds, and Soil Hauling Trucks	743	12,579	3,394	415	279	45	55	1,899,357	1,917,196
		Offsite ³	Worker	16,030	2,451	22,878	515	219	214	102	3,751,383	3,787,448
			Delivery Trucks, and Soil Hauling Trucks	72	1,487	304	59	40	5	9	260,830	263,676
	2015	Onsite ³	Worker	1,999	1,218	2,098	74	40	20	15	424,373	429,343
			Delivery Trucks, Flatbeds, and Soil Hauling Trucks	146	2,391	699	79	51	9	12	401,968	405,768
		Offsite ³	Worker	4,029	615	5,703	144	61	57	26	1,020,819	1,029,929
			Delivery Trucks, and Soil Hauling Trucks	11	209	46	9	6	1	1	39,785	40,223
	2016	Onsite ³	Worker	1,089	108	997	17	7	10	4	116,194	117,787
			Delivery Trucks, Flatbeds, and Soil Hauling Trucks	3	39	17	0.4	0.3	0.15	0	6,322.60	6,362
		Offsite ³	Worker	165	25	233	7	3	2	1	45,221	45,599
			Delivery Trucks, and Soil Hauling Trucks	6	154	28	4	3	0.29	1	41,396.40	41,857

Notes:

1. Emissions were estimated using the emissions factor generated with ARB EMFAC2011 and the activity data summarized in Tables 4.3-CST-7a and 4.3-CST-7b. The equations for the calculation are explained in Table 4.3-CST-3a.
2. The emissions presented here also include brakewear and tirewear.
3. Onsite emissions are emissions occurring within the Facility boundary; offsite emissions are emissions occurring outside of Facility boundary.

Abbreviations:

CO - carbon monoxide
lb - pound
CO₂ - carbon dioxide
CO₂e - carbon dioxide equivalent
CH₄ - methane
N₂O - nitrous oxide
NOx - nitrogen oxides
PM₁₀ - coarse particulate matter
PM_{2.5} - fine particulate matter

Table A4.3-CST-11
Architectural Coating Criteria Air Pollutant Emissions
Chevron Modernization Project
Richmond, California

Phase	Year ³	Activity ⁴		ROG Emissions ⁵
		Architectural Coating (Gallons of Paint)	Paving (Acres)	(lb)
Paving ¹ - H2 Plant	2014		7.5	20
Paving ¹ - #6 H2S	2014		1.4	3.7
Architectural Coating/paint ²	2014-2015	50		104

Notes:

1. CalEEMod™ default emission factor for paving is 2.62 lb/acre of ROG.
2. CalEEMod™ default emission factor for non-residential painting/coating is $EF \text{ (lb/gal)} = C_{voc} \text{ (g/L)} / 454 \text{ (g/lb)} \times 3.785 \text{ (L/Gal)}$. The default VOC content of 250 g/L is ARB's statewide limit as indicated in CalEEMod™ User's Guide.
3. The year was based on the usage date of "Tractors/Loaders/Backhoes" for Paving, and based on the usage date of "Air Compressors" for Architectural Coating/paint, provided by Chevron.
4. The number of acres to be paved and the gallons of paint to be used for architectural coating were provided by Chevron.
5. ROG was assumed to be equivalent to VOC, in this calculation.

Abbreviations:

CalEEMod™: California Emissions Estimator Model

g: gram

gal: gallon

H2: Hydrogen Gas

H2S: Hydrogen Sulfide

L: liter

lb: pound

ROG: reactive organic gases

VOC: volatile organic gases

C_{voc}: VOC content in paint

References:

CalEEMod™ Users Guide. 2011, February. Available at: <http://www.caleemod.com/>
Chevron Data Transmittal #10. Sent to ENVIRON on September 16, 2011.

Table A4.3-CST-12
Summary of Construction Criteria Air Pollutant and Greenhouse Gas Emissions for Completed and Future Construction
Chevron Modernization Project
Richmond, California

Year	Off-Road Equipment Sources ¹								On-Road Mobile Sources ¹								Off-gas Sources ¹	Max Possible Total					
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}	CH ₄	N ₂ O	CO ₂	ROG	NO _x	CO	PM ₁₀	PM _{2.5}	CH ₄	N ₂ O	CO ₂	ROG	ROG	NO _x	CO	PM ₁₀	PM _{2.5}	CO ₂ e
	lbs																MT						MT
2008	20,968	120,143	52,073	7,656	7,656	1,654	631	11,607,226	15,126	23,726	24,959	903	668	226	135	3,673,988	0	36,094	143,868	77,033	8,559	8,324	7,057
2009	41,959	183,728	81,925	14,113	14,113	3,310	1,017	18,673,082	29,065	34,957	45,653	1,375	975	413	228	6,231,808	0	71,024	218,685	127,578	15,488	15,088	11,507
2014	24,234	213,220	118,914	9,951	9,951	1,911	1,466	26,975,084	22,193	19,842	32,320	1,198	661	315	202	6,950,593	75	46,502	233,062	151,234	11,149	10,612	15,644
2015	7,001	57,935	35,587	2,855	2,855	552	405	7,439,341	6,186	4,433	8,546	306	157	86	53	1,886,945	52	13,239	62,369	44,133	3,161	3,012	4,301
2016	2,839	28,612	18,249	1,268	1,268	224	209	3,873,030	1,264	325	1,275	29	13	13	7	209,133	0	4,103	28,937	19,524	1,296	1,281	1,884
Total Emissions over 1088 Days [Completed + Future Construction Duration] [lbs]																		170,962	686,920	419,501	39,653	38,317	
Average Daily Emissions over 1088 Days [Completed + Future Construction Duration] [lbs/day]																		157	631	386	36	35	
Completed Emissions over 305 Days [Completed Construction Duration] [lbs]																		107,118	362,553	204,610	24,046	23,411	
Average Daily Emissions over 305 Days [Completed Construction Duration] [lbs/day]																		351	1,189	671	79	77	
Future Emissions over 783 Days [Future Construction Duration] [lbs]																		63,844	324,368	214,890	15,606	14,905	
Average Daily Emissions over 783 Days [Future Construction Duration] [lbs/day]																		82	414	274	20	19	
BAAQMD Significance Threshold² [lb/day]																		54	54	N/A	82	54	

Notes:

- The emissions due to off-road, on-road and off-gassing sources are consistent with the values and methodology described in Tables 4.3-CST-6, 4.3-CST-10, 4.3-CST-11. Note BAAQMD guidelines present the Significant Threshold for PM₁₀ exhaust and PM_{2.5} exhaust only. However PM emissions shown here and compared against thresholds includes emissions from exhaust, brakewear, and tirewear.
- BAAQMD Significance Threshold obtained from their "Adopted Air Quality CEQA Thresholds of Significance" in May 2011. Emissions for the Project are averaged over the total work days in the construction period and work days for the future construction only. Note according to Chevron, completed construction started their third quarter of 2008 and was ceased on September 1st 2009. Therefore total work days were assumed to be 132 days for 2008 and 173 days for year 2009. The other three years, 2014, 2015, and 2016 were assumed to have 261 work days per year.

Abbreviations:

CAP - criteria air pollutants
CO - carbon monoxide
CO₂ - carbon dioxide
CO₂e - carbon dioxide equivalent
CH₄ - methane
N₂O - nitrous oxide
lb - pound
MT - metric tonnes
NO_x - nitrogen oxides
PM₁₀ - coarse particulate matter
PM_{2.5} - fine particulate matter
ROG - reactive organic gas

Sources:

BAAQMD. 2011. Adopted Air Quality CEQA Thresholds of Significance. May

Table A4.3-CST-13a
Fugitive Dust Emissions from Grading¹
Chevron Modernization Project
Richmond, California

Construction Year ²	Construction Phase ²	Equipment ²	Quantity ²	Daily Use (hours) ²	Days of Operation ²	Acres of Grading	VMT (miles)	PM ₁₀ Emissions (lb)	PM _{2.5} Emissions (lb)
2008	Hydrogen Plant Replacement	Grader	1	4	66	16.5	11	17	2

Notes:

1. Fugitive dust emissions from grading equipment passes are estimated using the methodology described in Table 4.3-CST-3b. The emission factor of PM₁₀ is calculated by applying a scaling factor to that of PM₁₅. Similarly, the emission factor of PM_{2.5} is scaled from that of total suspended particulates (TSP). See Table below for emission factor calculation. S: mean vehicle speed in mph. AP-42 default of 7.1 mph was used in the absence of project-specific data.

F: PM scaling factor. The AP-42 default value is 0.031 for PM_{2.5} and 0.6 for PM₁₀

The grading dust emissions were then calculated by multiplying the emission factors with the total vehicle miles traveled (VMT) for the grading equipment (i.e., grader).

$$\text{VMT} = \text{As/Wb} \times 43,560 \text{ (sqft/acre)} / 5.280 \text{ (ft/mile)}$$

Where:

As: the acreage of the grading side. The acres is based on the equipment list and days in grading phase according to the anticipated maximum number of acres a given piece of equipment can pass over in an 8-hour workday. ENVIRON uses 0.5 acres/8-hr day for grader as suggested by SCAQMD.

Wb: Blade width of the grading equipment. ENVIRON uses a default blade width of 12 ft based on Caterpillar's 140 Motor Grader.

Emission Factor Type	Equation	Emission Factor (lb/VMT)
PM ₁₅	$\text{EF}_{\text{PM15}} = 0.051 * (\text{S})^{2.0}$	2.6
PM ₁₀	$\text{EF}_{\text{PM10}} = \text{EF}_{\text{PM15}} * \text{F}_{\text{PM10}}$	1.5
TSP	$\text{EF}_{\text{TSP}} = 0.04 * (\text{S})^{2.5}$	5.4
PM _{2.5}	$\text{EF}_{\text{PM2.5}} = \text{EF}_{\text{TSP}} * \text{F}_{\text{PM2.5}}$	0.2

2. Activity data was from Chevron Transmittals #20 and #360. Consistent with CalEEMod™, activity associated with graders, crawler tractors, rubber tired dozers, and scrapers were searched.

Abbreviations:

EF: Emission Factor

PM: Particulate Matter

TSP: Total Suspended Particulates

VMT: vehicle miles traveled

References:

CalEEMod™ User's Guide. 2013, February. Available at: <http://www.caleemod.com/>

Chevron Data Transmittal #20 Rev #1. Sent to ENVIRON on June 28, 2013.

Chevron Data Transmittal #360. Sent to ENVIRON on June 28, 2013 and October 16, 2013.

Table A4.3-CST-13b
Fugitive Dust Emissions from Truck Loading¹
Chevron Modernization Project
Richmond, California

	Amount of Soil Loaded/Unloaded (tons)	PM ₁₀ Emissions (lb)	PM _{2.5} Emissions (lb)
Completed Construction	307453.35	35791	5420
Future Construction	1000	116	18

Notes:

1. Fugitive dust emissions from trucking loading are estimated using the methodology described in Table 4.3-CST-3b. See Tale below for emission factor calculation.

EF: emission factor (lb/ton)

TP: throughput of load and unload material. From Transmittal #32.

k: particle size multiplier. The AP-42 default value for PM₁₀ is 0.35 and that for PM_{2.5} is 0.053.

U: mean wind speed. Project specific mean wind speed of 8.6 mph was used.

M: material moisture content (%). The moisture content of cover (12%) was used in this calculation.

Emission Factor Type	Equation	Emission Factor (lb/ton)
PM ₁₀	$EF = k_{PM10} * 0.0032 * (U/5)^{1.3} * [1/((M/2)^{1.4})]$	0.12
PM _{2.5}	$EF = k_{PM2.5} * 0.0032 * (U/5)^{1.3} * [1/((M/2)^{1.4})]$	0.02

Abbreviations:

EF: Emission Factor

PM: Particulate Matter

USEPA: United States Environmental Protection Agency

References:

Chevron Data Transmittal #32. Sent to ENVIRON on September 13, 2012.

Table A4.3-CST-13c
Fugitive Dust Emissions from On-Road Vehicle Movement¹
Chevron Modernization Project
Richmond, California

	PM ₁₀ Emissions (lb)	PM _{2.5} Emissions (lb)
Completed Construction	42	10
Future Construction	43	10

Notes:

1. Fugitive dust emissions from on-road vehicle movement on paved roads are estimated using the methodology described in Table AQ-CST-1b. See Tale below for emission factor calculation.

EF: emission factor

k: particle size multiplier (lb/VMT). ENVIRON used the PM₁₀ and PM_{2.5} particle size multiplier from Section 13.2.1-1 of USEPA AP-42.

sL: road surface silt loading (g/m²). ENVIRON used 0.2 g/m² (Ubiquitous Baseline) from AP-42.

W: average weight (tons) of the vehicles traveling the road. Based on ARB's EMFAC model.

P: number of "wet" days with at least 0.01 in of precipitation during the averaging period, ENVIRON used 60 days based on climate data from (<http://www.wrcc.dri.edu/>) for Richmond station (047414)

N: number of days in the averaging period. (365 days)

Activity data used for this calculation is presented in Tables AQ-CST-5a and b.

EMFAC Vehicle Class	EF (lb/VMT)	Pollutant
All Other Buses	0.01566	PM10
LDA	0.00093	PM10
T6	0.00851	PM10
T7	0.01566	PM10
LDT2	0.00143	PM10
LDT1	0.00093	PM10
LHD	0.00355	PM10
All Other Buses	0.00384	PM2.5
LDA	0.00023	PM2.5
T6	0.00209	PM2.5
T7	0.00384	PM2.5
LDT2	0.00035	PM2.5
LDT1	0.00023	PM2.5
LHD	0.00087	PM2.5

Abbreviations:

EF: Emission Factor

PM: Particulate Matter

USEPA: United States Environmental Protection Agency

References:

Chevron Data Transmittal #20 Rev #1. Sent on ENVIRON on June 28, 2013.

Chevron Data Transmittla #36O. Sent to ENVIRON on June 28, 2013 and October 16, 2013.

Table A4.3-CST-14
Summary of Construction Fugitive Dust Emissions for Completed and Future Construction
Chevron Modernization Project
Richmond, California

	PM ₁₀ Emissions (lb)	PM _{2.5} Emissions (lb)
Completed Construction	35850	5432
Future Construction	159	28

Abbreviations:

lb - pound

PM - Particulate Matter

Table A4.3-CST-15
Summary of Construction TAC Emission Sources
Chevron Modernization Project
Richmond, California

Source Category	Examples	Toxic Air Contaminant(s) Included in Inventory	Emitting Location
Off-road construction equipment (diesel engines)	Excavators, bulldozers, cranes	DPM PM _{2.5}	On site
On-road mobile sources (diesel and gasoline engines)	Trucks, cars, pickups, and buses	DPM (diesel engines) PM _{2.5} gasoline TOG (gasoline engines): acetaldehyde acrolein benzene 1,3-butadiene ethylbenzene formaldehyde hexane methanol methyl ethyl ketone naphthalene propylene styrene toluene xylenes	On site and off site
Architectural coatings and paving	Paints, asphalt	None ¹	--
Fugitive dust	Soil movement, mobile source movement	None	--

Notes:

1. Because constituents of the paving and coating materials were unknown, it was assumed that no air toxics were present in these materials.

Abbreviations:

DPM - diesel particulate matter

PM_{2.5} - fine particulate matter

TOG - total organic gas

TAC - toxic air contaminant

Table A4.3-CST-16
Off-Road Construction Equipment Emissions for HRA
Chevron Modernization Project
Richmond, California

	Year	Construction Phase	DPM	PM _{2.5}
			lb	
Completed Construction	2008	Hydrogen Plant Tie-In	1,364	1,364
		Hydrogen Plant Replacement	4,027	4,027
		Sulfur Removal Improvements	2,265	2,265
	2009	Hydrogen Plant Tie-In	4,710	4,710
		Hydrogen Plant Replacement	5,556	5,556
		Sulfur Removal Improvements	3,847	3,847
Future Construction	2014	Existing Storage Tank Domed Roof Installation	46	46
		Hydrogen Plant Tie-In	2,444	2,444
		Hydrogen Plant Replacement	4,523	4,523
		Sulfur Removal Improvements	2,883	2,883
		Project Water Reuse	53	53
	2015	Hydrogen Plant Replacement	776	776
		Sulfur Removal Improvements	2,079	2,079
	2016	Existing Hydrogen Plant Demolition	1,268	1,268

Abbreviations:

DPM - diesel particulate matter

HRA - health risk assessment

lb - pound

PM_{2.5} - fine particulate matter

Table A4.3-CST-17
On-Road Construction Mobile Emissions for HRA1
Chevron Modernization Project
Richmond, California

	Year	Onsite or Offsite ³	Vehicle Type	Gasoline TOG	DPM	PM _{2.5} ²
				lbs		
Completed Construction	2008	Onsite ³	Worker	5,702	31	56
			Delivery Trucks, Flatbeds, and Soil Hauling Trucks	0	368	368
		Offsite ³	Worker	3,158	0.1	25
			Delivery Trucks, and Soil Hauling Trucks	0	52	53
	2009	Onsite ³	Worker	12,369	64	119
			Delivery Trucks, Flatbeds, and Soil Hauling Trucks	0	619	622
		Offsite ³	Worker	5,803	0.2	48
			Delivery Trucks, and Soil Hauling Trucks	0	28	29
Future Construction	2014	Onsite ³	Worker	5,621	69	123
			Delivery Trucks, Flatbeds, and Soil Hauling Trucks	0	215	279
		Offsite ³	Worker	6,049	0.1	77
			Delivery Trucks, and Soil Hauling Trucks	0	9	12
	2015	Onsite ³	Worker	2,115	16	40
			Delivery Trucks, Flatbeds, and Soil Hauling Trucks	0	36	51
		Offsite ³	Worker	1,521	0.03	21
			Delivery Trucks, and Soil Hauling Trucks	0	1	2
	2016	Onsite ³	Worker	1,171	0.03	7
			Delivery Trucks, Flatbeds, and Soil Hauling Trucks	0	0.2	0.3
		Offsite ³	Worker	62	0.001	1
			Delivery Trucks, and Soil Hauling Trucks	0	1	1

Notes:

1. Emissions were estimated using the emissions factor generated with ARB EMFAC2011 and the activity data summarized in Tables 4.3-CST-7a and 4.3-CST-7b. The equations for the calculation are explained in Table 4.3-CST-3a.
2. The emissions presented here also include brakewear and tirewear.
3. Onsite emissions are emissions occurring within the Facility boundary; offsite emissions are emissions occurring outside of Facility boundary.

Abbreviations:

DPM - diesel particulate matter
HRA - health risk assessment
lb - pound
PM_{2.5} - fine particulate matter
TOG - total organic gases

Table A4.3-CST-18
Summary of Construction Criteria Air Pollutant and Greenhouse Gas Emissions for 2 MW Solar Facility
Chevron Modernization Project
Richmond, California

Year	CAP Emissions (lbs) ¹					GHG Emissions (lbs) ¹			
	ROG	NOx	CO	PM ₁₀	PM _{2.5} ²	CH ₄	N ₂ O	CO ₂	CO ₂ e
2014	950	5,990	2,546	215	177	32	43	1,079,622	1,093,742

Notes:

1. The emissions due to off-road, and on-road sources are consistent with the methodology described in Tables 4.3-CST-3a. Note BAAQMD guidelines present the Significant Threshold for PM₁₀ exhaust and PM_{2.5} exhaust only. However PM emissions shown here and compared against thresholds includes emissions from exhaust, brakewear, and tirewear.
2. PM₁₀ emission factor was conservatively used as a surrogate for PM_{2.5} emission factor.

Abbreviations:

CAP - criteria air pollutants
CO - carbon monoxide
CO₂ - carbon dioxide
CH₄ - methane
g - gram
GHG - greenhouse gas
lb - pound
N₂O - nitrous oxide
NOx - nitrogen oxides
PM₁₀ - coarse particulate matter
PM_{2.5} - fine particulate matter
ROG - reactive organic gas

Sources:

BAAQMD. 2011. Adopted Air Quality CEQA Thresholds of Significance. May

Table A4.3-CST-19
Summary of Construction Emissions for HRA for 2 MW Solar
Facility
Chevron Modernization Project
Richmond, California

Year	TAC Emissions (lbs) ¹		
	Gasoline TOG	DPM	PM _{2.5} ²
2014	377	122	129

Notes:

1. The emissions due to off-road, and on-road sources are consistent with the values and methodology described in Tables 4.3-CST-3a.
2. The emissions presented here also include brakewear and tirewear.

Abbreviations:

DPM - diesel particulate matter
HRA - health risk assessment
lb - pound
PM_{2.5} - fine particulate matter
TAC - toxic air contaminants
TOG - total organic gases

Table A4.3-CST-20
Summary of Construction Criteria Air Pollutant and Greenhouse Gas Emissions for 14 Tank Dome Installations
Chevron Modernization Project
Richmond, California

# of Tan Domes	CAP Emissions (lbs) ¹					GHG Emissions (lbs) ¹			
	ROG	NOx	CO	PM ₁₀	PM _{2.5} ²	CH ₄	N ₂ O	CO ₂	CO ₂ e
1	191	1,345	717	57	54	11	9	191,706	194,776
14	2,673	18,829	10,033	804	751	150	129	2,683,878	2,726,870

Notes:

1. The emissions due to off-road, and on-road sources are consistent with the methodology described in Tables 4.3-CST-3a. Note BAAQMD guidelines present the Significant Threshold for PM₁₀ exhaust and PM_{2.5} exhaust only. However PM emissions shown here and compared against thresholds includes emissions from exhaust, brakewear, and tirewear.
2. PM₁₀ emission factor was conservatively used as a surrogate for PM_{2.5} emission factor.

Abbreviations:

CAP - criteria air pollutants
CO - carbon monoxide
CO₂ - carbon dioxide
CH₄- methane
g - gram
GHG - greenhouse gas
lb - pound
N₂O - nitrous oxide
NOx - nitrogen oxides
PM₁₀ - coarse particulate matter
PM_{2.5} - fine particulate matter
ROG - reactive organic gas

Sources:

BAAQMD. 2011. Adopted Air Quality CEQA Thresholds of Significance. May

Table A4.3-CST-21
Summary of Construction Emissions for HRA for 14 Tank Dome
Installations
Chevron Modernization Project
Richmond, California

# of Tan Domes	TAC Emissions (lbs) ¹		
	Gasoline TOG	DPM	PM _{2.5} ²
1	50	50	52
14	695	701	721

Notes:

1. The emissions due to off-road, and on-road sources are consistent with the values and methodology described in Tables 4.3-CST-3a.
2. The emissions presented here also include brakewear and tirewear.

Abbreviations:

DPM - diesel particulate matter
HRA - health risk assessment
lb - pound
PM_{2.5} - fine particulate matter
TAC - toxic air contaminants
TOG - total organic gases

APPENDIX 4.3 - EE

EE: Bay Area Air Quality Management District
Engineering Evaluation Report

**Bay Area Air Quality Management District
Engineering Evaluation Report
Application No. 12842
Chevron Energy and Hydrogen Renewal Project**

Chevron Richmond Refinery
841 Chevron Way
Richmond, CA 94801
BAAQMD Plant No. 10

By:

Greg Solomon, PE
Senior Air Quality Engineer

Brian K. Lusher
Air Quality Engineer II

Reviewed by:

Janet P. Stromberg
Supervising Air Quality Engineer

Barry G. Young
Air Quality Engineering Manager

Brian Bateman
Director of Engineering

A#12842
9/19/2008

TABLE OF CONTENTS

BACKGROUND	4
HYDROGEN PLANT REPLACEMENT	4
New Equipment	5
Shutdown of Existing Equipment	6
REFORMER REPLACEMENT.....	7
New Equipment	7
Shutdown of Existing Equipment	7
POWER PLANT REPLACEMENT	8
New Equipment	8
Shutdown of Existing Equipment	9
HYDROGEN PURITY IMPROVEMENTS.....	9
New Equipment	11
Modification of Existing Equipment	11
PROJECT EMISSIONS.....	12
PLANT CUMULATIVE INCREASE	12
TOXIC AIR CONTAMINANT EMISSIONS	17
STATEMENT OF COMPLIANCE	19
BACT for Fugitive Components	22
BACT for Refinery Process Heaters (>50 MMBtu/hr).....	23
BACT for Hydrogen Plant Cooling Tower	25
BACT for Hydrogen Plant Flare	26
BACT for Continuous Catalyst Regenerative Reformer	27
BACT for Cogeneration Gas Turbine and Heat Recovery Steam Generator with Duct Burners.....	28
BACT for Modified Sulfur Recovery Units	32
SO ₂ BACT:.....	33
NO _x BACT:	34
CO BACT ANALYSIS:	34
PM ₁₀ BACT:.....	36
POC BACT:	36
Offsets:	36
Contemporaneous Emission Reductions.....	37
General Requirements	37
Timing for Provision of Offsets.....	38
Offset Requirements by Pollutant	38
POC Offsets	38
NO _x Offsets.....	39
PM ₁₀ Offsets.....	39
SO ₂ Offsets	39
PREVENTION OF SIGNIFICANT DETERIORATION AIR QUALITY IMPACT ANALYSIS	39
HEALTH RISK SCREENING ANALYSIS	39
OTHER APPLICABLE DISTRICT RULES AND REGULATIONS	40

STATE REQUIREMENTS.....	49
OTHER FEDERAL REQUIREMENTS	49
PUBLIC NOTICE/COMMENTS.....	54
CEQA	55
RECOMMENDATIONS.....	57
HYDROGEN PLANT REPLACEMENT	57
NEW EQUIPMENT	57
SHUTDOWN OF EXISTING EQUIPMENT.....	57
REFORMER REPLACEMENT	58
New Equipment	58
Shutdown of Existing Equipment	58
POWER PLANT REPLACEMENT.....	59
New Equipment	59
Shutdown of Existing Equipment	59
HYDROGEN PURITY IMPROVEMENTS.....	59
New Equipment	60
Modification of Existing Equipment	60
OTHER ALTERED EQUIPMENT.....	61
Retrofitting of Existing Furnaces with Low NO _x Burners (Reg. 9-10 Compliance).....	61
CONDITIONS	61
APPENDICES	61
APPENDIX A	63
CRITERIA EMISSIONS CALCULATIONS	63
APPENDIX B	64
TAC EMISSIONS CALCULATIONS.....	64
APPENDIX C	65
HEALTH RISK SCREENING ANALYSIS	65
APPENDIX D	66
DR. SAHU’S RESPONSES TO COMMENTS FROM CBE	66
APPENDIX E	67
CEQA FINDINGS DOCUMENT.....	67

BACKGROUND

Chevron Products Co. (Chevron or applicant) has submitted to the Bay Area Air Quality Management District (District or BAAQMD) a permit application for an Authority to Construct/Permit to Operate for the Energy & Hydrogen Renewal Project (Renewal Project or Project) at its Richmond Refinery (Refinery or facility). The Renewal Project is intended to improve the reliability, flexibility, and energy efficiency of the Refinery. The Project does not include an increase in the permitted throughput of crude oil at the Refinery. The Project is comprised of four main components:

- Hydrogen Plant Replacement
- Reformer Replacement
- Power Plant Replacement
- Hydrogen Purity Improvements

HYDROGEN PLANT REPLACEMENT

The existing 40+ year-old two-train Hydrogen Plant (180 million standard cubic feet per day (MMSCFD) total capacity) at the Refinery would be replaced with a new two-train Hydrogen Plant (280 MMSCFD total capacity). As part of the replacement of the Hydrogen Plant, the existing Hydrogen Recovery Unit (50 MMSCFD) would be replaced with a new Hydrogen Recovery Unit (50 MMSCFD). A new Cooling Tower and Flare would also be constructed as part of the Hydrogen Plant replacement.

Hydrogen is essential to produce current cleaner transportation fuels such as California gasoline. For instance, hydrogen is used by refineries for cracking and to remove impurities such as sulfur, which is required by California fuel standards. The existing Hydrogen Plant is energy inefficient, and produces relatively impure hydrogen (95% purity).

The new Hydrogen Plant would be capable of handling several different feeds including refinery process gas (RPG), refinery fuel gas (RFG), natural gas, liquefied petroleum gas (LPG, including propane), and ammonia (NH₃). RPG is gas produced by the refinery at its process units prior to going to the RFG drums where it is mixed/blended and leaves as RFG. Each train would include back-end pressure swing adsorption (PSA) units for hydrogen purification. The tail gas from the PSA units would be used to fuel the Hydrogen Plant Reformer Furnaces. The Hydrogen Plant Reformer Furnaces would normally be fired on a combination of natural gas and PSA tail gas.

During normal operation, Chevron's new Hydrogen Plant would have the capability to use RPG, natural gas, or a combination of the two, as a feedstock to the Hydrogen Plant. Chevron would prefer to start up in most instances using as much RPG as possible as a feedstock from the beginning, but that cannot be confirmed until Chevron has operating experience with the RPG portion. Chevron may instead have to use only natural gas feedstock for startup until satisfactory hydrogen product purity is achieved, and then introduce the RPG. The duration of startup should not be significantly impacted by the feedstock combination.

The feedstock composition would be that of pipeline quality natural gas whenever 100 percent natural gas feedstock is used, and a natural gas and RPG mixture during normal operation, except that the sulfur in both feedstock streams would be removed to less than 100 parts per billion (ppb). The actual use of RPG as part of the feedstock would be contingent upon stable and safe operation of the Reformers. During turndown, the natural gas flow is decreased but the RPG flow usually is not, so the RPG provides a higher percentage of the feedstock flow for that case as compared to normal operation.

Each Hydrogen Plant Reformer Furnace would be abated by Selective Catalytic Reduction (SCR). Each furnace would have a separate SCR unit and defined exhaust point. The two trains of the Hydrogen Plant would share a Cooling Tower and a Flare.

The normal operating temperature of the Hydrogen Plant Reformer Furnace will be in excess of 1,900 degrees Fahrenheit (F). The Hydrogen Plant Reformer Furnace supplier has recommended a target warm-up rate of 90 F/hour. At this rate, it would take slightly more than 20 hours of heating to reach 1,900 F. An additional four hours would be necessary to purge the nitrogen out of the PSA unit, achieve hydrogen purity (@ 99% purity), and fully route the tail gas to the furnace. As a result, a period of 24 continuous hours would be required for startup of the Hydrogen Plant.

The dryout/warmup is a series of steps that gently removes the excess moisture present in castable monolithic refractory linings. This is accomplished by heating the Hydrogen Plant Reformer Furnace at a rate no greater than 35 F/hour. In addition, several temperature hold steps are required. When the furnace temperature reaches one of the hold steps, it is held at that temperature by maintaining a constant firing rate. The hold steps occur at approximately 200 F, 400 F, 750 F, and 1,000 F. The duration of the hold steps can be as long as 24 hours each. The length of the hold step is dependent on the thickness of the castable monolithic refractory linings. After the 1,000 F hold step, the furnace is cooled at a rate of 90 F/hour until it is brought back to ambient temperature. In total, this process can take upwards of 120 hours to ensure the proper dryout of the castable monolithic refractory linings.

The SCR units are not operated during the dryout/warmup period. Dryout/warmup periods are necessary when there are significant refractory changes or refractory replacement. There are two reasons for SCR not being used during dryout/warmup. First, during this period the temperature at the SCR does not reach the minimum required temperature of 500 F in order to inject ammonia for oxides of nitrogen (NO_x) reduction. Second, should there be any dust remaining on the castable monolithic refractory linings from construction, or generated during the dryout/warmup process, it would get trapped in, and blind (or mask), the SCR.

The new Hydrogen Plant will be owned and operated by Praxair, Inc.. However, the Hydrogen Plant will be considered to be part of the Refinery for regulatory purposes including, but not limited to, the flare monitoring and control rule requirements of District Regulations 12-11 and 12-12, and the Major Facility Review requirements of Title V.

New Equipment

The proposed new equipment (i.e., sources) for the Hydrogen Plant Replacement is as follows:

S-4449 Hydrogen Plant Train #1, 140 MMSCFD Hydrogen Produced maximum capacity

S-4450 Hydrogen Plant Train #2, 140 MMSCFD Hydrogen Produced maximum capacity

S-4451 Hydrogen Recovery Unit, 50 MMSCFD Hydrogen Recovered maximum capacity

S-4471 Hydrogen Plant Train #1 Reformer Furnace, 950 million British Thermal Units per hour (MMBtu/hr) maximum firing rate higher heating value (HHV), equipped with Low-NO_x Burners abated by **A-0302** Hydrogen Plant Train #1 SCR [Vented to **P-0302** Hydrogen Plant Train #1 Furnace Exhaust]

S-4472 Hydrogen Plant Train #2 Reformer Furnace, 950 MMBtu/hr maximum firing rate HHV, equipped with Low-NO_x Burners abated by **A-0303** Hydrogen Plant Train #2 SCR [Vented to **P-0303** Hydrogen Plant Train #2 Furnace Exhaust]

S-4465 Hydrogen Plant Cooling Tower, 36,000 gallons/minute maximum capacity [Vented to **P-0304** Hydrogen Plant Cooling Tower Exhaust]

S-6021/A-6021 Hydrogen Plant Flare, 1.6 MMBtu/hr Pilot maximum capacity HHV, [Vented to **P-0305** Hydrogen Plant Flare Exhaust]

Shutdown of Existing Equipment

The following existing equipment would be shutdown as a result of the proposed Hydrogen Plant Replacement:

S-4250 Hydrogen Plant, Trains A and B, (Total Combined Capacity 150 MMSCFD) Train A abated by **A-261** Packed Bed Scrubber De-aerator Vent (Methanol), Exhaust to P-261 and Train B abated by **A-262** Packed Bed Scrubber De-aerator Vent (Methanol), Exhaust to P-262

S-4170 Hydrogen Plant Train A Reformer Furnace F-305 (820 MMBtu/hr), Exhaust to P-126 abated by **A-260** Hydrogen Plant Train A SCR System

S-4171 Hydrogen Plant Train B Reformer Furnace F-355 (820 MMBtu/hr), Exhaust to P-127, P-128, P-129, P-130

S-4348 Hydrogen Recovery Unit (1.1 ton/hour max), Exhaust to S-6039

S-4156 Feed Furnace F-320 (41 MMBtu/hr), Exhaust to P-114

S-4157 Feed Furnace F-330 (41 MMBtu/hr, Multi-fuel), Exhaust to P-115

S-4158 Feed Furnace F-340 (48 MMBtu/hr), Exhaust to P-116

REFORMER REPLACEMENT

Reforming is a refining process that increases the octane of gasoline components. Chevron's two existing naphtha octane Reformers that were originally constructed in the 1960s and 1970s would be replaced with new equipment. The existing units utilize semi-regenerative technology that requires the Reformers to shutdown twice a year to regenerate the catalyst. The existing Reformers have a combined capacity of 71,300 barrels per day (BPD) as listed on the current Refinery Title V permit. A single Reformer would replace the two existing units. The new Reformer would utilize a Continuous Catalyst Regeneration technology that would reduce shutdowns and would operate on a three to five year turnaround cycle. The new Continuous Catalyst Regeneration Reformer (CCRR) would have a capacity of 71,300 BPD. Replacing the two existing Reformers with a single unit would reduce the number of Reformer Furnaces from eight to four. The improved operation of the new CCRR, and improved hydrogen purity, would enable the Refinery to produce more California gasoline.

New Equipment

The proposed Reformer Replacement includes the following new sources and abatement devices:

S-4452 Continuous Catalyst Regeneration Reformer, 71,300 BPD maximum capacity [Vented to **P-0308** CCRR Regeneration Vent]

S-4477 Reformer Furnace #1, 201 MMBtu/hr maximum firing rate HHV, equipped with Low-NO_x Burners abated by **A-0309** SCR

S-4478 Reformer Furnace #2, 402 MMBtu/hr maximum firing rate HHV equipped with Low-NO_x Burners abated by **A-0309** SCR

S-4479 Reformer Furnace #3, 201 MMBtu/hr maximum firing rate HHV equipped with Low-NO_x Burners abated by **A-0309** SCR

S-4480 Reformer Furnace #4, 201 MMBtu/hr maximum firing rate HHV equipped with Low-NO_x Burners abated by **A-0309** SCR

A-0309 SCR for CCRR Furnaces #1 - #4 (S-4477, S-4478, S-4479, S-4480) [Vented to **P-0309** Reformer Furnaces #1 - #4 (S-4477, S-4478, S-4479, S-4480)]

Shutdown of Existing Equipment

The following existing equipment would be shutdown as a result of the proposed Reformer Replacement:

S-4283 No. 4 Catalytic Reformer (40.3 MBPD)

S-4038 No. 4 Rheniformer Furnace, F-3550 (187 MMBtu/hr), Exhaust P-40, P-41

S-4039 No. 4 Rheniformer Furnace, F-3560 (170 MMBtu/hr), Exhaust P-40, P-41

S-4040 No. 4 Rheniformer Furnace, F-3570 (152 MMBtu/hr), Exhaust P-40, P-41

S-4041 No. 4 Rheniformer Furnace, F-3580 (77 MMBtu/hr), Exhaust P-40, P-41

S-4237 No. 5 Catalytic Reformer (31 MBPD)

S-4042 No. 5 Rheniformer Furnace, F550 (198 MMBtu/hr), Exhaust P-42, P-43
Unit Equipped with 36-Ultra Low NO_x Burners

S-4043 No. 5 Rheniformer Furnace, F-560 (133 MMBtu/hr), Exhaust P-42, P-43

S-4044 No. 5 Rheniformer Furnace, F-570 (78 MMBtu/hr), Exhaust P-42, P-43

S-4045 No. 5 Rheniformer Furnace, F-580 (51 MMBtu/hr), Exhaust P-42, P-43

POWER PLANT REPLACEMENT

The Renewal Project includes the shutdown of the five existing Boilers of Power Plant No. 1 that were constructed in the 1930s and 1940s. Each of these Boilers has a maximum firing rate ranging from 233 to 272 MMBtu/hr. These Boilers would be replaced with a new Gas Turbine utilizing Heat Recovery Steam Generation Units with Duct Burners and abated by SCR and Oxidation Catalyst. The Gas Turbine would be fired on either natural gas, or a combination of natural gas and LPG. Aqueous or anhydrous ammonia is injected into the SCR catalyst to control NO_x emissions. The Duct Burners would be fired on RFG or a combination of natural gas and RFG. Chevron currently operates two other Cogeneration Units (S-4350 through S-4353).

New Equipment

The proposed Power Plant Replacement includes the following new sources and abatement devices:

S-4473 3rd Cogeneration Gas Turbine, 550 MMBtu/hr maximum firing rate HHV. Combined Gas Turbine and HRSG equipped with Duct Burners 860 MMBtu/hr firing rate (calendar day). Combined Gas Turbine and HRSG equipped with Duct Burners 840 MMBtu/hr maximum firing rate (annual average)

S-4474 3rd Cogeneration Heat Recovery Steam Generator (HRSG) equipped with Duct Burners, equipped with Low-NO_x Burners, 350 MMBtu/hr Duct Burner maximum firing rate HHV. Combined Gas Turbine and HRSG equipped with Duct Burners 860 MMBtu/hr firing rate (calendar day). Combined Gas Turbine and HRSG with Duct Burners 840 MMBtu/hr maximum firing rate (annual average)

A-74 SCR abating both 3rd Cogeneration Gas Turbine and Heat Recovery Steam Generator

A-75 Oxidation Catalyst abating both 3rd Cogeneration Gas Turbine and Heat Recovery Steam Generator [Vented to **P-0306** 3rd Cogeneration Gas Turbine/Heat Recovery Steam Generator]

Shutdown of Existing Equipment

The following existing equipment would be shutdown as a result of the proposed Power Plant Replacement:

S-4129 Boiler No. 1 (233 MMBtu/hr)

S-4131 Boiler No. 3 (236 MMBtu/hr)

S-4132 Boiler No. 4 (235 MMBtu/hr)

S-4133 Boiler No. 5 (237 MMBtu/hr)

S-4135 Boiler No. 7 (272 MMBtu/hr)

HYDROGEN PURITY IMPROVEMENTS

The Renewal Project includes the modification of existing equipment, and the installation of new process equipment, for improving hydrogen purity. The Hydrogen Purity Improvements would include the installation of new or modified equipment at the Fluidized Catalytic Cracking (FCC) Feed Hydrotreater, Sulfur Recovery Units (SRUs), and the No. 5 H₂S Unit.

New equipment to remove hydrogen sulfide (H₂S) from the FCC Feed Hydrotreater recycle hydrogen stream includes an Amine Contactor, Amine Regenerator, and Amine Storage Tanks. Alterations of the FCC Feed Hydrotreater furnaces and modifications of the FCC Feed Hydrotreater process equipment would also be part of the Hydrogen Purity Improvements. Alterations of the TKN and Poly plant furnaces are being made in order to comply with District Regulation 9, Rule 10. The current capacity of the FCC Feed Hydrotreater (S-4253 TKC Unit) is 65,000 BPD. The proposed modifications to the FCC Feed Hydrotreater would increase the capacity to 96,000 BPD.

Nine hydrogen compressors located throughout the Refinery would be modified as part of the Hydrogen Purity Improvements to preserve the present capacity with purer hydrogen streams.

The SRU modifications include a capacity increase, new process equipment, oxygen storage capability, new Sulfur Degassing Vessel, new Sulfur Loading Rack, and the installation of an additional Acid Gas Scrubber.

Hydrogen is used in several refining processes that remove impurities that naturally occur in crude oil, and in processes that convert oil to blending stocks for transportation fuels. The purity of hydrogen affects the performance of these refinery processes. The replacement of the Hydrogen Plant and Catalytic Reformer would also significantly improve the purity of hydrogen supplied to other processing units. Within these process units, hydrogen is circulated and it removes contaminants, such as nitrogen and sulfur, from the various process streams. These improvements would enhance the Refinery's ability to refine crude oil and other refinery feedstocks, or intermediates, from around the world.

The Hydrogen Purity Improvements consist of installing equipment needed to remove H₂S from the recycle hydrogen stream in the FCC Feed Hydrotreater (S-4253 TKC Unit). The following equipment would be used for this purpose: S-4454 No. 6 H₂S Plant, Recycle Amine Regenerator, and S-4456 Fresh Amine Storage Tank.

The capacity of three existing SRUs, S-4227 through S-4229, would be increased as part of this project. The modifications to the SRUs include adding process equipment and oxygen storage capability to allow oxygen enrichment into the Reaction Furnace.

Chevron would install an Acid Gas Scrubber A-4450 as part of the Hydrogen Purity Improvements. This additional acid gas scrubbing capacity, with existing A-4451, C-840 Emergency Scrubber, along with load shedding of the acid gas, would provide up to 3 hours of emergency scrubbing capacity or result in acid gas generating sources to be shutdown. Chevron would be given a permit condition limiting the acid gas feed to the three SRUs to that of the emergency scrubbing capacity. A-4450 Acid Gas Scrubber would abate #3 H₂S Plant (S-4433), #4 H₂S Plant (S-4434), #5 H₂S Plant (S-4435), Recycle Amine Regenerator (S-4454), and the #8 NH₃-H₂S Plant (S-4429) and #18 NH₃-H₂S Plant (S-4345). The Acid Gas Scrubber (A-4450) would also be used to prevent the release of acid gas during an unscheduled loss of SRU capacity.

Each SRU would be abated by a new dedicated Wet Electrostatic Precipitator (Wet ESP), which would be installed to abate sulfuric acid (H₂SO₄) mist emissions from the SRUs. The installation of the Wet ESPs will keep the H₂SO₄ emissions from the Project from exceeding the Prevention of Significant Deterioration (PSD) trigger level. The Wet ESPs would also ensure that particulate matter (PM₁₀) emissions do not increase above the baseline emissions since the Wet ESPs would reduce the PM₁₀ emissions by 90% or greater by weight. District PM₁₀ Best Available Control Technology (BACT) requirements would be satisfied through the use of the Wet ESPs.

Some other changes proposed by Chevron to improve the performance of the SRUs and to comply with both sulfur dioxide (SO₂) and carbon monoxide (CO) BACT requirements include the following:

- Reduce H₂S bypassing at the thermal oxidizer, which contributes to both SO₂ formed in the stack heater and the CO destruction efficiency;
- Improve scrubbing of SO₂, which should result in more stable operation at the higher sulfur loading; and
- Reduce the number and size of upsets caused by hydrocarbon in the acid gas feed to the

SRUs, which impacts both SO₂ and CO emissions.

New Equipment

The proposed Hydrogen Purity Improvements includes the following new sources and abatement devices:

S-4436 F-2170 Stack Gas Heater No. 1 SRU, 31.9 MMBtu/hr maximum firing rate HHV [vented to **P-0151** SRU Train #1 Exhaust]

S-4437 F-2270 Stack Gas Heater No. 2 SRU, 31.9 MMBtu/hr maximum firing rate HHV [Vented to **P-0152** SRU Train #2 Exhaust]

S-4438 F-2370 Stack Gas Heater No. 3 SRU, 56.1 MMBtu/hr maximum firing rate HHV [Vented to **P-0153** SRU Train #3 Exhaust]

S-4454 #6 H₂S Plant, Recycle Amine Regenerator, 11 MMSCFD maximum capacity

S-4490 Sulfur Loading Rack, 157 LT/hour maximum capacity abated by **A-0310** Sulfur Loading Rack Caustic Scrubber [Vented to **P-0310** Sulfur Loading Rack Caustic Scrubber Exhaust]

A-4450 Acid Gas Scrubber (C-2440), 11 MMSCFD Acid Gas for abatement of: #3 H₂S Plant

(S-4433), #4 H₂S Plant (S-4434), #5 H₂S Plant (S-4435), Recycle Amine Regenerator (S-4454), #8 NH₃-H₂S Plant (S-4429), and #18 NH₃-H₂S Plant (S-4345)

A-4451 Acid Gas Scrubber (C-840), 12.5 MMSCFD Acid Gas for abatement of: #3 H₂S Plant (S-4433), #4 H₂S Plant (S-4434), #5 H₂S Plant (S-4435), Recycle Amine Regenerator (S-4454), the #8 NH₃-H₂S Plant (S-4429), and #18 NH₃-H₂S Plant (S-4345)

S-4456 Fresh Amine Storage Tank, 70,000 gallon maximum capacity

S-3227 Lean Amine Storage Tank, 130,000 gallon maximum capacity

S-3228 Caustic Storage Tank, 200,000 gallon maximum capacity

S-3229 Spent Caustic Storage Tank, 400,000 gallon maximum capacity

Modification of Existing Equipment

The following existing equipment (i.e., sources) would be modified as a result of the proposed Hydrogen Purity Improvements:

S-4253 TKC/FCC Feed Hydrotreater, 96,000 BPD maximum capacity

S-4435 No. 5 H₂S Plant, 9.6 MMSCFD maximum capacity

S-4227 Sulfur Recovery Unit Train #1, 345 LTD maximum capacity, abated by both **A-0020** SRU#1 Tail Gas Unit Thermal Oxidizer, 30.8 MMBtu/hr HHV maximum firing rate and **A-120** Wet Electrostatic Precipitator (ESP)

S-4228 Sulfur Recovery Unit Train #2, 345 LTD maximum capacity, abated by **A-0021** SRU#2 Tail Gas Unit Thermal Oxidizer, 30.8 MMBtu/hr HHV maximum firing rate and **A-121** Wet Electrostatic Precipitator (ESP)

S-4229 Sulfur Recovery Unit Train #3, 570 LTD maximum capacity, abated by **A-0022** SRU#3 Tail Gas Unit Thermal Oxidizer, 45.0 MMBtu/hr HHV maximum firing rate and **A-122** Wet Electrostatic Precipitator (ESP)

Other Altered Equipment

Retrofitting of Existing Furnaces with Low NO_x Burners (Reg. 9-10 Compliance)

S-4161 F-510 TKN Furnace, 61 MMBtu/hr maximum firing rate HHV, equipped with Low-NO_x Burners [Vented to **P-0311** TKN Furnace Exhaust]

S-4162 F-520 TKN Furnace, 61 MMBtu/hr maximum firing rate HHV, equipped with Low-NO_x Burners [Vented to **P-0311** TKN Furnace Exhaust]

S-4163 F-530 TKN Furnace, 61 MMBtu/hr maximum firing rate HHV, equipped with Low-NO_x Burners [Vented to **P-0311** TKN Furnace Exhaust]

S-4188 F-651 Polymer Furnace, 27 MMBtu/hr maximum firing rate HHV, equipped with Low-NO_x Burners [Vented to **P-0312** Polymer Furnace Exhaust]

S-4189 F-661 Polymer Furnace, 15 MMBtu/hr maximum firing rate HHV, equipped with Low-NO_x Burners [Vented to **P-0313** Polymer Furnace Exhaust]

PROJECT EMISSIONS

PLANT CUMULATIVE INCREASE

In general, estimates of criteria pollutant emissions (precursor organic compounds (POC), nitrogen oxides (NO_x), particulate matter (PM₁₀), sulfur dioxide (SO₂), and carbon monoxide (CO)) from the Renewal Project fall into the following categories: Combustion, fugitive components, cooling tower, and process units/miscellaneous.

Project combustion sources, including Furnaces, Cogeneration Units (Gas Turbine/Duct Burner), and Flare

The District uses a number of methodologies to estimate emissions. For combustion sources subject to the District BACT requirements, where NO_x and CO concentrations are limited, emissions are estimated using the permit condition concentration limits and either the maximum, or permitted maximum, exhaust flow rate. For SO_2 emission estimates, the total sulfur concentration contained in the fuel combusted is assumed to convert 100 percent to SO_2 emissions. For the other criteria pollutants (PM_{10} and POC), and sources which are not limited by concentration, emission factors are used to estimate the emissions. These emission factors may be available from either a vendor/manufacturer guarantee or a suitable United States Environmental Protection Agency (EPA) AP-42 emission factor.

Combustion sources in the Renewal Project, with the exception of the flare, would be equipped with continuous emission monitors for both NO_x and CO emissions. For SO_2 emissions, both the total sulfur concentrations contained in the fuel and the fuel flow would be continuously monitored. Periodic source testing will be required for the other criteria pollutants.

Project Fugitive Components

The District performed fugitive emission estimates for this project using the Correlation Equation Method in the “California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999).” The District verified that Chevron’s leak detection and repair program (LDAR) would be using the approved 10,000 parts per million (ppm) pegged leaker emission factor as opposed to the 100,000 ppm emission factor, since the latter was developed using very few data points. The District also reserves the right, in the permit conditions, to approve the calculation methodology to be used in order to demonstrate compliance with emission estimates, offsets, etc. on an ongoing basis. The emission factors used in the emissions estimate are based on Chevron’s LDAR for similar source categories within the Refinery. The emission factors used correspond to an average leak rate much less than the 100 ppm limit in District Regulation 8-18, or current District BACT guidelines. The LDAR program will be used to demonstrate compliance with the emission limits specified in the permit conditions that also correspond to the specific number of components associated with this project. A more detailed description of the fugitive emissions estimate is contained in the BACT section of this document.

Project Cooling Tower

The Hydrogen Plant Cooling Tower PM_{10} emissions calculation is based on a maximum drift rate (as percent of circulation) of 0.0005%. The derivation of the emission factor (0.208 pounds of PM_{10} per million gallons of water circulation rate (lb PM_{10} /MMgal)) used in the Emissions Worksheet is presented in Table 1.

Table 1 – Hydrogen Plant Cooling Tower Emissions Worksheet	
Parameter	Value

Table 1 – Hydrogen Plant Cooling Tower Emissions Worksheet	
Maximum total dissolved solids (TDS) content of circulating water, mg/L or parts per million by weight (ppmw)	5,000
Maximum drift rate, % of circulation rate	0.0005%
Emission factor, lb PM ₁₀ /MMgal circulation rate (0.0005% * 8.33 lb/gal * 5,000 ppmw)	0.208

When this emission factor is used in the Emissions Worksheet with a maximum circulation rate of 36,000 gallons per minute (gpm), the resulting emission rate is:

$$(36,000 \text{ gpm}) * 60 * 24 * 365 / 1,000,000 = 18,922 \text{ MMgal/year}$$

$$18,922 \text{ MMgal/year} * 0.208 \text{ pound (lb) PM}_{10}\text{/MMgal} / 2000 = 1.97 \text{ tons/year PM}_{10}$$

The POC emissions from the Hydrogen Plant Cooling Tower were estimated using an emission factor from EPA AP-42.

Project Process Units/Miscellaneous Units including: Sulfur Recovery Units, CCRR Vent, and Sulfur Loading Rack

Whenever available, the District uses maximum, or permitted maximum, concentrations with maximum, or permitted maximum, exhaust flow rates to determine the respective emissions. In other cases, the District uses either vendor or manufacturer's guarantees, EPA AP-42 emission factors, or other appropriate emission factors or studies. Verification of emissions is to be done either through continuous emission monitors or source testing.

Detailed Emissions Estimates contained in Appendix A

The detailed methodology used to determine the Plant Cumulative Increase/Criteria Pollutant Emissions Estimates is provided in Appendix A. Appendix A contains calculation spreadsheets (or tables) that are organized by criteria pollutant, followed by an explanation of the calculation method for each pollutant, organized by source. Each spreadsheet in Appendix A also includes the basis for the criteria pollutant emission estimates, by source.

Any reductions in emissions presented in Appendix A represent actual emission reductions used for California Environmental Quality Act (CEQA) and Prevention of Significant Deterioration (PSD) purposes only. These reductions have not been Reasonably Available Control Technology (RACT) adjusted or otherwise reviewed for compliance with District banking or offset requirements. Table 2 provides a summary of emission offsets that are required for the Renewal Project.

Table 2 – Plant Cumulative (Criteria Pollutant) Emissions Increase and Offsets required for the Renewal Project				
Pollutant	Project Emission Increases (cumulative, in tons per year)	Project Emission Offsets Required (in tons per year)	Refinery Emission Reduction Credits Available (in tons per year)	Emission Reduction Credits (Banking Certificate #)
POC	69.34	79.74	236.22	TBD
NO _x	141.20	162.38	162.46	TBD
PM ₁₀	47.95	47.95	45.32	TBD
SO ₂	58.50	58.50	134.67	TBD
CO	147.03	Not applicable	Not applicable	Not applicable

Table 2 does not list the specific Emission Reduction Credits (ERCs) that would be used for the Project. Chevron has requested that the District issue the Authority to Construct using its existing banked ERCs, and review at a later date the ERCs from shutdown sources associated with the Renewal Project. Again, the emission reductions identified in Appendix A were used for CEQA and PSD purposes only. ERCs from the shutdown sources will be evaluated in another application to be submitted by Chevron.

For PM₁₀ emissions, Chevron does not have sufficient PM₁₀ ERCs in the District bank. For CEQA and PSD purposes, the Project PM₁₀ reductions are 89.15 tons per year, since the Project increase is 47.95 tons per year, this should be adequate to offset the PM₁₀ emissions increases. The banked PM₁₀ ERCs of 45.32 tons per year and the shutdown of one of the Project's large Hydrogen Plant Furnaces (S-4171) alone should adequately offset the PM₁₀ emissions increases. Additionally, other Project furnaces will be shutdown and Chevron has SO₂ ERCs in the bank that may be used to offset PM₁₀ emissions increases when adjusted by an appropriate offset ratio.

Table 3 provides a summary of PSD Emissions Increases, Contemporaneous Reductions, and Net Emissions

Table 3 – PSD Emissions Increases, Contemporaneous Reductions, and Net Emissions for the Renewal Project				
Pollutant	Project PSD Emission Increases (in tons/year or lb/day)	Contemporaneous Actual Emission Reductions for Netting (in tons/year or lb/day)	Net Emissions (in tons/year or lb/day)	PSD Trigger Levels (in tons/year or lb/day)
POC	69.87	63.09	6.78 tons/year	40 tons/year
NO _x	174.90	220.47	-45.57 tons/year	40 tons/year
PM ₁₀	66.06	89.15	-23.09 tons/year	15 tons/year
SO ₂	116.14	104.65	11.49 tons/year	40 tons/year
CO	278.75	184.39	94.36 tons/year	100 tons/year
H ₂ SO ₄	16.5	18.97	-2.47 tons/year	7 tons/year
H ₂ SO ₄	90.41 lb/day	103.94 lb/day	-13.53 lb/day	38 lb/day
H ₂ S	4.83	n/d*	< 10 tons/year	10 tons/year
H ₂ S	27.12 lb/day	n/d*	< 55 lb/day	55 lb/day

* Note: The Renewal Project H₂S emissions increases alone did not exceed the PSD trigger levels without taking into account any reductions from shutdown sources at the Refinery for netting purposes.

Shakedown Period and PSD Netting

EPA regulations and guidance indicate when to start counting emission increases from a new or replacement unit at a facility for the purpose of determining applicability of PSD requirements.

According to 40 CFR 52.21(b)(3)(viii) the definition of “net emissions increase” specifies that “an increase that results from a physical change at a source occurs when the emissions unit on which construction occurred becomes operational and begins to emit a particular pollutant. Any replacement unit that requires a shakedown becomes operational only after a reasonable shakedown period, not to exceed 180 days.”

The EPA’s October 1990 draft “NSR Manual” (at page A.38) also provides guidance on the issue:

"An increase resulting from a physical change at a source occurs when the new emissions unit becomes operational and begins to emit a pollutant. A replacement that requires a shakedown period becomes operational only after a reasonable shakedown period, not to exceed 180 days. Since the date construction actually will commence is unknown at the time the applicability determination takes place and is simply a scheduled date projected by the source, the contemporaneous period may shift if construction does not commence as scheduled. Many States have developed PSD regulations that allow different time frames for definitions of contemporaneous. Where approved by EPA, the time periods specified in these regulations govern the contemporaneous timeframe."

Similar to EPA regulations, the maximum length of the “shakedown period” allowed under District regulations is 180 days, as specified in Regulation 2-1-411 (note that the District uses the analogous term “start-up period” instead of “shakedown period”). District Regulation 2-2-

410 provides an additional requirement for replacement sources whereby the simultaneous operation of existing and new sources involved in the replacement may not exceed 90 days. Consistent with federal PSD requirements, the District will determine PSD applicability based on emissions starting at the end of the start-up period for a replacement source (subject to the additional District requirement of no more than 90 days of simultaneous operation of the existing and new sources involved in the replacement).

Baseline Period Emissions (For Sources to be Shutdown)

The baseline period for the Renewal Project was established to be the three years prior to the submittal of the District permit application. For new/modified sources, the emission calculation procedure specified in District Regulation 2-2-605 was followed. Regulation 2-2-605 requires that the baselines be RACT-adjusted. RACT is defined differently for sources that will continue to operate or that are being shutdown, as is specified in the definition given below. As was previously indicated, for PSD and CEQA purposes a RACT adjustment is not required and, therefore, was not performed.

2-2-243 Reasonably Available Control Technology (RACT): For sources which are to continue operating, RACT is the lowest emission limit that can be achieved by the specific source by the application of control technology taking into account technological feasibility and cost-effectiveness, and the specific design features or extent of necessary modifications to the source. For sources which are or will be shut-down, RACT is the lowest emission limit that can be achieved by the application of control technology to similar, but not necessarily identical categories of sources, taking into account technological feasibility and cost-effectiveness of the application of the control technology to the category of sources only and not to the shut-down source.

TOXIC AIR CONTAMINANT EMISSIONS

The District performed a Regulation 2, Rule 5 Health Risk Screening Analysis (HRSA) as part of the evaluation of the Renewal Project permit application. The toxic air contaminant emissions calculations are shown in Appendix B. The HRSA considers the emissions from new and modified sources, and does not consider reductions in emissions that will result from the shutdown of existing sources. Table 4 includes a summary of the toxic air contaminant emission rates, in both pounds per hour and pounds per year, and the acute and chronic risk screening trigger levels specified in Regulation 2, Rule 5.

Table 4 – Renewal Project Toxic Air Contaminant Summary Table				
Toxic Air Contaminant	Project Wide lb/year	Project Wide lb/hour	Acute Risk Screening Trigger Level (lb/hour)	Chronic Risk Screening Trigger Level (lb/year)
Acetaldehyde	1.80E+03	2.66E-01	None	6.40E+01
Antimony	9.96E+00	1.62E-03	None	7.70E+00
Ammonia @ 10 ppm slip	1.92E+05	2.53E+01	7.10E+00	7.70E+03
Arsenic	1.89E+01	3.06E-03	4.20E-04	1.20E-02
Benzene	1.52E+03	2.28E-01	2.90E+00	6.40E+00

Table 4 – Renewal Project Toxic Air Contaminant Summary Table				
Toxic Air Contaminant	Project Wide lb/year	Project Wide lb/hour	Acute Risk Screening Trigger Level (lb/hour)	Chronic Risk Screening Trigger Level (lb/year)
Benzo(a)anthracene	4.89E-01	7.79E-05	None	None
Benzo(a)pyrene	1.17E+00	1.89E-04	None	1.10E-02
Benzo(b)fluoranthene	6.23E-01	9.87E-05	None	None
Benzo(k)fluoranthene	3.62E-01	5.74E-05	None	None
Beryllium	0.00E+00	0.00E+00	None	8.00E-02
Bromine & Compounds	9.50E-01	1.08E-04	None	86.60E+01
1,3-Butadiene	6.84E+00	7.81E-04	None	1.10E+00
Cadmium	6.87E+01	8.94E-03	None	4.50E-02
Carbon disulfide	9.03E+02	1.24E-01	1.40E+01	3.10E+04
Chlorine	1.42E+03	1.95E-01	4.60E-01	7.70E+00
Chloroform	3.19E+01	3.64E-03	3.30E-01	3.40E+01
Chromium Total	0.00E+00	0.00E+00	None	None
Chrysene	3.37E-01	4.29E-05	None	None
Copper	1.69E+02	2.58E-02	2.20E-01	9.30E+01
Cresols (fugitive only)	7.96E+00	9.08E-04	None	2.30E+04
Dibenz (a,h)anthracene	3.06E-02	3.74E-06	None	None
Diethanolamine (DEA) fugitive only	1.61E+03	1.82E-01	None	1.20E+02
Ethylbenzene	7.99E+02	1.11E-01	None	7.70E+04
Ethylene Dibromide (EDB) (fugitive only)	0.00E+00	0.00E+00	None	2.60E+00
Formaldehyde	3.09E+03	4.67E-01	2.10E-01	3.00E-04
n-Hexane	3.93E-02	4.48E-02	None	2.70E+05
Hydrogen Chloride	9.88E+03	2.70E+00	4.60E+00	3.40E+02
Hydrogen sulfide	1.25E+04	1.45E+00	9.30E-02	3.90E+02
Indeno(1,2,3-c-d)pyrene	1.36E+00	2.20E-04	None	None
Lead	6.65E+01	1.03E-02	None	5.40E+00
Manganese	4.84E+02	6.33E-02	None	7.70E+00
Mercury	2.85E+01	3.70E-03	4.00E-03	5.60E-01
Methanol	1.10E+00	1.51E-04	6.20E+01	1.50E+05
Methyl tert-Butyl Ether (MTBE) (fugitive only)	0.00E+00	0.00E+00	None	3.60E+02
Methyl Ethyl Ketone (MEK) (fugitive only)	0.00E+00	0.00E+00	2.90E+01	3.90E+04
Naphthalene	2.23E+02	2.68E-02	None	None
Nickel	2.20E+03	2.73E-01	1.30E-02	7.30E-01
Perchloroethylene (fugitive only)	8.44E+01	1.90E-02	4.40E+01	3.00E+01
Phenol	5.79E+02	7.46E-02	1.30E+01	7.70E+03
Phosphorus	1.45E+02	1.77E-02	None	2.70E+00
Polychlorinated dioxins/furans	4.82E-05	9.97E-09	None	5.70E-07
Propylene (fugitive only)	7.32E+02	8.25E-02	None	1.20E+05
Selenium	2.36E+02	3.33E-02	None	7.70E+02
Styrene	8.78E+00	1.00E-03	4.60E+01	3.50E+04
Sulfuric acid mist	4.93E+04	2.14E+01	2.60E-01	3.90E+01
Toluene	4.00E+03	6.15E-01	8.20E+01	1.20E+04
Xylenes	2.65E+04	3.31E+00	4.90E+01	2.70E+04
Zinc	4.38E+02	6.66E-02	None	1.40E+03

Table 4 – Renewal Project Toxic Air Contaminant Summary Table				
Toxic Air Contaminant	Project Wide lb/year	Project Wide lb/hour	Acute Risk Screening Trigger Level (lb/hour)	Chronic Risk Screening Trigger Level (lb/year)
Cyanide	8.94E-03	1.22E-06	7.50E-01	3.50E+02

STATEMENT OF COMPLIANCE

This section summarizes the applicable District Rules and Regulations, and describes how the proposed Renewal Project will comply with them.

District Regulation 2, Rule 2: New Source Review

The primary requirements of the District's New Source Review (NSR) rule that apply to the Renewal Project are Regulation 2-2-301: "Best Available Control Technology Requirement," Section 2-2-302: "Offset Requirements, Precursor Organic Compounds and Nitrogen Oxides, NSR," and Section 2-2-303: "Offset Requirements, PM₁₀ and Sulfur Dioxide, NSR." Section 2-2-304: "PSD Air Quality Analysis" is not triggered due to the netting of emissions created by the emission reductions from shutdown sources occurring at the Refinery as a result of the Renewal Project.

Best Available Control Technology Determinations

Pursuant to District Regulation 2-2-206, BACT is defined as the more stringent of:

- (a) "The most effective control device or technique which has been successfully utilized for the type of equipment comprising such a source; or
- (b) The most stringent emission limitation achieved by an emission control device or technique for the type of equipment comprising such a source; or
- (c) Any emission control device or technique determined to be technologically feasible and cost-effective by the APCO; or
- (d) The most effective emission control limitation for the type of equipment comprising such a source which the EPA states, prior to or during the public comment period, is contained in an approved implementation plan of any state, unless the applicant demonstrates to the satisfaction of the APCO that such limitations are not achievable. Under no circumstances shall the emission control required be less stringent than the emission control required by any applicable provision of federal, state or District laws, rules or regulations."

The type of BACT described in definitions (a) and (b) above must have been demonstrated in practice and approved by a local Air Pollution Control District, California Air Resources Board

(CARB), or the EPA, and is referred to as “BACT 2.” This type of BACT is also referred to as "achieved in practice." The BACT category described in definition (c) is referred to as "technologically feasible/cost-effective" and it must be commercially available, demonstrated to be effective and reliable on a full-scale unit, and shown to be cost-effective on the basis of dollars per ton of pollutant abated. This is referred to as “BACT 1.” BACT specifications (for both the "achieved in practice" and “technologically feasible/cost-effective" categories) for various source categories have been compiled in the District’s BACT/Toxics Best Available Control Technology (TBACT) Workbook. The BACT/TBACT Workbook is a guideline document and may not in all cases represent current BACT or the latest information available.

Table 5 indicates the sources in the Renewal Project that are required to use BACT.

Table 5 - Renewal Project Sources subject to BACT							
Source	Description	NO_x	CO	POC	PM₁₀	SO₂	NPOC
Hydrogen Plant Replacement, New Sources							
S-4449	Hydrogen Plant Train No. 1	No	No	Yes	No	No	No
S-4450	Hydrogen Plant Train No. 2	No	No	Yes	No	No	No
S-4451	Hydrogen Recovery Unit	No	No	No	No	No	No
S-4471	Hydrogen Plant Train No. 1, Reformer Furnace	Yes	Yes	Yes	Yes	Yes	No
S-4472	Hydrogen Plant Train No. 2, Reformer Furnace	Yes	Yes	Yes	Yes	Yes	No
S-4465	Hydrogen Plant Cooling Tower	No	No	Yes	Yes	No	No
S-6021	Hydrogen Plant Flare	Yes	Yes	Yes	No	Yes	No
Reformer Replacement, New Sources							
S-4452	Continuous Catalyst Regeneration Reformer	No	Yes	No	No	No	No
S-4477	Reformer Furnace No. 1	Yes	Yes	Yes	Yes	Yes	No
S-4478	Reformer Furnace No.	Yes	Yes	Yes	Yes	Yes	No

Table 5 - Renewal Project Sources subject to BACT							
Source	Description	NO _x	CO	POC	PM ₁₀	SO ₂	NPOC
	2						
S-4479	Reformer Furnace No. 3	Yes	Yes	Yes	Yes	Yes	No
S-4480	Reformer Furnace No. 4	Yes	Yes	Yes	Yes	Yes	No
Power Plant Replacement							
S-4473	3 rd Cogeneration Gas Turbine	Yes	Yes	Yes	Yes	Yes	No
S-4474	3 rd Cogeneration Heat Recovery Steam Generator with Duct Burners	Yes	Yes	Yes	Yes	Yes	No
Hydrogen Purity Improvements, New Sources							
S-4454	Recycle Amine Regenerator	No	No	No	No	No	No
S-4490	Sulfur Loading Rack	No	No	No	No	No	No
S-4456	Fresh Amine Storage Tank	No	No	No	No	No	No
S-3227	Lean Amine Storage Tank	No	No	No	No	No	No
S-3228	Caustic Storage Tank	No	No	No	No	No	No
S-3229	Spent Caustic Storage Tank	No	No	No	No	No	No
Hydrogen Purity Improvements, Modified Sources							
S-4253	FCC Feed Hydrotreater	No	No	No	No	No	No
S-4435	No.5 H ₂ S Plant	No	No	No	No	No	No
S-4227	Sulfur Recovery Unit No. 1	Yes	No	No	No	Yes	No
S-4436	Stack Gas Heater for SRU No. 1	Yes	No	No	No	Yes	No
S-4228	Sulfur Recovery Unit No. 2	Yes	No	No	No	Yes	No

Table 5 - Renewal Project Sources subject to BACT							
Source	Description	NO_x	CO	POC	PM₁₀	SO₂	NPOC
S-4437	Stack Gas Heater for SRU No. 2	Yes	No	No	No	Yes	No
S-4229	Sulfur Recovery Unit No. 3	Yes	No	No	No	Yes	No
S-4438	Stack Gas Heater for SRU No. 3	Yes	No	No	No	Yes	No

Notes: SO₂ Emissions from sources burning Refinery Fuel Gas are limited by permit limits on the sulfur content of the Refinery Fuel Gas System.

CCRR Reformer Furnaces S-4477 through S-4480 share a common exhaust point.

Each SRU and corresponding Stack Gas Heater share a common exhaust point.

Sources being retrofitted with Low NO_x burners to meet District Regulation 9, Rule 10 requirements are exempt from BACT per Regulation 1-115 and are not included in this Table.

BACT for Fugitive Components

The fugitive components (i.e., valves, flanges, pumps, compressors, etc.) to be installed as part of the Renewal Project would satisfy the District BACT requirements.

BACT for petroleum refinery fugitive components per the District's BACT/TBACT Workbook is the following:

- Flanges leak level of 100 ppm as methane (BACT Level 2, Level 1 not determined (n/d)).
- Valves leak level of 100 ppm as methane (BACT Level 2, Level 1 n/d).
- Pumps leak level of 100 ppm as methane (BACT Level 2).
- Compressors leak level of 100 ppm as methane (BACT Level 2).
- Pressure Relief Valves, Emergency releases vented to fuel gas recovery system, furnace, or flare with a recovery/destruction efficiency $\geq 98\%$.

The "Typical Technologies" listed in the BACT/TBACT Workbook for each component type are indicated below:

- Flanges require: graphitic gaskets.
- Valves require: Bellows Valves, Diaphragm Valves, Quarter Turn Valves, Live Loaded Valves, or Other Low-Emission Valves (District Approved).
- Pumps require: Double Mechanical Seals with Barrier Fluid, Magnetically Coupled Pumps, Canned Pumps, Magnetic Fluid Sealing Technology, or Gas Seal System vented to District-approved control device.
- Compressors require: Double Mechanical Seals with Barrier Fluid, oil ring seals with non-VOC seal/barrier fluid, or Gas Seal System vented to District-approved control device.
- District-approved fugitive component inspection and maintenance program.

The District can approve equivalent technologies. The District also requires quarterly inspections for all component types except for flanges and connectors, which require biannual inspections.

For the Renewal Project, BACT for fugitive components in heavy liquid service is defined for materials with a flash point of less than or equal to 250 F. The District's Regulation 8-18 contains a limited exemption for monitoring of fugitive components with a boiling point greater than 302 F. For this project, the District has increased the population of components that is subject to control and monitoring beyond that of Regulation 8-18 to those components in hydrocarbon service up to, and including, a flashpoint of 250 F. This hydrocarbon service definition was based on SCAQMD requirements, and is achieved in practice in that district.

For this project, Chevron proposed using results of its current LDAR program to determine emission factors for each component type. Historically, project fugitive emission estimates have used a less refined method based on the maximum allowable emissions under District Regulation 8-18 (i.e., each component at 100 ppm plus allowable pegged leaker emissions) for the purposes of determining both cumulative increase and offsets. The new approach creates a much lower allowable emissions level for the total project fugitive emissions. Any individual component would still be subject to the 100 ppm BACT limit, but, for the purposes of cumulative increase and/or offsets, the LDAR results were used for the emissions estimate. This lower emissions estimate will be enforced through the LDAR program and a permit condition corresponding to the emissions estimate using this approach for the specified component counts. Chevron must demonstrate compliance with the permitted emissions level on an ongoing basis.

The Renewal Project fugitive components that are in hydrocarbon service with a flash point less than or equal to 250 F, will be subject to permit conditions that require all fugitive components associated with the Renewal Project to meet BACT requirements, including the use of low-emission equipment, individual concentration limits, inspection and maintenance frequencies, and quarterly mass emissions calculations demonstrating compliance with a mass emissions limit corresponding to the permitted component counts.

BACT for Refinery Process Heaters (>50 MMBtu/hr)

The following BACT guidelines were reviewed for determining BACT emission rates for the Renewal Project combustion sources with a firing rate greater than 50 MMBtu/hr: BAAQMD, SCAQMD, CARB BACT Clearinghouse, and the EPA BACT/LAER Clearinghouse. The applicable BACT guidelines, and the required BACT standards for the Renewal Project, are shown in Table 6.

The Renewal Project sources with emission increases that are subject to BACT requirements are: the Hydrogen Plant Reformer Furnaces (S-4471, S-4472) and the Continuous Catalytic Regenerative Reformer Furnaces (S-4477 through S-4480).

Hydrogen Plant Furnaces

S-4471 Hydrogen Plant Train #1 Reformer Furnace (950 MMBtu/hr)

S-4472 Hydrogen Plant Train #2 Reformer Furnace (950 MMBtu/hr)

These Hydrogen Plant Reformer Furnaces will normally be fired on a combination of natural gas and Pressure Swing Absorber tail gas. Each furnace will be abated by an SCR unit and have a separate exhaust stack. The required emission limits for NO_x and CO shown in Table 6 are more stringent than those in the current District BACT/TBACT Workbook, which is being updated as a result of this Project, and are in agreement with other recent District BACT determinations. BACT for POC and PM₁₀ emissions includes utilizing good combustion practice, and the use of natural gas or treated RFG with low sulfur content, rather than a specific numerical emission limit. BACT for SO₂ is the use of low-sulfur natural gas mixed with Pressure Swing Absorber tail gas, which is also low in sulfur. The Hydrogen Plant Furnaces (S-4471, S-4472) will satisfy the BACT requirement of District Regulation 2-2-301.

Continuous Catalytic Regenerative Reformer Furnaces

S-4477 CCRR Reformer Furnace (201 MMBtu/hr)

S-4478 CCRR Reformer Furnace (402 MMBtu/hr)

S-4479 CCRR Reformer Furnace (201 MMBtu/hr)

S-4480 CCRR Reformer Furnace (201 MMBtu/hr)

These CCRR Reformer Furnaces are normally fired on RFG, but would also have the capability to burn natural gas. All four furnaces will share a common exhaust stack and will be abated by a single SCR unit. The proposed emission limits for NO_x and CO (5 and 10 ppm, respectively) shown in Table 6 below meet the current District BACT guidelines. BACT for POC and PM₁₀ emissions includes utilizing good combustion practice, and the use of natural gas or treated RFG with low sulfur content, rather than a specific numerical emission limit. BACT for SO₂ is a refinery-wide permit limit on the sulfur content on the RFG system, including both short-term and long-term total sulfur (TS) and H₂S limits. Short-term (or daily) limits on fuel gas would be: 100 ppm TS and 50 ppm H₂S. Long-term (or annual average) limits on fuel gas would be: 30.85 ppm TS and 18.83 ppm H₂S. The long-term limits on the RFG system will be used to create SO₂ ERCs. The continuous catalyst regeneration reformer furnaces meet the BACT requirement of District Regulation 2-2-301.

Table 6 – BACT Guidelines for Refinery Process Heaters, >50 MMBtu/hr, @3% O₂

District	NO_x (ppmvd)	POC (ppmvd)	CO (ppmvd)	PM₁₀ (lb/MMBtu)	SO₂ (ppmvd)
BAAQMD Achieved in Practice	10	Good Combustion Practice	50	Good Combustion Practice, Fuel Selection	Fuel Selection
BAAQMD Technologically Feasible	n/d	n/d	n/d	n/d	Fuel Selection

Table 6 – BACT Guidelines for Refinery Process Heaters, >50 MMBtu/hr, @3% O2

District	NO_x (ppmvd)	POC (ppmvd)	CO (ppmvd)	PM₁₀ (lb/MMBtu)	SO₂ (ppmvd)
SCAQMD Application No. 352869 Natural Gas Fired	5	n/d	10	n/d	n/d
SCAQMD Application No. 411357 Refinery Gas and PSA Tail Gas Fired Hydrogen Reformer	5	n/d	10	n/d	n/d
SCAQMD Application No. 337979 Natural Gas and PSA Tail Gas Fired Hydrogen Reformer	5	n/d	10	n/d	n/d
SCAQMD Application No. 341340 Refinery Gas Fired Hydrogen Reformer	5	n/d	25	n/d	n/d
SCAQMD Application No. 389926 PSA Tail Gas Fired Hydrogen Reformer	5	n/d	400	n/d	n/d
SCAQMD Application No. 326118 Refinery Gas and PSA Tail Gas Fired Hydrogen Reformer	7	n/d	n/d	n/d	n/d
BAAQMD Chevron Renewal Project S-4471, S-4472 Proposed Permit Limits	5	0.00288 lb/MMBtu	10	0.00257 lb/MMBtu	PUC-quality Natural Gas
Chevron Renewal Project S-4477 through S-4480	5	0.00539 lb/MMBtu	10	0.00745 lb/MMBtu	Refinery Fuel Gas System Sulfur Limits

Note: n/d = not determined.

BACT for Hydrogen Plant Cooling Tower

Under District NSR requirements, the Hydrogen Plant Cooling Tower S-4465 is subject to BACT for PM₁₀ since emissions of PM₁₀ from this source would be greater than 10 lb/day.

The District's BACT/TBACT Workbook does not specify BACT for PM₁₀ emissions from Wet Cooling Towers. However, the CARB BACT Clearinghouse cites a BACT specification for PM₁₀ emissions for the proposed La Paloma Power Plant Cooling Tower as the use of drift eliminators with a maximum drift rate of 0.0006%. The cooling towers for the Los Medanos Energy Center, Delta Energy Center, and Metcalf Energy Center are equipped with drift eliminators with a guaranteed drift rate of 0.0005%.

The proposed Hydrogen Plant Cooling Tower would also be equipped with drift eliminators with a drift rate of 0.0005%. The Cooling Tower drift rate is based on an equipment vendor guarantee. This technology will satisfy the BACT requirement for PM₁₀ emissions from this source.

BACT for POC from a cooling tower is a combination of monitoring and repair frequency. Praxair/Chevron will be required in the permit conditions to inspect the Cooling Tower riser chamber in the cooling water return line daily for hydrocarbon leaks. The District will not require the installation of a hydrocarbon analyzer at this time since the Hydrogen Plant Cooling Tower would be permitted to only 15 days of hydrocarbon leakage during any consecutive 12-month period. Praxair/Chevron asserts that a hydrocarbon leak is unlikely. Should a hydrocarbon leak be detected, the leak must be repaired within 15 calendar days, which is consistent with other BACT determinations. If it is determined in the future that POC emissions for the Hydrogen Plant Cooling Tower are greater than originally estimated, at either a maximum daily emission rate of 36 lb/day or a maximum annual emission rate of 0.27 ton per year (which corresponds to 15 leaking days), then Chevron must submit a permit application to the District.

BACT for Hydrogen Plant Flare

The Hydrogen Plant Flare S-6021 is subject to BACT since it would emit more than 10 pounds per highest day of NO_x, CO, SO₂, and POC. BACT is not triggered for PM₁₀.

The main purpose of the flare is to dispose of hydrogen (H₂), methane (CH₄) and CO in an emergency, for safety reasons. Hydrogen and methane are not considered pollutants. The Hydrogen Plant Flare will only be used during periods of planned startup/shutdown, and periods of flaring caused by an emergency as allowed in the District-approved Flare Minimization Plan (FMP). This is consistent with BACT2 for refinery flares, which limits the flare operation to periods of emergency plant upset or breakdown. It also requires that routine venting of process gases be routed to a fuel gas recovery system. The process stream of most concern is associated with PSA 3, which handles the RPG received from Chevron. Praxair will operate a process compressor on this stream and will use this same compressor to return RPG to Chevron during most upset conditions. However, Praxair has identified certain instances where a small amount of RPG will need to be flared. These instances will be reviewed in greater detail through the District' FMP process.

The District will be including enforceable, permit condition-like, language into the Praxair FMP that will limit the operation of the flare, since this flare has triggered NSR review.

The District's BACT/TBACT Workbook states that an enclosed ground-level flare with a control efficiency of 98.5% for POC is BACT1. BACT1 for CO is undetermined at this point. The District has determined that an enclosed ground-level flare is not cost-effective for this project. This determination was based on information submitted by Chevron regarding the cost of installing an enclosed ground-level flare.

BACT2 for POC, CO, and NO_x is an elevated flare, steam- or air-assisted, POC destruction efficiency >98% by weight; use of natural gas or LPG as pilot fuel. Praxair has agreed to use steam-assist to satisfy BACT during all flaring events. BACT for SO₂ is not determined in the BACT/TBACT Workbook. However, the flare pilot will be fired exclusively on natural gas, which will minimize SO₂ emissions.

Also, the Hydrogen Plant Flare will be subject to the District's flare monitoring and control regulations, Regulation 12, Rule 11 and 12.

The proposed Hydrogen Plant Flare is expected to achieve a BACT2 level control efficiency of 98% by weight for POC and CO. This 98% control efficiency is based on the EPA AP-42 chapter on industrial flares and a previous determination made by the District's Advisory Council. District Regulation 12-11-401.9 requires that an efficiency of 93% be used when the heating value is less than 300 Btu/scf. However, for the purposes of both the District permit conditions and permitted emission estimates, a 98% destruction efficiency by weight may be used if the owner/operator satisfies the required parameters (H₂ content, tip velocity, and lower heating value) specified in the EPA Emission Standards Division Report ("Basis and Purpose Document on Specifications for Hydrogen-Fueled Flares," dated March 1998) and adequately monitors these required parameters. If there are any problems related to the monitoring of the parameters required to meet the 98% destruction efficiency, then 93% destruction efficiency must be used for both Regulation 12-11-401.9 and the permitted emissions.

The Hydrogen Plant Flare S-6021 will satisfy BACT2 for CO, POC, NO_x, and SO₂ as required by District Regulation 2-2-301.

BACT for Continuous Catalyst Regenerative Reformer

The CCRR S-4452 is subject to BACT since it emits more than 10 pounds per highest day of CO. Chevron has adjusted the emission factors supplied by the equipment vendor due to the uncertainty of the emission values from this unit. Based on the limited emissions information available for this source category, the permitted emissions for PM₁₀, NO_x, POC and SO₂ would not exceed 10 lb/highest day based on the maximum permitted concentrations and flowrate for this source. Chevron has accepted District permit conditions to limit the criteria pollutant emissions below 10 lb/highest day for all criteria pollutants other than CO.

The following BACT guidelines were reviewed for determining BACT emission rates for the CCRR vent: BAAQMD, SCAQMD, CARB BACT Clearinghouse, and the EPA BACT Clearinghouse. No applicable BACT guidelines are available for this source category.

The CCRR CO emissions were calculated using an emission factor supplied by the equipment vendor that was adjusted by Chevron for compliance assurance to 5.48×10^{-4} lb per barrel.

As part of the process design, UOP (the equipment vendor) estimated the CCRR vent gas CO concentration to be 252 parts per million by weight (ppmw) (270 parts per million by volume (ppmv)). CCRR vent gas CO concentrations are not well documented. Further, there are metallurgical limits on the temperature at which the regenerator can be operated, and this limits the amount of CO destruction that can occur in the regenerator. As a result, UOP will not guarantee a maximum CO concentration.

To find a suitable compliance limit, Chevron and its consultants conducted an independent search of existing regulations for limits on CO emissions from catalytic reformers but were unable to find any limits directly relevant to this application. The Refinery maximum available control technology (MACT) II rule¹ however does specify a 500 ppmv (dry basis) standard for CO from Fluid Catalytic Cracking (FCC) regenerator vents.

The District was unable to locate any BACT determinations for CO emissions from a CCRR vent. The District determined that the referenced MACT II limit for FCCs represents an appropriate CO emission limit for the CCRR vent gas. Compliance with the 500 ppmv limit will be confirmed through the periodic source testing requirements specified in Permit Conditions Parts 57, 58, and 59.

Table 7 - CCR Vent CO Emissions - Adjustments from UOP Estimates to Maximums					
Pollutant	UOP Est. Concentration ppmw	UOP Estimated Emissions	Maximum Concentration ppmv	Maximum Emissions lb/yr	Maximum Emissions tons/yr
CO	252	7560 lb/yr 20.71 lb/day	500	13,993	7.0

BACT for Cogeneration Gas Turbine and Heat Recovery Steam Generator with Duct Burners

Nitrogen Oxides (NO_x)

The District BACT/TBACT Workbook specifies BACT Level 1 for NO_x for a combined-cycle Gas Turbine with a power rating ≥ 40 megawatt (MW) as a NO_x concentration not to exceed 2.0 ppmvd @ 15% O₂, averaged over one hour for natural gas firing. This emissions level has been achieved through the use of SCR with ammonia injection in conjunction with combustion modifications. BACT Level 2 is a concentration not to exceed 2.5 ppmvd @ 15% O₂ (averaged over 3 hours) when firing a combination of natural gas and RFG.

¹ 40CFR Part 63 Subpart UUU Table 8; National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units.

Since there is no published BACT determination for a Gas Turbine fired on natural gas and a combination of natural gas and liquefied petroleum gas (LPG) with HRSG Duct Burners firing RFG or a combination of RFG and natural gas, a case-by-case BACT analysis has been performed. The District has determined that BACT for NO_x for this Project is an SCR system designed to achieve 2.0 parts per million, volumetric dry (ppmvd) @ 15% O₂ (three-hour average) and 2.5 ppmvd @ 15% O₂ (one-hour average). The permit condition is written using the word “and” instead of “or” since using “and” means that both limits must be exceeded to be out of compliance. This determination is based on a review of NO_x continuous emission monitoring (CEM) data that demonstrated that these emissions levels are achieved in practice at the Valero Cogeneration project permitted in 2001 (Application No. 2488 and 2695). Similar to Valero, Chevron will be required to adjust its fuel selection in order to satisfy the NO_x BACT requirement.

Two relatively new technologies are capable, under some conditions, of controlling NO_x emissions from a gas turbine to 2 ppmvd or below. These are: SCONO_x, manufactured by Goal Line Environmental Technologies, and XONON, manufactured by Catalytica, Inc. The District has reviewed these technologies to determine if the technologies are appropriate for this application. SCONO_x is the more established of the two technologies. This system uses a potassium carbonate coated catalyst to remove both NO_x and CO, without the use of a reagent such as ammonia. There are two systems in commercial operation on a Gas Turbine of comparable size to that being used in the Renewal Project. This system has demonstrated that SCONO_x can consistently achieve NO_x levels comparable to those achieved by SCR on medium-sized (~50 MW) turbines. The District considers this technology equivalent to the use of SCR for medium-sized turbines, and would approve a project that proposed its use.

XONON, developed by Catalytica, Inc., is another promising new technology for NO_x emissions control. This technology uses a flameless catalyst located inside the combustion chamber itself, which allows for the combustion reaction to proceed at a lower temperature than in conventional turbines, thus minimizing the formation of NO_x.

At the present time, the commercial availability of XONON technology is extremely limited. To date, District staff is aware of only one application, a 1.5 MW turbine in Santa Clara, California. There is no information available regarding the operation of such a system on a turbine the size of the one to be installed for the Renewal Project, which is over 25 times larger. Based on this information, XONON does not represent a technologically feasible control option for the Renewal Project.

In summary, XONON is not technologically feasible for this project. SCR and SCONO_x are both feasible, and achieve equivalent NO_x reductions. Chevron’s choice of SCR to achieve the NO_x BACT control levels described above are therefore acceptable.

The SCR unit will inject aqueous or anhydrous ammonia into the SCR catalyst to control NO_x emissions. The ammonia slip will be limited by permit condition to 10.0 ppmvd. While some recent projects using natural gas have been approved with ammonia slip at 5.0 ppmvd, the 10 ppmvd level is reasonable for this source because the variability of RFG qualities require some

additional allowance for ammonia slip. SCR for controlling NO_x emissions is a proven control technology that is technologically feasible, cost-effective, and achieved in practice in a wide variety of applications.

Carbon Monoxide (CO)

The District BACT/TBACT Workbook specifies BACT Level 2 for CO, firing natural gas, for a Gas Turbine with a power rating ≥ 40 MW, as CO emissions ≤ 4.0 ppmvd @ 15% O₂, achieved through the use of an oxidation catalyst. CO emissions are also minimized through the use of good combustion practices. BACT Level 1 has not been determined for this source category.

The District has determined that BACT Level 2 for the Gas Turbine firing natural gas with the HRSG Duct Burners firing refinery fuel gas is 6 ppmvd @ 15% O₂. BACT Level 1 has not been determined. This determination is based on the Valero Cogeneration project permitted in 2001 (Application No. 2488 and 2695).

The CO emissions from a Gas Turbine fired on natural gas or LPG and the duct burners fired on RFG would be reduced through the use of an oxidation catalyst to a CO concentration level not to exceed 6.0 ppmvd @ 15% O₂, averaged over any consecutive three-hour period.

In summary, achieved in practice BACT for CO is deemed to be 6.0 ppmvd CO @15% O₂, averaged over any consecutive three-hour period, for the combined exhaust from the Gas Turbine and HRSG Duct Burners during all modes of operation, except startup and shutdown. Chevron will achieve compliance with this limit through the use of good combustion practices and CO Oxidation Catalyst. Furthermore, the Renewal Project's new Cogeneration Unit will be equipped with a CO and O₂ CEM system.

Precursor Organic Compounds (POC)

The District BACT/TBACT Workbook specifies BACT Level 2 for POC, on natural gas, for a Gas Turbine with a power rating ≥ 40 MW, as POC emissions ≤ 2.0 ppmvd @ 15% O₂, achieved through the use of an oxidation catalyst or efficient Dry Low-NO_x Combustors. BACT Level 1 has not been determined. The POC emissions from the Renewal Project Gas Turbine firing natural gas, or a combination of natural gas and LPG, and the HRSG Duct Burners firing RFG, or a combination of RFG and natural gas will be reduced through good combustion practice and the use of an oxidation catalyst to a level not to exceed 2.0 ppmvd POC @ 15% O₂, based on a District-approved source test. This control technology represents BACT for this cogeneration project.

In order to demonstrate compliance with both the POC and PM₁₀ emission estimates, Chevron must conduct an initial source test within 120 days of startup. The POC emission concentration limit is 2.0 ppmvd @ 15% O₂, based on a District-approved source test. After the initial source test, Chevron must conduct three quarterly tests followed by two semi-annual tests, and annual source tests thereafter. The permit conditions have been written to allow the District to require more frequent source testing if any of the test results are greater than or equal to 90% of an emissions estimate or limit.

Sulfur Dioxide (SO₂)

The proposed Cogeneration Unit (S-4473, S-4474) would have the gas turbine fired on natural gas or a combination of natural gas with LPG, and the HRSG Duct Burners fired on RFG/natural gas. The District BACT/TBACT Workbook specifies BACT for SO₂ emissions as the use of PUC quality natural gas with sulfur content not to exceed 1.0 grain/100 scf (Grains are equal to 1/7000 of a pound). A case-by-case BACT analysis was performed. To control SO₂ emissions, the sulfur levels in the RFG would need to be at the lowest achievable level.

The District has determined that in order to avoid triggering BACT for SO₂ emissions increases from existing combustion sources firing on RFG, permit conditions limiting the sulfur levels in the RFG to baseline levels for both H₂S and TS are required. The baseline RFG concentrations are 30.85 ppmvd TS and 18.83 ppmvd H₂S (for any consecutive 365-day period). Based on records provided by Chevron, the Refinery currently routinely achieves these sulfur levels in its RFG. Both blending with natural gas and scrubbing to maintain this level on an ongoing basis are feasible.

The District will also impose a permit condition consistent with other BACT determinations made at other Bay Area refineries with the maximum daily limit for the RFG of a TS concentration at 100 ppmvd (averaged over any calendar day). The maximum daily limit for the RFG is an H₂S concentration of 50 ppmvd (averaged over a calendar day).

The Renewal Project's proposal to handle crude slates with increased sulfur levels require these RFG conditions since the RFG may otherwise experience an increase in sulfur, which would result in increased SO₂ emissions from all combustion sources using RFG. Instead of accepting limits on the total fuel flow at each drum, Chevron requested a limit on the total SO₂ emissions (approximately 53 tons/year) from the RFG system plus the Cogeneration Unit Gas Turbine and Heat Recovery Steam Generator. The mass emissions limit of approximately 49 tons per year of SO₂ combined with the concentration limits creates an implied fuel flow limit.

Particulate Matter (PM₁₀)

The proposed Cogeneration Unit (S-4473, S-4474) would have the Gas Turbine firing natural gas, or a combination of natural gas and liquefied petroleum gas (LPG), and the HRSG Duct Burners firing RFG or a combination of RFG and natural gas. According to the District BACT/TBACT Workbook, PM₁₀ BACT Level 2 for combustion sources, such as the Cogeneration Unit, is firing California Public Utilities Commission (PUC)-quality natural gas with sulfur content not to exceed 1.0 grain/100 scf. PM₁₀ BACT Level 1 has not been determined. The District BACT/TBACT Workbook does not specify a typical technology or PM₁₀ emission limits for this source category. PM₁₀ emissions from the Cogeneration Unit are subject to BACT requirements, and the District reviewed available emissions data to set a permit limit with a reasonable compliance margin.

The District has determined that the BACT Level 2 for the Gas Turbine firing natural gas or a combination of RFG and natural gas with the HRSG Duct Burners firing RFG or a combination

of RFG and natural gas is 0.00574 lb/MMBtu. This BACT determination is based on the Valero Cogeneration project permitted in 2001 (Application Nos. 2488 and 2695), using multiple fuels including RFG and/or natural gas or a combination of the two fuels. Chevron proposes to fire the Refinery's Gas Turbine and Duct Burners on similar multi-fuels. The Valero Cogeneration project has a permit limit of 4.65 lb/hour and a maximum firing rate of 810 MMBtu/hr for the Gas Turbine and HRSG Duct Burners. These values correspond to the 0.00574 lb/MMBtu limit, which is achieved in practice. Compliance with the PM₁₀ emission limit has been consistently demonstrated since 2003 through a District-approved quarterly source testing requirement on the Valero Cogen Gas Turbine. PM₁₀ emissions from the Renewal Project would be controlled by using clean-burning natural gas/treated (low-sulfur) RFG and good combustion practices.

A District permit condition would include a caveat that allows the District to re-review this PM₁₀ limit if source testing demonstrates that the limit cannot be achieved while operating with a fuel selection that satisfies a BACT-level of control. Moreover, the source test policy for combustion sources utilizing SCR allows for the subtraction of ammonium sulfates, which creates a compliance margin. The District anticipates that Chevron will be able to achieve compliance with the PM₁₀ emissions that Valero achieves. However, Chevron will accept permit conditions on the sulfur level in the RFG and be required to conduct source tests to demonstrate compliance with short-term and long-term emission limits.

In addition, the CO CEM will be a good indicator of good combustion practice at each source. Low CO emissions generally correspond to low particulate emissions since each is a product of incomplete combustion.

BACT for Modified Sulfur Recovery Units

As part of the Renewal Project, Chevron is modifying three existing Sulfur Recovery Units S-4227, S-4228, and S-4229 that use Wellman-Lord Tail Gas Units. Each SRU has a corresponding Stack Gas Heater S-4436, S-4437, and S-4438. This BACT determination is for each SRU and Stack Gas Heater combined.

For this application, BACT for the SRU will be triggered for SO₂, NO_x. BACT is not triggered for PM₁₀, CO, or POC. Per Regulation 2-2-301 BACT is required for modified sources with an increase in emissions which have the potential to emit 10 pounds or more per highest day. The requested increase in capacity and/or production rate from all three SRUs from the currently permitted level and the increase in both daily and annual SO₂ emissions make these SRUs modified sources per Regulation 2-1-234.1. PM₁₀ emissions from SRU 1 and SRU 2 and POC emissions from all three SRUs would not exceed 10 pounds per highest day and are not subject to BACT. Chevron has accepted permit conditions to demonstrate that emissions of these pollutants from these sources would remain below 10 pounds per highest day. PM₁₀ emissions from SRU 3 will be greater than 10 pounds per highest day, however there will be no increase in either the daily or annual PM₁₀ emissions from SRU 3. The reduction in PM₁₀ emissions from the three SRUs is due to the installation of the Wet ESPs. Chevron's proposed SRU modifications also include a significant increase in flowrate, which impacts both daily and annual emissions.

The last BACT determination for an SRU made by the District was in 2007 for the ConocoPhillips Clean Fuels Expansion Project. Prior to that, the last BACT determination made by the District for an SRU was in Application 8407 for the Shell Martinez Refinery in 1993. Both of these SRUs have SCOT Tail Gas Units. A summary of the SRU BACT determination for ConocoPhillips follows:

SO₂: 50 ppmv @ 0% O₂ averaged over any consecutive 24-hours (based on Shell Application 8407, 1993 BACT determination)

NO_x: 42.2 ppmv @ 7% O₂ one-hour averaging (based on ConocoPhillips Ferndale Refinery)

CO: 75 ppmv @ 7% O₂ one-hour averaging (based on ConocoPhillips Ferndale Refinery)

SO₂ BACT:

The SO₂ BACT determination for Chevron's SRUs included both an SO₂ emissions limit and technological control measures. This approach was taken since limited information was available on Wellman-Lord SRUs, and the District will keep the limits similar to the known performance of SCOT units. Chevron suggested some of the technological methods of operation and equipment improvements that would result in reductions of SO₂ emissions.

- 50.0 ppmv SO₂ @ 0% O₂, averaged over any calendar day as determined by an SO₂ CEM. (Based on the EPA BACT/LAER Clearinghouse/BAAQMD BACT/TBACT Workbook).
- Reduce H₂S bypassing at the Thermal Oxidizer: Performance tests have detected some H₂S bypassing and breakthrough from the Thermal Oxidizers, which contributes to SO₂ formed in the stack heater. To address this (and CO destruction), Chevron will modify the Thermal Oxidizer internals for better mixing, improve the control of excess O₂ and, if deemed necessary or beneficial by the District based on computational fluid dynamics (CFD) modeling conducted by Chevron, relocate the sulfur pit vent line to the tail gas inlet line. Chevron will be using an engineering firm to perform computational fluid dynamic analysis (flow modeling) of the Thermal Oxidizers to assist in optimizing the performance.
- Improve scrubbing of SO₂: The operation of the SO₂ Absorbers will be improved by increasing the makeup sodium sulfite rate, and upgrading the piping and controls and caustic make-up rate to meet the SO₂ concentration limit specified above. The controls for caustic makeup will also be upgraded for more stable operation.
- Reduce the number and size of upsets caused by hydrocarbon in the acid gas feed to the SRUs: The new 6H₂S Recovery Unit, which generates the largest acid gas feed stream, will follow Best Practice design guidelines for hydrocarbon removal. This includes sizing and internal design of the amine flash drum and carbon filtration of the amine. Improvements will be made in vent gas cooling and separation at the FCC feed hydrotreater by added/upgraded coolers in three locations. This will reduce C3 and C4 carryover into vent gas and acid gas. The PSA tail gas, which currently goes to the RLOP Gas Recovery Unit, will be re-routed to the Hydrogen Plant feed or the refinery

fuel gas system. This will reduce the GRU feedrate and improve cooling and separation at the RLOP GRU.

NO_x BACT:

The NO_x BACT determination for the SRUs presented several issues, the main being the establishment of a short-term limit. As mentioned above, both ConocoPhillips Ferndale and Rodeo have had NO_x BACT determinations made on their SRUs. Arizona Clean Fuels Yuma LLC also had a NO_x BACT determination for a new SRU done in 2005. The Arizona permit proposed a NO_x limit of 0.06 lb/MMBtu. None of these sources utilize the Wellman-Lord tail gas process used on the Chevron SRUs.

BACT determinations are often characterized as either standard or technology driven. This BACT determination is clearly technology driven, as opposed to standard driven, since at the time of issuance it was difficult to determine the extent of the reductions that will be achieved through the use of this technology. A summary of the requirements to satisfy NO_x BACT for each SRU follows:

- 50 ppmv NO_x @ 0% O₂, 3-hour average (condition to install CEM consistent with El Segundo Chevron Refinery SRUs). After reviewing 6 months worth of NO_x CEM data from the El Segundo Refinery, which also uses a Wellman-Lord Tail Gas Unit, it was determined that the highest 3-hour average concentration was 54 ppmv @ 0% O₂, from the lowest NO_x emitting SRU, which is equipped with its original burners from the 1970's. Based on discussions with a burner manufacturer, the District believes that, with the retrofit of ultra Low-NO_x Burners and other technologies listed below, the Thermal Oxidizers and stack gas heaters can achieve NO_x emissions below the 50 ppmv level on a continuous basis.
- Installation of pre-approved ultra Low-NO_x Burners and fuel induced recirculation (FIR) at both the Thermal Oxidizers and Stack Gas Heaters.
- Require the use of oxygen enrichment when operating at levels above original design capacities since this is how Chevron asserts it will achieve no emissions increases beyond original design levels (150 long tons per day (LTD), 150 LTD, 300 LTD). Discussions with the SRU vendor supports Chevron's assertion.
- Installation of NO_x CEMs in order to demonstrate compliance with short-term limits and annual mass emissions limits when used in conjunction with a flowmeter.
- Installation of a flowmeter. The flowmeter shall be installed in order to demonstrate compliance with the mass emissions limits from each SRU.

CO BACT ANALYSIS:

The District determined that BACT for CO was not triggered for each SRU since Chevron agreed to accept permit conditions limiting both daily and annual CO emissions at current operating levels. The daily CO emission limits correspond with the District's estimated actual daily baseline CO emissions for each SRU. The annual CO emission limits will be less than the current estimated annual CO emissions for each SRU.

In order to prevent CO BACT from being triggered, Chevron has agreed to the following requirements for each SRU as follows:

- New (ultra) Low-NO_x Burners with fuel-induced recirculation (FIR) at both the Thermal Oxidizers and Stack Gas Heaters, improved combustion/mixing efficiency, and increased Thermal Oxidizer temperature (to 1,400 F).
- The following daily and annual CO emission limits at each SRU.

SRU #1	222.72 lb/day	28.08 TPY (12 month rolling average)
SRU #2	173.52 lb/day	28.08 TPY (12 month rolling average)
SRU #3	325.44 lb/day	57.64 TPY (12 month rolling average)
- Minimum temperature set point at the Thermal Oxidizer of 1,400 F.
- Install CO CEM and flowmeter in order to demonstrate compliance with daily and annual CO emission limits at each SRU.

Chevron requested annual emissions levels that correspond to lower throughput levels and lower concentration levels than what is currently being requested on the latest data form submittal. There is a direct link between throughput and emissions and the District's emissions inventory relies on throughput in order to determine emissions per throughput for this source category. However, since Chevron will be accepting permit conditions that require both a CO CEM and a flow monitoring device these annual emissions limits shall be enforceable and will assist the District in determining the allowable annual throughput conditions that correspond to compliance with all emissions limits on each SRU.

The permit conditions are written in a manner that allows the District to finalize the throughput condition limits after compliance with all emissions limits is demonstrated. This approach was taken since there is a relationship between throughput and emissions for the three SRUs. Chevron has requested that the District use emissions estimates that correspond to lower annual throughput levels than the levels requested in the permit application. For example, Chevron requested that the Renewal Project emissions estimates be based on the flow rates that corresponds to 225 long tons (LT)/day, 225 LT/day, and 450 LT/day. Chevron recently requested SRU throughputs of 345 LT/day, 345 LT/day, and 570 LT/day. The District determined that an approach to handle Chevron's request is to use compliance with the emissions estimates to determine the corresponding allowable throughput levels. The District has determined that both throughput and emissions limits are warranted for this source category.

The SRUs' baseline CO emissions were not established by using CEM data since the three SRUs currently do not have CO CEMs. The baseline was determined using CO source test data from each of the SRUs. The CO baseline used was not adjusted downward for RACT since it was decided that there was no RACT adjustment to be made for CO emissions from the combined Thermal Oxidizer and Stack Gas Heater. The District was unable to locate any regulations in place that specifically limit the CO emissions from a Wellman-Lord Tail Gas Unit. The analysis was limited to reviewing only Wellman-Lord units operating at 1,350 F. The District staff was unable to accurately determine the reduction in CO emissions caused by raising the Thermal Oxidizer temperature from 1,350 F to 1,400 F and the reductions in CO emissions associated with upgrading the burners from a straight pipe with a pilot to ultra low-NO_x burner technology.

SRU CO emissions are abated by a Thermal Oxidizer. Source tests submitted by Chevron to the District demonstrate that increasing the Thermal Oxidizer temperature results in significant reductions in CO emissions. Chevron stated that historically the Thermal Oxidizer set point was 1,350 F. Both the increased Thermal Oxidizer set point temperature of 1,400 F and the CO CEM with flow monitoring device will help ensure that each modified SRU will comply with both the daily and annual CO emissions limits.

PM₁₀ BACT:

Each SRU will be abated by a dedicated new Wet ESP, which would ensure that PM₁₀ emissions do not increase above the baseline emissions. Wet ESPs typically reduce the PM₁₀ emissions by 90% or greater by weight. Although SRU 3's potential to emit is greater than 10 pounds per highest day, SRU 3 (S-4229) does not trigger BACT since its PM₁₀ emissions will not be increasing. The District is unaware of any Wellman-Lord SRUs being equipped with Wet ESPs. All three SRUs (S-4227 to S-4229) will be abated by Wet ESPs in order to control both PM₁₀ and H₂SO₄ emissions from the SRUs. The installation of the Wet ESPs prevented these three SRUs from triggering BACT.

The District permit conditions have established placeholder-type parametric permit conditions that will ensure compliance with emissions reductions associated with the proper operation of the Wet ESPs. These parameter placeholders were selected based on discussions with Wet ESP vendors and on CARB compliance assistance program reference materials. Some of the identified parameters may include: inlet water flow rate (in gpm), transformer rectifier (TR) set secondary current readings (in milliamps), maximum inlet temperature, and pH of the water system. The District also left an opening to include any new parameters identified by either the Wet ESP manufacturer or the District. Short-term emissions limits for both PM₁₀ and H₂SO₄ will be monitored through periodic source testing. The source test results will be used to demonstrate compliance with annual emission estimates.

POC BACT:

POC emissions do not trigger BACT since the highest days emissions estimate is less than 10 pounds of POC per day. The required increased Thermal Oxidizer temperature of 1,400 F will help to control any POC emissions increase. The new Low-NO_x Burners equipped with fuel induced recirculation (FIR) in both the Thermal Oxidizers and the Stack Gas Heaters of each of the SRUs should also minimize POC emissions due to better mixing and combustion.

Offsets:

Project emission increases from new/modified sources are presented in Table 2. The emission increases will be offset using the appropriate offset ratio per District Regulation 2-2. Chevron intends to use a combination of contemporaneous emission reductions and banked Emission Reduction Credits (ERCs). Contemporaneous emission reductions maintain net emissions below federal major NSR and PSD thresholds. A combination of existing banked ERCs and

contemporaneous emissions reductions would be used to offset any emissions increase associated with the Renewal Project.

Contemporaneous Emission Reductions

Chevron originally requested that the District use the POC emissions factor (0.003 lb/MMBtu) for combustion sources to be shut down that is used in condition #469 Richmond Lube Oil Project (RLOP)/Bubble. In Chevron's efforts to not exceed either the CEQA significance thresholds or PSD triggers, Chevron later requested that the District use the current EPA AP-42 combustion POC emissions factor (0.0054 lb/MMBtu) for the combustion sources to be shutdown. District Regulation 2-2-605.4 describes the process for establishing the baseline for a fully offset source stating that the baseline throughput and emission rate shall be based on levels allowed by the permit condition. Since the sources involved are included in a bubble, the "levels allowed by the permit" are the bubble limit. Providing the incremental offsets for the shutdown sources based on the difference between the emission factors assures that credits are not provided for emissions that have not been previously offset at the correct ratios. The District determined that for the combustion sources that are being shutdown as part of the Renewal Project, Chevron would provide POC offsets at an offset ratio of 1.15 to 1.0 to account for the difference in the two emissions factors.

Contemporaneous emission reductions can be used without a RACT adjustment for both CEQA and PSD purposes. The definition of Emission Reduction Credit per District Regulation 2-2-201.3 clearly states that for PSD purposes emissions are not RACT adjusted. A majority of the contemporaneous emission reductions for this project come from the shutdown of several furnaces.

All emissions reductions are subject to District Regulation 2-2-605 per many sections including: 2-2-201, 302, 303, and 606. District Regulation 2-2-243 defines RACT and the definition is broken into two parts. The first part of the definition discusses sources that would continue to operate (i.e. modified sources) and the second part pertains to closures or shutdown sources. The main difference is that RACT for sources continuing to operate is the lowest achievable emission limit but takes into account the "specific source" whereas for shutdowns RACT is the lowest emission limit that can be achieved by the application of control technology to similar, but not necessarily identical categories of sources, taking into account technological feasibility and cost-effectiveness of the application of the control technology to the category of sources only and not to the shut-down source. This ensures that ERCs given for shutdowns is fairly distributed since it uses the lowest emission rate achievable by similar but not necessarily identical categories of sources and will not penalize the low emitters.

General Requirements

Pursuant to District Regulation 2-2-302, federally enforceable emission offsets are required for POC and NO_x (as NO₂) emission increases from permitted sources at facilities, which will emit 10 tons per year or more on a pollutant-specific basis. For facilities that will emit more than 35 tons per year of NO_x (as NO₂), offsets must be provided by the applicant/permittee at a ratio of 1.15 to 1.0. Pursuant to Regulation 2-2-302.2, POC offsets may be used to offset emission

increases of NO_x.

Pursuant to District Regulation 2-2-303, emission offsets are required (at a ratio of 1.0:1.0) for PM₁₀ and/or SO₂ emission increases from new/modified sources at a Major Facility if emissions of these pollutants will increase by more than 1.0 tons per year. Pursuant to Regulation 2-2-303.1, emission reduction credits of nitrogen oxides or sulfur dioxide may be used to offset PM₁₀ emission increases at offset ratios determined by the District's Air Pollution Control Officer (APCO) to result in a net air quality benefit. This determination is based upon a case-by-case analysis that includes modeling, public notice, opportunity for public comment, and US EPA concurrence.

In the case of POC and NO_x offsets, District regulations do not require consideration of the location of the source of the emission reduction credits relative to the location of the proposed emission increases that will be offset. Chevron will provide offsets for this Project exclusively from offsets created at the Refinery.

Timing for Provision of Offsets

Pursuant to District Regulation 2-2-311, the applicant must provide the required valid emission reduction credits to mitigate the emission increases for the proposed project prior to the issuance of the Authority to Construct. However, District Regulation 2-2-421, allows the applicant to defer providing the offsets until the time of the annual permit renewal provided the applicant has valid Banking Certificates adequate to cover the offset obligation and that the facility does not have a cumulative increase greater than 15 tons per year for the pollutant or pollutants subject to the offset requirement(s). Chevron has provided emissions estimates and Banking Certificate inventories that show these provisions are met.

Offset Requirements by Pollutant

The quantity of offsets required is summarized in Table 2. Chevron has proposed to fully offset the cumulative increases requiring emission reduction credits from this project using its currently banked emission reduction credits. This approach assists the District expediting the issuance of the Authority to Construct since a banking/offsetting analysis, including any necessary RACT adjustments, will not be required prior to issuance. Chevron is planning to apply to bank any remaining reductions from the shutdown equipment. However, both the PSD netting and CEQA analysis used some portion of any available credits consistent with Regulation 2-4-303.2.2, and all emission reduction credits from these shutdowns must comply with the requirements in Regulations 2-4 and 2-2-605.

POC Offsets

Because the Refinery emissions are greater than 35 tons of POC per year, the POC emissions must be offset at a ratio of 1.15 to 1.0 pursuant to District Regulation 2-2-302. The cumulative increase in POC emissions from the Renewal Project is 69.34 tons per year (tpy); using an offset ratio of 1.15:1.0 requires 79.74 tpy of POC offsets.

NO_x Offsets

Because the Refinery emissions are greater than 35 tons per year of NO_x from permitted sources, Chevron must provide ERCs of NO_x at a ratio of 1.15 to 1.0 pursuant to District Regulation 2-2-302. Pursuant to District Regulation 2-2-302.2, Chevron has the option to provide POC ERCs to offset the proposed NO_x emission increases at a ratio of 1.15 to 1.0. The cumulative increase in NO_x emissions from the Renewal Project is 141.20 tpy; using an offset ratio of 1.15:1.0 requires 162.38 tpy of NO_x offsets.

PM₁₀ Offsets

The cumulative increase in PM₁₀ emissions from the Renewal Project is 47.95 tpy; using an offset ratio per District Regulation 2-2-303 of 1.0:1.0 requires 47.95 tpy of PM₁₀ emission reduction credits.

SO₂ Offsets

The cumulative increase in SO₂ emissions from the Renewal Project is 58.50 tpy; using an offset ratio per District Regulation 2-2-303 of 1.0:1.0 requires 58.50 tpy of SO₂ emission reduction credits.

PREVENTION OF SIGNIFICANT DETERIORATION AIR QUALITY IMPACT ANALYSIS

Pursuant to District Regulation 2-2-414.1, Chevron was not required to submit a modeling analysis that estimates the air quality impacts of the Renewal Project.

PSD is not triggered by this application since the net emissions from the Renewal Project do not exceed the PSD trigger levels in Regulation 2, Rule 2. The District's PSD Agreement with EPA Region IX requires that EPA be notified of projects that net out of PSD. A letter informing the EPA that this project will net out of PSD will be sent to EPA Region IX after the Authority to Construct has been issued.

HEALTH RISK SCREENING ANALYSIS

Pursuant to the District Regulation 2, Rule 5, the District conducted a Health Risk Screening Analysis (HRSA) to determine the potential impact on public health resulting from the emissions of toxic air contaminants (TAC) from the Renewal Project's new/modified sources. The detailed HRSA results, health-risk-weighted TAC emissions input, and methodology used are presented in Appendix C of this report. Note that the District Regulation 2-5 HRSA addresses only the increase in health risks from new/modified sources, and not the reductions in health risks associated with the shut-down of existing sources.

Results:

Results of the HRSA indicate that, for this Project, the maximum incremental cancer risk is

estimated at 2 in a million, the chronic hazard index is 0.3, and the acute hazard index is 1.0. In accordance with District Regulation 2, Rule 5, these risk levels are considered acceptable. None of the individual source emissions result in a cancer risk that is greater than one in a million, nor a chronic hazard that is greater than 0.20. At these risk levels, none of the sources trigger the requirement for TBACT (Best Available Control Technology for Toxics). In addition, the Project, with a 30-day maximum lead concentration of $0.0022 \mu\text{g}/\text{m}^3$, is approvable per the ARB Risk Management Guidelines for New, Modified and Existing Sources of Lead.

OTHER APPLICABLE DISTRICT RULES AND REGULATIONS

Regulation 1, Section 301: Public Nuisance

The proposed project's sources of air contaminants are not expected to cause injury, detriment, nuisance, or annoyance to any considerable number of persons with respect to any impacts resulting from the emissions regulated by the District.

Regulation 1, Section 521, 522, 523: CEMS, Parametric Monitoring

The District will require NO_x and CO CEMs for all of the Renewal Project furnaces and cogeneration sources. Additionally, the SRUs will be equipped with SO_2 , NO_x , and CO CEMs. These sources will be subject to the continuous emission monitoring requirements identified in District Regulation 1, Sections 520.4 and 522.

The District will also require many Renewal Project sources to monitor key process parameters that demonstrate compliance with permit limits, such as ammonia injection rate on units that are abated by SCR units. The sources required to install instruments to monitor process information that would be used to demonstrate compliance with permit limits are subject to the parametric monitoring requirements in District Regulation 1-523.

Regulation 2, Rule 1, Sections 301 and 302: Authority to Construct and Permit to Operate

Pursuant to District Regulation 2-1-301 and 2-1-302, Chevron has submitted an application to the District to obtain an Authority to Construct and Permit to Operate for the Renewal Project proposed sources.

Regulation 2, Rule 1, Sections 426: CEQA-Related Information Requirements

As the Lead Agency for the proposed Renewal Project, the City of Richmond is responsible for compliance with CEQA requirements. The draft and final EIR issued by the City for the Project meet the CEQA-information requirements of District Regulation 2-1-426.

Regulation 2, Rule 6: Major Facility Review

Pursuant to District Regulation 2-6-404.1, the owner/operator of the Refinery must submit an application to the District for a major facility review permit modifications prior to commencing operation of the proposed new sources in accordance with District Regulation 2-6-404.3.

Regulation 2, Rule 7: Acid Rain

S-4473 gas turbine and S-4474 heat recovery steam generator with duct burners may be subject to portions of Title IV of the federal Clean Air Act. The requirements of the Acid Rain Program are outlined in 40 Code of Federal Regulations (CFR) Part 72. The specifications for the type and operation of CEMs for pollutants that contribute to the formation of acid rain are given in 40 CFR Part 75.

District Regulation 2, Rule 7 incorporates by reference the provisions of 40 CFR Part 72. Pursuant to 40 CFR Part 72.30(b)(2)(ii), depending on the amount of power sold to the commercial grid, the cogeneration unit may become subject to the Acid Rain permit program. If the Cogeneration unit becomes subject to the Acid Rain permit program provisions, then Chevron must submit an Acid Rain permit application to the District at least 24 months prior to the date on which the unit commences operation. Pursuant to 40 CFR Part 72.2, “commence operation” includes the start-up of the unit’s combustion chamber.

Provisions in §§72.2 through 72.6, and §§72.10 through 72.13 may apply to this facility. The new cogeneration unit is expected to comply with the applicable sections of 40 CFR Part 72, which will be reviewed in the future Acid Rain permit application.

Regulation 6, Rule 1: Particulate Matter and Visible Emissions – General Requirements

The Renewal Project sources are expected to comply with District Regulation 6-1, including Sections 301: Ringelmann No. 1 Limitation, 302: Opacity Limitation, with visible emissions not to exceed 20% opacity, and Section 310: Particulate Weight Limitation, with particulate matter emissions of less than 0.15 grains per dry standard cubic foot (dscf) of exhaust gas volume.

All Renewal Project combustion sources are fueled with gaseous fuels and are expected to comply with the grain loading limit indicated in District Regulation 6-1-310.

The S-4465 Hydrogen Plant Cooling Tower, is also expected to comply with the requirements of Regulation 6-1 since the Cooling Tower PM₁₀ emissions are controlled by the use of a Cooling Water Tower equipped with drift eliminators with a guaranteed drift rate of 0.0005%.

PM₁₀ emissions associated with the construction of the Renewal Project sources are exempt from District permit requirements but are subject to Regulation 6-1. The EIR for the project includes mitigation measures for construction activities that would require the use of water and/or chemical dust suppressants to minimize PM₁₀ emissions and prevent visible particulate emissions.

The Renewal Project turbines, heat recovery steam generators, process heaters, and combustion sources all burn gaseous fuels and are expected to comply with District Regulation 6-1. These sources are subject to Regulations 6-1-301, 6-1-305, and 6-1-310.3. Regulation 6-1-301 is a requirement that visible emissions may not exceed 1.0 Ringelmann for more than 3 minutes/hour. Regulation 6-1-305 is a requirement that a unit may not emit visible particles that

fall outside of the facility's property. Regulation 6-1-310.3 is the grain-loading limit for heat transfer operations of 0.15 grains filterable particulate/dscf @ 6% O₂. The sources burn gaseous fuels and are expected to comply with these requirements.

The SRUs are subject to District Regulations 6-1-301, 6-1-305, 6-1-310, 6-1-311, 6-1-330, and 6-1-501. Regulations 6-1-301 and 6-1-305 were described in the paragraph above. Regulation 6-1-310 is the general grain-loading limit of 0.15 grains filterable particulate/dscf. Regulation 6-1-311 is the process weight limit. Regulation 6-1-330 has a limit of 0.08 grains/dscf of SO₃ or H₂SO₄, or both, expressed as 100% H₂SO₄, exceeding 0.08 grains/dscf of exhaust gas volume. "Filterable particulate" means particulate as measured by District Source Test Method ST-15, Particulate.

The PM₁₀ emissions from each of the SRUs will be abated by Wet ESPs. Therefore the SRUs are expected to comply with Regulations 6-1-301, 6-1-305, 6-1-311, and 6-1-330. The SRUs are not generally sources of visible emissions and testing for the sulfuric acid mist standard in District Regulation 6-1-330 is feasible and will be performed on a periodic basis. It is not feasible to test the existing units for the filterable particulate standards in Regulations 6-1-310 and 6-1-311 at this time because the SRUs do not have the required ports for source testing. The new unit will have the ports and will be tested on an annual basis.

In order to demonstrate compliance with PM₁₀ emission estimates, Chevron must conduct an initial source test within 120 days of startup. After the initial source test, Chevron must conduct three quarterly tests followed by two semi-annual tests and annual source tests thereafter. The permit conditions have been written to allow the District to require more frequent source testing if any of the results are either greater than or equal to 90% of an emissions estimate or limit.

The magnitude of the limit in Section 6-1-311 is determined by the process weight rate of the unit. The facility will be required to perform an initial and annual source test to assure compliance with Sections 6-1-310, 6-1-311, and 6-1-330. At this time, the filterable particulate concentration and mass emissions will be determined. The SRUs are expected to comply with Sections 6-1-310 and 6-1-311, especially because controlled sulfur recovery units generally do not have visible emissions, which are indicators of high particulate emissions.

Therefore, the SRUs are expected to comply with all of the Regulation 6-1 standards.

Regulation 7: Odorous Substances

The purpose of Regulation 7 is the general control of odorous compounds. All of the Renewal Project sources are expected to comply with Regulation 7. Ammonia is mentioned specifically in Regulation 7. H₂S is not specifically mentioned in Regulation 7 other than to direct the reader to Regulation 9, Rule 2. However, Regulation 7-301 and 302 have a general limit on odorous substances and a limit on odorous substances at or beyond the property line that may apply to H₂S emissions.

Ammonia

Regulation 7-302 prohibits the discharge of odorous substances, which remain odorous beyond the facility property line after dilution with four parts odor-free air. Regulation 7-302 limits ammonia emissions to 5,000 ppmvd. Because the ammonia slip emissions from the proposed combustion sources equipped with SCR will be limited by permit condition to 10 ppmvd, the facility is expected to comply with the requirements of Regulation 7.

The Renewal Project includes process heaters with SCR and modifications to SRUs, which are sources of ammonia. Ammonia is used at process heaters with SCR for abatement of NO_x. SRUs burn ammonia that is concentrated in the sour gas. District Regulation 7-303 limits the concentration of ammonia from Type A emission points to 5,000 ppm. A Type A emission point is defined in District Regulation 1-230 as: "An emission point, having sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured and where the nature and extent of air contaminants do not change substantially between a sampling point and the emission point." There is no correction for oxygen concentration. The heaters will comply because the heaters have a limit of 10 ppmv ammonia @ 3% oxygen. It is expected that the SRU will comply because tests for ammonia at the other SRUs have measured concentrations less than 10 ppm @ 15% O₂. The concentration of ammonia in the stacks of both source categories will be measured by source test after construction.

Regulation 8: Organic Compounds

The S-4473 Gas Turbine is exempt from District Regulation 8, Rule 2: "Miscellaneous Operations" per District Regulation 8-2-110 since natural gas and LPG will be fired exclusively at those sources.

The remaining Renewal Project combustion sources are fired on gaseous fuels and are expected to comply with the requirements of Regulation 8, Rule 2.

Cooling towers are exempt from this rule, in accordance with Section 8-2-114, if best modern practices are used. The District has determined best modern practices for cooling towers are as follows: daily visual inspection, water sampling and analysis for indicators of hydrocarbon leaks once per shift. Chevron will use best modern practices.

The use of solvents for cleaning and maintenance at the Renewal Project sources is expected to comply with District Regulation 8, Rule 4, "General Solvent and Surface Coating Operations," Section 302.1 by emitting less than 5 tons per year of volatile organic compounds.

Regulation 8, Rule 10: Process Vessel Depressurization

Process vessels contained in components of the Renewal Project (Hydrogen Plant, Continuous Catalytic Regenerative Reformer, and Hydrogen Purity Improvements) will be subject to Regulation 8, Rule 10. Section 301 of the rule requires that the emissions during depressurizing be controlled by an abatement device or the fuel gas system until the vessel is as close to atmospheric pressure as possible, but at least until the partial pressure of organic compounds in the vessel is less than 4.6 psig. Section 302 requires that no process vessel may be opened to the atmosphere unless the internal concentration of total organic compounds has been reduced prior

to release to the atmosphere to less than 10,000 ppmvd, with the following exception - vessels may be opened when the concentration of total organic compounds is 10,000 ppmvd or greater provided that the total number of such vessels opened with such concentration during any consecutive five year period does not exceed 10% of the total process vessel population, the organic compound emissions from the opening of these vessels does not exceed 15 pounds per day and the vessels are not opened on any day on which the APCO predicts an exceedance of a National Ambient Air Quality Standard for ozone or declares a Spare the Air Day. The Renewal Project sources that are subject to Regulation 8, Rule 10 are expected to comply with these requirements.

Regulation 8, Rule 18: Equipment Leaks

The Renewal Project fugitive components - valves, flanges, pumps, compressors, pressure relief devices - are subject to District Regulation 8, Rule 18. The rule has total organic leak limits of 100 ppmvd for valves and flanges, and 500 ppmvd for pumps, compressors, and pressure relief devices. These are "work-practice" standards. The facility is obligated to test the components for leaks on a periodic basis and to repair the leaks. A small percentage of non-repairable leaks are allowed until the next turnaround or five years, whichever is sooner. The facility has an inspection program for this regulation and is expected to comply with these standards for the new sources because the components will meet BACT, which was defined in Section 3.4 of this evaluation.

Regulation 8, Rule 28: Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants

District Regulation 8, Rule 28 applies to pressure relief devices (PRD) installed on refinery equipment. Regulation 8-28-302 applies to PRDs on new or modified sources. It requires that these PRDs comply with all requirements of Regulation 2, Rule 2, including BACT. BACT Level 1 is currently a rupture disk with a vent to a fuel gas recovery system, furnace, or flare with a recovery/destruction efficiency of 98%. The District has determined that rupture disks may not be feasible where there are a high number of pressure cycles and high temperatures and would require additional maintenance since the rupture disks would have to be replaced/repared if a rupture occurs. The perceived advantage of the rupture disks is that it indicates whether there has been flow to the fuel gas recovery system. If an event occurs associated with flaring, knowing that the vessel was vented to the flare would aid in a causal analysis. District Regulation 12, Rule 11 monitoring and Refinery data will enable the District staff to determine whether venting of the vessel occurred by reviewing the pressure data available for all vessels.

Existing PRDs associated with the Renewal Project's modified process units are also subject to the standard. These PRDs will be subject to BACT Level 2, which is a vent to a fuel gas recovery system, furnace, or flare with a recovery/destruction efficiency of 98%.

The sulfur pits are not subject to Regulation 8, Rule 28, because Section 8-28-101 states that the rule applies to equipment handling gaseous organic compounds at petroleum refineries. The sulfur pits do not handle gaseous organic compounds.

Permit conditions with the BACT requirement will be added to these units. The Refinery is expected to comply with this requirement.

Regulation 9: Inorganic Gaseous Pollutants

Regulation 9, Rule 1: Sulfur Dioxide

Regulation 9, Rule 1 establishes emission limits for sulfur dioxide from all sources and applies to the combustion sources at this facility. Section 301 (Limitations on Ground Level Concentrations) prohibits emissions which would result in ground level SO₂ concentrations in excess of 0.5 ppmvd continuously for 3 consecutive minutes, 0.25 ppmvd averaged over 60 consecutive minutes, or 0.05 ppmvd averaged over 24 hours. Section 302 (General Emission Limitation) prohibits SO₂ emissions in excess of 300 ppmvd (dry). The Renewal Project sources are not expected to cause ground level SO₂ concentrations in excess of the limits specified in Regulation 9-1-301 and should comply with Section 302. The SO₂ emissions from combustion sources will be limited on a refinery-wide basis by permit limits on the refinery fuel gas system. The fuel gas system will be limited to: 50 ppmvd H₂S averaged over a calendar day, 18.83 ppmvd H₂S averaged over any consecutive 365 day period, 100 ppmvd total sulfur averaged over a calendar day, and to 30.85 ppmvd total sulfur over any consecutive 365 day period. It is anticipated that SO₂ emissions at the facility will be decreased due to the implementation of the Renewal Project.

The combustion sources and the modified SRUs are sources of SO₂ emissions. These sources are not subject to the 300-ppm limit in District Regulation 9-1-301 because the refinery complies with the exemption in Regulation 9-1-110. The exemption requires ground level monitoring and compliance with the ground level concentration limit.

The modified SRUs are subject to the limit of 250 ppmv SO₂, dry, at zero percent O₂, in Regulation 9-1-307. The sources will be subject to continuous monitoring by Regulations 1-520, 1-522, and 9-1-502, which will ensure compliance.

Regulation 9, Rule 2, Hydrogen Sulfide

The Refinery is subject to the requirements of District Regulation 9, Rule 2. The Refinery utilizes ground level monitoring of H₂S to ensure compliance with the ground level concentration limits of 0.06 ppmvd averaged over three consecutive minutes or 0.03 ppmvd averaged over any 60 consecutive minutes.

H₂S is very odorous and is one of the compounds generated by various pieces of equipment in the refinery. Most of the H₂S in the refinery is concentrated in sour gas streams that are sent to the SRUs, where H₂S is converted to elemental sulfur. The SRUs are not expected to be a significant source of H₂S because any residual H₂S that exits the SRU will be burned in a stack gas heater.

Many pieces of equipment that are included in the Renewal Project can be sources of fugitive H₂S. After the implementation of the Renewal Project, the Refinery is required to continue to

monitor for H₂S and demonstrate ongoing compliance with Regulation 9, Rule 2. Therefore, the facility is expected to comply with the requirement.

The Sulfur Loading Rack, will handle molten sulfur that contains less than 10 ppmw H₂S. Additionally, the tank and truck rack H₂S emissions will also be controlled by a scrubber.

The District maintains and operates three air monitoring stations that measure ambient H₂S levels in the vicinity of the Refinery located at: (1) Point Richmond, (2) Richmond - 7th Street, and (3) Rodeo. Chevron operates three H₂S ground level monitoring stations. Each is located on Refinery property on the perimeter of the Refinery. One is located at the Castro Street side of the Refinery (Castro Street), the second is located at the Gertrude Street side of the Refinery (Gertrude Street), and the third is located above the Refinery on the bluff where tanks are located (Golden Gate).

Also, Chevron maintains an H₂S monitoring system at the SRUs. This system detects ambient levels of H₂S and, when required, activates an alarm system, which indicates the location and concentration of leaks. When H₂S levels exceed 10 ppm, a panel low alarm sounds in the SRU control house for that location. If levels exceed 20 ppm, a second panel high alarm sounds. Each event activates a field warble horn and a Control Board alarm for initiation of appropriate operational emergency response.

The monitoring system consists of 19 Model S214 and one Model S4000T General Monitors Smart H₂S Sensor Units (Electrical Classification Class I, Division 1) that are strategically located throughout the SRU Complex at the Refinery. Sensor elements within each unit utilize continuous diffusion adsorption type metal oxide semiconductor (MOS) technology to detect H₂S. In 2002, all units were upgraded from Model Type ST200 to Model Type S214. One unit was upgraded to Model S4000T in 2006. MOS sensors elements have a typical lifespan of three to five years. Regardless, because the units are classified as safety devices, Chevron tests and calibrates each sensor element on a monthly schedule. Defective sensor elements, if any, are replaced accordingly.

Regulation 9, Rule 3: Nitrogen Oxides from Heat Transfer Operations

The Renewal Project combustion sources listed below will comply with the Regulation 9-3-303 NO_x limits by complying with more stringent permit limits. This rule only applies to heaters greater than 250 MMBtu/hour.

S-4471 Hydrogen Plant Train #1 Reformer Furnace, 950 MMBtu/hour maximum firing rate higher heating value (HHV), equipped with Low-NO_x Burners abated by **A-0302** Hydrogen Plant Train #1 Selective Catalytic Reduction (SCR) [Vented to **P-0302** Hydrogen Plant Train #1 Furnace Exhaust]

S-4472 Hydrogen Plant Train #2 Reformer Furnace, 950 MMBtu/hour maximum firing rate HHV, equipped with Low-NO_x Burners abated by **A-0303** Hydrogen Plant Train #2 SCR [Vented to **P-0303** Hydrogen Plant Train #2 Furnace Exhaust]

S-4474 3rd Cogeneration Heat Recovery Steam Generator (HRSG) equipped with Duct Burners, equipped with Low-NO_x Burners, 350 MMBtu/hr Duct Burner maximum firing rate HHV. Combined Gas Turbine and HRSG equipped with Duct Burners 860 MMBtu/hr firing rate (calendar day). Combined Gas Turbine and HRSG with Duct Burners 840 MMBtu/hr maximum firing rate (annual average)

S-4478 Reformer Furnace #2, 402 MMBtu/hour maximum firing rate HHV equipped with Low-NO_x Burners abated by **A-0309** SCR

Regulation 9, Rule 7: Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters

The proposed Renewal Project Heat Recovery Steam Generators are exempt from the standards of Regulation 9, Rule 7, Section 301, which limits NO_x emissions to 30 ppmvd dry @ 3% O₂ and CO emissions to 400 ppmvd dry @ 3% O₂ per Regulation 9-7-110.5.

Regulation 9, Rule 9, Nitrogen Oxides from Stationary Gas Turbines

The proposed combustion Gas Turbine S-4473 will be limited by permit condition to NO_x emissions of 2.5 ppmvd (1-hour average) or 2.0 ppmvd (3-hour average) @ 15% O₂. The Turbine will therefore comply with the less stringent District Regulation 9-9-301.3 NO_x limitation of 9 ppmvd @ 15% O₂.

Regulation 9, Rule 10, Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators and Process Heaters in Petroleum Refineries

All new and/or modified process heaters will be subject to current BACT limits for NO_x and CO, which are more stringent, instead of the Regulation 9, Rule 10 limits, which apply to existing process heaters.

Regulation 10: Standards of Performance for New Stationary Sources

District Regulation 10 incorporates by reference the provisions of Title 40 CFR Part 60. The applicable subparts of 40 CFR Part 60 include Subpart A, "General Provisions" and Subpart KKKK, "Standards of Performance for Stationary Combustion Turbines." Subpart KKKK exempts sources subject to it from Subparts Da, Db, Dc, and GG. The proposed Gas Turbines and Heat Recovery Steam Generators comply with all applicable standards and limits prescribed by these regulations. The applicable emission limitations are summarized in Table 8 below:

Table 8			
Source	Requirement	Emission Limitation	Compliance Verification
Gas Turbine and HRSG with Duct Burners S-4473, S-4474	Subpart KKKK	25 ppm NO _x at 15% oxygen on natural gas	Sources limited by permit condition to 2.5 ppmvd NO _x averaged over any 1-hour at 15% O ₂ , dry and 2.0 ppmvd NO _x averaged over any 3-hour period @ 15% O ₂
		74 ppm NO _x at 15% oxygen on other fuels other than natural gas	Sources limited by permit condition to 2.5 ppmvd NO _x averaged over any 1-hour at 15% O ₂ , dry and 2.0 ppmvd NO _x averaged over any 3-hour period @ 15% O ₂
		0.06 lb SO ₂ /MMBtu heat input	Project maximum SO ₂ content in fuel of 0.0019 lb SO ₂ /MMBtu
		0.9 lb SO ₂ /MW-hour	Projected emissions of 0.019 lb SO ₂ /MW-hour from the proposed Renewal Project Gas Turbine alone

Regulation 11, Rule 10: Hexavalent Chromium Emissions from Cooling Towers

The Refinery has not used chromium based water treatment since 1989, and is expected to continue to comply with the requirements of District Regulation 11, Rule 10.

Regulation 11, Rule 12: NESHAP from Benzene Waste Operations

The Refinery is currently subject to the general provision portions of 40 CFR Part 60 Subpart FF. The Refinery will continue to be subject to 40 CFR Part 60 Subpart FF after implementation of the Renewal Project and is expected to comply with this regulation.

Regulation 12, Rule 11, Flare Monitoring at Petroleum Refineries and Regulation 12, Rule 12, Flares at Petroleum Refineries

The new Hydrogen Plant will have a Hydrogen Plant Flare S-6021 that will only flare hydrogen, pressure swing absorption gas, and refinery fuel/process gas during startups and shutdowns, or if there is an emergency upset. District Regulation 12, Rules 11 and 12, applies to petroleum refineries, which are defined for the purposes of the rule as: "A facility that processes petroleum, as defined in the North American Industrial Classification Standard No. 32411 and including any associated sulfur recovery plant."

Since the Hydrogen Plant may handle refinery process gas, the Hydrogen Plant Flare will be subject to BAAQMD Regulation 12, Rules 11 and 12. The flare will be used exclusively to burn hydrogen, pressure swing absorption gas, and refinery process/fuel gas that is generated or

received by the plant, and will fire natural gas exclusively in the pilots for the flare. The process streams and the natural gas pilot both have inherently low sulfur content. The Hydrogen Plant will use refinery process/fuel gas as a feed stream. The Hydrogen Plant Flare will also be subject to the monitoring requirements of District Regulation 12, Rules 11 and 12. Regulation 12-12 requires refineries such as Chevron to reduce emissions from flares by minimizing the frequency and magnitude of flaring. Both Chevron and Praxair have submitted Flare Minimization Plan (FMP) updates for the Renewal Project per Regulation 12-12.

STATE REQUIREMENTS

The Refinery is subject to the Air Toxic “Hot Spots” (ATHS) Program contained in the California Health and Safety Code Section 44300 et seq. Chevron has previously prepared a facility-wide Health Risk Assessment under the ATHS program, and is required to update its toxics emissions inventory on an annual basis. The Renewal Project is not expected to change the facility’s ATHS program status (i.e., “Level 0”).

OTHER FEDERAL REQUIREMENTS

40 CFR Part 60 - Subpart A, NSPS General Provisions

The Refinery is currently subject to the general provision portions of 40 CFR Part 60 Subpart A. According to documents included in the permit application submitted to the District, the Refinery will continue to be subject to 40 CFR Part 60 Subpart A after implementation of the Renewal Project and is expected to continue to comply with this regulation.

40 CFR Part 60 - Subpart J, NSPS for Petroleum Refineries

The following sources are subject to Subpart J: S-4227 Sulfur Plant Claus Unit, S-4228 Sulfur Plant Claus Unit, S-4229 Sulfur Plant Claus Unit, S-4471 Train 1 Hydrogen Plant Furnace, S-4472 Train 2 Hydrogen Plant Furnace, S-4473 Hydrogen Plant Cogeneration Turbine 3, S-4474 Heat Recovery Steam Generation 3, S-4477 CCRR 1 Preheat Furnace, S-4478 CCRR 2 Reheat Furnace, S-4479 CCR 3 Reheat Furnace, S-4480 CCRR 4 Reheat Furnace.

60.104 Standards for Sulfur Oxides.

60.104(a)(1): Fuel gas H₂S limited to 230 mg/dscm (0.10 gr/dscf) except for gas burned as a result of process upset or at flares from relief valve leaks or other emergency malfunctions.

60.104(a)(2)(i): Limit on sulfur dioxide emissions from Claus sulfur recovery plants of 250 ppmv, dry at 0% O₂.

The Refinery’s fuel system and the Claus units are already subject to these respective emission limits and will continue to be subject.

60.105: Monitoring of emissions and operations.

The Refinery's fuel system is already equipped with H₂S CEMs, which will remain in service. Claus units S-4227, S-4228 and S-4229 are already equipped with SO₂ CEMs, which will remain in service.

According to documents included in the permit application submitted to the District, the sulfur content of the pipeline natural gas will be documented using information provided by the gas supplier and will be required to do so by permit condition on a daily basis.

On June 24, 2008, EPA published in the Federal Register final amendments to the current standards of performance for petroleum refineries and separate standards of performance for new, modified, or reconstructed process units at petroleum refineries (New Source Performance Standards, Subparts J and Ja, published at 73 Federal Register 35838). Subpart J provides for an effective date of June 24, 2008 for flare requirements, an effective date of May 14, 2007 for FCC Regenerators, fuel gas combustion devices, and Sulfur Recovery Units. Subpart Ja has an effective date of June 24, 2008 for flare requirements, and an effective date of May 14, 2007 for FCCUs, FCUs/cokers, fuel gas combustion devices, process heaters, and Sulfur Recovery Units. The EPA stayed the effective date of the rule (Subpart Ja) for the newly promulgated standards of performance for new, modified, or reconstructed process units at petroleum refineries. The effective date for the final rule promulgating amendments to the current standards (Subpart J) of performance for petroleum refineries is not changing and remains June 24, 2008. When the EPA stay ends, the District will re-evaluate applicability based on the outcome of the changes.

40 CFR Part 60 - Subpart Kb, NSPS for Volatile Organic Liquid Storage Vessels

The Refinery is currently subject to the general provision portions of 40 CFR Part 60 Subpart Kb. The Refinery will continue to be subject to 40 CFR Part 60 Subpart Kb after implementation of the Renewal Project and according to documents included in the permit application submitted to the District, is expected to continue to comply with this regulation.

40 CFR Part 60 - Subpart GG, NSPS for Stationary Gas Turbines

See Discussion for District Regulation 10.

Equipment Leaks:

40 CFR Part 60 - Subpart VV, NSPS for Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006

40 CFR Part 60 - Subpart GGG, NSPS for Equipment Leaks of VOC in Petroleum Refineries

40 CFR Part 61 - Subpart J, NESHAP for Equipment Leaks (Fugitive Emission Sources) of Benzene

40 CFR Part 63 - Subpart H, NESHAP MACT for Equipment Leaks

The Refinery is currently subject to the equipment leak provisions of 40 CFR Parts 60, 61 and 63. The Refinery will continue to be subject to these requirements after implementation of the Renewal Project and according to documents included in the permit application, is expected to continue to comply with this regulation.

40 CFR Part 60 - Subpart QQQ, NSPS for Petroleum Refinery Wastewater Systems

The Refinery is currently subject to the general provision portions of 40 CFR Part 60 Subpart QQQ. The Refinery will continue to be subject to 40 CFR Part 60 Subpart QQQ after implementation of the Renewal Project and according to documents included in the permit application, is expected to continue to comply with this regulation.

40 CFR 60 - Subpart KKKK, NSPS for Stationary Combustion Turbines

See discussion above on District Regulation 10 compliance. The refinery is in compliance with more stringent District requirements.

40 CFR Part 61 - Subpart FF, NESHAP for Hazardous Air Pollutants from Benzene Waste Operations

See District Regulation 11-11 (NESHAP requirements for this source category are incorporated by reference).

40 CFR Part 61 - Subpart V, NESHAP for Equipment Leaks (Fugitive Emission Sources)

See Discussion for District Regulation 11, Rule 7 (Standard incorporated by reference)

40 CFR Part 63 - Subpart Q, NESHAP MACT for Industrial Process Cooling Towers

According to documents included in the permit application submitted to the District, the Refinery has not used chromium based water treatment since 1989 and is expected to continue to comply with the requirements of 40 CFR Part 63 Subpart Q.

40 CFR Part 63, - Subpart CC, NESHAP MACT for Petroleum Refineries

The Refinery is an existing affected source as defined in 63.640(c) and is subject to Subpart CC. Pursuant to 63.648(a), for components containing or contacting hazardous air pollutants (HAPs). According to documents included in the permit application submitted to the District, the Refinery shall continue to comply with the provisions of 40 CFR part 60 subpart VV.

40 CFR Part 63 - Subpart UUU, NESHAP MACT for Hazardous Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units

S-4227, S-4228 and S-4229, Sulfur Recovery Unit Trains #1, #2 and #3 are subject to 40 CFR

63, Subpart UUU. This standard is essentially equivalent to the SO₂ standard in 40 CFR 60, Subpart J. According to documents included in the permit application submitted to the District, these units will comply with the SO₂ standard and with the requirement for continuous SO₂ monitoring. The CCRR will comply with the requirements for catalytic reforming units.

40 CFR 63 - Subpart DDDDD, NESHAP MACT for Industrial, Commercial, and Institutional Boilers and Process Heaters

S-4471 and S-4472 Reformer Furnaces for Hydrogen Plant Trains #1, and #2; and S-4477, S-4478, S-4479 and S-4480 Reformer Furnaces #1, #2, #3 and #4 are subject to 40 CFR 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters. The Washington DC Circuit Court vacated this standard on June 8, 2007. Where there is no MACT for a new source and the deadline for promulgation of a standard by the EPA is past, local agencies must determine on a case-by-case basis, MACT for the new source, in accordance with 40 CFR 63.52(a). The emission limit for these sources in the vacated standard was 400 ppm CO. There were no other limits for gaseous-fueled boilers. A CO CEM was not required for units under 100 MMBtu/hour.

The reason that the court gave for vacating the MACT standard was that the EPA had inappropriately classified solid waste incineration units that were subject to Section 129 of the Clean Air Act as solid fuel units that were subject to the MACT standard. This classification greatly increased the number of units subject to the MACT standard and therefore skewed the determination of the MACT floor. The court stated that the "universe of units ... will be far smaller and more homogenous [sic]" after the solid waste units were taken out of the group of units affected. The court expects that the rule will change substantially when the EPA considers the smaller pool of units.

One possible outcome is that the standards may become more stringent because the HAP emissions from the solid waste incineration units are expected to be higher. The MACT "floor" is based on the performance of the top 12 percent of the units in a category.

The EPA had determined that CO was an appropriate surrogate for organic HAPs. The argument was that high CO was indicative of poor combustion and therefore, poor destruction of organic HAPs. This is a reasonable assumption.

The District does not have the resources to survey all industrial, commercial, and institutional boilers and process heaters in the United States and determine the MACT "floor." However, the District notes that the CO BACT limit in the District's BACT workbook for boilers over 50 MMBtu/hr has been 50 ppmv since 2005. For refinery process heaters over 50 MMBtu/hr, the BACT limit has been 50 ppmv since 1994. The South Coast AQMD has had BACT limits for CO of 50 ppm for boilers since 2000.

On page 1680, column 3, second paragraph, of the MACT proposal published on January 13, 2003, the EPA states:

"The approach that we use to calculate the MACT floors for new sources is somewhat

different from the approach that we use to calculate the MACT floors for existing sources. While the MACT floors for existing units are intended to reflect the average performance achieved by a representative group of sources, the MACT floors for new units are meant to reflect the emission control that is achieved in practice by the best-controlled source. Thus, for existing units, we are concerned about estimating the central tendency of a set of multiple units, while for new units, we are concerned about estimating the level of control that is representative of that achieved by a single best controlled source."

Since the District agrees with the EPA that low CO levels indicate low levels of organic HAPs, then lower CO levels are better than higher CO levels. Considering that the "best-controlled sources" have CO levels that are 50 ppm or lower, and the Project will be limited to a CO level of 10 ppm CO at 3% O₂, this level of control will be considered to be the presumptive MACT level for these sources until the EPA re-proposes and re-promulgates MACT.

All these sources will be equipped with NO_x and CO CEMs.

40 CFR 64, Compliance Assurance Monitoring

According to documents included in the permit application submitted to the District, all subject sources shall comply with the requirements of 40 CFR Part 64.

40 CFR 70, Title V, Operating Permits

The Refinery is subject to the Title V program because it is a major facility as defined by BAAQMD Regulation 2-6-206. The date of initial issuance of the Refinery's Title V permit was December 1, 2003. The Title V permit has been revised several times after initial issuance, and an application for the five-year renewal has been submitted.

The changes proposed in this application require a significant revision of the Title V permit because the Renewal Project is subject to the following District regulations:

- 2-6-226.2: The incorporation of a change considered a modification under 40 CFR Parts 60 (NSPS) and 63 (MACT)
- 2-6-226.4: The establishment of or change to a permit term or condition allowing a facility to avoid an applicable requirement
- 2-6-226.5: The establishment of or change to a case-by-case determination of any emission limit or other standard

The required revisions to the Title V permit will be prepared at a later date and are subject to publication and public comment, and EPA review.

40 CFR 72-78, Acid Rain

S-4473 3rd Cogeneration Gas Turbine and S-4474 3rd Cogeneration HRSG with Duct Burners may be subject to the requirements of Title IV of the federal Clean Air Act. The requirements of the Acid Rain Program are outlined in 40 CFR Part 72. The specifications for the type and

operation of continuous emission monitors (CEMs) for pollutants that contribute to the formation of acid rain are given in 40 CFR Part 75. District Regulation 2, Rule 7 incorporates by reference the provisions of 40 CFR Part 72. Pursuant to 40 CFR Part 72.30(b)(2)(ii), should the cogeneration unit become subject to the Acid Rain Program, Chevron must submit an Acid Rain Permit Application to the District at least 24 months prior to the date on which each unit commences operation. Pursuant to 40 CFR Part 72.2, "commence operation" includes the start-up of the unit's combustion chamber.

PUBLIC NOTICE/COMMENTS

Requirements for publication and public comment of preliminary permit decisions are specified in District Regulation 2-2-405. The Renewal Project permit application is not subject to these requirements because: (1) it is not a new major facility, (2) it is not a major modification of an existing major facility as defined in Regulation 2-2-221, (3) it does not require a PSD analysis, and (4) it is not subject to the MACT Requirement as defined in Regulation 2-2-317.

It is clear that this project's net emissions (i.e., emission increases from new, modified sources minus contemporaneous actual emission reductions from sources to be shutdown) do not exceed any of the emissions thresholds that would constitute a major modification under Regulation 2-2-221. These are 40 tons per year of POC, NO_x or SO₂; 100 tons per year of CO; and 15 tons per year of PM₁₀.

The term "PSD Analysis" is not defined in Regulation 2-2, however, "PSD Air Quality Analysis" is defined in Regulation 2-2-414. The District has consistently interpreted that the terms "PSD Analysis" and "PSD Air Quality Analysis" are interchangeable and synonymous. In other words, a PSD Analysis or PSD Air Quality Analysis only occurs when a facility hits a PSD trigger, and does not apply when PSD netting demonstrates that no trigger has been hit.

The term "MACT Requirement" is defined in Regulation 2-2-317. This Section refers to Regulation 2-2-114, which provides a series of exemptions. The MACT Requirement would apply if any of the sources in the Project were subject to case-by-case MACT determination under Clean Air Act Section 112(g). This is not the case.

Although it is not required by regulation, due to the public interest in the Renewal Project, the Executive Officer/Air Pollution Control Officer decided that the District, in collaboration with the City of Richmond Planning Department, should hold a community meeting in Richmond to discuss air quality issues associated with the Renewal Project and the District's permit process. This well-attended community meeting was held on February 13, 2008 in Richmond. District staff also attended numerous public meetings held regarding the City of Richmond's EIR certification and conditional use permit issuance.

Some of the public comments expressed at the meetings concerned air quality issues. In particular, because the Renewal Project would allow Chevron to run a crude oil blend with a higher sulfur content than current blends, many of these comments requested a "Comprehensive Crude Cap" on the Refinery. Under this approach, a Comprehensive Crude Cap would limit the sulfur content of incoming crude and gas oils to that of historical baseline levels. Limits would

also be similarly established for other constituents in these incoming materials to be refined at the facility.

On April 30, 2008, the District met with representatives of Communities for a Better Environment (CBE) to discuss the comprehensive crude cap issue. At the meeting, CBE representatives presented a graph, which asserted that crude sulfur content correlates to flare SO₂ emissions. The District has reviewed the graph, as well as other data provided by CBE, and is not convinced that this correlation is valid. Furthermore, the District is confident that District Regulation 12-12 will continue to identify and implement reductions in flaring events.

The City of Richmond hired Dr. Ranajit Sahu, an environmental engineering consultant, to respond to the “Comprehensive Crude Cap” comments from the public. Appendix D contains Dr. Sahu’s responses to comments from Communities for a Better Environment (CBE). At the June 5th Planning Commission meeting, Dr. Sahu indicated that there is not a clear nexus from crude sulfur content to SO₂ flaring emissions. The District is satisfied that limiting the sulfur content in the refinery fuel gas, and subjecting the modified SRUs to BACT, adequately address the increased sulfur loading from the Renewal Project. Flare SO₂ emissions will be addressed on an ongoing basis through District Regulations 12-11 and 12-12.

District staff was present at the Planning Commission meeting on June 5th, where Dr. Sahu presented his responses to the comments. Dr. Sahu identified the Solvent Deasphalting (SDA) Plant, S-4251, as a bottleneck for the handling of heavier, higher sulfur, crude slates after a thorough review of Chevron’s refining process. Dr. Sahu recommended that a reduced throughput limit at the SDA Plant would limit the Refinery’s ability to handle heavier crudes. The District has determined that the City of Richmond’s Conditional Use Permit conditions and review adequately addressed the comments on this issue. Pursuant to the Use Permit’s Condition C12, Chevron has submitted a permit application for a revision to its Major Facility Review (Title V) Permit to decrease the daily and annual throughput limits of the SDA Plant in the Refinery’s Title V permit. The District received the minor revision permit application on August 15, 2008 (District Permit Application No. 18740).

District staff has worked closely with City of Richmond Planning Division, the preparers of the Environmental Impact Report (EIR) for the Renewal Project, and Dr. Sahu regarding the Renewal Project. District staff has considered public input expressed in recommending a final action on this application. The District is satisfied that the SDA Plant condition in the City of Richmond’s Conditional Use Permit, the permit application to establish a new lowered SDA Plant throughput limit, District-imposed permit conditions on the RFG and SRUs, and numerous other permit conditions that monitor and limit the emissions or various regulated air pollutants adequately address this issue.

CEQA

CEQA requires public agencies to evaluate the potential environmental impacts of certain types of “projects” before approving the project. (Public Resources Code §21080). In accordance with District Regulation 2-1-310.3, the District may not issue an Authority to Construct for this project until final action has been taken by the CEQA Lead Agency.

The City of Richmond is the CEQA Lead Agency for the Renewal Project. A draft EIR for the Project was issued by the City's Planning Department in May 2007. The District, as a CEQA Responsible Agency, provided comments on the draft EIR. These comments, as well as others, were addressed in a Final EIR. An electronic copy of the Final EIR is available for review at the following link: <http://www.ci.richmond.ca.us/index.asp?NID=832>.

The Richmond Planning Commission certified that the Final EIR was prepared in compliance with the California Environmental Quality Act. The Richmond Planning Commission considered the EIR at noticed public hearings on April 10, 2008, and June 5, 2008. The Final EIR was certified on July 17, 2008. The City of Richmond filed a Notice of Determination on August 5, 2008.

Final action by the District will be taken only after careful review and consideration of the information in the Project's certified EIR. As a Responsible Agency, the District has prepared findings for the purposes of CEQA. The findings are attached in Appendix F.

RECOMMENDATIONS

The District recommends that the Chevron Richmond Refinery be issued a Conditional Authority to Construct for the following:

HYDROGEN PLANT REPLACEMENT

New Equipment

S-4449 Hydrogen Plant Train #1, 140 MM SCFD Hydrogen Produced maximum capacity

S-4450 Hydrogen Plant Train #2, 140 MM SCFD Hydrogen Produced maximum capacity

S-4451 Hydrogen Recovery Unit, 50 MM SCFD Hydrogen Recovered maximum capacity

S-4471 Hydrogen Plant Train #1 Reformer Furnace, 950 MMBtu/hr maximum firing rate higher heating value (HHV), equipped with Low-NO_x Burners abated by **A-0302** Hydrogen Plant Train #1 Selective Catalytic Reduction (SCR) [Vented to **P-0302** Hydrogen Plant Train #1 Furnace Exhaust]

S-4472 Hydrogen Plant Train #2 Reformer Furnace, 950 MMBtu/hr maximum firing rate HHV, equipped with Low-NO_x Burners abated by **A-0303** Hydrogen Plant Train #2 SCR [Vented to **P-0303** Hydrogen Plant Train #2 Furnace Exhaust]

S-4465 Hydrogen Plant Cooling Tower, 36,000 gal/min maximum capacity

S-6021/A-6021 Hydrogen Plant Flare, 1.6 MMBtu/hr Pilot maximum capacity HHV, [Vented to **P-0305** Hydrogen Plant Flare Exhaust]

Shutdown of Existing Equipment

S-4250 Hydrogen Plant, Trains A and B, (Total Combined Capacity 150 MMSCFD) Train A abated by: **A-261** Packed Bed Scrubber De-aerator Vent (Methanol), Exhaust to P-261 and Train B abated by: **A-262** Packed Bed Scrubber De-aerator Vent (Methanol), Exhaust to P-262

S-4170 Hydrogen Plant Train A Reformer Furnace F-305 (820 MMBtu/hr) Exhaust to P-123, P-124, P-125, P-126 abated by **A-260** Hydrogen Plant Train A SCR System

S-4171 Hydrogen Plant Train B Reformer Furnace F-355 (820 MMBtu/hr)
Exhaust to P-127, P-128, P-129, P-130

S-4348 Hydrogen Recovery Unit (1.1 ton/hour max), Exhaust to S-6039

S-4156 Feed Furnace F-320 (41 MMBtu/hr), Exhaust to P-114

S-4157 Feed Furnace F-330 (41 MMBtu/hr, Multi-fuel), Exhaust to P-115

S-4158 Feed Furnace F-340 (48 MMBtu/hr), Exhaust to P-116

REFORMER REPLACEMENT

New Equipment

S-4452 Continuous Catalyst Regeneration Reformer, 71,300 BPD maximum capacity
[Vented to **P-0308** CCRR Regeneration Vent]

S-4477 Reformer Furnace #1, 201 MMBtu/hr maximum firing rate HHV, equipped with
Low-NO_x Burners abated by **A-0309** SCR

S-4478 Reformer Furnace #2, 402 MMBtu/hr maximum firing rate HHV equipped with
Low-NO_x Burners abated by **A-0309** SCR

S-4479 Reformer Furnace #3, 201 MMBtu/hr maximum firing rate HHV equipped with
Low-NO_x Burners abated by **A-0309** SCR

S-4480 Reformer Furnace #4, 201 MMBtu/hr maximum firing rate HHV equipped with
Low-NO_x Burners abated by **A-0309** SCR

A-0309 SCR for CCRR Furnaces #1 - #4 (S-4477, S-4478, S-4479, S-4480) [Vented to
P-0309 Reformer Furnaces #1 - #4 (S-4477, S-4478, S-4479, S-4480)]

Shutdown of Existing Equipment

S-4283 No. 4 Catalytic Reformer (28 MBPD)

S-4038 No. 4 Rheniformer Furnace, F-3550 (187 MMBtu/hr), Exhaust P-40, P-41

S-4039 No. 4 Rheniformer Furnace, F-3560 (170 MMBtu/hr), Exhaust P-40, P-41

S-4040 No. 4 Rheniformer Furnace, F-3570 (152 MMBtu/hr), Exhaust P-40, P-41

S-4041 No. 4 Rheniformer Furnace, F-3580 (77 MMBtu/hr), Exhaust P-40, P-41

S-4237 No. 5 Catalytic Reformer (23 MBPD)

S-4042 No. 5 Rheniformer Furnace, F550 (198 MMBtu/hr), Exhaust P-42, P-43
Unit Equipped with 36-Ultra Low NO_x Burners

S-4043 No. 5 Rheniformer Furnace, F-560 (133 MMBtu/hr), Exhaust P-42, P-43

S-4044 No. 5 Rheniformer Furnace, F-570 (78 MMBtu/hr), Exhaust P-42, P-43

S-4045 No. 5 Rheniformer Furnace, F-580 (51 MMBtu/hr), Exhaust P-42, P-43

POWER PLANT REPLACEMENT

New Equipment

S-4473 3rd Cogeneration Gas Turbine, 550 MMBtu/hr maximum firing rate HHV. Combined Gas Turbine and HRSG equipped with Duct Burners 860 MMBtu/hr firing rate (calendar day). Combined Gas Turbine and HRSG equipped with Duct Burners 840 MMBtu/hr maximum firing rate (annual average)

S-4474 3rd Cogeneration Heat Recovery Steam Generator (HRSG) equipped with Duct Burners, equipped with Low-NO_x Burners 350 MMBtu/hr Duct Burner maximum firing rate HHV. Combined Gas Turbine and HRSG equipped with Duct Burners 860 MMBtu/hr firing rate (calendar day). Combined Gas Turbine and HRSG with Duct Burners 840 MMBtu/hr maximum firing rate (annual average)

A-74 SCR abating both 3rd Cogeneration Gas Turbine and Heat Recovery Steam Generator

A-75 Oxidation Catalyst abating both 3rd Cogeneration Gas Turbine and Heat Recovery Steam Generator [Vented to **P-0306** 3rd Cogeneration Gas Turbine/Heat Recovery Steam Generator]

Shutdown of Existing Equipment

S-4129 Boiler No. 1 (233 MMBtu/hr)

S-4131 Boiler No. 3 (236 MMBtu/hr)

S-4132 Boiler No. 4 (235 MMBtu/hr)

S-4133 Boiler No. 5 (237 MMBtu/hr)

S-4135 Boiler No. 7 (272 MMBtu/hr)

HYDROGEN PURITY IMPROVEMENTS

New Equipment

S-4454 #6 H₂S Plant, Recycle Amine Regenerator, 11 MMSCFD maximum capacity

S-4490 Sulfur Loading Rack, 157 LT/hr maximum capacity abated by **A-0310** Sulfur Loading Rack Caustic Scrubber [Vented to **P-0310** Sulfur Loading Rack Caustic Scrubber Exhaust]

A-4450 Acid Gas Scrubber (C-2440), 11 MMSCFD Acid Gas for abatement of: #3 H₂S Plant (S-4433), #4 H₂S Plant (S-4434), #5 H₂S Plant (S-4435), Recycle Amine Regenerator (S-4454), and the #8 NH₃-H₂S Plant (S-4429) and #18 NH₃-H₂S Plant (S-4345)

S-4436 F-2170 Stack Gas Heater No. 1 SRU, 31.9 MMBtu/hr maximum firing rate HHV [vented to **P-0151** SRU Train #1 Exhaust]

S-4437 F-2270 Stack Gas Heater No. 2 SRU, 31.9 MMBtu/hr maximum firing rate HHV [Vented to **P-0152** SRU Train #2 Exhaust]

S-4438 F-2370 Stack Gas Heater No. 3 SRU, 56.1 MMBtu/hr maximum firing rate HHV [Vented to **P-0153** SRU Train #3 Exhaust]

S-4456 Fresh Amine Storage Tank, 70,000 gal maximum capacity

S-3227 Lean Amine Storage Tank, 130,000 gallon maximum capacity

S-3228 Caustic Storage Tank, 200,000 gallon maximum capacity

S-3229 Spent Caustic Storage Tank, 400,000 gallon maximum capacity

Modification of Existing Equipment

S-4253 TKC/FCC Feed Hydrotreater, 96,000 BPD maximum capacity

S-4435 No. 5 H₂S Plant, 9.6 MMSCFD maximum capacity

S-4227 Sulfur Recovery Unit Train #1, 345 LTD maximum capacity abated by both **A-0020** SRU#1 Tail Gas Unit Thermal Oxidizer 30.8 MMBtu/hr HHV maximum firing rate and **A-120** Wet Electrostatic Precipitator (ESP)

S-4228 Sulfur Recovery Unit Train #2, 345 LTD maximum capacity abated by **A-0021** SRU#2 Tail Gas Unit Thermal Oxidizer 30.8 MMBtu/hr HHV maximum firing rate and **A-121** Wet Electrostatic Precipitator (ESP)

S-4229 Sulfur Recovery Unit Train #3, 570 LTD maximum capacity abated by **A-0022** SRU#3 Tail Gas Unit Thermal Oxidizer 45.0 MMBtu/hr HHV maximum firing rate and

A-122 Wet Electrostatic Precipitator (ESP)

The District recommends that the Chevron Richmond Refinery be issued a Conditional Permit to Operate for the following:

A-4451 Acid Gas Scrubber (C-840), 12.5 MMSCFD Acid Gas for abatement of: #3 H₂S Plant (S-4433), #4 H₂S Plant (S-4434), #5 H₂S Plant (S-4435), Recycle Amine Regenerator (S-4454), and the #8 NH₃-H₂S Plant (S-4429) and #18 NH₃-H₂S Plant (S-4345).

OTHER ALTERED EQUIPMENT

Retrofitting of Existing Furnaces with Low NO_x Burners (Reg. 9-10 Compliance)

S-4161 F-510 TKN Furnace, 61 MMBtu/hr maximum firing rate HHV, equipped with Low-NO_x Burners

S-4162 F-520 TKN Furnace, 61 MMBtu/hr maximum firing rate HHV equipped with Low-NO_x Burners

S-4163 F-530 TKN Furnace, 61 MMBtu/hr maximum firing rate HHV equipped with Low-NO_x Burners [Vented to **P-0311** TKN Furnace Exhaust]

S-4188 F-651 Polymer Furnace, 27 MMBtu/hr maximum firing rate HHV equipped with Low-NO_x Burners [Vented to **P-0312** Polymer Furnace Exhaust]

S-4189 F-661 Polymer Furnace, 15 MMBtu/hr maximum firing rate HHV equipped with Low-NO_x Burners [Vented to **P-0313** Polymer Furnace Exhaust]

CONDITIONS

See Attached Conditions.

APPENDICES

Appendix A

Criteria Emissions Calculations

Appendix B

HAP Emissions Calculations

Appendix C

Health Risk Screening Analysis

Appendix D

Dr. Sahu's responses to comments from CBE

Appendix E

CEQA Findings Document

APPENDIX A
CRITERIA EMISSIONS CALCULATIONS

Chevron Renewal Project
Basis for NOx Emissions Estimates
BAAQMD September 2008

Sources		NOx Emissions							Based on	Basis for Emission Factor / Emissions
1. Hydrogen Plant Replacement		Baseline			Permit/Potential			Net NOx	Emission	
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions	Factor?	
a) Existing H2 Plant Train A Reformer Furnace F-305; S-4170	Value	4,932,983	0.0128	31.63	0	--	0	-31.63	N	CEM. The dates used for all baseline data are July 1, 2002 through June 30, 2005.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
b) Existing H2 Plant Train B Reformer Furnace F-355; S-4171	Value	4,414,649	0.0169	37.22	0	--	0	-37.22	N	CEM. The dates used for all baseline data are July 1, 2002 through June 30, 2005.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
c) Existing H2 Plant Feed Furnaces F-320/30/40; S-4156, S-4157, S-4158	Value	291,564	0.0230	3.35	0	--	0	-3.35	N	CEM. The dates used for all baseline data are July 1, 2002 through June 30, 2005.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
d) H2 Plant Train 1 Reformer Furnace: S-4471	Value	0	--	0	8,059,200	0.00661	26.64	26.64	Y	BACT = 5 ppmvd@3%O2. From three SCAQMD submittals. Tail Gas Fd estimated by Praxair at 9526.7 scf/MMBtu lb/MMBtu = 5 E-06 x 1/386.8 x 46 x 9526.7 x 20.9/(20.9-3) = 0.00661 lb/MMBtu
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
e) H2 Plant Train 2 Reformer Furnace: S-4472	Value	0	--	0	8,059,200	0.00661	26.64	26.64	Y	BACT = 5 ppmvd@3%O2. From three SCAQMD submittals. Tail Gas Fd estimated by Praxair at 9526.7 scf/MMBtu lb/MMBtu = 5 E-06 x 1/386.8 x 46 x 9526.7 x 20.9/(20.9-3) = 0.00661 lb/MMBtu
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
f) New Flare: S-6021/A-6021	Value	0	--	0	327,821	0.0680	11.15	11.15	Y	0.068 lb/MMBTU (AP-42, September 1991, Table 13.5-1) Heat load based on Praxair estimated flare flows and durations during start-up, shutdown and maintenance periods.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
								-7.79		
Net Hydrogen Plant Replacement	Value	9,639,197		72.20	16,446,221		64.42	-7.79		
2. Power Plant Replacement (Include Repower Existing)		Baseline			Permit/Potential			Net NOx		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing Power Plant Boilers 1, 3, 4, 5 and 7: S-4129, S-4131, S-4132, S-4133, S-4135	Value	3,585,535	0.0265	47.43	0	--	0	-47.43	N	CEM. The dates used for all baseline data are July 1, 2002 through June 30, 2005.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
b) New 3rd Cogen Unit: S-4473 (Turbine), S-4474 (HRSG)	Value	0	--	0	7,358,400	0.0092	33.91	33.91	Y	BACT = 2.5 ppmvd@15%O2 lb/MMBtu = 2.5 E-06 x 1/386.8 x 46 x 8743 x 20.9/(20.9-15) = 0.0092 lb/MMBtu
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
								-13.52		
Net Power Plant Replacement (Include Repower Existing)	Value	3,585,535		47.43	7,358,400		33.91	-13.52		
3. Reformer Replacement		Baseline			Permit/Potential			Net NOx		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing #4 Rheniformer: S-4283	Value	8,467,156	4.14E-06	0.02	0	--	0	-0.02	N	UOP estimate for CCR applied to baseline Rheniformer throughput.
	(Units) Basis	B/yr	lb/B	T/yr	B/yr	lb/B	T/yr	T/yr		
b) Existing #5 Rheniformer: S-4237	Value	9,051,274	4.14E-06	0.02	0	--	0	-0.02	N	UOP estimate for CCR applied to baseline Rheniformer throughput.
	(Units) Basis	B/yr	lb/B	T/yr	B/yr	lb/B	T/yr	T/yr		
c) New Continuous Catalytic Reformer: S-4452	Value	0	--	0	42	7.34E+02	0.96	0.96	N	NOx lb/hr = ppm x 1/386.8 dscf/lb-mol x 46 lb/lb-mol x ft3/min x 60 min/hr
	(Units) Basis	B/yr	lb/B	T/yr	ppm	dscfm	T/yr	T/yr		
d) Existing #4 Rhen Furnaces F-3550/60/70/80: S-4038, S-4039, S-4040, S-4041, resp	Value	2,423,281	0.0288	34.86	0	--	0	-34.86	N	CEM. The dates used for all baseline data are July 1, 2002 through June 30, 2005.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
e) Existing #5 Rhen Furnaces F-550/60/70/80: S-4042, S-4043, S-4044, S-4045	Value	2,003,990	0.0322	32.25	0	--	0	-32.25	N	CEM. The dates used for all baseline data are July 1, 2002 through June 30, 2005.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
f) New CCR Furnaces S-4477, S-4478, S-4479, S-4480	Value	0	--	0	4,380,000	0.00607	13.29	13.29	Y	Annual average = 5 ppmvd@3%O2 lb/MMBtu = 5 E-06 x 1/386.8 x 46 x 8743 x 20.9/(20.9-3) = 0.00607 lb/MMBtu
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
								-52.89		
Net Reformer Replacement	Value	4,427,271		67.14	4,380,000		14.26	-52.89		
4. Hydrogen Purity Project (incl. TKC Debottleneck)		Baseline			Permit/Potential			Net NOx		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing No. 1 SRU: S-4227 w/Heater S-4192	Value	27.7	6239	5.401	0	--	0	-5.40	N	NOx lb/hr = ppm x 1/386.8 dscf/lb-mol x 46 lb/lb-mol x ft3/min x 60 min/hr
	(Units) Basis	ppm	dscfm	T/yr	LT/yr	lb/LT	T/yr	T/yr		
b) Existing No. 2 SRU: S-4228 w/Heater S-4193	Value	51.3	8082	12.958	0	--	0	-12.96	N	
	(Units) Basis	ppm	dscfm	T/yr	LT/yr	lb/LT	T/yr	T/yr		
c) Existing No. 3 SRU: S-4229 w/Heater S-4194	Value	38.6	12716	15.340	0	--	0	-15.34	N	
	(Units) Basis	ppm	dscfm	T/yr	LT/yr	lb/LT	T/yr	T/yr		
d) New No. 1 SRU: S-4227 w/Heater S-4436	Value	0	--	0	50	9840	15.377	15.38	N	
	(Units) Basis	LT/yr	lb/LT	T/yr	ppm	dscfm	T/yr	T/yr		
e) New No. 2 SRU: S-4228 w/Heater S-4437	Value	0	--	0	50	9840	15.377	15.38	N	
	(Units) Basis	LT/yr	lb/LT	T/yr	ppm	dscfm	T/yr	T/yr		
f) New No. 3 SRU: S-4229 w/Heater S-4438	Value	0	--	0	50	20200	31.566	31.57	N	
	(Units) Basis	LT/yr	lb/LT	T/yr	ppm	dscfm	T/yr	T/yr		
								28.62		

**Chevron Renewal Project
Basis for CO Emissions Estimates
BAAQMD September 2008**

Sources		CO Emissions							Based on Emission	
1. Hydrogen Plant Replacement		Baseline			Permit/Potential			Net CO		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions	Factor?	Basis for Emission Factor / Emissions
a) Existing H2 Plant: S-4250	Value (Units) Basis	50,166 MMSCF/yr Prod Hyd	0.40725 lb/MMSCF	10.22 T/yr	0 MMSCF/yr	-- lb/MMSCF	0 T/yr	-10.22 T/yr	N	BAAQMD source test on CO2 vent
b) Existing H2 Plant Train A Reformer Furnace F-305: S-4170	Value (Units) Basis	4,932,983 MMBTU/yr	0.00822 lb/MMBTU	20.26 T/yr	0 MMBTU/yr	-- lb/MMBTU	0 T/yr	-20.26 T/yr	Y	Calibrated indoor on-line analyzer. Capped concentrations at 200 ppm (400 ppm if during start-up/shutdown). The dates used for all baseline data are July 1, 2002 through June 30, 2005.
c) Existing H2 Plant Train B Reformer Furnace F-355: S-4171	Value (Units) Basis	4,414,649 MMBTU/yr	0.00453 lb/MMBTU	10.00 T/yr	0 MMBTU/yr	-- lb/MMBTU	0 T/yr	-10.00 T/yr	Y	Calibrated indoor on-line analyzer. Capped concentrations at 200 ppm (400 ppm if during start-up/shutdown). The dates used for all baseline data are July 1, 2002 through June 30, 2005.
d) Existing H2 Plant Feed Furnaces F-320/30/40: S-4156, S-4157, S-4158	Value (Units) Basis	291,564 MMBTU/yr	0.00989 lb/MMBTU	1.44 T/yr	0 MMBTU/yr	-- lb/MMBTU	0 T/yr	-1.44 T/yr	Y	Calibrated indoor on-line analyzer. Capped concentrations at 200 ppm (400 ppm if during start-up/shutdown). The dates used for all baseline data are July 1, 2002 through June 30, 2005.
e) H2 Plant Train 1 Reformer Furnace: S-4471	Value (Units) Basis	0 MMBTU/yr	-- lb/MMBTU	0 T/yr	8,059,200 MMBTU/yr	0.00805 lb/MMBTU	32.44 T/yr	32.44 T/yr	Y	BACT = 10 ppmvd@3%O2 lb/MMBtu = 10 E-06 x 1/386.8 x 28 x 9526.7 x 20.9/(20.9-3) = 0.00805
f) H2 Plant Train 2 Reformer Furnace: S-4472	Value (Units) Basis	0 MMBTU/yr	-- lb/MMBTU	0 T/yr	8,059,200 MMBTU/yr	0.00805 lb/MMBTU	32.44 T/yr	32.44 T/yr	Y	BACT = 10 ppmvd@3%O2 lb/MMBtu = 10 E-06 x 1/386.8 x 28 x 9526.7 x 20.9/(20.9-3) = 0.00805
g) New Flare: S-6021/A-6021	Value (Units) Basis	0 MMBTU/yr	-- lb/MMBTU	0 T/yr	327,821 MMBTU/yr		27.40 T/yr	27.40 T/yr	Y	Praxair Calc. 43.81 Ton/year, Permit Limit for H2 Plant Permit Condition set Flare at 27.4 ton/year. CO destruction efficiency 98%. Heat load based on Praxair estimated flare flows and durations
Net Hydrogen Plant Replacement	Value							50.36		
2. Power Plant Replacement (Include Repower Existing)		Baseline			Permit/Potential			Net CO		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing Power Plant Boilers 1, 3, 4, 5 and 7: S-4129, S-4131, S-4132, S-4133, S-4135	Value (Units) Basis	3,585,535 MMBTU/yr	0.00156 lb/MMBTU	2.80 T/yr	0 MMBTU/yr	-- lb/MMBTU	0 T/yr	-2.80 T/yr	Y	Average of BAAQMD source test data 7/1/02 through 6/30/05.
b) New 3rd Cogen Unit: S-4473 (Turbine), S-4474 (HRSG)	Value (Units) Basis	0 MMBTU/yr	-- lb/MMBTU	0 T/yr	7,358,400 MMBTU/yr	0.01345 lb/MMBTU	49.49 T/yr	49.49 T/yr	Y	BACT = 6 ppmvd@15%O2 3 hr avg. lb/MMBtu = 6 E-06 x 1/386.8 x 28 x 8743 x 20.9/(20.9-15) = 0.0135
Net Power Plant Replacement (Include Repower Existing)	Value	3,585,535		2.80	7,358,400		49.49	46.68		
3. Reformer Replacement		Baseline			Permit/Potential			Net CO		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing #4 Rheniformer: S-4283	Value (Units) Basis	8,467,156 B/yr	2.76E-04 lb/B	1.17 T/yr	0 B/yr	-- lb/B	0 T/yr	-1.17 T/yr	N	UOP estimate for CCR applied to baseline Rheniformer throughput.
b) Existing #5 Rheniformer: S-4237	Value (Units) Basis	9,051,274 B/yr	2.76E-04 lb/B	1.25 T/yr	0 B/yr	-- lb/B	0 T/yr	-1.25 T/yr	N	UOP estimate for CCR applied to baseline Rheniformer throughput.
c) New Continuous Catalytic Reformer: S-4452	Value (Units) Basis	0 B/yr	-- lb/B	0 T/yr	500 ppm	7.34E+02 dscfm	6.98 T/yr	6.98 T/yr	N	500 ppm, design flowrate of 44045 dscf/hr
d) Existing #4 Rhen Furnaces F-3550/60/70/80: S-4038, S-4039, S-4040, S-4041	Value (Units) Basis	2,423,281 MMBTU/yr	0.00170 lb/MMBTU	2.06 T/yr	0 MMBTU/yr	-- lb/MMBTU	0 T/yr	-2.06 T/yr	N	Calibrated indoor on-line analyzer. Capped concentrations at 200 ppm (400 ppm if during start-up/shutdown). The dates used for all baseline data are July 1, 2002 through June 30, 2005.
e) Existing #5 Rhen Furnaces F-550/60/70/80: S-4042, S-4043, S-4044, S-4045	Value (Units) Basis	2,003,990 MMBTU/yr	0.00346 lb/MMBTU	3.47 T/yr	0 MMBTU/yr	-- lb/MMBTU	0 T/yr	-3.47 T/yr	N	Calibrated indoor on-line analyzer. Capped concentrations at 200 ppm (400 ppm if during start-up/shutdown). The dates used for all baseline data are July 1, 2002 through June 30, 2005.
f) New CCR Furnaces S-4477, S-4478, S- 4479, S-4480	Value (Units) Basis	0 MMBTU/yr	-- lb/MMBTU	0 T/yr	4,380,000 MMBTU/yr	0.00740 lb/MMBTU	16.20 T/yr	16.20 T/yr	Y	BACT = 10 ppmvd@3%O2 lb/MMBtu = 10 E-06 x 1/386.8 x 28 x 8743 x 20.9/(20.9-3) = 0.07397
Net Reformer Replacement	Value							15.23		
4. Hydrogen Purity Project (incl. TKC Debottleneck)		Baseline			Permit/Potential			Net CO		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing No. 1 SRU: S-4227 w/Heater S-4192	Value (Units) Basis	342 ppm	6239 dscfm	40.639 T/yr	0 LT/yr	-- lb/LT	0 T/yr	-40.64 T/yr	N	CO lb/hr = ppm x 1/386.8 dscf/lb-mol x 28 lb/lb-mol x ft3/min x 60 min/hr
b) Existing No. 2 SRU: S-4228 w/Heater S-4193	Value (Units) Basis	206 ppm	8082 dscfm	31.688 T/yr	0 LT/yr	-- lb/LT	0 T/yr	-31.69 T/yr	N	
c) Existing No. 3 SRU: S-4229 w/Heater S-4194	Value (Units) Basis	246 ppm	12716 dscfm	59.388 T/yr	0 LT/yr	-- lb/LT	0 T/yr	-59.39 T/yr	N	
d) New No. 1 SRU: S-4227 w/Heater S-4436	Value (Units) Basis	0 LT/yr	-- lb/LT	0 T/yr	150 ppm	9840 dscfm	28.079 T/yr	28.08 T/yr	N	
e) New No. 2 SRU: S-4228 w/Heater S-4437	Value (Units) Basis	0 LT/yr	-- lb/LT	0 T/yr	150 ppm	9840 dscfm	28.079 T/yr	28.08 T/yr	N	
f) New No. 3 SRU: S-4229 w/Heater S-4438	Value (Units) Basis	0 LT/yr	-- lb/LT	0 T/yr	150 ppm	20200 dscfm	57.642 T/yr	57.64 T/yr	N	
Net Hydrogen Purity Project (incl. TKC Debottleneck)	Value							-17.91		

Chevron Renewal Project
Basis for PM10 Emissions Estimates
BAAQMD September 2008

Sources	PM10 Emissions								Based on Emission	
1. Hydrogen Plant Replacement		Baseline			Permit/Potential			Net PM	Factor?	Basis for Emission Factor / Emissions
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing H2 Plant Train A Reformer Furnace F-305: S-4170	Value	4,932,983	0.01050	25.90	0	--	0	-25.90	Y	Best Environmental F-305 source test (May 11, 17 & 25, 2006), as corrected in Tim Underwood 8/1/06 memo. SCR furnace. Results submitted by Best to Tim Underwood of BAAQMD by fax 7/31/06.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
b) Existing H2 Plant Train B Reformer Furnace F-355: S-4171	Value	4,414,649	0.00696	15.36	0	--	0	-15.36	Y	Best Environmental F-305 source test (May 11, 17 & 25, 2006), as corrected in Tim Underwood 8/1/06 memo. SCR furnace. Results submitted by Best to Tim Underwood of BAAQMD by fax 7/31/06.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
c) Existing H2 Plant Feed Furnaces F-320/30/40: S-4156, S-4157, S-4158	Value	291,564	0.00696	1.01	0	--	0	-1.01	Y	Best Environmental F-305 source test (May 11, 17 & 25, 2006), as corrected in Tim Underwood 8/1/06 memo. SCR furnace. Results submitted by Best to Tim Underwood of BAAQMD by fax 7/31/06.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
d) H2 Plant Train 1 Reformer Furnace: S-4471	Value	0	--	0	8,059,200	0.00257	10.34	10.34	Y	Praxair emission factor from source test at similar hydrogen facility at BP Texas City refinery, as corrected by BAAQMD. Source test conducted by Golden Specialty Consulting Aug 5 & 6, 2004.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
e) H2 Plant Train 2 Reformer Furnace: S-4472	Value	0	--	0	8,059,200	0.00257	10.34	10.34	Y	Praxair emission factor from source test at similar hydrogen facility at BP Texas City refinery, as corrected by BAAQMD. Source test conducted by Golden Specialty Consulting Aug 5 & 6, 2004.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
f) New Cooling Tower: S-4465	Value	0	0	0	18,922	0.208	1.97	1.97	Y	Drift rate .0005% of circulation rate, TDS content 5000 ppmw to allow potential use of reclaimed water.
	(Units) Basis	MMgal/yr	T/MMgal	T/yr	MMgal/yr	lb/MMgal	T/yr	T/yr		
g) New Flare: S-6021/A-6021	Value	0	--	0	80,526	0.00745	0.30	0.30	Y	AP-42, Supplement D, July 1998, Table 1.4-2 Heat load based on est. flare flows and durations during start-up, shutdown and maintenance periods.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
Net Hydrogen Plant Replacement	Value							-19.33		
2. Power Plant Replacement (Include Repower Existing)		Baseline			Permit/Potential			Net PM		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing Power Plant Boilers 1, 3, 4, 5 and 7: S-4129, S-4131, S-4132, S-4133, S-4135	Value	3,585,535	0.00745	13.36	0	--	0	-13.36	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
b) New 3rd Cogen Unit: S-4473 (Turbine), S-4474 (HRSG)	Value	0	--	0	7,358,400	0.00574	21.12	21.12	Y	Valero Cogen Permit Limit 4.65 lb/hour, 810 MMBtu/hour
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
c) Cogen Wetted Media and NOx Steam	Value	0	0	0	0	0.000	0.09	0.09	N	Chevron Estimate
	(Units) Basis	MMgal/yr	T/MMgal	T/yr	MMgal/yr	lb/MMgal	T/yr	T/yr		
Net Power Plant Replacement (Include Repower Existing)	Value							7.85		
3. Reformer Replacement		Baseline			Permit/Potential			Net PM		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) New Continuous Catalytic Reformer: S-4452	Value	0	--	0	0.0083	734.1	0.23	0.23	N	
	(Units) Basis	B/yr	lb/B	T/yr	gr/dscf	dscfm	T/yr	T/yr		
b) Existing #4 Rhen Furnaces F-3550/60/70/80: S-4038, S-4039, S-4040, S-4041	Value	2,423,281	0.00696	8.43	0	--	0	-8.43	Y	Best Environmental F-600 source test (June 21, 27 & July 5, 2006), as corrected in Tim Underwood 8/1/06
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
c) Existing #5 Rhen Furnaces F-550/60/70/80: S-4042, S-4043, S-4044, S-4045	Value	2,003,990	0.00696	6.97	0	--	0	-6.97	Y	Best Environmental F-600 source test (June 21, 27 & July 5, 2006), as corrected in Tim Underwood 8/1/06 memo. Non-SCR furnace. Results submitted by Best to Tim Underwood of BAAQMD by fax 7/31/06.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
d) New CCR Furnaces S-4477, S-4478, S-4479, S-4480	Value	0	--	0	4,380,000	0.00745	16.32	16.32	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
Net Reformer Replacement	Value							1.14		
4. Hydrogen Purity Project (incl. TKC Debottleneck)		Baseline			Permit/Potential			Net PM		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing No. 1 SRU: S-4227 w/Heater S-4192	Value	0.0196	6239	4.59	0	--	0	-4.59	Y	See SRU Test Summary Spreadsheet
	(Units) Basis	grain/dscf	dscf/min	T/yr	LT/yr	lb/LT	T/yr	T/yr		
b) Existing No. 2 SRU: S-4228 w/Heater S-4193	Value	0.0175	8082	5.31	0	--	0	-5.31	Y	See SRU Test Summary Spreadsheet
	(Units) Basis	grain/dscf	dscf/min	T/yr	LT/yr	lb/LT	T/yr	T/yr		
c) Existing No. 3 SRU: S-4229 w/Heater S-4194	Value	0.0172	12716	8.21	0	--	0	-8.21	Y	See SRU Test Summary Spreadsheet
	(Units) Basis	grain/dscf	dscf/min	T/yr	LT/yr	lb/LT	T/yr	T/yr		
d) New No. 1 SRU: S-4227 w/Heater S-4436	Value	0	--	0	0.00392	9840	1.44	1.44	Y	90% Abatement Efficiency for Wet ESP grain/dscf baseline x (1-.9) x 2 compliance margin = grain/dscf permit potential
	(Units) Basis		lb/LT	T/yr	grain/dscf	dscf/min	T/yr	T/yr		
e) New No. 2 SRU: S-4228 w/Heater S-4437	Value	0	--	0	0.00350	9840	1.30	1.30	Y	90% Abatement Efficiency for Wet ESP grain/dscf baseline x (1-.9) x 2 compliance margin = grain/dscf permit potential
	(Units) Basis		lb/LT	T/yr	grain/dscf	dscf/min	T/yr	T/yr		
f) New No. 3 SRU: S-4229 w/Heater S-4438	Value	0	--	0	0.00344	20200	2.60	2.60	Y	90% Abatement Efficiency for Wet ESP grain/dscf baseline x (1-.9) x 2 compliance margin = grain/dscf permit potential
	(Units) Basis		lb/LT	T/yr	grain/dscf	dscf/min	T/yr	T/yr		
g) New Sulfur Loading Rack: S-4490	Value	0	--	0	328,500		0.01	0.01	N	Loading rack vapor rate and vapor pressure of elemental sulfur.
	(Units) Basis	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr		
Net Hydrogen Purity Project (incl. TKC Debottleneck)	Value							-12.76		

Calculation of Hydrogen Plant cooling tower PM10 emission factor

Maximum TDS content, mg/l	5000
Drift factor, % of circulation	0.0005%
Drift rate per million gpm of circulation, gpm	5
Water, lb/gal	8.33
lb/min of drift per million gpm of circulation	41.65
lb of TDS per million gpm of circulation	0.20825

Chevron Renewal Project
Basis for VOC Emissions Estimates
BAAQMD September 2008

Sources		VOC Comb & Vent Emissions							Based on	Basis for Emission Factor / Emissions
1. Hydrogen Plant Replacement		Baseline			Permit/Potential			Net VOC	Factor?	
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing H2 Plant: S-4250	Value	50,166	0.1857	4.66	0	--	0	-4.66	N	Methanol emissions as calculated in App. 1015f (Change Catalyst in Low Temperature Shift). Emissions after LTS change used as baseline for Renewal Project
	(Units) Basis	MMSCF/yr Prod Hyd	lb/MMSCF	T/yr	MMSCF/yr	lb/MMSCF	T/yr	T/yr		
b) New Hydrogen Plant (2 Trains): S-4449, S-4450	Value	0	--	0	102,200	0.0000	0.00	0.00	N	
	(Units) Basis	MMSCF/yr	lb/MMSCF	T/yr	MMSCF/yr	lb/MMSCF	T/yr	T/yr		New hydrogen plant does not employ Low Temperature Shift reactor, significantly reducing methanol generation All methanol generated is consumed in furnace.
c) Existing H2 Plant Train A Reformer Furnace F-305: S-4170	Value	4,932,983	0.00539	13.30	0	--	0	-13.30	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
d) Existing H2 Plant Train B Reformer Furnace F-355: S-4171	Value	4,414,649	0.00539	11.90	0	--	0	-11.90	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
c) Existing H2 Plant Feed Furnaces F-320/30/40: S-4156, S-4157, S-4158	Value	291,564	0.00539	0.79	0	--	0	-0.79	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
d) H2 Plant Train 1 Reformer Furnace: S-4471	Value	0	--	0	8,059,200	0.00288	11.61	11.61	N	Fuel gas is 80% PSA tail gas (BTU basis), remainder natural gas or RFG. PSA gas is 13.5% VOC. AP-42 VOC EF is applied to VOC portion.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
e) H2 Plant Train 2 Reformer Furnace: S-4472	Value	0	--	0	8,059,200	0.00288	11.61	11.61	N	Fuel gas is 80% PSA tail gas (BTU basis), remainder natural gas or RFG. PSA gas is 13.5% VOC. AP-42 VOC EF is applied to VOC portion.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
f) New Flare: S-6021/A-6021	Value	0	--	0			5.41	5.41	Y	98% Destruction of Organic Streams, See Flare Calculation Spreadsheet. Heat load based on Praxair estimated flare flows and durations during start-up, shutdown and maintenance periods.
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
g) New Cooling Tower: S-4465	Value	0	0	0	18,922	0.70	0.27	0.27	Y	15 days a year of VOC leaks 0.07 lb/MMgal from AP-42, Supplement D, Jan 1995, Table 5.1-2
	(Units) Basis	MMgal/yr	T/MMgal	T/yr	MMgal/yr	lb/MMgal	T/yr	T/yr		
Net Hydrogen Plant Replacement	Value	9,639,197		30.65	16,118,400		28.62	-1.75		
2. Power Plant Replacement (Include Repower Existing)		Baseline			Permit/Potential			Net VOC		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing Power Plant Boilers 1, 3, 4, 5 and 7: S-4129, S-4131, S-4132, S-4133, S-4135	Value	3,585,535	0.0054	9.67	0	--	0	-9.67	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
b) New 3rd Cogen Unit: S-4473 (Turbine), S-4474 (HRSG)	Value	0	--	0	7,358,400	0.00256	9.44	9.44	Y	BACT = 2 ppmvd@15%O2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		lb/MMBtu = 2 E-06 x 1/386.8 x 16 x 8743 x 20.9/(20.9-3) = 0.00256
Net Power Plant Replacement (Include Repower Existing)	Value	3,585,535		9.67	7,358,400		9.44	-0.23		
3. Reformer Replacement		Baseline			Permit/Potential			Net VOC		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing #4 Rheniformer: S-4283	Value	8,467,156	6.90E-05	0.29	0	--	0	-0.29	N	UOP estimate for CCR applied to baseline Rheniformer throughput
	(Units) Basis	B/yr	lb/B	T/yr	B/yr	lb/B	T/yr	T/yr		
b) Existing #5 Rheniformer: S-4237	Value	9,051,274	6.90E-05	0.31	0	--	0	-0.31	N	UOP estimate for CCR applied to baseline Rheniformer throughput
	(Units) Basis	B/yr	lb/B	T/yr	B/yr	lb/B	T/yr	T/yr		
c) New Continuous Catalytic Reformer: S-4452	Value	0	--	0	123	7.34E+02	0.98	0.98	N	
	(Units) Basis	B/yr	lb/B	T/yr	ppm	dscfm	T/yr	T/yr		
d) Existing #4 Rhen Furnaces F-3550/60/70/80: S-4038, S-4039, S-4040, S-4041	Value	2,423,281	0.00539	6.53	0	--	0	-6.53	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
e) Existing #5 Rhen Furnaces F-550/60/70/80: S-4042, S-4043, S-4044, S-4045	Value	2,003,990	0.00539	5.40	0	--	0	-5.40	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
f) New CCR Furnaces S-4477, S-4478, S-4479, S-4480	Value	0	--	0	4,380,000	0.00539	11.81	11.81	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
Net Reformer Replacement	Value	4,427,271		12.54	4,380,000		12.79	0.25		
4. Hydrogen Purity Project (incl. TKC Debottleneck)		Baseline			Permit/Potential			Net VOC		
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions		
a) Existing No. 1 SRU: S-4227	Value	35,904	--	0	0	--	0	0.00	N	All VOC emissions from SRU stack assumed to come from stack heater.
	(Units) Basis	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr		
b) Existing No. 2 SRU: S-4228	Value	45,696	--	0	0	--	0	0.00	N	All VOC emissions from SRU stack assumed to come from stack heater.
	(Units) Basis	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr		
c) Existing No. 3 SRU: S-4229	Value	70,311	--	0	0	--	0	0.00	N	All VOC emissions from SRU stack assumed to come from stack heater.
	(Units) Basis	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr		
d) New No. 1 SRU: S-4227	Value	0	--	0	55,042	--	0	0.00	N	All VOC emissions from SRU stack assumed to come from stack heater.
	(Units) Basis	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr		
e) New No. 2 SRU: S-4228	Value	0	--	0	55,042	--	0	0.00	N	All VOC emissions from SRU stack assumed to come from stack heater.
	(Units) Basis	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr		
f) New No. 3 SRU: S-4229	Value	0	--	0	110,048	--	0	0.00	N	All VOC emissions from SRU stack assumed to come from stack heater.
	(Units) Basis	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr		
g) Existing No. 1 SRU Stack Gas Heater: S-4192	Value	57,488	0.00539	0.15	0	--	0	-0.15	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
h) Existing No. 2 SRU Stack Gas Heater: S-4193	Value	54,268	0.00539	0.15	0	--	0	-0.15	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
i) Existing No. 3 SRU Stack Gas Heater: S-4194	Value	84,622	0.00539	0.23	0	--	0	-0.23	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
j) New No. 1 SRU Stack Gas Heater: S-4436	Value	0	--	0	280,320	0.00539	0.76	0.76	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
k) New No. 2 SRU Stack Gas Heater: S-4437	Value	0	--	0	280,320	0.00539	0.76	0.76	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
l) New No. 3 SRU Stack Gas Heater: S-4438	Value	0	--	0	490,560	0.00539	1.32	1.32	Y	AP-42, Supplement D, July 1998, Table 1.4-2
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr		
Net Hydrogen Purity Project (incl. TKC Debottleneck)	Value			0.53			2.83	2.30		

Chevron Renewal Project
NOx Emissions Estimate
BAAQMD September 2008

Sources	NOx Emissions							
Hydrogen Plant Replacement		Baseline			Permit/Potential			Net NOx
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions
Existing H2 Plant: S-4250	Value	50,166			0	--	0	0.00
	(Units)	MMSCF/yr	lb/MMSCF	T/yr	MMSCF/yr	lb/MMSCF	T/yr	T/yr
	Basis	Prod Hyd						
Existing 20 Plant PSA/HRU: S-4348	Value	2,980			0	--	0	0.00
	(Units)	MMSCF/yr	lb/MMSCF	T/yr	MMSCF/yr	lb/MMSCF	T/yr	T/yr
	Basis	Prod Hyd						
New Hydrogen Plant (2 Trains): S-4449, S-4450	Value	0	--	0	102,200			0.00
	(Units)	MMSCF/yr	lb/MMSCF	T/yr	MMSCF/yr	lb/MMSCF	T/yr	T/yr
	Basis							
Existing H2 Plant Train A Reformer Furnace F-305: S-4170	Value	4,932,983	0.0128	31.63	0	--	0	-31.63
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Existing H2 Plant Train B Reformer Furnace F-355: S-4171	Value	4,414,649	0.0169	37.22	0	--	0	-37.22
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Existing H2 Plant Feed Furnaces F-320/30/40: S-4156, S-4157, S-4158	Value	291,564	0.0230	3.35	0	--	0	-3.35
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
H2 Plant Train 1 Reformer Furnace: S-4471	Value	0	--	0	8,059,200	0.00661	26.64	26.64
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
H2 Plant Train 2 Reformer Furnace: S-4472	Value	0	--	0	8,059,200	0.00661	26.64	26.64
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
New Cooling Tower: S-4465	Value	0	0	0	18,922	0	0	0.00
	(Units)	MMgal/yr	T/MMgal	T/yr	MMgal/yr	T/MMgal	T/yr	T/yr
New Flare: S-6021/A-6021	Value	0	--	0	327,821	0.0680	11.15	11.15
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Existing TKN Furnaces F-510/20/30: S-4161, S-4162, S-4163	Value	911,634	0.1130	0.00	0	--	0	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Existing Poly Plant Furnaces F-651, F-661: S-4188, S-4189	Value	202,362	0.0000	0.00	0	--	0	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Low NOx Burners TKN Furnaces F-510/20/30: S-4161, S-4162, S-4163	Value	0	--	0	1,603,080	0.0320	0.00	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Low NOx Burners Poly Plant Furnaces F-651, F-661: S-4188, S-4189	Value	0	--	0.00	367,920	0.0330	0.00	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Net Hydrogen Plant Replacement	Value			72.20			64.42	-7.79
Power Plant Replacement (Include Repower Existing)		Baseline			Permit/Potential			Net NOx
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions
Existing Power Plant Boilers 1, 3, 4, 5 and 7: S-4129, S-4131, S-4132, S-4133, S-4135	Value	3,585,535	0.0265	47.43	0	--	0	-47.43
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
New 3rd Cogen Unit: S-4473 (Turbine), S-4474 (HRSG)	Value	0	--	0	7,358,400	0.00922	33.91	33.91
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Cogen Wetted Media and NOx Steam	Value	0	0	0	0	0	0	0.00
	(Units)	MMgal/yr	T/MMgal	T/yr			T/yr	T/yr
	Basis							
Net Power Plant Replacement (Include Repower Existing)	Value	3,585,535		47.43	7,358,400		33.91	-13.52

Chevron Renewal Project
Refinery Fuel Gas System SO₂ Emission Reduction for All Sources Fired on Refinery Fuel Gas and Offsets
BAAQMD September 2008

RFG Drum Allocation (Not a permit limit)	49.09
S-4473, Cogen Turbine Natural Gas 120 MMBtu/hr	0.74
Cogen LPG	3.33
SO ₂ Fuel Drums + Cogen	53.15

H ₂ Plant Natural Gas Combustion (70% PSA Tail Gas)	4.64
S-6021, New H ₂ Plant Flare	0.31
S-4471, H ₂ Plant Train No. 1 Breakthrough	0.15
S-4472, H ₂ Plant Train No. 2 Breakthrough	0.15
	5.25

Chevron Renewal Project
NOx Emissions Estimate
BAAQMD September 2008

Reformer Replacement		Baseline			Permit/Potential			Net NOx
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions
Existing #4 Rheniformer: S-4283	Value	8,467,156	4.14E-06	0.02	0	--	0	-0.02
	(Units)	B/yr	lb/B	T/yr	B/yr	lb/B	T/yr	T/yr
	Basis							
Existing #5 Rheniformer: S-4237	Value	9,051,274	4.14E-06	0.02	0	--	0	-0.02
	(Units)	B/yr	lb/B	T/yr	B/yr	lb/B	T/yr	T/yr
	Basis							
New Continuous Catalytic Reformer: S-4452	Value	0	--	0	42	7.34E+02	0.96	0.96
	(Units)	B/yr	lb/B	T/yr	ppm	dscfm	T/yr	T/yr
	Basis							
Existing #4 Rhen Furnaces F-3550/60/70/80: S-4038, S-4039, S-4040, S-4041	Value	2,423,281	0.0288	34.86	0	--	0	-34.86
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Existing #5 Rhen Furnaces F-550/60/70/80: S-4042, S-4043, S-4044, S-4045	Value	2,003,990	0.0322	32.25	0	--	0	-32.25
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
New CCR Furnaces S-4477, S- 4478, S-4479, S-4480	Value	0	--	0	4,380,000	0.00607	13.29	13.29
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Net Reformer Replacement	Value	4,427,271		67.14	4,380,000		14.26	-52.89
Hydrogen Purity Project (incl. TKC Debottleneck)		Baseline			Permit/Potential			Net NOx
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions
Existing TKC Furnaces F-410, F-420, F-710: S-4159, S-4160, S-4167	Value	1,304,577	0.0000	0.00	0	--	0	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Debottlenecked TKC Furnaces F-410, F-420, F-710: S-4159, S-4160, S-4167	Value	0	--	0	2,146,200	0.0000	0.00	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
New TKC Recycle H2 Amine Contactor: S-4454	Value	0	--	0	2,190		0	0.00
	(Units)	MMSCF/yr H2S	lb/MMSCF	T/yr	MMSCF/yr H2S	lb/MMSCF	T/yr	T/yr
	Basis							
Existing No. 1 SRU: S-4227 w/Heater S-4192	Value	27.7	6239	5.401	0	--	0	-5.40
	(Units)	ppm	dscfm	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
Existing No. 2 SRU: S-4228 w/Heater S-4193	Value	51.3	8082	12.958	0	--	0	-12.96
	(Units)	ppm	dscfm	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
Existing No. 3 SRU: S-4229 w/Heater S-4194	Value	38.6	12716	15.340	0	--	0	-15.34
	(Units)	ppm	dscfm	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
New No. 1 SRU: S-4227 w/Heater S-4436	Value	0	--	0	50	9840	15.377	15.38
	(Units)	LT/yr	lb/LT	T/yr	ppm	dscfm	T/yr	T/yr
	Basis							
New No. 2 SRU: S-4228 w/Heater S-4437	Value	0	--	0	50	9840	15.377	15.38
	(Units)	LT/yr	lb/LT	T/yr	ppm	dscfm	T/yr	T/yr
	Basis							
New No. 3 SRU: S-4229 w/Heater S-4438	Value	0	--	0	50	20200	31.566	31.57
	(Units)	LT/yr	lb/LT	T/yr	ppm	dscfm	T/yr	T/yr
	Basis							
Existing Sulfur Loading Rack: S-4396	Value	118	0	0	0	0	0	0.00
	(Units)	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
New Acid Gas Scrubber: A-4450	Value	0	--	0				0.00
	(Units)	MMSCFD	lb/MMSCF	T/yr	MMSCFD	lb/MMSCF	T/yr	T/yr
	Basis							
New Sulfur Loading Rack: S-4490	Value	0	--	0	328,500			0.00
	(Units)	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
Net Hydrogen Purity Project (incl. TKC Debottleneck)	Value			33.70			62.32	28.62

Chevron Renewal Project
SO2 Shutdown Sources and New Sources
BAAQMD September 2008

RENEWAL Permit Potential SOx

Non Drum SO2 Increases (Must Be Offset)

Sulfur Recovery Unit Increase	29.06
H2 Plant Condition	5.25
CCR Vent	1.00
Total Non Drum SO2	35.31

New Drum SO2 (Accounted for in Bubble)

New RFG at CCRR Furnaces	11.65
New RFG at Cogen Duct Burner	7.46
LPG at Cogen	3.33
Natural Gas at Cogen	0.74
Total New Drum SO2 to be included in Drum SO2 Limit of 53.15 tons/year	23.17

Total Renewal Permit Potential SOx (ton/year)	58.48
--	--------------

Potential RENEWAL Baseline/Shutdown SOx tons/year	47.01
Potential RFG Sources Shutdown	46.95
Potential Other Shutdown (Rheniformer)	0.06

Potential Shutdown Reductions Used to Offset New Non Drum SO2

Potential RENEWAL Baseline/Shutdown SOx tons/year	47.01
Non Drum Increases SO2 Increases	35.31
Potential Leftover Emission Reductions	11.70

New Permit Limit at Refinery Fuel Gas Drums

Potential Baseline Refinery Fuel Gas System All Sources Refinery Wide	101.64
Potential Renewal Shutdown RFG Sources	46.95
Potential Baseline Refinery Fuel Gas System Non Renewal Sources	54.69
Permit Limit at Refinery Fuel Gas Drums	53.15
Potential Reduction at Drums = Potential Baseline Drums non Shutdown - New Drum Limit	1.54

Potential Reduction of SO2 = (Total Shutdown - Non Drum SO2 Increases) + Difference at Drums	13.24
--	-------

Notes:

New Drum SO2 is a potential to emit value and will be included as part of the new 53.15 ton/year permit limit.

Fuel Drum Permit Limit of 53.15 tons/year SO2 is the sum of all three fuel gas drums + Cogen Natural Gas + Cogen

The Refinery will have to lower the sulfur content in the RFG system and/or burn less RFG to manage emissions w

All potential SO2 emissions reductions will need to be evaluated in a future District Banking Application.

Potential Baseline for Refinery Fuel Gas System
SO2 lb/MMBtu for Baseline = (101.64 tons/year x 2000 lb/ton)/(106.87 MMscf/day x 979.26 Btu/scf x 365 day/year) = 0.00532 lb/MMBtu

Permit Potential Using Permit Limit for Total Sulfur for Fuel Gas System
SO2 lb/MMBtu for Future based on future SO2 concentration = 30.85 E-06 x 1/379 dscf/lb-mol x 32 lb/lb-mol x 64 lb/lb-mol/32 lb/lb-mol x 1/979.26 x 1 E06 Btu/MMBtu = 0.00532 lb/MMBtu

Potential Baseline Shutdown Sources	Baseline MMBtu/yr	SO2 ton/yr
S-4170 H2 Plant Furnace	4932983	13.12
S-4171 H2 Plant Furnace	4414649	11.74
S-4156, S-4157, S-4158 H2 Plant Feed Furnaces	291564	0.78
S-4129, S-4131, S-4132, S-4133, S-4135 Power Plant Boilers	3585535	9.54
S-4038, S-4039, S-4040, S-4041 Rheniformer #4	2423281	6.45
S-4042, S-4043, S-4044, S-4045 Rheniformer #5	2003990	5.33
Total Shutdown	17652002	46.95

Potential Shutdown SO2 = 17652002 MMBtu/yr x 0.00532 lb/MMBtu x ton/2000 lb = 46.95 tons/yr

Potential Baseline Fuel Gas System Total = Potential Shutdown SO2 + Existing SO2 = 101.64 Ton/yr = 46.95 Tons/yr + 54.69 Tons/yr

Sulfur Recovery Units Potential Baseline

	1 SRU	2 SRU	3 SRU	Total
July 1 - Dec 31, 2002	3.05	8.23	8.87	20.15
2003	13.93	15.63	28.92	58.48
2004	12.40	19.40	32.78	64.59
Jan 1 - Jun 30, 2005	9.07	8.32	12.31	29.70
Total Potential SRU baseline SO2 emissions, tons	38.45	51.59	82.88	172.92
Total Potential SRU baseline SO2 emissions, tons/year	12.82	17.20	27.63	57.64

Other Sources of Potential SO2 Baseline	tons/year
Rheniformer #4 S-4283	0.03
Rheniformer #5 S-4237	0.03
Total	0.06

Total Renewal Potential Shutdown, No SRU, (tons/year)	47.01
Total Renewal Potential Baseline with SRU, (tons/year)	104.65

New Sources fired on RFG (Non Cogen)		
S-4477, S-4478, S-4479, S-4480 CCRR Furnaces	4380000	11.65
Total	4380000	11.65

New SO2 = 4380000 MMBtu/yr x 0.00532 lb/MMBtu x ton/2000 lb = 11.65 tons/yr

New Sources fired on Natural Gas (Non Cogen)		
S-4471, New H2 Plant Reformer Furnace Train 1	3314285.7	2.32
S-4472, New H2 Plant Reformer Furnace Train 2	3314285.7	2.32
Total	6628571.4	4.64

New SO2 Natural Gas = 3314285.7 MMBtu/yr x 0.0014 lb/MMBtu x ton/2000 lb = 2.32
H2 Plant will burn a maximum of 30% Natural Gas on an Annual Basis balance PSA tail gas.

Natural Gas Emission Factor
lb/MMBtu = 0.5 gr/100 scf x lb/7000 gr x 1/1020 BTU/scf x 1 E06 Btu/MMBtu x 64 lb/lb-mol/32 lb/lb-mol = 0.0014 lb/MMBtu

Cogen (Turbine fires LPG and/or Natural Gas, Duct Burner fires RFG)		
S-4473, Cogen Turbine Natural Gas 120 MMBtu/hr	1051200	0.74
S-4473, Cogen Turbine LPG 400 MMBtu/hr	3504000	3.33
S-4474, New Cogen Ductburner Only 320 MMBtu/hr	2803200	7.46
Total		11.52

LPG lb/MMBtu = 0.0019 based on Chevron Estimate, Slightly more conservative than 0.0014 lb/MMBtu for Natural Gas

Cogen Max Firing Rate for Turbine 550 MMBtu/hr, Duct Burner 350 MMBtu/hr, Total 900 MMBtu/hr
Cogen Annual Average Limit Total = 840 MMBtu/hr
Turbine MMBtu/hr Annual Average = 520
Duct Burner MMBtu/hr Annual Average = 320

Permit Potential Sulfur Recovery Units

SRU Stack Emissions

SOx lb/hr = ppm x 1/386.8 dscf/lb-mol x 64 lb/lb-mol x ft3/min x 60 min/hr

	Stack SOx (ppm)	Maximum Stack Gas Flowrate (dscfm)	Stack SOx (lb/hr)	Stack SOx ton/yr
S-4227 SRU No. 1		50	9840	4.88
S-4228 SRU No. 2		50	9840	4.88
S-4229 SRU No. 3		50	20200	10.03
Total				86.70

Other Sources of SO2 Permit Potential	tons/year
S-6021, New H2 Plant Flare	0.31
S-4471, H2 Plant Train No. 1 Breakthrough	0.15
S-4472, H2 Plant Train No. 2 Breakthrough	0.15
S-4452, New Continous Catalytic Reformer	1.00
S-4490, Sulfur Loading Rack	0.01
Total	1.62

Total Renewal Permit Potential, (tons/year)	116.14
---	--------

RENEWAL Potential Baseline with SRU SO2 tons/year	104.65
RENEWAL Permit Potential with SRU SO2 tons/year	116.14
Difference	11.48

Notes:
Chevron Plans to reduce SO2 emissions from the Refinery by limiting the sulfur content in the Refinery Fuel Gas System.
This will reduce the SO2 emissions from all Refinery Fuel Gas fired sources at the Refinery.
All potential SO2 emissions reductions will need to be evaluated in a future District Banking Application.

Chevron Renewal Project
CO Emissions Estimate
BAAQMD September 2008

Sources	CO Emissions							
Hydrogen Plant Replacement		Baseline			Permit/Potential			Net CO
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions
Existing H2 Plant: S-4250	Value	50,166	0.40725	10.22	0	--	0	-10.22
	(Units) Basis	MMSCF/yr Prod Hyd	lb/MMSCF	T/yr	MMSCF/yr	lb/MMSCF	T/yr	T/yr
Existing 20 Plant PSA/HRU: S-4348	Value	2,980			0	--	0	0.00
	(Units) Basis	MMSCF/yr Prod Hyd	lb/MMSCF	T/yr	MMSCF/yr	lb/MMSCF	T/yr	T/yr
New Hydrogen Plant (2 Trains): S-4449, S-4450	Value	0	--	0	102,200			0.00
	(Units) Basis	MMSCF/yr	lb/MMSCF	T/yr	MMSCF/yr	lb/MMSCF	T/yr	T/yr
Existing H2 Plant Train A Reformer Furnace F-305: S-4170	Value	4,932,983	0.00822	20.26	0	--	0	-20.26
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Existing H2 Plant Train B Reformer Furnace F-355: S-4171	Value	4,414,649	0.00453	10.00	0	--	0	-10.00
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Existing H2 Plant Feed Furnaces F-320/30/40: S-4156, S-4157, S-4158, resp.	Value	291,564	0.0099	1.44	0	--	0	-1.44
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
H2 Plant Train 1 Reformer Furnace: S-4471	Value	0	--	0	8,059,200	0.00805	32.44	32.44
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
H2 Plant Train 2 Reformer Furnace: S-4472	Value	0	--	0	8,059,200	0.00805	32.44	32.44
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
New Cooling Tower: S-4465	Value	0	0	0	18,922	0	0	0.00
	(Units) Basis	MMgal/yr	T/MMgal	T/yr	MMgal/yr	T/MMgal	T/yr	T/yr
New Flare: S-6021/A-6021	Value	0	--	0			27.40	27.40
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Existing TKN Furnaces F-510/20/30: S-4161, S-4162, S-4163	Value	911,634	0.0163	0.00	0	--	0	
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Existing Poly Plant Furnaces F-651, F-661: S-4188, S-4189	Value	202,362	0.0163	0.00	0	--	0	
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Low NOx Burners TKN Furnaces F-510/20/30: S-4161, S-4162, S-4163	Value	0	--	0	1,603,080	0.0163	0.00	
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Low NOx Burners Poly Plant Furnaces F-651, F-661: S-4188, S-4189	Value	0	--	0.00	367,920	0.0163	0.00	
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Net Hydrogen Plant Replacement	Value			41.92			92.28	50.36
Power Plant Replacement (Include Repower Existing)		Baseline			Permit/Potential			Net CO
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions
Existing Power Plant Boilers 1, 3, 4, 5 and 7: S-4129, S-4131, S-4132, S-4133, S-4135	Value	3,585,535	0.00156	2.80	0	--	0	-2.80
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
New 3rd Cogen Unit: S-4473 (Turbine), S-4474 (HRSG)	Value	0	--	0	7,358,400	0.01345	49.49	49.49
	(Units) Basis	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
Cogen Wetted Media and NOx Steam	Value	0	0	0	0	0	0	0.00
	(Units) Basis	MMgal/yr	T/MMgal	T/yr			T/yr	T/yr
Net Power Plant Replacement (Include Repower Existing)	Value	3,585,535		2.80	7,358,400		49.49	46.68

Chevron Renewal Project
CO Emissions Estimate
BAAQMD September 2008

Reformer Replacement		Baseline			Permit/Potential			Net CO
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions
Existing #4 Rheniformer: S-4283	Value	8,467,156	2.76E-04	1.17	0	--	0	-1.17
	(Units)	B/yr	lb/B	T/yr	B/yr	lb/B	T/yr	T/yr
	Basis							
Existing #5 Rheniformer: S-4237	Value	9,051,274	2.76E-04	1.25	0	--	0	-1.25
	(Units)	B/yr	lb/B	T/yr	B/yr	lb/B	T/yr	T/yr
	Basis							
New Continuous Catalytic Reformer: S-4452	Value	0	--	0	500	7.34E+02	6.98	6.98
	(Units)	B/yr	lb/B	T/yr	ppm	dscfm	T/yr	T/yr
	Basis							
Existing #4 Rhen Furnaces F-3550/60/70/80: S-4038, S-4039, S-4040, S-4041	Value	2,423,281	0.00170	2.06	0	--	0	-2.06
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Existing #5 Rhen Furnaces F-550/60/70/80: S-4042, S-4043, S-4044, S-4045	Value	2,003,990	0.00346	3.47	0	--	0	-3.47
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
New CCR Furnaces S-4477, S- 4478, S-4479, S-4480	Value	0	--	0	4,380,000	0.00740	16.20	16.20
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Net Reformer Replacement	Value			7.95			23.18	15.23

Hydrogen Purity Project (incl. TKC Debottleneck)		Baseline			Permit/Potential			Net CO
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions
Existing TKC Furnaces F-410, F-420, F-710: S-4159, S-4160, S-4167	Value	1,304,577	0.0163	0.00	0	--	0	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Debottlenecked TKC Furnaces F-410, F-420, F-710: S-4159, S-4160, S-4167	Value	0	--	0	2,146,200	0.0163	0.00	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
New TKC Recycle H2 Amine Contactor: S-4454	Value	0	--	0	2,190		0	0.00
	(Units)	MMSCF/yr H2S	lb/MMSCF	T/yr	MMSCF/yr H2S	lb/MMSCF	T/yr	T/yr
	Basis							
Existing No. 1 SRU: S-4227 w/Heater S-4192	Value	342	6239	40.639	0	--	0	-40.64
	(Units)	ppm	dscfm	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
Existing No. 2 SRU: S-4228 w/Heater S-4193	Value	206	8082	31.688	0	--	0	-31.69
	(Units)	ppm	dscfm	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
Existing No. 3 SRU: S-4229 w/Heater S-4194	Value	246	12716	59.388	0	--	0	-59.39
	(Units)	ppm	dscfm	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
New No. 1 SRU: S-4227 w/Heater S-4436	Value	0	--	0	150	9840	28.079	28.08
	(Units)	LT/yr	lb/LT	T/yr	ppm	dscfm	T/yr	T/yr
	Basis							
New No. 2 SRU: S-4228 w/Heater S-4437	Value	0	--	0	150	9840	28.079	28.08
	(Units)	LT/yr	lb/LT	T/yr	ppm	dscfm	T/yr	T/yr
	Basis							
New No. 3 SRU: S-4229 w/Heater S-4438	Value	0	--	0	150	20200	57.642	57.64
	(Units)	LT/yr	lb/LT	T/yr	ppm	dscfm	T/yr	T/yr
	Basis							
Existing Sulfur Loading Rack: S-4396	Value	794	0	0	0	0	0	0.00
	(Units)	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
New Acid Gas Scrubber: A-4450	Value	0	--	0				0.00
	(Units)	MMSCFD	lb/MMSCF	T/yr	MMSCFD	lb/MMSCF	T/yr	T/yr
	Basis							
New Sulfur Loading Rack: S-4490	Value	0	--	0	328,500			0.00
	(Units)	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
Net Hydrogen Purity Project (incl. TKC Debottleneck)	Value			131.72			113.80	-17.91

Chevron Renewal Project
PM10 Emissions Estimate
BAAQMD September 2008

Sources	PM Emissions							
Hydrogen Plant Replacement		Baseline			Permit/Potential			Net PM
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions
Existing H2 Plant: S-4250	Value	50,166			0	--	0	0.00
	(Units)	MMSCF/yr	lb/MMSCF	T/yr	MMSCF/yr	lb/MMSCF	T/yr	T/yr
	Basis	Prod Hyd						
Existing 20 Plant PSA/HRU: S-4348	Value	2,980			0	--	0	0.00
	(Units)	MMSCF/yr	lb/MMSCF	T/yr	MMSCF/yr	lb/MMSCF	T/yr	T/yr
	Basis	Prod Hyd						
New Hydrogen Plant (2 Trains): S-4449, S-4450	Value	0	--	0	102,200			0.00
	(Units)	MMSCF/yr	lb/MMSCF	T/yr	MMSCF/yr	lb/MMSCF	T/yr	T/yr
	Basis							
Existing H2 Plant Train A Reformer Furnace F-305: S-4170	Value	4,932,983	0.01050	25.90	0	--	0	-25.90
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Existing H2 Plant Train B Reformer Furnace F-355: S-4171	Value	4,414,649	0.00696	15.36	0	--	0	-15.36
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Existing H2 Plant Feed Furnaces F-320/30/40: S-4156, S-4157, S-4158, resp.	Value	291,564	0.00696	1.01	0	--	0	-1.01
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
H2 Plant Train 1 Reformer Furnace: S-4471	Value	0	--	0	8,059,200	0.00257	10.34	10.34
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
H2 Plant Train 2 Reformer Furnace: S-4472	Value	0	--	0	8,059,200	0.00257	10.34	10.34
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
New Cooling Tower: S-4465	Value	0	0	0	18,922	0.208	1.97	1.97
	(Units)	MMgal/yr	T/MMgal	T/yr	MMgal/yr	lb/MMgal	T/yr	T/yr
	Basis							
New Flare: S-6021/A-6021	Value	0	--	0	80,526	0.00745	0.30	0.30
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Existing TKN Furnaces F-510/20/30: S-4161, S-4162, S-4163	Value	911,634	0.00745	0.00	0	--	0	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Existing Poly Plant Furnaces F-651, F-661: S-4188, S-4189	Value	202,362	0.00745	0.00	0	--	0	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Low NOx Burners TKN Furnaces F-510/20/30: S-4161, S-4162, S-4163	Value	0	--	0	1,603,080	0.00745	0.00	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Low NOx Burners Poly Plant Furnaces F-651, F-661: S-4188, S-4189	Value	0	--	0.00	367,920	0.00745	0.00	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Net Hydrogen Plant Replacement	Value			42.27			22.95	-19.33
Power Plant Replacement (Include Repower Existing)		Baseline			Permit/Potential			Net PM
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions
Existing Power Plant Boilers 1, 3, 4, 5 and 7: S-4129, S-4131, S-4132, S-4133, S-4135	Value	3,585,535	0.00745	13.36	0	--	0	-13.36
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
New 3rd Cogen Unit: S-4473 (Turbine), S-4474 (HRSG)	Value	0	--	0	7,358,400	0.00574	21.12	21.12
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Cogen Wetted Media and NOx Steam	Value	0	0	0			0.09	0.09
	(Units)	MMgal/yr	T/MMgal	T/yr			T/yr	T/yr
	Basis							
Net Power Plant Replacement (Include Repower Existing)	Value			13.36			21.21	7.85

Chevron Renewal Project
PM10 Emissions Estimate
BAAQMD September 2008

Reformer Replacement		Baseline			Permit/Potential			Net PM
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions
Existing #4 Rheniformer: S-4283	Value	8,467,156	0	0	0	--	0	0.00
	(Units)	B/yr	lb/B	T/yr	B/yr	lb/B	T/yr	T/yr
	Basis							
Existing #5 Rheniformer: S-4237	Value	9,051,274	0	0	0	--	0	0.00
	(Units)	B/yr	lb/B	T/yr	B/yr	lb/B	T/yr	T/yr
	Basis							
New Continuous Catalytic Reformer: S-4452	Value	0	--	0	0.0083	734.1	0.23	0.23
	(Units)	B/yr	lb/B	T/yr	gr/dscf	dscfm	T/yr	T/yr
	Basis							
Existing #4 Rhen Furnaces F-3550/60/70/80: S-4038, S-4039, S-4040, S-4041	Value	2,423,281	0.00696	8.43	0	--	0	-8.43
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Existing #5 Rhen Furnaces F-550/60/70/80: S-4042, S-4043, S-4044, S-4045	Value	2,003,990	0.00696	6.97	0	--	0	-6.97
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
New CCR Furnaces S-4477, S- 4478, S-4479, S-4480	Value	0	--	0	4,380,000	0.00745	16.32	16.32
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Net Reformer Replacement	Value			15.41			16.55	1.14
4. Hydrogen Purity Project (incl. TKC Debottleneck)		Baseline			Permit/Potential			Net PM
		Throughput	Em. Factor	Emission	Throughput	Em. Factor	Emission	Emissions
Existing TKC Furnaces F-410, F-420, F-710: S-4159, S-4160, S-4167	Value	1,304,577	0.00745	0.00	0	--	0	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
Debottlenecked TKC Furnaces F-410, F-420, F-710: S-4159, S-4160, S-4167	Value	0	--	0	2,146,200	0.00745	0.00	
	(Units)	MMBTU/yr	lb/MMBTU	T/yr	MMBTU/yr	lb/MMBTU	T/yr	T/yr
	Basis							
New TKC Recycle H2 Amine Contactor: S-4454	Value	0	--	0	2,190		0	0.00
	(Units)	MMSCF/yr H2S	lb/MMSCF	T/yr	MMSCF/yr H2S	lb/MMSCF	T/yr	T/yr
	Basis							
Existing No. 1 SRU: S-4227 w/Heater S-4192	Value	0.0196	6239	4.59	0	--	0	-4.59
	(Units)	grain/dscf	dscf/min	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
Existing No. 2 SRU: S-4228 w/Heater S-4193	Value	0.0175	8082	5.31	0	--	0	-5.31
	(Units)	grain/dscf	dscf/min	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
Existing No. 3 SRU: S-4229 w/Heater S-4194	Value	0.0172	12716	8.21	0	--	0	-8.21
	(Units)	grain/dscf	dscf/min	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
New No. 1 SRU: S-4227 w/Heater S-4436	Value	0	--	0	0.00392	9840	1.44	1.44
	(Units)		lb/LT	T/yr	grain/dscf	dscf/min	T/yr	T/yr
	Basis							
New No. 2 SRU: S-4228 w/Heater S-4437	Value	0	--	0	0.00350	9840	1.30	1.30
	(Units)		lb/LT	T/yr	grain/dscf	dscf/min	T/yr	T/yr
	Basis							
New No. 3 SRU: S-4229 w/Heater S-4438	Value	0	--	0	0.00344	20200	2.60	2.60
	(Units)		lb/LT	T/yr	grain/dscf	dscf/min	T/yr	T/yr
	Basis							
Existing Sulfur Loading Rack: S-4396	Value	0	0	0	0	0	0	0.00
	(Units)	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
New Acid Gas Scrubber: A-4450	Value	0	--	0				0.00
	(Units)	MMSCFD	lb/MMSCF	T/yr	MMSCFD	lb/MMSCF	T/yr	T/yr
	Basis							
New Sulfur Loading Rack: S-4490	Value	0	--	0	328,500		0.01	0.01
	(Units)	LT/yr	lb/LT	T/yr	LT/yr	lb/LT	T/yr	T/yr
	Basis							
Net Hydrogen Purity Project (incl. TKC Debottleneck)	Value			18.11			5.35	-12.76

APPENDIX B
TAC EMISSIONS CALCULATIONS

1) Simplified Speciation for Permit Potential Case. PERF gas and liquid speciations by plant are used to develop combined conservative speciation by plant. Combined Speciation then applied to final permit potential fugitive estimate. Fugitive in this Spreadsheet were calculated by BAAQMD using PERF speciation data. Where Rev 8 had estimates for compounds not included in the speciation data. The Rev 8 estimates were retained for these compounds. The BAAQMD calculation for xylene fugitives at the H2 plant was lower than Rev 8. The Rev 8 value was retained. As shown in PERF Speciation Permit Potential Fugitive Estimate 083107

2) Cogen Cooling Tower S-4325 Removed for Estimate

3) Hourly H2S Estimate for S-4396 Sulfur Loading Rack revised from 0.00661 lb/hr to 0.0245 lb/hr

4) Source Numbers for Cogen Corrected to S-4473 Turbine, S-4474 HRSG Duct Burner

5) Removed Emission Reduction of Methanol at Bio Reactor S-4393 (Per Rob Johnston conversation 8/29/07)

6) Corrected DEA at TKC and SRU (#6 H2S) Annual and Maximum Hourly, TKC 455 lb/year, SRU 1150 lb/year

7) Chevron's hourly H2S emissions rate from S-4396 from 6.61E-3 #/hr to 3.67E-2 #/hr.

8) Revised SRU H2SO4 emission rates to agree with Chamberlin Email of 9/6/07. Max Hourly 1 and 2 at 345 LT/day abated 90%, 3 at 225 LT/day unabated H2SO4 estimates are calculated in Renewal Project SAM Calculation Spreadsheet dated 091407.

9) The H2SO4 estimate for other RFG fired sources was adjusted from 1413.6 lb/year to 1,680.1 lb/year.

Total RFG = Shutdown Renewal SO2 + Existing SO2 = 101.64 = 46.78 Shutdown + 54.86 Existing

H2SO4 Non Renewal RFG sources = 54.86 tons/year x 2000 x 98/64 x 0.01 = 1680.1 lb/year

H2SO4 Non Renewal RFG sources = 1680.1 lb/year/8760 hr/year = 0.19 lb/hr

10) The annual H2SO4 originally in this file were not adjusted for the 14 days of unabated operation.

	CEQA Run	Corrected	Difference
	lb/year	lb/year	lb/year
SRU 1	-11640	-10860	780
SRU 2	-10240	-9740	500
SRU 3	-15420	-14340	1080

The corrected lb/year values have been entered into this spreadsheet.
The corrected values were calculated in the Chevron Renewal SAM Calculation spreadsheet dated 9/14/07.

Changes on 10/12/07

Cogen Max Hourly Firing Rate was 860 MMBtu/hr now 900 MMBtu/hr

Changes on 2/04/08

- 1) CATEF Emission Factors from RFG Emission Factors spreadsheet
- 2) All Shutdown Sources removed

- 3) All documentation in other documents pulled into R9
- 4) All fugitive emissions based on District PERF spreadsheet, and misc fugitive NH3 sheet

Changes on 2/25/08

- 1) DEA lb/year value removed from H2 Plant Fugitive estimate. No basis.
- 2) H2S and Perc estimates removed from CCR Fugitive estimate. No basis.
- 3) H2 Plant Fugitive NH3 from SCR systems increased from 32.1 lb/year to 42.48 lb/year. Hourly raised to 0.00485 lb/hr.
- 4) Metals added to H2 Plant cooling tower annual estimate.

Changes on 2/26/08

Antimony and Ethylbenzene max hourly added at SRU for completeness. Neither compound has an acute REL.

Changes on 3/3/08

CCR Fugitive lb/hr had a value for H2SO4, This was erroneous and set to zero.

Changes on 3/24/08

Incorporated Final SAM Calc into R9 Final
Revised Dioxin lb/yr and lb/hr based on higher flowrate 44,045 dscfh
Metals at Cooling Tower were based on ppm concentration data. The data was actually ppb and the calculations have been revised.

Changes 3/27/08

SO2 at H2 Plant Flare increased from 0.04 Tons/year to 0.31 Tons/year.
SAM Values corrected to correspond to new SO2 values.

Changes 4/2/08

H2S at SRU Stacks now at 6 ppm

Changes 4/3/08

H2SO4 Annual at Cogen raised from 26,081 lb/year to 30172 lb/year. Due to SO2 from LPG at Cogen 1.67 ton/year.

7/10/2008

H2SO4 at SRUs Now Max Hourly Rates are used to calcuate annual H2SO4 emissions. Permit limit will be corresponding grains/dscf @ 15000 dscfm for 1 and 2 and 30000 for 3.
H2S Now 3 ppm at SRU stack with a flowrate of 15000 for 1 and 2 and 30000 for 3.

CCR Vent Max Hourly Values doubled to account for catalyst burn off issue and a flowrate of 79835 dscf per hour. Annual values use 44045 dscf per hour. Annual values were not doubled.
Hydrogen Plant Cooling Tower Max Hourly Values now correspond to 36,000 gpm which is the value used for the annual estimate.

August-08

H2S at SRU Stacks now 4 ppm

**Chevron Renewal Project
Final TAC Inventory
New & Modified Sources
September 2008**

Toxic Air Contaminant	Project Wide lb/year	Project Wide lb/hour	Acute Risk Screening Trigger Level (lb/hr)	Chronic Risk Screening Trigger Level (lb/yr)
Acetaldehyde	1.80E+03	2.66E-01	None	6.40E+01
Antimony	9.96E+00	1.62E-03	None	7.70E+00
Ammonia @ 10 ppm slip	1.92E+05	2.53E+01	7.10E+00	7.70E+03
Arsenic	1.89E+01	3.06E-03	4.20E-04	1.20E-02
Benzene	1.52E+03	2.28E-01	2.90E+00	6.40E+00
Benzo(a)anthracene	4.89E-01	7.79E-05	None	None
Benzo(a)pyrene	1.17E+00	1.89E-04	None	1.10E-02
Benzo(b)fluoranthene	6.23E-01	9.87E-05	None	None
Benzo(k)fluoranthene	3.62E-01	5.74E-05	None	None
Beryllium	0.00E+00	0.00E+00	None	8.00E-02
Bromine & compounds	9.50E-01	1.08E-04	None	6.60E+01
1,3-Butadiene	6.84E+00	7.81E-04	None	1.10E+00
Cadmium	6.87E+01	8.94E-03	None	4.50E-02
Carbon disulfide	9.03E+02	1.24E-01	1.40E+01	3.10E+04
Chlorine	1.42E+03	1.95E-01	4.60E-01	7.70E+00
Chloroform	3.19E+01	3.64E-03	3.30E-01	3.40E+01
Chromium Total	0.00E+00	0.00E+00	None	None
Chrysene	3.37E-01	4.29E-05	None	None
Copper	1.69E+02	2.58E-02	2.20E-01	9.30E+01
Cresols (fugitive only)	7.96E+00	9.08E-04	None	2.30E+04
Dibenz(a,h)anthracene	3.06E-02	3.74E-06	None	None
Diethanolamine (DEA) (fugitive only)	1.61E+03	1.82E-01	None	1.20E+02
Ethylbenzene	7.99E+02	1.11E-01	None	7.70E+04
Ethylene Dibromide (EDB) (fugitive only)	0.00E+00	0.00E+00	None	2.60E+00
Formaldehyde	3.09E+03	4.67E-01	2.10E-01	3.00E+01
n-Hexane	3.93E+02	4.48E-02	None	2.70E+05
Hydrogen chloride	9.88E+03	2.70E+00	4.60E+00	3.50E+02
Hydrogen sulfide	1.25E+04	1.45E+00	9.30E-02	3.90E+02
Indeno(1,2,3-cd)pyrene	1.36E+00	2.20E-04	None	None
Lead	6.65E+01	1.03E-02	None	5.40E+00
Manganese	4.84E+02	6.33E-02	None	7.70E+00
Mercury	2.85E+01	3.70E-03	4.00E-03	5.60E-01
Methanol	1.10E+00	1.51E-04	6.20E+01	1.50E+05
Methyl tert-Butyl Ether (MTBE) (fugitive only)	0.00E+00	0.00E+00	None	3.60E+02
Methyl Ethyl Ketone (MEK) (fugitive only)	0.00E+00	0.00E+00	2.90E+01	3.90E+04
Naphthalene	2.23E+02	2.68E-02	None	None
Nickel	2.20E+03	2.73E-01	1.30E-02	7.30E-01
Perchloroethylene (fugitive only)	8.44E+01	1.90E-02	4.40E+01	3.00E+01
Phenol	5.79E+02	7.46E-02	1.30E+01	7.70E+03
Phosphorus	1.45E+02	1.77E-02	None	2.70E+00
Polychlorinated dioxins/furans	4.82E-05	9.97E-09	None	5.70E-07
Propylene (fugitive only)	7.32E+02	8.35E-02	None	1.20E+05
Selenium	2.36E+02	3.33E-02	None	7.70E+02
Styrene	8.78E+00	1.00E-03	4.60E+01	3.50E+04
Sulfuric acid mist	4.93E+04	2.14E+01	2.60E-01	3.90E+01
Toluene	4.00E+03	6.15E-01	8.20E+01	1.20E+04
Xylenes	2.65E+04	3.31E+00	4.90E+01	2.70E+04
Zinc	4.38E+02	6.66E-02	None	1.40E+03
Cyanide	8.94E-03	1.22E-06	7.50E-01	3.50E+02

**Chevron Renewal Project
Final TAC Inventory
New & Modified Sources
Annual Emissions
September 2008**

[illegible]

Chevron Renewal Project
H2 Plant Cooling Tower Other TAC Emissions
BAAQMD September 2008

TAC	Concentration	Recirc. (gpm)	Drift (%)	Emissions	
	(ppb)			(lb/hr)	(lb/yr)
Ammonia	1000	36000	0.0005	3.60E-04	2.63E+00
Arsenic	2.5	36000	0.0005	9.00E-07	6.57E-03
Chromium III	0.54	36000	0.0005	1.94E-07	1.42E-03
Cyanide (total)	3.4	36000	0.0005	1.22E-06	8.94E-03
Copper	7.7	36000	0.0005	2.77E-06	2.02E-02
Lead	0.31	36000	0.0005	1.12E-07	8.15E-04
Mercury	0.022	36000	0.0005	7.92E-09	5.78E-05
Nickel	4.7	36000	0.0005	1.69E-06	1.24E-02
Zinc	46	36000	0.0005	1.66E-05	1.21E-01

Arsenic lb/hr = 2.5 ug/L x g/1E6 ug x lb/453.6 g x 3.785 L/gal x 36,000 gal/min x 60 min/hr x (0.0005)/100 x 4 Cycles of Concentration = 9.01E-7 lb/hr

Maximum Recirculation Rate 36,000 gpm

Annual Average 36,000 gpm

lb/hr based on 36,000 gpm

lb/year based on 36,000 gpm

Cooling TowerHydrogen Plant Cooling Tower**Chloroform**

		<u>Annual</u>	<u>Max Hourly</u>	<u>Comment/Basis</u>
Circulation rate, Mmgal/yr		18,922		Condition 21
Circulation rate, gal/min		36000	36000	add 20% for hourly max
Estimated bleach use, gal/hr:	<u>Circ, gpm</u>			
Alky tower	30000	3		Appl # 13023
Hydrogen Plant tower	36000	3.6		
gal/yr		31536		
Bleach density, lb/gal		10		Input from CWT technician
Bleach NaOCl content, wt fract		0.125		Input from CWT technician
We fract Cl in NaOCl		0.476		Ratio of molecular weights (Na:22.9898, O:15.9994, Cl:35.453)
lb Cl/gal		0.595		Density X NaOCl content X We fract X
lb Cl ₂ /gal		0.298		divide by 2 (Cl --> Cl ₂)
Cl ₂ usage, lb/hr		1.072		Circulation rate X lb Cl ₂ /gal
Cl ₂ usage, lb/yr		9387		
Chloroform emission factor, lb/lb Cl ₂ (1)		0.0034		Note (1)
Chloroform emissions, lb/yr		31.9	3.64E-03	Cl ₂ usage X Chloroform EF
Bromine & Compounds and Chlorine (2)				
Est, max conc of water treatment chemicals, ppmw		0.5		Appl # 13023
Max wt frac of bromine & compounds		0.6		Appl # 13023
Max wt frac of chlorine		0.27		Appl # 13023
Expected drift, % of cir rate (per MTBE Marley call)		0.002		Condition 23
Emissions of bromine & compounds, lb/yr		0.95	1.08E-04	ppmw chemicals X wt frac bromine & compounds X drift X Circ rate
Emissions of chlorine, lb/yr		0.43	4.85806E-05	ppmw chemicals X wt frac chlorine X drift X Circ rate

(1) *Proposed Identification of Chloroform as a Toxic Air Contaminant* (CARB, September 1990)

(2) Data from Alky Cooling Tower application (Appl # 13023)

BAAQMD September 2008

Furnaces at 3% Oxygen

Ammonia Slip

$$\text{NH}_3 \text{ lb/MMBtu} = 10 \text{ E-06 ft}^3/\text{ft}^3 \times 1/386.8 \text{ scf/lb-mol} \times 17 \text{ lb/lb-mol} \times 8743 \text{ dscf/MMBtu} \times 20.9/(20.9-3) = 0.00449$$

Cogen at 15% Oxygen

$$\text{NH}_3 \text{ lb/MMBtu} = 10 \text{ E-06 ft}^3/\text{ft}^3 \times 1/386.8 \text{ scf/lb-mol} \times 17 \text{ lb/lb-mol} \times 8743 \text{ dscf/MMBtu} \times 20.9/(20.9-15) = 0.01361$$

Ammonia

A. Emission Factors	Valves	Flanges	Other Connectors	Pump Seals	Comp Seals	PSV's			
<u>Anhydrous Ammonia</u>									
Ammonia liquid (lb/day/source)	0.000674	0.001042	0.001042	0.00259	0.08640	0.00020			
Ammonia vapor (lb/day/source)	0.000201	0.000307	0.000307	0.00259	0.08640	0.00020			
							NH3 Emissions (lb/day)	(lb/year)	Sources
B. New Equipment (constant composition, adding new components)									
<u>3. Liquid Anhydrous Ammonia</u>									
Anhydrous feed line to Hydrogen Plant	8	20	2			1	0.02851104	10.4065296	H2 1/2
Anhydrous feed line to SRU's	8	20	2			1	0.02851104	10.4065296	SRU
New SCR systems (including supply line) - Hydrogen Trains (two systems)	30	18	10				0.0493968	18.029832	H2 A/B
New SCR systems (including supply line) - CCR (two systems)	30	18	10				0.0493968	18.029832	CCR
New SCR systems (including supply line) - Cogens (two systems)	30	18	10				0.0493968	18.029832	Cogen
<u>4. Vapor Anhydrous Ammonia</u>									
New SCR systems (including supply line) - Hydrogen Trains (two systems)	52	82	8			2	0.03848256	14.0461344	H2 A/B
New SCR systems (including supply line) - CCR (two systems)	52	82	8			2	0.03848256	14.0461344	CCR
New SCR systems (including supply line) - Cogens (two systems)	52	82	8			2	0.03848256	14.0461344	Cogen

Emission factor basis: Chevron plant data

DEA

		Lean DEA					Rich DEA					Combined Total
		<u>Pumps</u>	<u>Valves</u>	<u>Flanges/ connectors</u>	<u>PRVs</u>	<u>Total</u>	<u>Pumps</u>	<u>Valves</u>	<u>Flanges/ connectors</u>	<u>PRVs</u>	<u>Total</u>	
A. Emission factors, lb/hr-comp lb/day-comp		8.25E-03	1.76E-04	7.00E-05	1.76E-04		8.25E-03	1.76E-04	7.00E-05	1.76E-04		
		1.98E-01	4.22E-03	1.68E-03	4.22E-03		1.98E-01	4.22E-03	1.68E-03	4.22E-03		
B. Counts												
TKC		2	26	70	0	98	1	53	118	1	173	
6 H2S & Offplot		3	208	516	3	730	1	71	174	2	248	
C. Emissions												
TKC		1.45E+02	4.01E+01	4.29E+01	0.00E+00	2.28E+02	7.23E+01	8.17E+01	7.24E+01	1.54E+00	2.28E+02	4.55E+02
6 H2S & Offplot (lbs/year)		2.17E+02	3.21E+02	3.16E+02	4.63E+00	8.59E+02	7.23E+01	1.09E+02	1.07E+02	3.08E+00	2.92E+02	1.15E+03

Emission Factor BASIS: API Publication 337;Table ES-1 (August 1996) Heavy liquid factor used for TRI Reporting

H2S

		H2S wt %	Fugitive Component Counts					Change in Emissions, lb/day		H2S lb/year
			Valves	Flanges	Other Connectors	Pump Seals	Comp Seals	PSV's	Total		H2S lb/day
A. Emission Factors										
Percent nonrepairable			0.3%	0.3%	0.3%	1.0%	1.0%	1.0%		
Leak definition, ppmv			100	100	100	500	500	500		
Emission factor at leak definition, lb/day-source			0.00375	0.00619	0.0024	0.04711	0.0471	0.0084		
Emission factor pegged, lb/day-source			0.1	0.1	0.1	0.2	0.2	0.2		
Average emission factor, lb/day-source (average EF based on nonrepairables pegged, others at leak definition)			0.004039	0.006471	0.002693	0.04864	0.04864	0.01032		
B. New Equipment (constant composition, adding new components)										TKC 1.76E+02 6.73E+01 SRU 1.49E+02 9.35E+00 4.25E+01 1.58E+01 H2 1/2 6.48E-04 6.48E-04 6.09E-04 FG -5.32E-01

Notes:

- (1) Based on changes in ground-level (fugitive) emission sources only. Furnace SCR ammonia slip not included due to high temperature, high elevation, high dispersion and low concentration.
 (2) Refinery-wide count of flanges in fuel gas service estimated based on 2.3 times valve count. Assumed all flanges vs. other connector types.

note: H2S fugitive estimate is shown below. Prepared

Summary of SRU area component counts				ef @25 ppm H2S #/d/s	RDEA Emissio ns #/y	acid gas H2S efs #/d/s	acid gas H2S #/y	total H2S fug #/y
	Acid Gas	Rich DEA	Total					
Comp, wt % H2S	95%	4.63%	--					
Valves	133	80	213	0.0013	37.96	0.0037	179.6165	
PSVs	5	2	7	0.0036	2.628	0.025	45.625	
Pump Seals	0	4	4					
Flanges	194	165	359	0.0023	138.52	0.0062	439.022	
Connectors	24	19	43	0.0009	6.2415	0.0024	21.024	
Total	356	270	626		185.35		685.2875	870.6345

Constants:

SRU stack temp, F	600
MW H2S	34
lb/LT	2240
MW, S	32
Acid gas vol % H2S	100
SCF/lb-mole	379

1. SRU Max H2S

Revised Estimate September 08

	Stack Flow SCFM	Stack H2S ppmv	Stack H2S lb/hr	Fugitive H2S lb/yr	Fugitive H2S lb/hr	Total H2S lb/hr	Total H2S lb/yr
SRU							
SRU 1	15000	4	0.323			0.323	2829.09
SRU 2	15000	4	0.323			0.323	2829.09
SRU 3	30000	4	0.646			0.646	5658.17
Subtotal			1.292			1.292	11316.35
No. 6 H2S area				674	0.0769	0.077	673.97
Total	60000		1.292	674	0.0000	1.369	11990.32

Rheniformer toxics estimated by taking UOP's CCR estimate and pro-rating to Rheniformer baseline throughput

<u>Unit</u>	Annual Throughput <u>B/Y</u>	Max Hourly Throughput <u>B/hr</u>	
CCR	27,375,000	3750	Basis: 75,000 BPD annual and 90,000 BPD daily max
4 Rhen	8,467,156		
5 Rhen	<u>9,051,274</u>		
Rhens	17,518,430		

CCR lb/Y per David Lowe 10/4/05 E-mail

	CCR	Annual EF	4 Rhen	5 Rhen	Rhens	2X Hourly CCR	Max Hourly CCR	Cl2 Adjustment	
	<u>lb/Y</u>	<u>lb/K-bbl</u>	<u>lb/Y</u>	<u>lb/Y</u>	<u>lb/Y</u>	<u>lb/hr</u>	<u>lb/hr</u>	<u>CCR</u>	<u>Max Hourly CCR</u>
HCl	9876	3.61E-01	3055	3265	6320	1.35E+00	2.71E+00		
Cl2	710	2.59E-02	220	235	454	9.73E-02	1.95E-01	1420	1.95E-01
Benzene	20.5	7.49E-04	6.3	6.8	13.1	2.81E-03	5.62E-03		
Toluene	418.98	1.53E-02	130	139	268	5.74E-02	1.15E-01		
Xylene	322.07	1.18E-02	100	106	206	4.41E-02	8.82E-02		
Perchloroethylene*	84	3.08E-03				1.16E-02	2.31E-02	Old Value	SEE CCR PERC TAB

* Perchloroethylene 84.4 lb/Y See "CCR Perc" tab

Perchllooethylene Max lb/hr = 84.4lb/Y x 1/8760 hr/Y x 2 = 0.019 lb/hr

Doubled chlorine estimate from 710 to 1420 4/17/06
for operating flexibility
(also doubled max hourly and multiplied by 1.2)

From: Low, David [mailto:David.Low@uop.com]

Sent: Tuesday, October 04, 2005 1:34 PM

To: Chamberlin, Robert (RTCH)

Subject: RE: Chevron Richmond Refinery, Strategy Meeting for CCR Toxics Response to BAAQMD (due Oct 17)

CycleMax emission estimate:

1: 4500 lb/hr circulation

2: 8400 hours per year of operation

CCR Vent	Lb/year	wtppm	Vppm	Note:
VOC:	1890	63	118.125	vppm as ch4 (1)
Sox	162.54	5.418	2.539688	vppm as SO2(2)
Nox	113.4	3.78	2.465217	vppm as NO2(2)
CO	7560	252	270	-3
CO2	7480000	249333.3	170000	-4
HCL	9876.32165	329.2107	278.2062	-5
CL2	710	23.66667	10	-6 Value doubled to 1420 lb/year
Dioxins ITEQ 4D2378	See Below		(3)	Old Value New Value shown below
Benzene	2.05E+01			-3
Toluene	4.19E+02			-3
Xylene	3.22E+02			-3

Note:

1: Scale up from North American Refiner, purging operation dependent

2: Scale up from Canadian refiner and General emission data. Feed contaminant level dependent

3: Scale up from European refiner.

4: Calculate from mass balance and US refiner data analysis

5: Calculate from RMACTII parameter limit and regenerated catalyst chloride loading of 1 wt% for permit only. The concentration is higher than normal operation.

6: Scale up from Canadian and European refiners.

CCR Calculation Continued. Attachment 3 contains UOP's process description and emissions estimate for the Chlorsorb™ control system. As presented in the Project Specification page, UOP estimates the following outlet concentrations of chlorine, hydrochloric acid, and dioxins/furans:

Component	Estimated Concentration
Cl ₂	<10 ppmv
HCl	<150 ppmv
PCDD/PCDF	20 ng TEQ/Nm ³

CCR VENT DIOXIN/FURAN ESTIMATE Chevron has selected a different manufacturer to provide residual dioxin control. In place of Gore, CRI Catalyst will provide the dioxin destruction system. This will consist of a stainless steel catalyst module containing a platinum-based catalyst. The dioxin destruction system is a passive control device and does not require any chemical reagent injection to function.

CRI has stated that they will guarantee in writing 90% removal of dioxin. Chevron will submit the guarantee when received. This is the control efficiency currently assumed in the HRSA. Since the HRSA was done, there have been two other changes. First, the control device inlet concentration has increased from 16.36 to 20 ng TEQ/Nm³. Second, the CCR catalyst circulation rate has decreased from 4,500 to 3,000 lb/hr. This reduces vent gas flow rate and mass emissions of dioxin at a given concentration. The data are summarized in the following two tables. As shown the net result is an estimated reduction in dioxin emissions of about 16%. Therefore, the current HRSA is conservative with regard to dioxin emissions.

The corresponding current values are:

Parameter	Value
Inlet concentration, ng TEQ/Nm ³	20
Catalyst circulation rate, lb/hr	3,000
Vent gas flow rate, SCF/hr	79,835 Worst Case Flow
Dioxin to control device, lb/hr	9.97E-08
Control device efficiency, %	90%
Dioxin emissions, lb/hr	9.97E-09

Parameter	Value
Inlet concentration, ng TEQ/Nm ³	20
Catalyst circulation rate, lb/hr	3,000
Vent gas flow rate, SCF/hr	44,045
Dioxin to control device, lb/hr	4.82E-04
Control device efficiency, %	90%
Dioxin emissions, lb/hr	4.82E-05

ToxicsNew R7.xls

CCR Perchloroethylene

Perc MW	165.8	
Perc concentration	0.5 ppmv	For compliance assurance, assume Perc at half of source test detection limit (1 ppm)
Perc Mole rate	5.81E-05 lbmol/hr	= concentration /10e6 X Vt(lb-mole.hr) --see below
Perc Mole rate	5.09E-01 lbmol/yr	
Per Mass rate	8.44E+01 lb/yr	= Mole rate X MW

CCR Regeneration Vent Gas Calculation

Vent Gas (Vt) = Total Combustion Gas (At)+ Nitrogen Makeup to Regeneration Loop (Mt) -- note: Vent Gas MW ~ 30 lb/lbmol

Nitrogen Makeup is a function of Reactor 4 Operating Pressure (75 psig current estimate) + Regeneration Tower Pressure (35 psig)
Based on similar design, nitrogen makeup ~ 80 MSCFD

Combustion Air Usage

To compute the catalyst circulation rate by air usage, use the following formula:

$$\text{CCR (lb/hr)} = (0.0288) \times \left(\frac{100}{X} - 1 \right) \times A_T \times (0.21 - Y)$$

where:

X	=	5 wt%	spent catalyst coke content, wt-% (design 5 wt%)
CCR	=	4500 lb/hr	catalyst circulation rate,(lb/hr - current estimate at 3000 lb/hr)
Y	=	0.008 mol frac	Burn Zone inlet oxygen concentration, mole fraction (design 0.8 mol%, 0.008 mol Fraction)
AT	=	40711.31 SCFH	total combustion air, (SCFH) -- rearrange Eq. 1 to find total combustion air
At	=	107.4177 lbmol/hr	
Mt	=	3333.333 SCFH	Nitrogen make-up to regeneration loop (80,000 SCFD)
Mt	=	8.795075 lbmol/hr	
Vt	=	44044.64 SCFH	
Vt	=	116.2128 lbmol/hr	
Vt	=	1018024 lb-mol/yr	
Vt	=	3.14E+07 lb/yr	MW 30.85

PERF Speciation used for H2 Plant, Cogen, Rheniformer and TKC Mods:

PERF Unit Stream	H2 Plant gas, and light liq Cracked gas plant Fuel gas	H2 Plant Heavy Gas fuel gas	Cogen gas, and light liq Cracked gas plant Fuel gas	Cogen heavy liquids Distillate blending Diesel fuel Diesel	Rheniformer gas, and light and heavy liquids Cat. Reformer Reformate	TKC gas, and light liquids Hydrodesulfurization Naphtha HDS naphtha	TKC heavy liquids Cat. Hydrocracker Light Heartcut distillate LHC distillate
Benzene					4.647	0.652	0.082
Biphenyl		0.071		0.071			
1,3-butadiene	0.043		0.043				
cresols		0.05		0.05			
cumene		0.024		0.024	0.231	0.135	
EB		0.029		0.029	3.305	0.931	0.424
H2S	0.466		0.466				
MEK							
methanol							
MTBE		0.024		0.024			0.017
n-hexane	0.094	0.016	0.094	0.016	2.183	2.57	0.02
naphthalene		0.17		0.17	0.302	0.14	0.747
phenol		0.26		0.26			
styrene					0.108		
124-trimethylbenzene		0.225		0.225	3.754	0.501	0.187
224 trimethylpentane	0.017	0.012	0.017	0.012			0.022
toluene		0.05		0.05	15.978	3.758	1.557
xylene	0.026	0.122	0.026	0.122	16.326	4.218	2.316
ethane	20.244		20.244				
ethylene	11.158		11.158				
propane	2.283		2.283			0.904	
propylene	4.6		4.6				
butane	0.147		0.147		0.089	0.608	
Diethanolamine							
Ammonia							
Cyclohexane							

SRU Sulfuric Acid.xls

Hourly

Final SRU Sulfuric Acid Max Hourly Estimate

lb/LT 2240
MW, S 32
Acid gas vol % H2S 100
SCF/lb-mole 379

		Worst Case	Worst Case	Worst Case	Control	Worst Case	Worst Case
		Throughput	Throughput	Unabated		Abated	Abated
				H2SO4		H2SO4	H2SO4
<u>Train</u>	<u>EF</u> <u>lb/MMSCF</u>	<u>LT/D</u>	<u>MMSCFD</u>	<u>lb/hr</u>	<u>Eff</u>	<u>lb/hr</u>	<u>lb/yr</u>
SRU 1	17.64	345	9.153	6.73	90%	0.673	5893.15
SRU 2	11.14	345	9.153	4.25	90%	0.425	3721.640339
SRU 3	12.03	<u>570</u>	<u>15.122</u>	<u>7.58</u>	90%	<u>0.758</u>	<u>6640.04</u>
Total		1260	33.428	18.56		1.86	16254.83

SRU Sulfuric Acid.xls

Annual

Final SRU Sulfuric Acid Annual Estimate

lb/LT 2240
 MW, S 32
 Acid gas vol % H2S 100
 SCF/lb-mole 379

		365 Days 52 Weeks Abated					
		Annual	Annual	Unabated		Abated	Abated
		Throughput	Throughput	H2SO4	Abatement	H2SO4	H2SO4
<u>Train</u>	<u>EF</u> <u>lb/MMSCF</u>	<u>LT/D</u>	<u>MMSCFD</u>	<u>lb/day</u>	<u>Eff</u>	<u>lb/day</u>	<u>lb/year</u>
SRU 1	17.64	345	9.153	161	90%	16.1	5893.15
SRU 2	11.14	345	9.153	102	90%	10.2	3721.64
SRU 3	12.03	<u>570</u>	<u>15.122</u>	<u>182</u>	90%	<u>18.2</u>	6640.04
Total		1260	33.428	445		44.5	16254.83

Baseline SRU

	Acid Gas (MMSCFD)	Sulfur Longton/day	H2SO4 (lb/MMSCF)	H2SO4 (lb/hr)	H2SO4 (ton/year)	H2SO4 lb/year
S-4227, S4192, SRU 1 + Heater	2.61	98.397	17.64	1.92	8.40	16805
S-4228, S-4193, SRU 2 + Heater	3.321	125.2017	11.14	1.54	6.75	13504
S-4229, S-4194 SRU 3 + Heater	5.111	192.6847	12.03	2.56	11.22	22442
					26.38	

Baseline Fuel Gas System

SO2 lb/MMBtu for Baseline = (101.64 x 2000)/(106.87 x 979.26 x 365) = 0.00532 lb/MMBtu

Shutdown RFG Fired Sources for Renewal Project	Baseline MMBtu/yr	SO2 ton/yr	H2SO4 ton/year	H2SO4 lb/year
S-4170 H2 Plant Furnace	4932983	13.12	0.20	402
S-4171 H2 Plant Furnace	4414649	11.74	0.18	360
S-4158 H2 Feed Furnace (S-4156, S-4157 and S-4158 modeled one source)	291564	0.78	0.01	24
S-4129 Power Plant	561355	1.49	0.02	46
S-4131 Power Plant	815685	2.17	0.03	66
S-4132 Power Plant	707772	1.88	0.03	58
S-4133 Power Plant	699282	1.86	0.03	57
S-4135 Power Plant	801442	2.13	0.03	65
S-4038, S-4039, Rheniformer #4 West	1705837	4.54	0.07	139
S-4040, S-4041, Rheniformer #5 East	717444	1.91	0.03	58
S-4042, S-4043 Rheniformer #5 West	1001995	2.67	0.04	82
S-4044, S-4045 Rheniformer #5 East	1001995	2.67	0.04	82
Total Shutdown	17652003	46.95	0.72	

Shutdown SO2 = 17652003 MMBtu/yr x 0.00532 lb/MMBtu x ton/2000 lb = 46.95 tons/yr

Total RFG = Shutdown Renewal SO2 + Existing SO2 = 101.64 Ton/yr = 46.95 Tons/yr + 54.69 Tons/yr

H2SO4 Tons/yr = SO2 Tons/yr x 98/64 x 0.01

Other Shutdown H2SO4 Sources

	SO2 tons/year	H2SO4 tons/year	H2SO4 lb/year
S-4283 Rheniformer #4	0.03	0.0005	1
S-4237 Rheniformer #5	0.03	0.0005	1
Total		0.0009	

Baseline Total Renewal = Baseline SRU + Renewal Shutdown + Other Shutdown Sources = 27.10

Permit Potential SRU	Acid Gas (MMSCFD)	H2SO4 (lb/MMSCF)	H2SO4 (lb/hr)	Normal Oper. Abatement Efficiency Percent	Abated H2SO4 (ton/year)	Abated H2SO4 (lb/year)
S-4227, S4436, SRU 1 + Heater	9.153	17.64	6.73	90	2.95	5893.25
S-4228, S-4437, SRU 2 + Heater	9.153	11.14	4.25	90	1.86	3721.70
S-4229, S-4438 SRU 3 + Heater	15.122	12.03	7.58	90	3.32	6639.99
					8.13	16254.95

Permit Potential Renewal Project Sources

Future Using Permit Limit for Total Sulfur for Fuel Gas System

SO2 lb/MMBtu for Future based on future SO2 concentration = 30.85 E-06 x 1/379 dscf/lb-mol x 32 lb/lb-mol x 64 lb/lb-mol/32 lb/lb-mol x 1/979.26 x 1 E06 Btu/MMBtu = 0.00532 lb/MMBtu

New Sources fired on RFG	Future MMBtu/year	SO2 ton/year	Conversion Percent	H2SO4 ton/year	H2SO4 lb/year
S-4474, New Cogen Ductburner Only 320 MMBtu/hr	2803200	7.46	See Cogen Calculation Below		
S-4477, S-4478, S-4479, S-4480 CCRR Furnaces	4380000	11.65	5.00	0.89	1784
Total	7183200	19.11		0.89	Cogen H2SO4 Shown Below

New SO2 = 8216880 MMBtu/yr x 0.00532 lb/MMBtu x ton/2000 lb = 21.86 tons/yr

H2SO4 Tons/yr = SO2 Tons/yr x 98/64 x 0.05

Cogen Duct Burner Capacity 350 MMBtu/hr, Annual Average 320 MMBtu/hr

New Sources fired on Natural Gas	Future MMBtu/year	SO2 ton/year	Conversion Percent	H2SO4 ton/year	H2SO4 lb/year
S-4471, New H2 Plant Reformer Furnace Train 1	2496600	1.75	5	0.13	268
S-4472, New H2 Plant Reformer Furnace Train 2	2496600	1.75	5	0.13	268
S-4471, New H2 Plant Reformer Furnace Train 1 Breakthrough		0.72	5	0.06	110
S-4472, New H2 Plant Reformer Furnace Train 2 Breakthrough		0.72	5	0.06	110
S-4473, Cogen Turbine Only No LPG 520 MMBtu/hr	4555200	3.19	See Cogen Calculation Below		
Total	9548400	8.12		0.38	Cogen H2SO4 Shown Below

Breakthrough now estimated at 0.15 ton/year per train for new SO2 calculations, 0.72 is very conservative estimate for SAM calculations.

New SO2 Natural Gas = 2496600 MMBtu/yr x 0.0014 lb/MMBtu x ton/2000 lb = 1.75 ton/yr

H2SO4 Tons/yr = SO2 Tons/yr x 98/64

Natural Gas Emission Factor

lb/MMBtu = 0.5 gr/100 scf x lb/7000 gr x 1/1020 BTU/scf x 1 E06 Btu/MMBtu x 64 lb/lb-mol/32 lb/lb-mol = 0.0014 lb/MMBtu

Cogen Max Firing Rate for Turbine 550 MMBtu/hr, Annual Turbine 520 MMBtu/hr, Duct Burner Max. 350 MMBtu/hr, Duct Burner Annual 320 MMBtu/hr

Cogen Annual Average Limit Total = 840 MMBtu/hr, H2SO4 Annual Emissions based on Turbine and Ductburner firing at full capacity all year.

Cogen H2SO4	SO2 ton/year	Conversion Percent	H2SO4 ton/year	H2SO4 lb/year
S-4473, Natural Gas Firing at Turbine	3.19			
S-4474, RFG Firing at Ductburner	7.46			
Cogen LPG	1.67			
Total Cogen	12.32	80.00	15.09	30172

3.19 ton/year SO2 natural gas + 1.67 ton/year SO2 LPG + 7.46 ton/year SO2 RFG = 12.32 ton/year value more conservative than new Cogen SO2 estimate (11.52 ton/year, See SO2 calcs)
Conservative Estimate for Cogen assumes 80% SO2 to H2SO4

H2SO4 Tons/yr = SO2 Tons/yr x 98/64

Other H2SO4	SO2 ton/year	Conversion Percent	H2SO4 ton/year	H2SO4 lb/year
S-4452, CCR Vent	1.8	5	0.14	276
S-6020, H2 Plant Flare	0.04	5	0.0031	6
Total			0.14	

Permit Potential H2SO4 = SRU + Non Cogen RFG Sources+ Natural Gas Sources + Cogen + Other 24.62
H2SO4 Emissions Increase = Baseline Renewal Project - Permit Potential Renewal Project -2.47

Baseline SRU	Acid Gas (MMSCFD)	Sulfur Long ton/day	H2SO4 (lb/MMSCF)	Emission Factor H2SO4 (lb/hr)	Source Test Results H2SO4 (lb/hr)
S-4227, S4192, SRU 1 + Heater	2.61	98.397	17.64	1.92	2.30
S-4228, S-4193, SRU 2 + Heater	3.321	125.2017	11.14	1.54	1.85
S-4229, S-4194 SRU 3 + Heater	5.111	192.6847	12.03	2.56	3.07
Total SRU				6.02	7.22

Baseline Fuel Gas System

SO2 lb/MMBtu for Baseline = (101.64 x 2000)/(106.87 x 979.26 x 365) = 0.00532 lb/MMBtu

Shutdown RFG Fired Sources for Renewal Project	Baseline MMBtu/hr	SO2 lb/hr	H2SO4 lb/hr
S-4170 H2 Plant Furnace	563	3.00	0.046
S-4171 H2 Plant Furnace	504	2.68	0.041
S-4158 H2 Feed Furnace (S-4156, S-4157 and S-4158 modeled one source)	33.3	0.18	0.003
S-4129 Power Plant Boiler	64.1	0.34	0.005
S-4131 Power Plant Boiler	93.1	0.50	0.008
S-4132 Power Plant Boiler	80.8	0.43	0.007
S-4133 Power Plant Boiler	79.8	0.42	0.007
S-4135 Power Plant Boiler	91.5	0.49	0.007
S-4038, S-4039 Rheniformer #4 West	195	1.04	0.016
S-4040, S-4041 Rheniformer #4 East	81.9	0.44	0.007
S-4042, S-4043 Rheniformer #5 West	114	0.61	0.009
S-4044, S-4045 Rheniformer #5 East	114	0.61	0.009
Total Shutdown	2014.5	10.72	0.164

Based on 1% Conversion of SO2 to H2SO4 Conservative Assumption for Baseline

H2SO4 Tons/yr = SO2 Tons/yr x 98/64 x 0.01

Other Shutdown H2SO4 Sources	SO2 lb/year	Average H2SO4 lb/hr
S-4283, Rheniformer #4	60	0.00010
S-4237, Rheniformer #5	60	0.00010
Total		0.00021

Baseline Total Renewal = Baseline SRU + Renewal Shutdown + Other Sources = 7.384

Permit Potential SRU	Acid Gas (MMSCFD)	Sulfur Longton/day	H2SO4 (lb/MMSCF)	H2SO4 (lb/hr)	Abatement Efficiency Percent	H2SO4 (lb/hr)
S-4227, S4192, SRU 1 + Heater	9.153	345.0681	17.64	6.73	90	0.67
S-4228, S-4193, SRU 2 + Heater	9.153	345.0681	11.14	4.25	90	0.42
S-4229, S-4194 SRU 3 + Heater	15.122	570.0994	12.03	7.58	90	0.76
				18.56		1.86

Actual Acid Gas Feedrates will be 8, 8, 14.59 MMSCFD for Permit Potential.

Each SRU will operate with an abatement device during normal operations.

Permit Potential Renewal Project Sources

Future Using Limit for Total Sulfur for Fuel Gas System 100 ppm daily limit, 200 ppm maximum
SO2 lb/MMBtu for Future = 200 E-06 x 1/386.8 dscf/lb-mol x 32 lb/lb-mol x 64 lb/lb-mol/32 lb/lb-mol x 1/979.26 x 1 E06 Btu/MMBtu = 0.0338 lb/MMBtu

New Sources fired on RFG	Future MMBtu/hr	SO2 lb/hr	Conversion Percent	H2SO4 lb/hr
S-4474, New Cogen Ductburner Only 350 MMBtu/hr	350	11.83	See Cogen Calculation Below	
S-4477, S-4478, S-4479, S-4480 CCRR Furnaces	1005	33.97	5.00	2.60
Total	1355	45.80		2.60 Cogen Not Included

H2SO4 Tons/yr = SO2 Tons/yr x 98/64

New Sources fired on Natural Gas	Future MMBtu/hr	SO2 lb/hr	Conversion Percent	H2SO4 lb/hr
S-4471, New H2 Plant Reformer Furnace Train 1	950	2.66	5	0.20
S-4472, New H2 Plant Reformer Furnace Train 2	950	2.66	5	0.20
S-4471, New H2 Plant Reformer Furnace Train 1 Breakthrough		0.16	5	0.01
S-4472, New H2 Plant Reformer Furnace Train 2 Breakthrough		0.16	5	0.01
S-4473, Cogen Turbine Only No LPG 550 MMBtu/hr	550	1.54	See Cogen Calculation Below	
Total	2450	7.19		0.43

H2 Plant Natural Gas Combustion + Feed Breakthrough emitted at Reformer Furnace Stack
H2 Plant Normally burns 70% or more of PSA tail gas, Worst Case is all Natural Gas.
Stack Gas Heaters at SRU also burn Natural Gas, H2SO4 Emissions from the Heaters are combined with the SRU Estimates.

H2SO4 Tons/yr = SO2 Tons/yr x 98/64 x 0.05

Natural Gas Emission Factor
lb/MMBtu = 1 gr/100 scf x lb/7000 gr x 1/1020 BTU/scf x 1 E06 Btu/MMBtu x 64 lb/lb-mol/32 lb/lb-mol = 0.0028 lb/MMBtu

Cogen Max Firing Rate for Turbine 550 MMBtu/hr, Duct Burner 350 MMBtu/hr, Total 900 MMBtu/hr

Cogen H2SO4	SO2 lb/hr	Conversion Percent	H2SO4 lb/hr
S-4473, Natural Gas Firing at Turbine	1.54		
S-4474, RFG Firing at Ductburner	11.83		
Total Cogen	13.37	80.00	16.38

Conservative Estimate for Cogen assumes 80% SO2 to H2SO4
Natural Gas at 1 gr/100 scf more conservative than LPG for SO2/H2SO4 emissions
LPG not considered since 200 ppm Total Sulfur is sufficiently conservative.

H2SO4 Tons/yr = SO2 Tons/yr x 98/64

Other H2SO4	SO2 ton/year	SO2 lb/hr	SO2 lb/hr	Conversion Percent	H2SO4 lb/hr	
S-4452, CCR Vent		1.8	0.41	0.82	5	0.06
S-6020, H2 Plant Flare		0.04	0.009	0.02	5	0.0014
Total						0.06

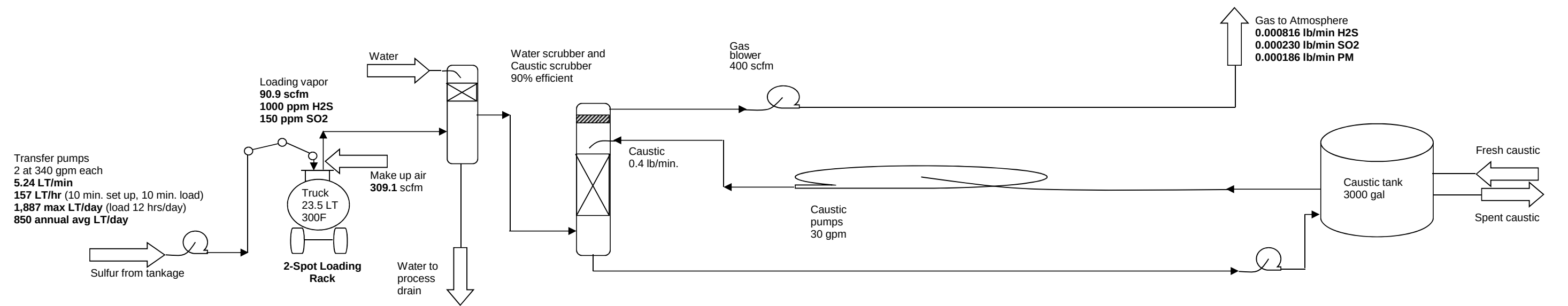
Maximum Hourly = Average Hourly x 2

SRU Carbon Disulfide.xls

Carbon Disulfide

<u>Sulfur Recovery Units</u>	Annual				Max Hourly			
	<u>1 SRU</u>	<u>2 SRU</u>	<u>3 SRU</u>	<u>Total</u>	<u>1 SRU</u>	<u>2 SRU</u>	<u>3 SRU</u>	<u>Total</u>
<u>CS2</u>								
Emission rate during testing, lb/hr	7.40E-02	6.50E-02	7.30E-02	2.12E-01				
SRU throughput during testing, MMSCFD	2.90	3.25	3.90	10.05				
Emission factor, lb/MMSCF	6.12E-01	4.80E-01	4.49E-01	5.06E-01				
Baseline throughput, MMSCFD	2.610	3.321	5.111	11.042				
Baseline emissions, lb/yr	5.83E+02	5.82E+02	8.38E+02	2.00E+03				
Permit/Potential throughput, MMSCFD	4.000	4.000	8.000	16.000				
Permit/Potential emissions, lb/yr	8.94E+02	7.01E+02	1.31E+03	2.91E+03				
Change in emissions, lb/yr	3.11E+02	1.19E+02	4.74E+02	9.03E+02	4.26E-02	1.63E-02	6.49E-02	1.24E-01

Attachment XX. Sulfur Loading Rack Abatement Device Design and Emissions



Loading vapor rate:

90.9	scf/m	(=340 gal/m X 2 X 0.1337 cf/gal)
90.9	scf/m	(conservative since vapor volume drops as vapor cools)

Assumption (per previous permitting):
Vapor concentrations of H2S at 1000 ppm, SO2 at 150 ppm

Make up air rate:

309.1	scf/m	(=400 scf/m - 90.9 scf/m)
-------	-------	---------------------------

H2S loading vapor volume rate:

0.0909	scf/m H2S	(=1000/1000000 x 90.9 scf/m)
--------	-----------	------------------------------

H2S uncontrolled mass rate:

0.00816	lb/m H2S	(=0.0909 scfm H2S x 34 lbs H2S/lb-mole / 379 scf/lb-mole)
---------	----------	---

H2S controlled mass rate:

0.000816	lb/m H2S	(=0.00816 lb/m H2S x (100% - 90%))
----------	----------	------------------------------------

SO2 loading vapor volume rate:

0.0136	scf/m SO2	(=150/1000000 x 90.9 scf/m)
--------	-----------	-----------------------------

SO2 uncontrolled mass rate:

0.00230	lb/m SO2	(=0.0136 scfm SO2 x 64 lbs SO2/lb-mole / 379 scf/lb-mole)
---------	----------	---

SO2 controlled mass rate:

0.000230	lb/m SO2	(=0.0023 lb/m SO2 x (100% - 90%))
----------	----------	-----------------------------------

Particulate (elemental sulfur) loading vapor volume rate:

0.184	mmHg	Vapor pressure of sulfur at 300F
0.022	scf/m PM	(=0.184 mmHg / 760 mmHg x 90.9 scf/m)

Particulate uncontrolled mass rate:

0.00186	lb/m PM	(=0.022 scf/m PM x 32 lbs S/lb-mole / 379 scf/lb-mole)
---------	---------	--

Particulate controlled mass rate:

0.000186	lb/m PM	(=0.00186 lb/m PM x (100% - 90%))
----------	---------	------------------------------------

Loading Rates (LT = long tons = 2,240 lb):

5.24	(LT)/m	(=340 gal/m X 2 X 0.1337 cf/gal x 129.13 lb/cf / 2240 lb/LT)
		(where 129.13 lb/cu ft = density of sulfur at 300F)
157	LT/hr	(= 2.62 LT/m x 30 m/hr loading time)
1,887	LT/day	(= 157 LT/hr X 12 hours loading per day)
900	max permtted LT/day, annual average	
329	max permitted MLT/year	(=850 LT/day x 365 d/y /1000)
2,089	hr/year	permitted loading (=328,500 LT/year / 157 LT/hr)

Emission Rate Summary					
	lb/min	lb/hr	lb/day	lb/yr	tons/yr
H2S	0.000816	0.0367	0.440	76.7	0.038
SO2	0.000230	0.0069	0.083	14.4	0.007
PM	0.000186	0.0056	0.067	11.6	0.006

Reg 6-310 particulate weight limitation:
0.15 gr/dscf Reg 6-310
Particulate matter emissions for sulfur rack scrubber vent:
0.003252321 gr/dscf (= 0.000186 lb/m PM x 7000 gr/lb / 400 scfm)--**2% of the limit!**

Reg 6-311 process weight limitation:
Process Weight:
352,199 lb/h (= 5.24 LT/m x 2240 lb/LT x 30 m/h)
Sulfur loading rate, disregarding loading vapor and dilution air

Process Weight Limit:
40 lb/h (per Reg 6 Table 1)

PM emissions:
0.0056 lb/h (From above Emission Rate Summary)--**0.01% of the limit!**

APPENDIX C
HEALTH RISK SCREENING ANALYSIS

INTEROFFICE MEMORANDUM

July 24, 2008

TO: Barry Young/Greg Solomon
FROM: Jane H. Lundquist *JHL*

Via: Scott B. Lutz *SBL*
Daphne Y. Chong *ayc*

SUBJECT: Revised Health Risk Assessment for Chevron Products Company, Richmond,
Plant #10, Application #12842, Energy Plant and Hydrogen Plant Renewal Project

We have completed a revised health risk assessment for the above referenced permit application based on the latest emission estimates provided in the "TAC R10 BAAQMD Final" spreadsheet dated 7/17/2008, the stack parameter changes provided by the applicant in the "Revised Ch Renewal Stack Parameters 7-8-08" spreadsheet (with SRU stack exit velocities adjusted to correspond to the flowrates used in the TAC emission calculations) and the latest health values adopted by OEHHA. The analysis estimates the incremental health risk resulting from toxic air contaminant (TAC) emissions from the Energy Plant and Hydrogen Plant Renewal Project at this facility. Emissions of 39 different TACs from 11 new sources and 8 modified sources were evaluated. Results from the health risk assessment indicate that, for this project, the maximum incremental cancer risk is estimated at **2 in a million**, the chronic hazard index is **0.3**, and the acute hazard index is **0.9**. In accordance with the District's Regulation 2, Rule 5, these risk levels are considered acceptable. None of the individual source emissions result in a cancer risk that is greater than one in a million nor a chronic hazard that is greater than 0.20. At these risk levels, none of the sources trigger the requirement for TBACT. However, the cogen#3 source, with a chronic hazard index of 0.20, is very close to the TBACT trigger. Table 1 shows the estimated chronic health impacts for the project and for each individual source. Table 2 shows the estimated acute health impacts for the project and for each individual source. In addition, the project, with a 30-day maximum lead concentration of $0.0022 \mu\text{g}/\text{m}^3$, is approvable per the ARB Risk Management Guidelines for New, Modified and Existing Sources of Lead.

EMISSIONS: The health risk value weighted emissions were entered into the model so that the modeled results are in terms of cancer risk, chronic hazard index and acute hazard index. The lead emission input to determine the one-month averaged lead concentration is conservatively based on the maximum one-hour average emission rate of lead. The attached tables show the health values and health value weighted emission inputs used in this analysis. Table 3 shows the health values used for each pollutant, Tables 4, 5 and 6 show the annual average health value weighted emission inputs for combustion point sources, non-combustion point sources, and fugitive sources, respectively. The chronic hazard index weighted emission inputs in Tables 4, 5 and 6 are conservatively calculated summing all hazard quotient weighted emissions regardless of the target organ that is affected by the pollutant. Tables 7 and 8 show the maximum hourly average health value weighted emission inputs for point sources and fugitive sources, respectively. As previously requested, emission rates for the hydrogen plant and CCR furnaces have been scaled up by a factor of two to provide a conservative estimate of risks.

MODELING: The ISCST3 atmospheric dispersion model was used to estimate the chronic and acute health risks. Based on an Auer land use analysis, the facility is located in an area considered rural. Rural dispersion coefficients and five years of on-site meteorological data, 1999 through 2003, were used in the model. Complex terrain impacts were also considered with elevation data extracted from USGS digital elevation maps for Richmond and San Quentin. Impacts due to building down wash were evaluated. Stack, area source, and building parameters used in the analysis are those provided by Chevron. Aerial photos were used to assist in determining location of the emission sources and receptors. For the residential receptors, the initial run was made with a coarser receptor grid. A second residential receptor run was made with a finer receptor grid around the high values found with the initial coarse grid run.

HEALTH RISK: The health risk assessment was performed in accordance with the California Office of Environmental Health Hazard Assessment (OEHHA) guidelines. Multipathway substances for which non-inhalation pathway exposures (soil ingestion, dermal exposure, and mother's milk ingestion) were also evaluated are Arsenic, Cadmium, Lead, Mercury, Nickel, Benzo(a)anthracene, Benz(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene and polychlorinated dioxins and furans.

Cancer Risk: Estimates of the maximum incremental residential cancer risk are based on the assumption that the resident is exposed to annual average TAC concentrations over a 70-year lifetime. Estimates of the maximum incremental off-site worker cancer risk are based on the assumption that an off-site worker is exposed eight hours per day, 245 days per year for 40 years out of a 70-year lifetime. The cancer risk results are presented in the following table.

Receptor	Location		Cancer Risk in a million
	UTM_E	UTM_N	
Residential	554275	4197050	1.0
Worker	552540	4199105	1.9

Chronic Hazard Index: Estimates of the maximum incremental residential chronic hazard index are based on the assumption that the resident is exposed to annual average TAC concentrations. Estimates of the maximum incremental off-site worker chronic hazard index are based on the assumption that an off-site worker is exposed eight hours per day, 245 days per year. The results for the chronic hazard index are presented below.

Receptor	Location		Chronic Hazard Index
	UTM_E	UTM_N	
Residential	553750	4197625	0.09
Worker	552540	4199105	0.29

Acute Hazard Index: Estimates of acute hazard index are based on the assumption that the receptor is exposed to maximum one-hour average TAC concentrations. The results for the acute hazard index are presented below.

Receptor	Location		Acute Hazard Index
	UTM_E	UTM_N	
Residential	551171	4201595	0.09
Worker	552085	4200131	0.94

Chronic Non-cancer Health Effects for Lead Exposure: In accordance with the OEHHA guidelines, the chronic non-cancer health effects for lead exposure are not based on a hazard index approach. Instead, air concentrations are compared to defined air lead levels associated with specified percentages of children with blood lead levels (BLLs) $\geq 10 \mu\text{g/dL}$. The location of the 30-day maximum lead ambient air concentration for this project is not in a high exposure area and a simplified approach for assessing non-cancer risk may be used. Per Table 5, Recommended Risk Management Levels Using the Simplified Approach, of the *ARB Risk Management Guidelines for New, Modified, and Existing Sources of Lead*; permits for projects with maximum offsite air concentrations $\leq 0.30 \mu\text{g/m}^3$ are approvable. The 30-day maximum lead air concentration for this project is $0.0024 \mu\text{g/m}^3$ and is approvable.

Location		30-day Maximum Lead Concentration $\mu\text{g/m}^3$
UTM_E	UTM_N	
552590	4199335	0.0022

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
Table 1 - Chronic Health Risk Results
July 24, 2008

Receptor	NAD27 UTM_E	NAD27 UTM_N	Cancer Risk in a million	Comment
Actual Resident	554275	4197050	1.0	Residential receptor located about 0.8 kilometer from the south property line.
#1SRU	552006	4200185	0.1	Max. residential value - at Pt. Molate, not a residential location
#2SRU	552046	4200158		Max. residential value - at Pt. Molate, not a residential location
#3SRU	552085	4200131		Max. residential value - at Pt. Molate, not a residential location
Sulfur Load Rack			NA	
Cogen #3	554200	4197100	0.4	Residential receptor located about 1 kilometer from the south property line.
H2 Plant #1	554200	4197100		Residential receptor located about 1 kilometer from the south property line.
H2 Plant #2	554200	4197100		Residential receptor located about 1 kilometer from the south property line.
CCR Furnaces	553412	4198079		Residential receptor located at the south property line.
H2 Pit Cool. Twr	552590	4199405		Max. residential value - east of sulfur loading racks, not a residential location
TKC	553068	4198066		Residential receptor located at the south property line.
H2 Pit Flare	552590	4199355		Max. residential value - at quarry, not a residential location
Actual Worker	552540	4199105		Located at the northeast part of the quarry operations where workers are actually located.
#1SRU	552006	4200185		Max. worker value - Pt. Molate west of SRUs
#2SRU	552046	4200158		Max. worker value - Pt. Molate west of SRUs
#3SRU	552085	4200131	0.1	Max. worker value - Pt. Molate west of SRUs
			NA	
			0.6	Located at the northeast part of the quarry operations where workers are actually located.
				Located at the northeast part of the quarry operations where workers are actually located.
				Located at the northeast part of the quarry operations where workers are actually located.
				Located at the northeast part of the quarry operations where workers are actually located.
				Located at the northeast part of the quarry operations where workers are actually located.
				Max. worker value - east of sulfur loading racks.
				Located at the northeast part of the quarry operations where workers are actually located.
			Chronic Hazard Index	
Actual Resident	553750	4197625	0.09	Residential receptor located about 0.5 kilometer from the south property line.
#1SRU	553800	4197600		Residential receptor located about 0.5 kilometer from the south property line.
	553800	4197600		Residential receptor located about 0.5 kilometer from the south property line.
	553800	4197600		Residential receptor located about 0.5 kilometer from the south property line.
Sulfur Load Rack	552561	4200647		Max. residential value - not at residential location
Cogen #3	554200	4197100		Residential receptor located about 0.8 kilometer from the south property line.
	552590	4199355		Max. residential value - not at residential location
	552590	4199405		Max. residential value - not at residential location
	553371	4198045		Residential receptor located near the south property line.
H2 Pit Cool. Twr	552540	4199205		Max. residential value - at quarry, not a residential location
TKC	552773	4200613		Max. residential value - east of sulfur loading racks, not a residential location
	552590	4199355		Max. residential value - at quarry, not a residential location
	552540	4199105		Located at the northeast part of the quarry operations where workers are actually located.
	552006	4200185		Max. worker value - Pt. Molate west of SRUs
	552046	4200158		Max. worker value - Pt. Molate west of SRUs
	552085	4200131		Max. worker value - Pt. Molate west of SRUs
Sulfur Load Rack	552561	4200647		Max. worker value - east of sulfur loading racks.
Cogen #3	552540	4199105	0.20	Located at the northeast part of the quarry operations where workers are actually located.
	552540	4199105	0.02	Located at the northeast part of the quarry operations where workers are actually located.
	552540	4199105		Located at the northeast part of the quarry operations where workers are actually located.
	552590	4198805		Located at the southeast part of the quarry operations where workers are actually located.
H2 Pit Cool. Twr	552540	4199255		Located at the northeast part of the quarry operations where no workers are located.
TKC	552773	4200613		Max. worker value - east of sulfur loading racks.
	552590	4199335		Located at the northeast part of the quarry operations where no workers are located.

1. All TAC emissions, including H2SO4, from the H2 plant and CCR furnaces were scaled up by a factor of 2.

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842

Table 2 - Acute Hazard Index Results

July 24, 2008

Note: The model output for the maximum acute HI due to the emissions from each sources does not necessarily occur at the same hour or location. Simply summing the maximum individual acute HI results in a value that is higher than that found when analyzing the combined source impacts occurring at the same hour and location.

Source(s)	NAD27 UTM_E	NAD27 UTM_N	Acute Hazard Index	Comment
Actual Resident	551171	4201595	0.09	Residential receptor located at boat docks to northwest of facility
Actual Worker	552085	4200131	0.94	Located at the west side of the road by the Point Molate property line near SRUs.
I#1 SRU stack & fugitive	552590	4200601	0.49	Located on the east shoreline near loading rack.
I#2 SRU stack & fugitive	552590	4200601	0.49	Located on the east shoreline near loading rack.
I#3 SRU stack & fugitive	552112	4200093	0.49	Located at the west side of the road by the Point Molate property line near SRUs.
I Cogen #3	552590	4199255	0.58	Located at the northeast part of the leased quarry property.
	552590	4199405	0.10	Located at the northeast part of the leased quarry property.
	552590	4199405	0.10	Located at the northeast part of the leased quarry property.
CCR - 4 furnaces + vent	552590	4199355	0.05	Located at the northeast part of the leased quarry property.
H2 Plt Cooling Tower	552490	4199455	0.00	Located at the northeast part of the leased quarry property.
Sulfur Loading Rack	552661	4200556	0.14	Located on the east shoreline near loading rack.
TKC Fugitives	552748	4200581	0.14	Located on the east shoreline near loading rack.
H2 Plant Flare	552590	4199355	0.00	Located at the northeast part of the leased quarry property.

30-day Average Lead Conc., ug/m3				
Max. location, no actual receptors	552590	4199335	0.0022	Located at the northeast part of the leased quarry property.

1. All TAC emissions, including H₂SO₄, from the H₂ plant and CCR furnaces were scaled up by a factor of 2.
2. The maximum 30-day average lead concentration is at a location where there are no actual receptors.

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842

Table 3 - Health Values

July 24, 2008

Toxic Air Contaminant	Inhalation Cancer Potency Factor, (mg/kg d) ⁻¹	Residential Unit Risk Value From HARP, (ug/m ³) ¹	Offsite Worker Unit Risk Value From HARP, (ug/m ³) ¹	Chronic Inhalation REL, (ug/m ³)	Residential HI per unit concentration, HI/(ug/m ³)	Offsite Worker HI per unit concentration, HI/(ug/m ³)	Acute Inhalation, (ug/m ³)
Acetaldehyde	1.0E-02	2.90E-06	5.72E-07	9.0E+00	1.11E-01	2.49E-02	na
Antimony	na	na	na	na	na	na	na
Ammonia @ 10 ppm slip	na	na	na	2.0E+02	5.00E-03	1.12E-03	3.2E+03
Arsenic	HARP	1.58E-02	5.18E-03	HARP	6.20E+01	5.94E+01	1.9E-01
Benzene	1.0E-01	2.90E-05	5.72E-06	6.0E+01	1.67E-02	3.73E-03	1.3E+03
Benzo(a)anthracene	HARP	1.65E-03	6.00E-04	na	na	na	na
Benzo(a)pyrene	HARP	1.65E-02	6.00E-03	na	na	na	na
Benzo(b)fluoranthene	HARP	1.65E-03	6.00E-04	na	na	na	na
Benzo(k)fluoranthene	HARP	1.65E-03	6.00E-04	na	na	na	na
Bromine & compounds	na	na	na	na	na	na	na
1,3-Butadiene	6.0E-01	1.74E-04	3.43E-05	2.0E+01	5.00E-02	1.12E-02	na
Cadmium	1.5E+01	4.34E-03	8.57E-04	HARP	5.59E+01	5.49E+01	na
Carbon disulfide	na	na	na	8.0E+02	1.25E-03	2.80E-04	6.2E+03
Chlorine	na	na	na	2.0E-01	5.00E+00	1.12E+00	2.1E+02
Chloroform	1.9E-02	5.50E-06	1.09E-06	3.0E+02	3.33E-03	7.46E-04	1.5E+02
Chrysene	HARP	1.65E-04	6.00E-05	na	na	na	na
Copper	na	na	na	na	na	na	1.0E+02
Cresols	na	na	na	6.0E+02	1.67E-03	3.73E-04	na
Dibenz(a,h)anthracene	HARP	6.48E-03	2.21E-03	na	na	na	na
Diethanolamine (DEA)	na	na	na	3.0E+00	3.33E-01	7.46E-02	na
Ethylbenzene	8.7E-03	2.5E-06	5.0E-07	2.0E+03	5.00E-04	1.12E-04	na
Formaldehyde	2.1E-02	6.08E-06	1.20E-06	3.0E+00	3.33E-01	7.46E-02	9.4E+01
n-Hexane	na	na	na	7.0E+03	1.43E-04	3.20E-05	na
Hydrogen chloride	na	na	na	9.0E+00	1.11E-01	2.49E-02	2.1E+03
Hydrogen sulfide	na	na	na	1.0E+01	1.00E-01	2.24E-02	4.2E+01
Indeno(1,2,3-cd)pyrene	HARP	1.65E-03	6.00E-04	na	na	na	na
Lead	HARP	3.58E-05	1.44E-05	Appendix F (BL	na	na	na
Manganese	na	na	na	2.0E-01	5.00E+00	1.12E+00	na
Mercury	na	na	na	HARP	5.76E+01	5.35E+01	1.8E+00
Methanol	na	na	na	4.0E+03	2.50E-04	5.59E-05	2.8E+04
Naphthalene	1.2E-01	3.48E-05	6.86E-06	9.0E+00	1.11E-01	2.49E-02	na
Nickel	9.1E-01	2.64E-04	5.20E-05	HARP	2.00E+01	2.00E+01	6.0E+00

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842

Table 3 - Health Values

July 24, 2008

Toxic Air Contaminant	Inhalation Cancer Potency Factor, (mg/kg d) ⁻¹	Residential Unit Risk Value From HARP, (ug/m ³) ¹	Offsite Worker Unit Risk Value From HARP, (ug/m ³) ¹	Chronic Inhalation REL, (ug/m ³)	Residential HI per unit concentration, HI/(ug/m ³)	Offsite Worker HI per unit concentration, HI/(ug/m ³)	Acute Inhalation, (ug/m ³)
Perchloroethylene	2.1E-02	6.08E-06	1.20E-06	3.5E+01	2.86E-02	6.39E-03	2.0E+04
Phenol	na	na	na	2.0E+02	5.00E-03	1.12E-03	5.8E+03
Phosphorus	na	na	na	na	na	na	na
Polychlorinated dioxins/furans	HARP	3.37E+02	8.10E+01	HARP	2.65E+05	1.73E+05	na
Propylene	na	na	na	3.0E+03	3.33E-04	7.46E-05	na
Selenium	na	na	na	2.0E+01	5.00E-02	1.12E-02	na
Styrene	na	na	na	9.0E+02	1.11E-03	2.49E-04	2.1E+04
Sulfuric acid mist	na	na	na	1.0E+00	1.00E+00	2.24E-01	1.2E+02
Toluene	na	na	na	3.0E+02	3.33E-03	7.46E-04	3.7E+04
Xylenes	na	na	na	7.0E+02	1.43E-03	3.20E-04	2.2E+04
Zinc	na	na	na	na	na	na	na
Cyanide	na	na	na	9.0E+00	1.11E-01	2.49E-02	3.4E+02

1. The cancer unit risk values include the impacts from other pathways for multipathway TACs. The URV is derived from HARP for each receptor (residential and worker) and includes exposure adjustments based on the continuous operation of the source.
2. The chronic non-cancer hazard quotient for the residential is not adjusted for exposure. For the worker receptor, the chronic non-cancer hazard quotient for TACs with inhalation only pathways is adjusted for exposure (adjustment = 8/24*245/365) and no exposure adjustment is made to the hazard quotient for multipathway TACs.
3. Includes latest health value changes adopted by OEHHHA for Ethylbenzene, Antimony, Bromine and compounds, Copper, Phosphorus and Zinc.

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842

Table 4 - Combustion Point Sources, Annual Average Emissions

July 24, 2008

Source No(s)/Status Description	S-4471 New Hyd Plt Train 1 Reformer Furnace									
	Residential Unit Risk Value From HARP, (ug/m3)-1	Offsite Worker Unit Risk Value From HARP, (ug/m3)-1	Residential HI per unit concentration, HI/(ug/m3)	Offsite Worker HI per unit concentration, HI/(ug/m3)	1x TAC Emissions, lbs/yr	2x TAC Emissions (including H2SO4), g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
Toxic Air Contaminant										
Acetaldehyde	2.90E-06	5.72E-07	1.11E-01	2.49E-02	4.26E+02	1.23E-02	3.56E-02	7.01E-03	1.36E-03	3.05E-04
Antimony	na	na	na	na	3.74E+00	1.08E-04				
Ammonia @ 10 ppm slip	na	na	5.00E-03	1.12E-03	3.62E+04	1.04E+00			5.21E-03	1.16E-03
Arsenic	1.58E-02	5.18E-03	6.20E+01	5.94E+01	6.90E+00	1.99E-04	3.14E+00	1.03E+00	1.23E-02	1.18E-02
Benzene	2.90E-05	5.72E-06	1.67E-02	3.73E-03	3.92E+02	1.13E-02	3.27E-01	6.45E-02	1.86E-04	4.20E-05
Benzo(a)anthracene	1.65E-03	6.00E-04	na	na	1.66E-01	4.78E-06	7.89E-03	2.87E-03		
Benzo(a)pyrene	1.65E-02	6.00E-03	na	na	4.27E-01	1.23E-05	2.03E-01	7.37E-02		
Benzo(b)fluoranthene	1.65E-03	6.00E-04	na	na	2.07E-01	5.94E-06	9.81E-03	3.57E-03		
Benzo(k)fluoranthene	1.65E-03	6.00E-04	na	na	1.21E-01	3.48E-06	5.74E-03	2.09E-03		
Bromine & compounds	na	na	na	na		0.00E+00				
1,3-Butadiene	1.74E-04	3.43E-05	5.00E-02	1.12E-02		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	4.34E-03	8.57E-04	5.59E+01	5.49E+01	4.91E+00	1.41E-04	6.12E-01	1.21E-01	7.89E-03	7.75E-03
Carbon disulfide	na	na	1.25E-03	2.80E-04		0.00E+00			0.00E+00	0.00E+00
Chlorine	na	na	5.00E+00	1.12E+00		0.00E+00			0.00E+00	0.00E+00
Chloroform	5.50E-06	1.09E-06	3.33E-03	7.46E-04		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	1.65E-04	6.00E-05	na	na	1.55E-02	4.45E-07	7.34E-05	2.67E-05		
Copper	na	na	na	na	4.70E+01	1.35E-03				
Cresols	na	na	1.67E-03	3.73E-04		0.00E+00			0.00E+00	0.00E+00
Dibenz(a,h)anthracene	6.48E-03	2.21E-03	na	na	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
Diethanolamine (DEA)	na	na	3.33E-01	7.46E-02		0.00E+00			0.00E+00	0.00E+00
Ethylbenzene	2.52E-06	4.97E-07	5.00E-04	1.12E-04	1.46E+02	4.19E-03	1.06E-02	2.08E-03	2.10E-06	4.69E-07
Formaldehyde	6.08E-06	1.20E-06	3.33E-01	7.46E-02	8.17E+02	2.35E-02	1.43E-01	2.82E-02	7.84E-03	1.75E-03
n-Hexane	na	na	1.43E-04	3.20E-05		0.00E+00			0.00E+00	0.00E+00
Hydrogen chloride	na	na	1.11E-01	2.49E-02		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide	na	na	1.00E-01	2.24E-02	0.00E+00	0.00E+00			0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	1.65E-03	6.00E-04	na	na	4.99E-01	1.43E-05	2.37E-02	8.61E-03		
Lead	3.58E-05	1.44E-05	na	na	2.03E+01	5.85E-04	2.09E-02	8.42E-03		
Manganese	na	na	5.00E+00	1.12E+00	3.81E+01	1.10E-03			5.48E-03	1.23E-03
Mercury	na	na	5.76E+01	5.35E+01	1.98E+00	5.71E-05			3.29E-03	3.05E-03
Methanol	na	na	2.50E-04	5.59E-05	5.52E-01	1.59E-05			3.97E-09	8.89E-10
Naphthalene	3.48E-05	6.86E-06	1.11E-01	2.49E-02	3.90E+00	1.12E-04	3.91E-03	7.70E-04	1.25E-05	2.79E-06
Nickel	2.64E-04	5.20E-05	2.00E+01	2.00E+01	4.07E+01	1.17E-03	3.09E-01	6.09E-02	2.34E-02	2.34E-02
Perchloroethylene	6.08E-06	1.20E-06	2.86E-02	6.39E-03		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol	na	na	5.00E-03	1.12E-03	3.81E+01	1.10E-03			5.48E-06	1.23E-06
Phosphorus	na	na	na	na	0.00E+00	0.00E+00				
Polychlorinated dioxins/furans	3.37E+02	8.10E+01	2.65E+05	1.73E+05		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene	na	na	3.33E-04	7.46E-05		0.00E+00			0.00E+00	0.00E+00
Selenium	na	na	5.00E-02	1.12E-02	4.07E+01	1.17E-03			5.86E-05	1.31E-05
Styrene	na	na	1.11E-03	2.49E-04		0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist	na	na	1.00E+00	2.24E-01	3.78E+02	1.09E-02			1.09E-02	2.43E-03
Toluene	na	na	3.33E-03	7.46E-04	5.90E+02	1.99E-02			6.62E-05	1.48E-05
Xylenes	na	na	1.43E-03	3.20E-04	3.42E+02	9.85E-03			1.41E-05	3.15E-06
Zinc	na	na	na	na	1.20E+02	3.46E-03				
Cyanide	na	na	1.11E-01	2.49E-02		0.00E+00			0.00E+00	0.00E+00
sum							4.85E+00	1.41E+00	7.80E-02	5.30E-02

(1) Cancer Risk Model Input (per million) = Sum { (TAC emission, g/s) * (Unit Risk, (ug/m³)⁻¹) * 1E6 }(2) Chronic Hazard Index Model Input = Sum { (TAC emission, g/s) * (Chronic HI / (ug/m³)) }

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842

Table 4 - Combustion Point Sources, Annual Average Emissions

July 24, 2008

Source No(s)/Status Description	S-4472 New Hyd Plt Train 2 Reformer Furnace						S-6020 New Flare Pilot/Purge					
	1x TAC Emissions, lbs/yr	2x TAC Emissions (including H2SO4), g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
Toxic Air Contaminant												
Acetaldehyde	4.26E+02	1.23E-02	3.56E-02	7.01E-03	1.36E-03	3.05E-04	3.56E+00	5.12E-05	1.49E-04	2.93E-05	5.69E-06	1.27E-06
Antimony	3.74E+00	1.08E-04					3.13E-02	4.50E-07				
Ammonia @ 10 ppm slip	3.62E+04	1.04E+00			5.21E-03	1.16E-03		0.00E+00			0.00E+00	0.00E+00
Arsenic	6.90E+00	1.99E-04	3.14E+00	1.03E+00	1.23E-02	1.16E-02	5.77E-02	8.29E-07	1.31E-02	4.30E-03	5.14E-05	4.93E-05
Benzene	3.92E+02	1.13E-02	3.27E-01	6.45E-02	1.88E-04	4.20E-05	3.27E+00	4.71E-05	1.36E-03	2.69E-04	7.84E-07	1.75E-07
Benzo(a)anthracene	1.66E-01	4.78E-06	7.89E-03	2.87E-03			1.39E-03	2.00E-08	3.30E-05	1.20E-05		
Benzo(a)pyrene	4.27E-01	1.23E-05	2.03E-01	7.37E-02			3.57E-03	5.13E-08	8.47E-04	3.08E-04		
Benzo(b)fluoranthene	2.07E-01	5.94E-06	9.81E-03	3.57E-03			1.73E-03	2.48E-08	4.09E-05	1.49E-05		
Benzo(k)fluoranthene	1.21E-01	3.48E-06	5.74E-03	2.09E-03			1.01E-03	1.45E-08	2.40E-05	8.72E-06		
Bromine & compounds		0.00E+00						0.00E+00				
1,3-Butadiene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	4.91E+00	1.41E-04	8.12E-01	1.21E-01	7.89E-03	7.75E-03	4.10E-02	5.89E-07	2.56E-03	5.05E-04	3.29E-05	3.23E-05
Carbon disulfide		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Chlorine		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Chloroform		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	1.55E-02	4.45E-07	7.34E-05	2.67E-05			1.29E-04	1.86E-09	3.07E-07	1.12E-07		
Copper	4.70E+01	1.35E-03					3.92E-01	5.65E-06				
Cresols		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Dibenz(a,h)anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00		
Diethanolamine (DEA)		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Ethylbenzene	1.48E+02	4.19E-03	1.06E-02	2.08E-03	2.10E-06	4.69E-07	1.22E+00	1.75E-05	4.41E-05	8.70E-06	8.75E-09	1.96E-09
Formaldehyde	8.17E+02	2.35E-02	1.43E-01	2.82E-02	7.84E-03	1.75E-03	6.83E+00	9.82E-05	5.97E-04	1.18E-04	3.27E-05	7.32E-06
n-Hexane		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Hydrogen chloride		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide	0.00E+00	0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	4.99E-01	1.43E-05	2.37E-02	8.61E-03			4.17E-03	5.99E-08	9.89E-05	3.59E-05		
Lead	2.03E+01	5.85E-04	2.09E-02	8.42E-03			1.70E-01	2.44E-06	8.74E-05	3.52E-05		
Manganese	3.81E+01	1.10E-03			5.48E-03	1.23E-03	3.18E-01	4.58E-06			2.29E-05	5.12E-06
Mercury	1.98E+00	5.71E-05			3.29E-03	3.05E-03	1.66E-02	2.38E-07			1.37E-05	1.27E-05
Methanol	5.52E-01	1.59E-05			3.97E-09	8.89E-10		0.00E+00			0.00E+00	0.00E+00
Naphthalene	3.90E+00	1.12E-04	3.91E-03	7.70E-04	1.25E-05	2.79E-06	3.26E-02	4.69E-07	1.63E-05	3.21E-06	5.21E-08	1.17E-08
Nickel	4.07E+01	1.17E-03	3.09E-01	6.09E-02	2.34E-02	2.34E-02	3.40E-01	4.89E-06	1.29E-03	2.54E-04	9.79E-05	8.79E-05
Perchloroethylene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol	3.81E+01	1.10E-03			5.48E-06	1.23E-06	3.18E-01	4.58E-06			2.29E-08	5.12E-09
Phosphorus	0.00E+00	0.00E+00					0.00E+00	0.00E+00				
Polychlorinated dioxins/furans		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Selenium	4.07E+01	1.17E-03			5.86E-05	1.31E-05	3.40E-01	4.89E-06			2.45E-07	5.47E-08
Styrene		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist	3.78E+02	1.09E-02			1.09E-02	2.43E-03	4.75E+01	6.83E-04			6.83E-04	1.53E-04
Toluene	6.90E+02	1.99E-02			6.62E-05	1.48E-05	5.77E+00	8.29E-05			2.76E-07	8.19E-08
Xylenes	3.42E+02	9.85E-03			1.41E-05	3.15E-06	2.86E+00	4.11E-05			5.88E-08	1.31E-08
Zinc	1.20E+02	3.46E-03					1.00E+00	1.44E-05				
Cyanide		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
sum			4.85E+00	1.41E+00	7.80E-02	5.30E-02	sum		2.03E-02	5.90E-03	9.42E-04	3.59E-04

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842

Table 4 - Combustion Point Sources, Annual Average Emissions

July 24, 2008

Source No(s)/Status Description	S-4473 & S-4474 New No. 1 Power Plant - Cogen 3						S-4477, S-4478, S-4479 & S-4480 New CCR Furnaces					
	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾	1x TAC Emissions, lbs/yr	2x TAC Emissions (including H2SO4), g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
Acetaldehyde	6.64E+02	9.55E-03	2.77E-02	5.47E-03	1.06E-03	2.38E-04	2.32E+02	6.67E-03	1.93E-02	3.81E-03	7.41E-04	1.66E-04
Antimony		0.00E+00					2.04E+00	5.85E-05				
Ammonia @ 10 ppm slip	1.00E+05	1.44E+00			7.21E-03	1.61E-03	1.97E+04	5.66E-01			2.83E-03	6.33E-04
Arsenic	4.97E-01	7.16E-06	1.13E-01	3.71E-02	4.44E-04	4.25E-04	3.75E+00	1.08E-04	1.71E+00	5.59E-01	6.69E-03	6.41E-03
Benzene	3.04E+01	4.38E-04	1.27E-02	2.50E-03	7.30E-06	1.63E-06	2.13E+02	6.12E-03	1.78E-01	3.50E-02	1.02E-04	2.28E-05
Benzo(a)anthracene	4.69E-02	6.74E-07	1.11E-03	4.05E-04			9.03E-02	2.60E-06	4.29E-03	1.56E-03		
Benzo(a)pyrene	3.25E-02	4.67E-07	7.70E-03	2.80E-03			2.32E-01	6.68E-06	1.10E-01	4.01E-02		
Benzo(b)fluoranthene	7.42E-02	1.07E-06	1.76E-03	6.41E-04			1.12E-01	3.23E-06	5.33E-03	1.94E-03		
Benzo(k)fluoranthene	4.04E-02	5.80E-07	9.58E-04	3.48E-04			6.57E-02	1.89E-06	3.12E-03	1.13E-03		
Bromine & compounds		0.00E+00						0.00E+00				
1,3-Butadiene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	5.57E+01	8.01E-04	3.48E+00	6.86E-01	4.48E-02	4.40E-02	2.67E+00	7.67E-05	3.33E-01	6.57E-02	4.29E-03	4.21E-03
Carbon disulfide		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Chlorine		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Chloroform		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	2.96E-01	4.26E-06	7.03E-04	2.56E-04			8.41E-03	2.42E-07	3.99E-05	1.45E-05		
Copper	4.41E+01	6.34E-04					2.55E+01	7.35E-04				
Cresols		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Dibenz(a,h)anthracene	3.06E-02	4.40E-07	2.85E-03	9.72E-04			0.00E+00	0.00E+00	0.00E+00	0.00E+00		
Diethanolamine (DEA)		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Ethylbenzene	6.61E+01	9.50E-04	2.39E-03	4.72E-04	4.75E-07	1.06E-07	7.92E+01	2.26E-03	5.74E-03	1.13E-03	1.14E-06	2.55E-07
Formaldehyde	9.17E+02	1.32E-02	8.02E-02	1.58E-02	4.40E-03	9.83E-04	4.44E+02	1.28E-02	7.77E-02	1.53E-02	4.26E-03	9.53E-04
n-Hexane		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Hydrogen chloride		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide	0.00E+00	0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	3.14E-02	4.52E-07	7.45E-04	2.71E-04			2.71E-01	7.80E-06	1.29E-02	4.68E-03		
Lead	1.25E+01	1.79E-04	6.42E-03	2.58E-03			1.10E+01	3.18E-04	1.14E-02	4.58E-03		
Manganese	3.82E+02	5.50E-03			2.75E-02	6.15E-03	2.07E+01	5.96E-04			2.98E-03	6.66E-04
Mercury	2.32E+01	3.34E-04			1.92E-02	1.79E-02	1.08E+00	3.10E-05			1.79E-03	1.66E-03
Methanol		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Naphthalene	1.03E+02	1.48E-03	5.15E-02	1.02E-02	1.65E-04	3.68E-05	2.12E+00	6.10E-05	2.12E-03	4.18E-04	6.78E-06	1.52E-06
Nickel	2.09E+03	3.00E-02	7.93E+00	1.56E+00	6.01E-01	6.01E-01	2.21E+01	6.37E-04	1.68E-01	3.31E-02	1.27E-02	1.27E-02
Perchloroethylene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol	4.36E+02	6.27E-03			3.13E-05	7.01E-06	2.07E+01	5.96E-04			2.98E-06	6.66E-07
Phosphorus	1.45E+02	2.09E-03					0.00E+00	0.00E+00				
Polychlorinated dioxins/furans		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Selenium	1.28E+02	1.84E-03			9.19E-05	2.06E-05	2.21E+01	6.37E-04			3.18E-05	7.13E-06
Styrene		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist	3.02E+04	4.34E-01			4.34E-01	9.71E-02	1.78E+03	5.13E-02			5.13E-02	1.15E-02
Toluene	1.48E+02	2.13E-03			7.10E-06	1.59E-06	3.75E+02	1.08E-02			3.60E-05	8.05E-06
Xylenes	2.36E+04	3.39E-01			4.85E-04	1.08E-04	1.86E+02	5.35E-03			7.65E-06	1.71E-06
Zinc	1.18E+02	1.70E-03					6.53E+01	1.88E-03				
Cyanide		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
sum			1.17E+01	2.33E+00	1.14E+00	7.69E-01	sum		2.64E+00	7.68E-01	6.78E-02	3.90E-02

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842

Table 4 - Combustion Point Sources, Annual Average Emissions

July 24, 2008

Source No(s)/Status Description	S-4227 & S-4192 Modified 1 SRU & Stack Heater						S-4228 & S-4193 Modified 2 SRU & Stack Heater					
	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
Toxic Air Contaminant												
Acetaldehyde	1.21E+01	1.73E-04	5.03E-04	9.92E-05	1.93E-05	4.31E-06	1.14E+01	1.64E-04	4.76E-04	9.39E-05	1.82E-05	4.08E-06
Antimony	1.06E-01	1.52E-06					1.00E-01	1.44E-06				
Ammonia @ 10 ppm slip		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Arsenic	1.95E-01	2.81E-06	4.44E-02	1.45E-02	1.74E-04	1.67E-04	1.85E-01	2.66E-06	4.20E-02	1.38E-02	1.65E-04	1.58E-04
Benzene	1.11E+01	1.59E-04	4.62E-03	9.11E-04	2.66E-06	5.94E-07	1.05E+01	1.51E-04	4.37E-03	8.63E-04	2.51E-06	5.62E-07
Benzo(a)anthracene	4.70E-03	6.76E-08	1.12E-04	4.06E-05			4.45E-03	6.40E-08	1.06E-04	3.84E-05		
Benzo(a)pyrene	1.21E-02	1.74E-07	2.87E-03	1.04E-03			1.14E-02	1.64E-07	2.71E-03	9.87E-04		
Benzo(b)fluoranthene	5.64E-03	8.40E-08	1.39E-04	5.04E-05			5.53E-03	7.95E-08	1.31E-04	4.77E-05		
Benzo(k)fluoranthene	3.42E-03	4.92E-08	8.12E-05	2.95E-05			3.24E-03	4.66E-08	7.68E-05	2.79E-05		
Bromine & compounds		0.00E+00						0.00E+00				
1,3-Butadiene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	1.39E-01	1.99E-06	8.66E-03	1.71E-03	1.12E-04	1.10E-04	1.31E-01	1.89E-06	8.20E-03	1.62E-03	1.06E-04	1.04E-04
Carbon disulfide	3.11E+02	4.47E-03			5.59E-06	1.25E-06	1.19E+02	1.71E-03			2.14E-06	4.78E-07
Chlorine		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Chloroform		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	4.37E-04	6.29E-09	1.04E-06	3.78E-07			4.14E-04	5.96E-09	9.83E-07	3.57E-07		
Copper	1.33E+00	1.91E-05					1.26E+00	1.81E-05				
Cresols		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Dibenz(a,h)anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Diethanolamine (DEA)		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Ethylbenzene	4.12E+00	5.92E-05	1.49E-04	2.94E-05	2.96E-08	6.63E-09	3.90E+00	5.61E-05	1.41E-04	2.79E-05	2.80E-08	6.27E-09
Formaldehyde	2.31E+01	3.32E-04	2.02E-03	3.99E-04	1.11E-04	2.48E-05	2.19E+01	3.15E-04	1.91E-03	3.78E-04	1.05E-04	2.35E-05
n-Hexane		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Hydrogen chloride		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide	2.12E+03	3.05E-02			3.05E-03	6.82E-04	2.12E+03	3.05E-02			3.05E-03	6.82E-04
Indeno(1,2,3-cd)pyrene	1.41E-02	2.03E-07	3.35E-04	1.22E-04			1.33E-02	1.92E-07	3.17E-04	1.15E-04		
Lead	5.75E-01	8.27E-06	2.96E-04	1.19E-04			5.44E-01	7.83E-06	2.80E-04	1.13E-04		
Manganese	1.08E+00	1.55E-05			7.75E-05	1.73E-05	1.02E+00	1.47E-05			7.33E-05	1.64E-05
Mercury	5.61E-02	8.07E-07			4.65E-05	4.32E-05	5.31E-02	7.64E-07			4.40E-05	4.09E-05
Methanol		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Naphthalene	1.10E-01	1.59E-06	5.52E-05	1.09E-05	1.76E-07	3.94E-08	1.04E-01	1.50E-06	5.23E-05	1.03E-05	1.67E-07	3.73E-08
Nickel	1.15E+00	1.66E-05	4.37E-03	8.61E-04	3.31E-04	3.31E-04	1.09E+00	1.57E-05	4.14E-03	8.16E-04	3.14E-04	3.14E-04
Perchloroethylene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol	1.08E+00	1.55E-05			7.75E-08	1.73E-08	1.02E+00	1.47E-05			7.33E-08	1.64E-08
Phosphorus	0.00E+00	0.00E+00					0.00E+00	0.00E+00				
Polychlorinated dioxins/furans		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Selenium	1.15E+00	1.66E-05			8.28E-07	1.85E-07	1.09E+00	1.57E-05			7.64E-07	1.75E-07
Styrene		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist	5.89E+03	8.47E-02			8.47E-02	1.90E-02	3.72E+03	5.35E-02			5.35E-02	1.20E-02
Toluene	1.95E+01	2.81E-04			9.36E-07	2.09E-07	1.85E+01	2.66E-04			8.86E-07	1.98E-07
Xylenes	9.68E+00	1.39E-04			1.99E-07	4.45E-08	9.16E+00	1.32E-04			1.88E-07	4.21E-08
Zinc	3.40E+00	4.89E-05					3.22E+00	4.63E-05				
Cyanide		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
sum			6.86E-02	2.00E-02	8.86E-02	2.03E-02	sum		6.49E-02	1.89E-02	5.74E-02	1.33E-02

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842

Table 4 - Combustion Point Sources, Annual Average Emissions

July 24, 2008

Source No(s)/Status Description	S-4229 & S-4194 Modified 3 SRU & Stack Heater					
	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
Toxic Air Contaminant						
Acetaldehyde	2.22E+01	3.19E-04	9.25E-04	1.82E-04	3.54E-05	7.93E-06
Antimony	1.95E-01	2.80E-06				
Ammonia @ 10 ppm slip		0.00E+00			0.00E+00	0.00E+00
Arsenic	3.59E-01	5.17E-06	8.16E-02	2.68E-02	3.20E-04	3.07E-04
Benzene	2.04E+01	2.93E-04	8.50E-03	1.68E-03	4.89E-06	1.09E-06
Benzo(a)anthracene	8.65E-03	1.24E-07	2.05E-04	7.46E-05		
Benzo(a)pyrene	2.22E-02	3.20E-07	5.27E-03	1.92E-03		
Benzo(b)fluoranthene	1.07E-02	1.55E-07	2.55E-04	9.27E-05		
Benzo(k)fluoranthene	6.29E-03	9.05E-08	1.49E-04	5.43E-05		
Bromine & compounds		0.00E+00				
1,3-Butadiene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	2.55E-01	3.67E-06	1.59E-02	3.15E-03	2.05E-04	2.01E-04
Carbon disulfide	4.74E+02	6.81E-03			8.52E-06	1.91E-06
Chlorine		0.00E+00			0.00E+00	0.00E+00
Chloroform		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	8.05E-04	1.16E-08	1.91E-06	6.95E-07		
Copper	2.44E+00	3.52E-05				
Cresols		0.00E+00			0.00E+00	0.00E+00
Dibenz(a,h)anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
Diethanolamine (DEA)		0.00E+00			0.00E+00	0.00E+00
Ethylbenzene	7.58E+00	1.09E-04	2.75E-04	5.42E-05	5.45E-08	1.22E-08
Formaldehyde	4.25E+01	6.12E-04	3.72E-03	7.34E-04	2.04E-04	4.56E-05
n-Hexane		0.00E+00			0.00E+00	0.00E+00
Hydrogen chloride		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide	4.24E+03	6.10E-02			6.10E-03	1.36E-03
Indeno(1,2,3-cd)pyrene	2.59E-02	3.73E-07	6.16E-04	2.24E-04		
Lead	1.06E+00	1.52E-05	5.45E-04	2.19E-04		
Manganese	1.98E+00	2.85E-05			1.43E-04	3.19E-05
Mercury	1.03E-01	1.48E-06			8.55E-05	7.94E-05
Methanol		0.00E+00			0.00E+00	0.00E+00
Naphthalene	2.03E-01	2.92E-06	1.02E-04	2.00E-05	3.24E-07	7.26E-08
Nickel	2.12E+00	3.05E-05	8.05E-03	1.59E-03	6.10E-04	6.10E-04
Perchloroethylene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol	1.98E+00	2.85E-05			1.43E-07	3.19E-08
Phosphorus	0.00E+00	0.00E+00				
Polychlorinated dioxins/furans		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene		0.00E+00			0.00E+00	0.00E+00
Selenium	2.12E+00	3.05E-05			1.52E-06	3.41E-07
Styrene		0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist	6.64E+03	9.55E-02			9.55E-02	2.14E-02
Toluene	3.59E+01	5.17E-04			1.72E-06	3.85E-07
Xylenes	1.78E+01	2.56E-04			3.66E-07	8.19E-08
Zinc	6.25E+00	8.99E-05				
Cyanide		0.00E+00			0.00E+00	0.00E+00
sum			1.26E-01	3.67E-02	1.03E-01	2.40E-02

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
Table 5 - Non-combustion Point Sources, Annual Average Emissions
July 24, 2008

Source No(s)/Status Description Sub-Project	S-4465 New Hyd Pit Cooling Tower									
	Residential Unit Risk Value From HARP, (ug/m3)-1	Offsite Worker Unit Risk Value From HARP, (ug/m3)-1	Residential HI per unit concentration, HI/(ug/m3)	Offsite Worker HI per unit concentration, HI/(ug/m3)	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
	(ug/m3)-1	(ug/m3)-1	HI/(ug/m3)	HI/(ug/m3)			(per million) ⁽¹⁾	(per million) ⁽¹⁾	Model Input ⁽²⁾	Model Input ⁽²⁾
Toxic Air Contaminant										
Acetaldehyde	1.90E-06	5.72E-07	1.11E-01	2.49E-02		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Antimony	na	na	na	na		0.00E+00				
Amonia @ 10 ppm slip	na	na	5.00E-03	1.12E-03	2.63E+00	3.78E-05			1.89E-07	4.23E-08
Arsenic	1.58E-02	5.18E-03	6.20E+01	5.94E+01	6.57E-03	9.45E-08	1.46E-03	4.90E-04	5.86E-06	5.61E-06
Benzene	2.90E-05	5.72E-06	1.67E-02	3.73E-03		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	1.65E-03	6.00E-04	na	na		0.00E+00	0.00E+00	0.00E+00		
Benzo(a)pyrene	1.65E-02	6.00E-03	na	na		0.00E+00	0.00E+00	0.00E+00		
Benzo(b)fluoranthene	1.65E-03	6.00E-04	na	na		0.00E+00	0.00E+00	0.00E+00		
Benzo(k)fluoranthene	1.65E-03	6.00E-04	na	na		0.00E+00	0.00E+00	0.00E+00		
Bromine & compounds	na	na	na	na	9.50E-01	1.37E-05				
1,3-Butadiene	1.74E-04	3.43E-05	5.00E-02	1.12E-02		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	4.34E-03	8.57E-04	5.59E+01	5.49E+01		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon disulfide	na	na	1.25E-03	2.80E-04		0.00E+00			0.00E+00	0.00E+00
Chlorine	na	na	5.00E+00	1.12E+00	4.30E-01	6.16E-06			3.09E-05	6.92E-06
Chloroform	5.50E-06	1.09E-06	3.33E-03	7.46E-04	3.19E+01	4.59E-04	2.52E-03	5.00E-04	1.53E-06	3.42E-07
Chrysene	1.65E-04	6.00E-05	na	na		0.00E+00	0.00E+00	0.00E+00		
Copper	na	na	na	na	2.02E-02	2.91E-07				
Cresols	na	na	1.67E-03	3.73E-04		0.00E+00			0.00E+00	0.00E+00
Dibenz(a,h)anthracene	6.48E-03	2.21E-03	na	na		0.00E+00	0.00E+00	0.00E+00		
Diethanolamine (DEA)	na	na	3.33E-01	7.46E-02		0.00E+00			0.00E+00	0.00E+00
Ethylbenzene	2.52E-06	4.97E-07	5.00E-04	1.12E-04		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	6.06E-06	1.20E-06	3.33E-01	7.46E-02		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
n-Hexane	na	na	1.43E-04	3.20E-05		0.00E+00			0.00E+00	0.00E+00
Hydrogen chloride	na	na	1.11E-01	2.49E-02		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide	na	na	1.00E-01	2.24E-02		0.00E+00			0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	1.65E-03	6.00E-04	na	na		0.00E+00	0.00E+00	0.00E+00		
Lead	3.58E-05	1.44E-05	na	na	8.15E-04	1.17E-08	4.20E-07	1.69E-07		
Manganese	na	na	5.00E+00	1.12E+00		0.00E+00			0.00E+00	0.00E+00
Mercury	na	na	5.76E+01	5.35E+01	5.78E-05	8.31E-10			4.79E-08	4.45E-08
Methanol	na	na	2.50E-04	5.59E-05		0.00E+00			0.00E+00	0.00E+00
Naphthalene	3.48E-05	6.86E-06	1.11E-01	2.49E-02		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	2.64E-04	5.20E-05	2.00E+01	2.00E+01	1.24E-02	1.78E-07	4.71E-05	9.27E-06	3.57E-06	3.57E-06
Perchloroethylene	6.06E-06	1.20E-06	2.86E-02	6.39E-03		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol	na	na	5.00E-03	1.12E-03		0.00E+00			0.00E+00	0.00E+00
Phosphorus	na	na	na	na		0.00E+00				
Polychlorinated dioxins/furans	3.37E+02	8.10E+01	2.65E+05	1.73E+05		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene	na	na	3.33E-04	7.46E-05		0.00E+00			0.00E+00	0.00E+00
Selenium	na	na	5.00E-02	1.12E-02		0.00E+00			0.00E+00	0.00E+00
Styrene	na	na	1.11E-03	2.49E-04		0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist	na	na	1.00E+00	2.24E-01		0.00E+00			0.00E+00	0.00E+00
Toluene	na	na	3.33E-03	7.46E-04		0.00E+00			0.00E+00	0.00E+00
Xylenes	na	na	1.43E-03	3.20E-04		0.00E+00			0.00E+00	0.00E+00
Zinc	na	na	na	na	1.21E-01	1.74E-06				
Cyanide	na	na	1.11E-01	2.49E-02	8.94E-03	1.29E-07			1.43E-08	3.20E-09
sum							4.07E-03	9.99E-04	4.21E-05	1.65E-05

- (1) Cancer Risk Model Input (per million) = Sum { (TAC emission, g/s) * (Unit Risk, (ug/m³)⁻¹) * 1E6 }
 (2) Chronic Hazard Index Model Input = Sum { (TAC emission, g/s) * (Chronic HI / (ug/m³)) }

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
Table 5 - Non-combustion Point Sources, Annual Average Emissions
July 24, 2008

Source No(s)/Status Description Sub-Project	S-4452 New CCR Regen Vent						S-4396 Modified Sulfur Loading Rack					
	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
Toxic Air Contaminant												
Acetaldehyde		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Antimony		0.00E+00						0.00E+00				
Ammonia @ 10 ppm slip		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Arsenic		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	2.05E+01	2.95E-04	8.55E-03	1.69E-03	4.91E-06	1.10E-06		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Benzo(a)pyrene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Benzo(b)fluoranthene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Benzo(k)fluoranthene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Bromine & compounds		0.00E+00						0.00E+00	0.00E+00	0.00E+00		
1,3-Butadiene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon disulfide		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Chlorine	1.42E+03	2.04E-02			1.02E-01	2.28E-02		0.00E+00			0.00E+00	0.00E+00
Chloroform		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Copper		0.00E+00						0.00E+00				
Cresols		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Dibenz(a,h)anthracene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Diethanolamine (DEA)		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Ethylbenzene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
n-Hexane		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Hydrogen chloride	9.88E+03	1.42E-01			1.58E-02	3.53E-03		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide		0.00E+00			0.00E+00	0.00E+00	7.67E+01	1.10E-03			1.10E-04	2.47E-05
Indeno(1,2,3-cd)pyrene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Lead		0.00E+00	0.00E+00	0.00E+00				0.00E+00				
Manganese		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Mercury		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Methanol		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Naphthalene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Perchloroethylene	8.44E+01	1.21E-03	7.38E-03	1.46E-03	3.47E-05	7.76E-06		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Phosphorus		0.00E+00						0.00E+00			0.00E+00	0.00E+00
Polychlorinated dioxins/furans	4.82E-05	6.93E-10	2.34E-01	5.62E-02	1.84E-04	1.20E-04		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Selenium		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Styrene		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist	2.76E+02	3.97E-03			3.97E-03	8.88E-04		0.00E+00			0.00E+00	0.00E+00
Toluene	4.19E+02	6.03E-03			2.01E-05	4.49E-06		0.00E+00			0.00E+00	0.00E+00
Xylenes	3.22E+02	4.63E-03			6.62E-06	1.48E-06		0.00E+00			0.00E+00	0.00E+00
Zinc		0.00E+00						0.00E+00				
Cyanide		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
sum			2.50E-01	5.93E-02	1.22E-01	2.74E-02	sum		0.00E+00	0.00E+00	1.10E-04	2.47E-05

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
Table 6 - Fugitive Sources, Annual Average Emissions
July 24, 2008

Source No(s)/Status Description Sub-Project	S-4449 fugitive New Hydrogen 1 Train Hydrogen Plant Fugitives									
	Residential Unit Risk Value From HARP, (ug/m3)-1	Offsite Worker Unit Risk Value From HARP, (ug/m3)-1	Residential HI per unit concentration, HI/(ug/m3)	Offsite Worker HI per unit concentration, HI/(ug/m3)	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
Toxic Air Contaminant										
Acetaldehyde	2.90E-06	5.72E-07	1.11E-01	2.49E-02		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Antimony	na	na	na	na		0.00E+00				
Ammonia @ 10 ppm slip	na	na	5.00E-03	1.12E-03	4.25E+01	6.11E-04			3.06E-06	6.84E-07
Arsenic	1.58E-02	5.18E-03	6.20E+01	5.94E+01		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	2.90E-05	5.72E-06	1.67E-02	3.73E-03		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene	1.65E-03	6.00E-04	na	na		0.00E+00	0.00E+00	0.00E+00		
Benzo(a)pyrene	1.65E-02	6.00E-03	na	na		0.00E+00	0.00E+00	0.00E+00		
Benzo(b)fluoranthene	1.65E-03	6.00E-04	na	na		0.00E+00	0.00E+00	0.00E+00		
Benzo(k)fluoranthene	1.65E-03	6.00E-04	na	na		0.00E+00	0.00E+00	0.00E+00		
Bromine & compounds	na	na	na	na		0.00E+00	0.00E+00	0.00E+00		
1,3-Butadiene	1.74E-04	3.43E-05	5.00E-02	1.12E-02	2.79E+00	4.02E-05	6.99E-03	1.38E-03	2.01E-06	4.49E-07
Cadmium	4.34E-03	8.57E-04	5.59E+01	5.49E+01		0.00E+00	0.00E+00	0.00E+00		
Carbon disulfide	na	na	1.25E-03	2.80E-04		0.00E+00			0.00E+00	0.00E+00
Chlorine	na	na	5.00E+00	1.12E+00		0.00E+00			0.00E+00	0.00E+00
Chloroform	5.50E-06	1.09E-06	3.33E-03	7.46E-04		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	1.65E-04	6.00E-05	na	na		0.00E+00	0.00E+00	0.00E+00		
Copper	na	na	na	na		0.00E+00				
Cresols	na	na	1.67E-03	3.73E-04	3.25E+00	4.67E-05			7.79E-08	1.74E-08
Dibenz(a,h)anthracene	3.48E-03	2.21E-03	na	na		0.00E+00	0.00E+00	0.00E+00		
Diethanolamine (DEA)	na	na	3.33E-01	7.46E-02		0.00E+00			0.00E+00	0.00E+00
Ethylbenzene	2.52E-06	4.97E-07	5.00E-04	1.12E-04	1.88E+00	2.70E-05	6.81E-05	1.34E-05	1.35E-08	3.03E-09
Formaldehyde	6.08E-06	1.20E-06	3.33E-01	7.46E-02		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
n-Hexane	na	na	1.43E-04	3.20E-05	6.11E+00	8.78E-05			1.25E-08	2.81E-09
Hydrogen chloride	na	na	1.11E-01	2.49E-02		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide	na	na	1.00E-01	2.24E-02	3.03E+01	4.35E-04			4.35E-05	9.74E-06
Indeno(1,2,3-cd)pyrene	1.65E-03	6.00E-04	na	na		0.00E+00	0.00E+00	0.00E+00		
Lead	3.58E-05	1.44E-05	na	na		0.00E+00	0.00E+00	0.00E+00		
Manganese	na	na	5.00E+00	1.12E+00		0.00E+00			0.00E+00	0.00E+00
Mercury	na	na	5.76E+01	5.35E+01		0.00E+00			0.00E+00	0.00E+00
Methanol	na	na	2.50E-04	5.59E-05		0.00E+00			0.00E+00	0.00E+00
Naphthalene	3.48E-05	6.86E-06	1.11E-01	2.49E-02	1.10E+01	1.58E-04	5.51E-03	1.09E-03	1.76E-05	3.93E-06
Nickel	2.64E-04	5.20E-05	2.00E+01	2.00E+01		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Perchloroethylene	6.08E-06	1.20E-06	2.86E-02	6.39E-03		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol	na	na	5.00E-03	1.12E-03	1.69E+01	2.43E-04			1.22E-06	2.72E-07
Phosphorus	na	na	na	na		0.00E+00				
Polychlorinated dioxins/furans	3.37E+02	8.10E+01	2.65E+05	1.73E+05		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene	na	na	3.33E-04	7.46E-05	2.99E+02	4.30E-03			1.43E-06	3.21E-07
Selenium	na	na	5.00E-02	1.12E-02		0.00E+00			0.00E+00	0.00E+00
Styrene	na	na	1.11E-03	2.49E-04		0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist	na	na	1.00E+00	2.24E-01		0.00E+00			0.00E+00	0.00E+00
Toluene	na	na	3.33E-03	7.46E-04	3.25E+00	4.67E-05			0.00E+00	0.00E+00
Xylenes	na	na	1.43E-03	3.20E-04	7.92E+00	1.14E-04			1.56E-07	3.49E-08
Zinc	na	na	na	na		0.00E+00			1.63E-07	3.64E-08
Cyanide	na	na	1.11E-01	2.49E-02		0.00E+00			0.00E+00	0.00E+00
sum							1.26E-02	2.48E-03	6.92E-05	1.55E-05

(1) Cancer Risk Model Input (per million) = Sum { (TAC emission, g/s) * (Unit Risk, (ug/m³)⁻¹) * 1E6 }

(2) Chronic Hazard Index Model Input = Sum { (TAC emission, g/s) * (Chronic HI / (ug/m³)) }

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
Table 6 - Fugitive Sources, Annual Average Emissions
July 24, 2008

Source No(s)/Status Description Sub-Project	S-4450 fugitive - New Hydrogen 2 Train Hydrogen Plant Fugitives						S-4473 & S-4474 fugitive - New Cogen 3 Power Plant Fugitives					
	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
	Toxic Air Contaminant											
Acetaldehyde		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Antimony		0.00E+00						0.00E+00				
Ammonia @ 10 ppm slip	4.25E+01	6.11E-04			3.06E-06	6.84E-07	3.21E+01	4.61E-04			2.31E-05	5.16E-07
Arsenic		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)pyrene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(b)fluoranthene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(k)fluoranthene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromine & compounds		0.00E+00						0.00E+00				
1,3-Butadiene	2.79E+00	4.02E-05	6.99E-03	1.38E-03	2.01E-06	4.49E-07	1.26E+00	1.81E-05	3.14E-03	6.19E-04	9.03E-07	2.02E-07
Cadmium		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon disulfide		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Chlorine		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Chloroform		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Copper		0.00E+00						0.00E+00	0.00E+00	0.00E+00		
Cresols	3.25E+00	4.67E-05			7.79E-08	1.74E-08	1.46E+00	2.10E-05			3.50E-08	7.83E-09
Dibenz(a,h)anthracene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Diethanolamine (DEA)		0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethylbenzene	1.88E+00	2.70E-05	6.81E-05	1.34E-05	1.35E-08	3.03E-09	8.47E-01	1.22E-05	3.07E-05	6.05E-06	6.09E-09	1.36E-09
Formaldehyde		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
n-Hexane	6.11E+00	8.78E-05			1.25E-08	2.81E-09	2.74E+00	3.95E-05			5.64E-09	1.26E-09
Hydrogen chloride		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide	3.03E+01	4.35E-04			4.35E-05	9.74E-06	1.36E+01	1.96E-04			1.96E-05	4.38E-06
Indeno(1,2,3-cd)pyrene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Lead		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Manganese		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Mercury		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Methanol		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Naphthalene	1.10E+01	1.58E-04	5.51E-03	1.09E-03	1.76E-05	3.93E-06	4.96E+00	7.14E-05	2.48E-03	4.90E-04	7.93E-06	1.78E-06
Nickel		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Perchloroethylene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol	1.69E+01	2.43E-04			1.22E-06	2.72E-07	7.59E+00	1.09E-04			5.46E-07	1.22E-07
Phosphorus		0.00E+00						0.00E+00				
Polychlorinated dioxins/furans		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene	2.99E+02	4.30E-03			1.43E-06	3.21E-07	1.34E+02	1.93E-03			6.44E-07	1.44E-07
Selenium		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Styrene		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Toluene	3.26E+00	4.67E-05			1.66E-07	3.49E-08	1.46E+00	2.10E-05			0.00E+00	0.00E+00
Xylenes	7.92E+00	1.14E-04			1.63E-07	3.64E-08	3.56E+00	5.12E-05			7.00E-08	1.57E-08
Zinc		0.00E+00						0.00E+00			7.32E-08	1.64E-08
Cyanide		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
sum			1.26E-02	2.48E-03	6.92E-05	1.55E-05	sum		5.66E-03	1.12E-03	3.21E-05	7.18E-06

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
Table 6 - Fugitive Sources, Annual Average Emissions
July 24, 2008

Source No(s)/Status Description Sub-Project	S-4452 fugitive - New						S-4253 fugitive - Modified					
	CCR						TKC					
	Reformer Fugitives						H2 Purity Fugitives					
	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
Toxic Air Contaminant												
Acetaldehyde		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Antimony		0.00E+00						0.00E+00				
Ammonia @ 10 ppm slip	3.21E+01	4.61E-04			2.31E-06	5.16E-07	0.00E+00	0.00E+00			0.00E+00	0.00E+00
Arsenic		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	3.78E+02	5.44E-03	1.58E-01	3.11E-02	9.06E-05	2.03E-05	5.09E+01	7.30E-04	2.12E-02	4.18E-03	1.22E-05	2.72E-06
Benzo(a)anthracene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Benzo(a)pyrene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Benzo(b)fluoranthene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Benzo(k)fluoranthene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Bromine & compounds		0.00E+00						0.00E+00				
1,3-Butadiene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon disulfide		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Chlorine		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Chloroform		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Copper		0.00E+00						0.00E+00				
Cresols	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00
Dibenz(a,h)anthracene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Diethanolamine (DEA)	0.00E+00	0.00E+00			0.00E+00	0.00E+00	4.55E+02	6.54E-03			2.18E-03	4.88E-04
Ethylbenzene	2.69E+02	3.67E-03	9.74E-03	1.92E-03	1.93E-06	4.32E-07	7.25E+01	1.04E-03	2.63E-03	5.18E-04	5.22E-07	1.17E-07
Formaldehyde		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
n-Hexane	1.78E+02	2.55E-03			3.65E-07	8.16E-08	2.00E+02	2.88E-03			4.11E-07	9.20E-08
Hydrogen chloride		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide	0.00E+00	0.00E+00			0.00E+00	0.00E+00	1.52E+02	2.19E-03			2.19E-04	4.90E-05
Indeno(1,2,3-cd)pyrene		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Lead		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00	0.00E+00		
Manganese		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Mercury		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Methanol	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00
Naphthalene	2.46E+01	3.53E-04	1.23E-02	2.42E-03	3.92E-05	8.78E-06	5.82E+01	8.37E-04	2.91E-02	5.74E-03	9.30E-05	2.08E-05
Nickel		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Perchloroethylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00
Phosphorus		0.00E+00						0.00E+00			0.00E+00	0.00E+00
Polychlorinated dioxins/furans		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene	8.77E-03	1.26E-07			4.21E-11	9.41E-12	0.00E+00	0.00E+00			0.00E+00	0.00E+00
Selenium		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Styrene	8.78E+00	1.26E-04			1.40E-07	3.14E-08	0.00E+00	0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Toluene	1.30E+03	1.87E-02			6.23E-05	1.39E-05	2.93E+02	4.21E-03			1.40E-05	3.14E-06
Xylenes	1.33E+03	1.91E-02			2.73E-05	6.10E-06	3.28E+02	4.73E-03			6.75E-06	1.51E-06
Zinc		0.00E+00						0.00E+00				
Cyanide		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
sum			1.80E-01	3.54E-02	2.24E-04	5.02E-05	sum		5.29E-02	1.04E-02	2.53E-03	5.65E-04

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
 Table 6 - Fugitive Sources, Annual Average Emissions
 July 24, 2008

Source No(s)/Status Description Sub-Project	S-4227, S-4228, & S-4229 fugitive Modified					
	SRU's					
	H2 Purity Fugitives					
	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
Toxic Air Contaminant						
Acetaldehyde		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Antimony		0.00E+00				
Ammonia @ 10 ppm slip	1.04E+01	1.50E-04			7.48E-07	1.67E-07
Arsenic		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene		0.00E+00	0.00E+00	0.00E+00		
Benzo(a)pyrene		0.00E+00	0.00E+00	0.00E+00		
Benzo(b)fluoranthene		0.00E+00	0.00E+00	0.00E+00		
Benzo(k)fluoranthene		0.00E+00	0.00E+00	0.00E+00		
Bromine & compounds		0.00E+00				
1,3-Butadiene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon disulfide		0.00E+00			0.00E+00	0.00E+00
Chlorine		0.00E+00			0.00E+00	0.00E+00
Chloroform		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene		0.00E+00	0.00E+00	0.00E+00		
Copper		0.00E+00				
Cresols		0.00E+00			0.00E+00	0.00E+00
Dibenz(a,h)anthracene		0.00E+00	0.00E+00	0.00E+00		
Diethanolamine (DEA)	1.15E+03	1.65E-02			5.51E-03	1.23E-03
Ethylbenzene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
n-Hexane		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hydrogen chloride		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide	8.71E+02	1.25E-02			1.25E-03	2.80E-04
Indeno(1,2,3-cd)pyrene		0.00E+00	0.00E+00	0.00E+00		
Lead		0.00E+00	0.00E+00	0.00E+00		
Manganese		0.00E+00			0.00E+00	0.00E+00
Mercury		0.00E+00			0.00E+00	0.00E+00
Methanol		0.00E+00			0.00E+00	0.00E+00
Naphthalene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Perchloroethylene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol		0.00E+00			0.00E+00	0.00E+00
Phosphorus		0.00E+00				
Polychlorinated dioxins/furans		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene		0.00E+00			0.00E+00	0.00E+00
Selenium		0.00E+00			0.00E+00	0.00E+00
Styrene		0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist		0.00E+00			0.00E+00	0.00E+00
Toluene		0.00E+00			0.00E+00	0.00E+00
Xylenes		0.00E+00			0.00E+00	0.00E+00
Zinc		0.00E+00				
Cyanide		0.00E+00			0.00E+00	0.00E+00
sum			0.00E+00	0.00E+00	6.77E-03	1.51E-03

Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
Table 7 - Point Sources, Maximum Hourly Emissions
July 24, 2008

Source No(s)/Status Description Sub-Project		S-4471 New Hyd Pit Train 1 Reformer Furnace Hydrogen Plant Replacement					S-4472 New Hyd Pit Train 2 Reformer Furnace Hydrogen Plant Replacement					S-6020 New Flare Pilot/Purge Hydrogen Plant Replacement				
		Acute Inhalation, (ug/m3)	1x TAC Emissions, lbs/hr	2x TAC Emissions (including H2SO4), g/s	Acute HI Model Input (1)	Lead, g/s	1x TAC Emissions, lbs/hr	2x TAC Emissions (including H2SO4), g/s	Acute HI Model Input (1)	Lead, g/s	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s		
Toxic Air Contaminant																
Acetaldehyde	na	5.03E-02	1.27E-02				5.03E-02	1.27E-02			2.48E-02	3.12E-03				
Antimony	na	4.41E-04	1.11E-04				4.41E-04	1.11E-04			2.18E-04	2.74E-05				
Ammonia @ 10 ppm slip	3.2E+03	4.27E+00	1.08E+00	3.36E-04			4.27E+00	1.08E+00	3.36E-04			0.00E+00	0.00E+00			
Arsenic	1.9E-01	8.14E-04	2.05E-04	1.08E-03			8.14E-04	2.05E-04	1.08E-03		4.02E-04	5.06E-05	2.66E-04			
Benzene	1.3E+03	4.62E-02	1.16E-02	8.95E-06			4.62E-02	1.16E-02	8.95E-06		2.28E-02	2.87E-03	2.21E-06			
Benzo(a)anthracene	na	1.96E-05	4.94E-06				1.96E-05	4.94E-06			9.67E-06	1.22E-06				
Benzo(a)pyrene	na	5.03E-05	1.27E-05				5.03E-05	1.27E-05			2.48E-05	3.13E-06				
Benzo(b)fluoranthene	na	2.44E-05	6.14E-06				2.44E-05	6.14E-06			1.20E-05	1.51E-06				
Benzo(k)fluoranthene	na	1.43E-05	3.59E-06				1.43E-05	3.59E-06			7.04E-06	8.87E-07				
Bromine & compounds	na		0.00E+00					0.00E+00				0.00E+00				
1,3-Butadiene	na		0.00E+00					0.00E+00				0.00E+00				
Cadmium	na	5.78E-04	1.46E-04				5.78E-04	1.46E-04			2.85E-04	3.59E-05				
Carbon disulfide	8.2E+03		0.00E+00	0.00E+00				0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Chlorine	2.1E+02		0.00E+00	0.00E+00				0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Chloroform	1.5E+02		0.00E+00	0.00E+00				0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Chrysene	na	1.82E-06	4.60E-07				1.82E-06	4.60E-07			9.00E-07	1.13E-07				
Copper	1.0E+02	5.54E-03	1.40E-03	1.40E-05			5.54E-03	1.40E-03	1.40E-05		2.73E-03	3.44E-04	3.44E-06			
Cresols	na		0.00E+00					0.00E+00				0.00E+00				
Dibenz(a,h)anthracene	na	0.00E+00	0.00E+00				0.00E+00	0.00E+00			0.00E+00	0.00E+00				
Diethanolamine (DEA)	na		0.00E+00					0.00E+00				0.00E+00				
Ethylbenzene	na	1.72E-02	4.33E-03				1.72E-02	4.33E-03			8.47E-03	1.07E-03				
Formaldehyde	9.4E+01	9.63E-02	2.43E-02	2.58E-04			9.63E-02	2.43E-02	2.58E-04		4.75E-02	5.99E-03	6.37E-05			
n-Hexane	na		0.00E+00					0.00E+00				0.00E+00				
Hydrogen chloride	2.1E+03		0.00E+00	0.00E+00				0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Hydrogen sulfide	4.2E+01	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00			
Indeno(1,2,3-cd)pyrene	na	5.88E-05	1.48E-05				5.88E-05	1.48E-05			2.90E-05	3.66E-06				
Lead	na	2.40E-03	6.04E-04		6.04E-04		2.40E-03	6.04E-04		6.04E-04	1.18E-03	1.49E-04		1.49E-04		
Manganese	na	4.49E-03	1.13E-03				4.49E-03	1.13E-03			2.22E-03	2.79E-04				
Mercury	1.8E+00	2.34E-04	5.89E-05	3.27E-05			2.34E-04	5.89E-05	3.27E-05		1.15E-04	1.45E-05	8.08E-06			
Methanol	2.8E+04	7.57E-05	1.91E-05	6.81E-10			7.57E-05	1.91E-05	6.81E-10			0.00E+00	0.00E+00			
Naphthalene	na	4.60E-04	1.16E-04				4.60E-04	1.16E-04			2.27E-04	2.86E-05				
Nickel	8.0E+00	4.80E-03	1.21E-03	2.02E-04			4.80E-03	1.21E-03	2.02E-04		2.37E-03	2.99E-04	4.98E-05			
Perchloroethylene	2.0E+04		0.00E+00	0.00E+00				0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Phenol	5.8E+03	4.49E-03	1.13E-03	1.95E-07			4.49E-03	1.13E-03	1.95E-07		2.22E-03	2.79E-04	4.81E-08			
Phosphorus	na	0.00E+00	0.00E+00				0.00E+00	0.00E+00			0.00E+00	0.00E+00				
Polychlorinated biphenyls	na		0.00E+00					0.00E+00				0.00E+00				
Propylene	na		0.00E+00					0.00E+00				0.00E+00				
Selenium	na	4.80E-03	1.21E-03				4.80E-03	1.21E-03			2.37E-03	2.99E-04				
Styrene	2.1E+04		0.00E+00	0.00E+00				0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Sulfuric acid mist	1.2E+02	2.10E-01	5.29E-02	4.41E-04			2.10E-01	5.29E-02	4.41E-04		7.40E-02	9.32E-03	7.77E-05			
Toluene	3.7E+04	8.14E-02	2.05E-02	5.54E-07			8.14E-02	2.05E-02	5.54E-07		4.02E-02	5.06E-03	1.37E-07			
Xylenes	2.2E+04	4.04E-02	1.02E-02	4.62E-07			4.04E-02	1.02E-02	4.62E-07		1.99E-02	2.51E-03	1.14E-07			
Zinc	na	1.42E-02	3.57E-03				1.42E-02	3.57E-03			6.99E-03	8.81E-04				
Cyanide	3.4E+02		0.00E+00	0.00E+00				0.00E+00	0.00E+00			0.00E+00	0.00E+00			
		sum		2.37E-03	6.04E-04		sum		2.37E-03	6.04E-04		sum		4.72E-04	1.49E-04	

Acute Hazard Index Model Input = Sum { (TAC emission, g/s) (Acute REL, ug/m3)

Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
Table 7 - Point Sources, Maximum Hourly Emissions
July 24, 2008

Source No(s)/Status Description Sub-Project	S-4473 & S-4474 New No. 1 Power Plant - Cogen 3 Power Plant Replacement				S-4477, S-4478, S-4479 & S-4480 New CCR Furnaces Reformer Replacement				S-4227 & S-4192 Modified Note 3 1 SRU & Stack Heater Hydrogen Purity				S-4228 & S-4193 Modified Note 3 2 SRU & Stack Heater Hydrogen Purity			
	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s	1x TAC Emissions, lbs/hr	2x TAC Emissions (except H2SO4), g/s	Acute HI Model Input (1)	Lead, g/s	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s
	lbs/hr	g/s	(1)	g/s	lbs/hr	g/s	(1)	g/s	lbs/hr	g/s	(1)	g/s	lbs/hr	g/s	(1)	g/s
Toxic Air Contaminant																
Acetaldehyde	8.12E-02	1.02E-02			5.32E-02	1.34E-02			1.69E-03	2.13E-04			1.69E-03	2.13E-04		
Antimony		0.00E+00			4.67E-04	1.18E-04			1.49E-05	1.87E-06			1.49E-05	1.87E-06		
Ammonia @ 10 ppm slip	1.23E+01	1.54E+00	4.83E-04		4.51E+00	1.14E+00	3.55E-04			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Arsenic	6.08E-05	7.67E-06	4.03E-05		8.61E-04	2.17E-04	1.14E-03		2.74E-05	3.45E-06	1.82E-05		2.74E-05	3.45E-06	1.82E-05	
Benzene	3.72E-03	4.69E-04	3.61E-07		4.89E-02	1.23E-02	9.47E-06		1.56E-03	1.96E-04	1.51E-07		1.56E-03	1.96E-04	1.51E-07	
Benzo(a)anthracene	5.73E-06	7.23E-07			2.07E-05	5.22E-06			6.60E-07	8.32E-08			6.60E-07	8.32E-08		
Benzo(a)pyrene	3.97E-06	5.00E-07			5.33E-05	1.34E-05			1.70E-06	2.14E-07			1.70E-06	2.14E-07		
Benzo(b)fluoranthene	9.08E-06	1.14E-06			2.58E-05	6.49E-06			8.20E-07	1.03E-07			8.20E-07	1.03E-07		
Benzo(k)fluoranthene	4.94E-06	6.22E-07			1.51E-05	3.80E-06			4.80E-07	6.05E-08			4.80E-07	6.05E-08		
Bromine & compounds		0.00E+00				0.00E+00				0.00E+00				0.00E+00		
1,3-Butadiene		0.00E+00				0.00E+00				0.00E+00				0.00E+00		
Cadmium	6.81E-03	8.58E-04			6.12E-04	1.54E-04			1.95E-05	2.45E-06			1.95E-05	2.45E-06		
Carbon disulfide		0.00E+00	0.00E+00			0.00E+00	0.00E+00		4.26E-02	5.36E-03	8.65E-07		1.81E-02	2.05E-03	3.31E-07	
Chlorine		0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Chloroform		0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Chrysene	3.62E-05	4.56E-06			1.92E-06	4.86E-07			6.14E-08	7.74E-09			6.14E-08	7.74E-09		
Copper	5.39E-03	6.80E-04	6.80E-06		5.86E-03	1.48E-03	1.48E-05		1.87E-04	2.35E-05	2.35E-07		1.87E-04	2.35E-05	2.35E-07	
Cresols		0.00E+00				0.00E+00				0.00E+00				0.00E+00		
Dibenz(a,h)anthracene	3.74E-06	4.71E-07			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00		
Diethanolamine (DEA)		0.00E+00				0.00E+00				0.00E+00				0.00E+00		
Ethylbenzene	8.08E-03	1.02E-03			1.82E-02	4.58E-03			5.78E-04	7.29E-05			5.78E-04	7.29E-05		
Formaldehyde	1.12E-01	1.41E-02	1.50E-04		1.02E-01	2.57E-02	2.73E-04		3.24E-03	4.09E-04	4.35E-06		3.24E-03	4.09E-04	4.35E-06	
n-Hexane		0.00E+00				0.00E+00				0.00E+00				0.00E+00		
Hydrogen chloride		0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Hydrogen sulfide	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00		2.42E-01	3.05E-02	7.26E-04		2.42E-01	3.05E-02	7.26E-04	
Indeno(1,2,3-cd)pyrene	3.84E-06	4.84E-07			6.22E-05	1.57E-05			1.98E-06	2.50E-07			1.98E-06	2.50E-07		
Lead	1.53E-03	1.92E-04		1.92E-04	2.53E-03	6.39E-04		6.39E-04	8.07E-05	1.02E-05	1.02E-05		8.07E-05	1.02E-05		1.02E-05
Manganese	4.68E-02	5.89E-03			4.75E-03	1.20E-03			1.51E-04	1.91E-05			1.51E-04	1.91E-05		
Mercury	2.84E-03	3.58E-04	1.99E-04		2.47E-04	6.23E-05	3.46E-05		7.88E-06	9.92E-07	5.51E-07		7.88E-06	9.92E-07	5.51E-07	
Methanol		0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Naphthalene	1.21E-02	1.59E-03			4.86E-04	1.23E-04			1.55E-05	1.95E-06			1.55E-05	1.95E-06		
Nickel	2.55E-01	3.22E-02	5.37E-03		5.08E-03	1.28E-03	2.13E-04		1.62E-04	2.04E-05	3.40E-06		1.62E-04	2.04E-05	3.40E-06	
Perchloroethylene		0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Phenol	5.33E-02	6.72E-03	1.16E-06		4.75E-03	1.20E-03	2.06E-07		1.51E-04	1.91E-05	3.29E-09		1.51E-04	1.91E-05	3.29E-09	
Phosphorus	1.77E-02	2.23E-03			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00		
Polychlorinated Biphenyls		0.00E+00				0.00E+00				0.00E+00				0.00E+00		
Propylene		0.00E+00				0.00E+00				0.00E+00				0.00E+00		
Selenium	1.56E-02	1.97E-03			5.08E-03	1.28E-03			1.62E-04	2.04E-05			1.62E-04	2.04E-05		
Styrene		0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Sulfuric acid mist	1.64E+01	2.06E+00	1.72E-02		2.60E+00	6.55E-01	5.46E-03		6.73E-01	8.48E-02	7.07E-04		4.25E-01	5.36E-02	4.46E-04	
Toluene	1.81E-02	2.28E-03	6.17E-08		8.61E-02	2.17E-02	5.86E-07		2.74E-03	3.45E-04	9.34E-09		2.74E-03	3.45E-04	9.34E-09	
Xylenes	2.89E+00	3.64E-01	1.65E-05		4.27E-02	1.08E-02	4.89E-07		1.36E-03	1.71E-04	7.79E-09		1.36E-03	1.71E-04	7.79E-09	
Zinc	1.44E-02	1.82E-03			1.50E-02	3.78E-03			4.77E-04	6.01E-05			4.77E-04	6.01E-05		
Cyanide		0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
sum			2.35E-02	1.92E-04	sum		7.50E-03	6.39E-04	sum		1.46E-03	1.02E-05	sum		1.20E-03	1.02E-05

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
Table 7 - Point Sources, Maximum Hourly Emissions
July 24, 2008

Source No(s)/Status Description Sub-Project	S-4229 & S-4194, Modified Note 3 3 SRU & Stack Heater Hydrogen Purty				S-4465 New Hyd Pitt Cooling Tower				S-4452 New CCR Regen Vent				S-4396 Modified Sulfur Loading Rack			
	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s
Toxic Air Contaminant																
Acetaldehyde	3.13E-03	3.94E-04				0.00E+00				0.00E+00				0.00E+00		
Antimony	2.75E-05	3.46E-06				0.00E+00				0.00E+00				0.00E+00		
Ammonia @ 10 ppm slip		0.00E+00	0.00E+00		3.60E-04	4.54E-05	1.42E-08			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Arsenic	5.06E-05	6.38E-06	3.36E-05		9.00E-07	1.13E-07	5.97E-07			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Benzene	2.87E-03	3.62E-04	2.78E-07			0.00E+00	0.00E+00		5.62E-03	7.08E-04	5.45E-07			0.00E+00	0.00E+00	
Benzo(a)anthracene	1.22E-06	1.54E-07				0.00E+00				0.00E+00				0.00E+00		
Benzo(a)pyrene	3.13E-06	3.95E-07				0.00E+00				0.00E+00				0.00E+00		
Benzo(b)fluoranthene	1.51E-06	1.91E-07				0.00E+00				0.00E+00				0.00E+00		
Benzo(k)fluoranthene	8.87E-07	1.12E-07				0.00E+00				0.00E+00				0.00E+00		
Bromine & compounds		0.00E+00			1.08E-04	1.36E-05				0.00E+00				0.00E+00		
1,3-Butadiene		0.00E+00				0.00E+00				0.00E+00				0.00E+00		
Cadmium	3.60E-05	4.53E-06				0.00E+00				0.00E+00				0.00E+00		
Carbon disulfide	6.49E-02	8.18E-03	1.32E-06			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Chlorine		0.00E+00	0.00E+00		4.86E-05	6.12E-06	2.92E-08		1.95E-01	2.45E-02	1.17E-04			0.00E+00	0.00E+00	
Chloroform		0.00E+00	0.00E+00		3.64E-03	4.59E-04	3.06E-06			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Chrysene	1.13E-07	1.43E-08				0.00E+00				0.00E+00				0.00E+00		
Copper	3.45E-04	4.34E-05	4.34E-07		2.77E-06	3.49E-07	3.49E-09			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Cresols		0.00E+00				0.00E+00				0.00E+00				0.00E+00		
Dibenz(a,h)anthracene	0.00E+00	0.00E+00				0.00E+00				0.00E+00				0.00E+00		
Diethanolamine (DEA)		0.00E+00				0.00E+00				0.00E+00				0.00E+00		
Ethylbenzene	1.07E-03	1.35E-04				0.00E+00				0.00E+00				0.00E+00		
Formaldehyde	5.99E-03	7.55E-04	8.03E-06			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
n-Hexane		0.00E+00				0.00E+00				0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Hydrogen chloride		0.00E+00	0.00E+00			0.00E+00	0.00E+00		2.70E+00	3.40E-01	1.82E-04		3.57E-02	0.00E+00	0.00E+00	
Hydrogen sulfide	4.84E-01	6.10E-02	1.45E-03			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Indeno(1,2,3-cd)pyrene	3.66E-06	4.61E-07				0.00E+00				0.00E+00				0.00E+00		
Lead	1.49E-04	1.88E-05		1.88E-05	1.12E-07	1.41E-08		1.41E-08		0.00E+00		0.00E+00		0.00E+00		0.00E+00
Manganese	2.79E-04	3.52E-05				0.00E+00				0.00E+00				0.00E+00		
Mercury	1.45E-05	1.83E-06	1.02E-06		7.92E-09	9.98E-10	5.54E-10			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Methanol		0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Naphthalene	2.86E-05	3.60E-06				0.00E+00				0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Nickel	2.99E-04	3.78E-05	6.27E-06		1.69E-06	2.13E-07	3.55E-08			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Perchloroethylene		0.00E+00	0.00E+00			0.00E+00	0.00E+00		1.90E-02	2.39E-03	1.20E-07			0.00E+00	0.00E+00	
Phenol	2.79E-04	3.52E-05	6.07E-09			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Phosphorus	0.00E+00	0.00E+00				0.00E+00				0.00E+00				0.00E+00	0.00E+00	
Polychlorinated dioxins/furans		0.00E+00				0.00E+00			9.97E-09	1.26E-09				0.00E+00		
Propylene		0.00E+00				0.00E+00				0.00E+00				0.00E+00		
Selenium	2.99E-04	3.78E-05				0.00E+00				0.00E+00				0.00E+00		
Styrene		0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
Sulfuric acid mist	7.56E-01	9.55E-02	7.96E-04			0.00E+00	0.00E+00		6.00E-02	7.56E-03	6.30E-05			0.00E+00	0.00E+00	
Toluene	5.06E-03	6.38E-04	1.72E-08			0.00E+00	0.00E+00		1.15E-01	1.45E-02	3.92E-07			0.00E+00	0.00E+00	
Xylenes	2.51E-03	3.16E-04	1.44E-08			0.00E+00	0.00E+00		8.82E-02	1.11E-02	5.05E-07			0.00E+00	0.00E+00	
Zinc	8.81E-04	1.11E-04			1.66E-05	2.09E-06				0.00E+00				0.00E+00		
Cyanide		0.00E+00	0.00E+00		1.22E-06	1.54E-07	4.52E-10			0.00E+00	0.00E+00			0.00E+00	0.00E+00	
sum			2.30E-03	1.88E-05	sum		3.74E-06	1.41E-08	sum		3.43E-04	0.00E+00	sum		1.10E-04	0.00E+00

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
Table 8 - Fugitive Sources, Maximum Hourly Emissions
July 24, 2008

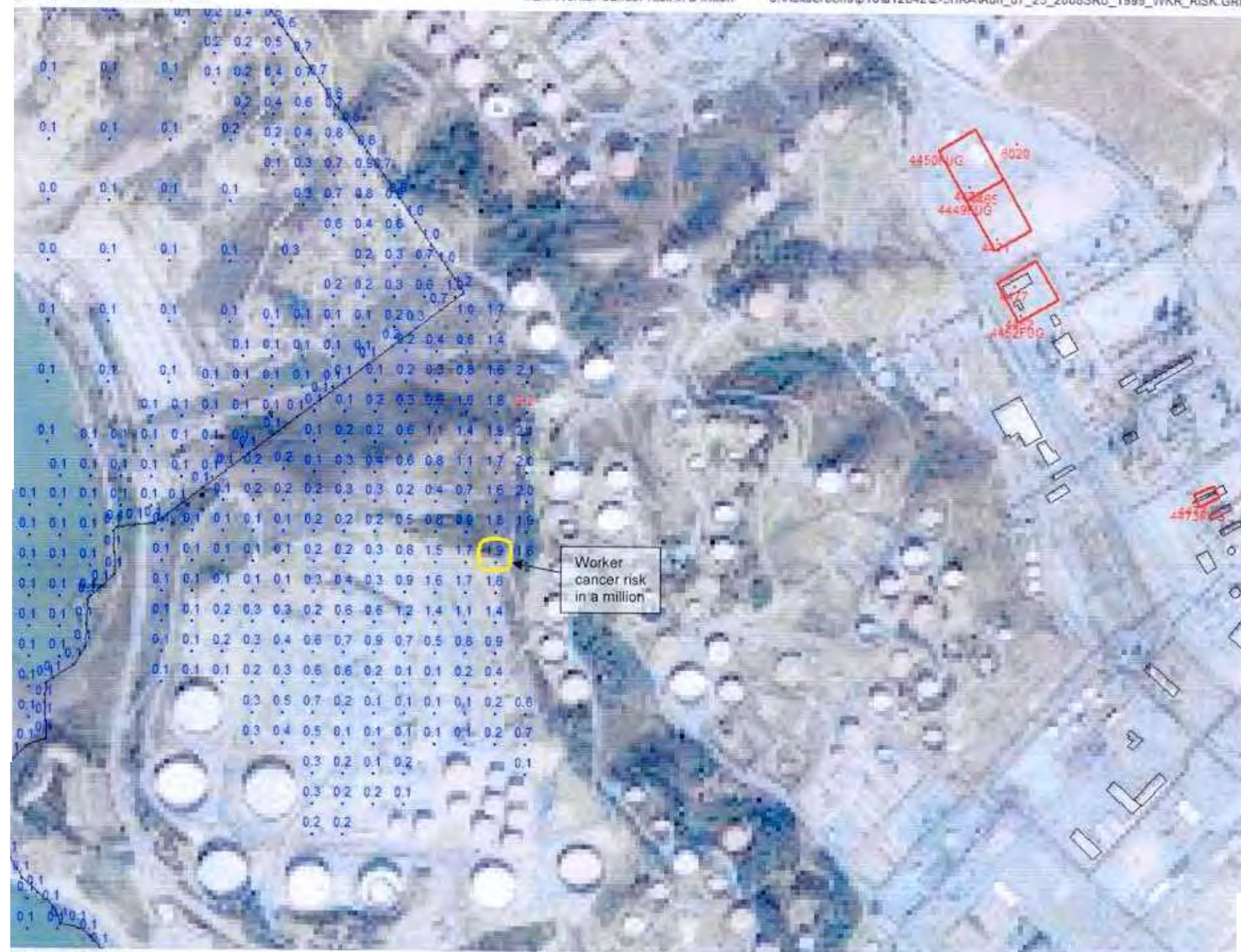
Source No(s)/Status Description Sub-Project		S-4449 fugitive New Hydrogen 1 Train Hydrogen Plant Fugitives					S-4450 fugitive New Hydrogen 2 Train Hydrogen Plant Fugitives					S-4473 & S-4474 fugitive New Cogen 3 Power Plant Fugitives				
		Acute Inhalation, (ug/m3)	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s		
Toxic Air Contaminant																
Acetaldehyde	na			0.00E+00				0.00E+00				0.00E+00				
Antimony	na			0.00E+00				0.00E+00				0.00E+00				
Ammonia @ 10 ppm slip	3.2E+03	4.85E-03		6.11E-04	1.91E-07		4.85E-03	6.11E-04	1.91E-07		3.66E-03	4.61E-04	1.44E-07			
Arsenic	1.9E-01			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Benzene	1.3E+03			0.00E+00	0.00E+00			0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00			
Benzo(a)anthracene	na			0.00E+00				0.00E+00			0.00E+00	0.00E+00				
Benzo(a)pyrene	na			0.00E+00				0.00E+00			0.00E+00	0.00E+00				
Benzo(b)fluoranthene	na			0.00E+00				0.00E+00			0.00E+00	0.00E+00				
Benzo(k)fluoranthene	na			0.00E+00				0.00E+00			0.00E+00	0.00E+00				
Bromine & compounds	na			0.00E+00				0.00E+00			0.00E+00	0.00E+00				
1,3-Butadiene	na	3.19E-04		4.02E-05			3.19E-04	4.02E-05			1.43E-04	1.81E-05				
Cadmium	na			0.00E+00				0.00E+00				0.00E+00				
Carbon disulfide	6.2E+03			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Chlorine	2.1E+02			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Chloroform	1.5E+02			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Chrysene	na			0.00E+00				0.00E+00				0.00E+00				
Copper	1.0E+02			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Cresols	na	3.71E-04		4.67E-05			3.71E-04	4.67E-05			1.67E-04	2.10E-05				
Dibenz(a,h)anthracene	na			0.00E+00				0.00E+00				0.00E+00				
Diethanolamine (DEA)	na			0.00E+00				0.00E+00			0.00E+00	0.00E+00				
Ethylbenzene	na	2.15E-04		2.71E-05			2.15E-04	2.71E-05			9.67E-05	1.22E-05				
Formaldehyde	9.4E+01			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			
n-Hexane	na	6.97E-04		8.78E-05			6.97E-04	8.78E-05			3.13E-04	3.95E-05				
Hydrogen chloride	2.1E+03			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Hydrogen sulfide	4.2E+01	3.46E-03		4.35E-04	1.04E-05		3.46E-03	4.35E-04	1.04E-05		1.55E-03	1.96E-04	4.66E-06			
Indeno(1,2,3-cd)pyrene	na			0.00E+00				0.00E+00				0.00E+00				
Lead	na			0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		0.00E+00		
Manganese	na			0.00E+00				0.00E+00				0.00E+00				
Mercury	1.8E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Methanol	2.8E+04			0.00E+00	0.00E+00			0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00			
Naphthalene	na	1.26E-03		1.59E-04			1.26E-03	1.59E-04			5.67E-04	7.14E-05				
Nickel	6.0E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Perchloroethylene	2.0E+04			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Phenol	5.8E+03	1.93E-03		2.43E-04	4.19E-08		1.93E-03	2.43E-04	4.19E-08		8.67E-04	1.09E-04	1.88E-08			
Phosphorus	na			0.00E+00				0.00E+00				0.00E+00				
Polychlorinated dioxins/furans	na			0.00E+00				0.00E+00				0.00E+00				
Propylene	na	3.41E-02		4.30E-03			3.41E-02	4.30E-03			1.53E-02	1.93E-03				
Selenium	na			0.00E+00				0.00E+00				0.00E+00				
Styrene	2.1E+04			0.00E+00	0.00E+00			0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00			
Sulfuric acid mist	1.2E+02			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			
Toluene	3.7E+04	3.71E-04		4.67E-05	1.26E-09		3.71E-04	4.67E-05	1.26E-09		1.67E-04	2.10E-05	5.68E-10			
Xylenes	2.2E+04	9.05E-04		1.14E-04	5.18E-09		9.05E-04	1.14E-04	5.18E-09		4.07E-04	5.12E-05	2.33E-09			
Zinc	na			0.00E+00				0.00E+00				0.00E+00				
Cyanide	3.4E+02			0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00			
				sum	1.06E-05	0.00E+00		sum	1.06E-05	0.00E+00		sum	4.83E-06	0.00E+00		

(1) Acute Hazard Index Model Input = $\text{Sum} \{ (\text{TAC emission, g/s}) / (\text{Acute REL, ug/m}^3) \}$

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
Table 8 - Fugitive Sources, Maximum Hourly Emissions
July 24, 2008

Source No(s)/Status Description Sub-Project	S-4452 fugitive New					S-4253 fugitive Modified					S-4227, S-4228, & S4229 fugitive Modified				
	CCR					TKC					SRU's				
	Reformer Fugitives					H2 Purity Fugitives					H2 Purity Fugitives				
	Acute Inhalation, (ug/m3)	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s		TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s	
Toxic Air Contaminant															
Acetaldehyde	na		0.00E+00				0.00E+00					0.00E+00			
Antimony	na		0.00E+00				0.00E+00					0.00E+00			
Ammonia @ 10 ppm slip	3.2E+03	3.66E-03	4.61E-04	1.44E-07		0.00E+00	0.00E+00	0.00E+00			1.19E-03	1.50E-04	4.69E-08		
Arsenic	1.9E-01		0.00E+00	0.00E+00			0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Benzene	1.3E+03	4.31E-02	5.44E-03	4.18E-06		5.80E-03	7.30E-04	0.00E+00	5.62E-07			0.00E+00	0.00E+00		
Benzo(a)anthracene	na		0.00E+00				0.00E+00					0.00E+00			
Benzo(a)pyrene	na		0.00E+00				0.00E+00					0.00E+00			
Benzo(b)fluoranthene	na		0.00E+00				0.00E+00					0.00E+00			
Benzo(k)fluoranthene	na		0.00E+00				0.00E+00					0.00E+00			
Bromine & compounds	na		0.00E+00				0.00E+00					0.00E+00			
1,3-Butadiene	na	0.00E+00	0.00E+00			0.00E+00	0.00E+00					0.00E+00			
Cadmium	na		0.00E+00				0.00E+00					0.00E+00			
Carbon disulfide	6.2E+03		0.00E+00	0.00E+00			0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Chlorine	2.1E+02		0.00E+00	0.00E+00			0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Chloroform	1.5E+02		0.00E+00	0.00E+00			0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Chrysene	na		0.00E+00				0.00E+00					0.00E+00			
Copper	1.0E+02		0.00E+00	0.00E+00			0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Cresols	na	0.00E+00	0.00E+00			0.00E+00	0.00E+00					0.00E+00	0.00E+00		
Dibenz(a,h)anthracene	na		0.00E+00				0.00E+00					0.00E+00			
Diethanolamine (DEA)	na	0.00E+00	0.00E+00			5.20E-02	6.55E-03				1.30E-01	1.64E-02			
Ethylbenzene	na	3.07E-02	3.87E-03			8.28E-03	1.04E-03					0.00E+00	0.00E+00		
Formaldehyde	9.4E+01		0.00E+00	0.00E+00			0.00E+00	0.00E+00				0.00E+00	0.00E+00		
n-Hexane	na	2.03E-02	2.55E-03			2.29E-02	2.88E-03					0.00E+00			
Hydrogen chloride	2.1E+03		0.00E+00	0.00E+00			0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Hydrogen sulfide	4.2E+01	0.00E+00	0.00E+00	0.00E+00		1.74E-02	2.19E-03	5.22E-05			9.94E-02	1.25E-02	2.98E-04		
Indeno(1,2,3-cd)pyrene	na		0.00E+00				0.00E+00					0.00E+00			
Lead	na		0.00E+00		0.00E+00		0.00E+00		0.00E+00			0.00E+00		0.00E+00	
Manganese	na		0.00E+00				0.00E+00					0.00E+00			
Mercury	1.8E+00		0.00E+00	0.00E+00			0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Methanol	2.8E+04	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Naphthalene	na	2.80E-03	3.53E-04			6.64E-03	8.37E-04					0.00E+00			
Nickel	6.0E+00		0.00E+00	0.00E+00			0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Perchloroethylene	2.0E+04	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Phenol	5.8E+03	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Phosphorus	na		0.00E+00				0.00E+00					0.00E+00			
Polychlorinated dioxins/furans	na		0.00E+00				0.00E+00					0.00E+00			
Propylene	na	1.00E-06	1.26E-07			0.00E+00	0.00E+00					0.00E+00			
Selenium	na		0.00E+00				0.00E+00					0.00E+00			
Styrene	2.1E+04	1.00E-03	1.26E-04	6.02E-09		0.00E+00	0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Sulfuric acid mist	1.2E+02		0.00E+00	0.00E+00			0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Toluene	3.7E+04	1.48E-01	1.87E-02	5.05E-07		3.34E-02	4.21E-03	1.14E-07				0.00E+00	0.00E+00		
Xylenes	2.2E+04	1.52E-01	1.91E-02	8.68E-07		3.75E-02	4.73E-03	2.15E-07				0.00E+00	0.00E+00		
Zinc	na		0.00E+00				0.00E+00					0.00E+00			
Cyanide	3.4E+02		0.00E+00	0.00E+00			0.00E+00	0.00E+00				0.00E+00	0.00E+00		
			sum	5.70E-06	0.00E+00		sum	5.30E-05	0.00E+00			sum	2.98E-04	0.00E+00	





Scale: 1" = 192.3 Meters

PERIOD VALUES FOR GROUP: ALL

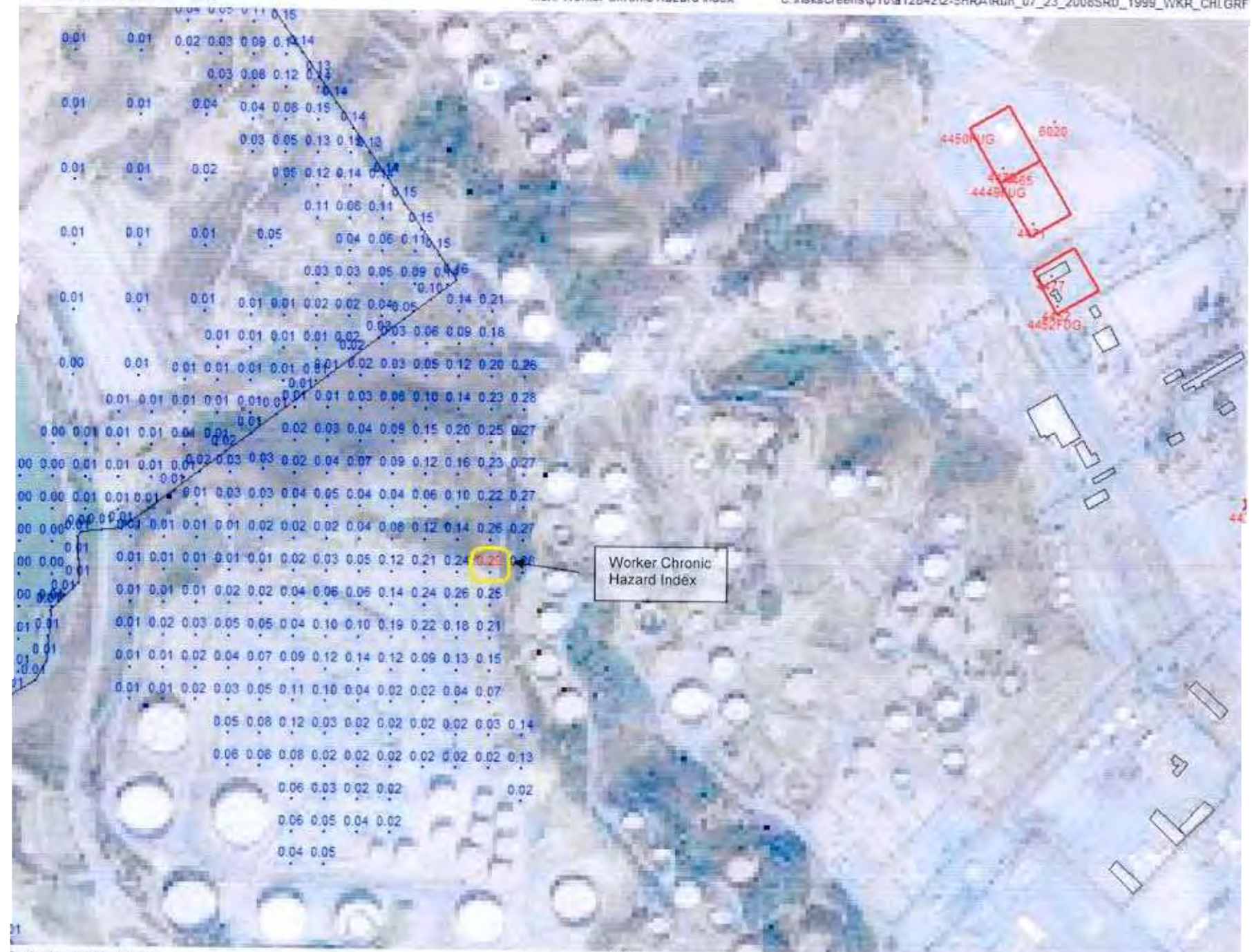
Max = 2.18179 (552590, 4199355)



Scale: 1" = 81.8 Meters

PERIOD VALUES FOR GROUP: ALL

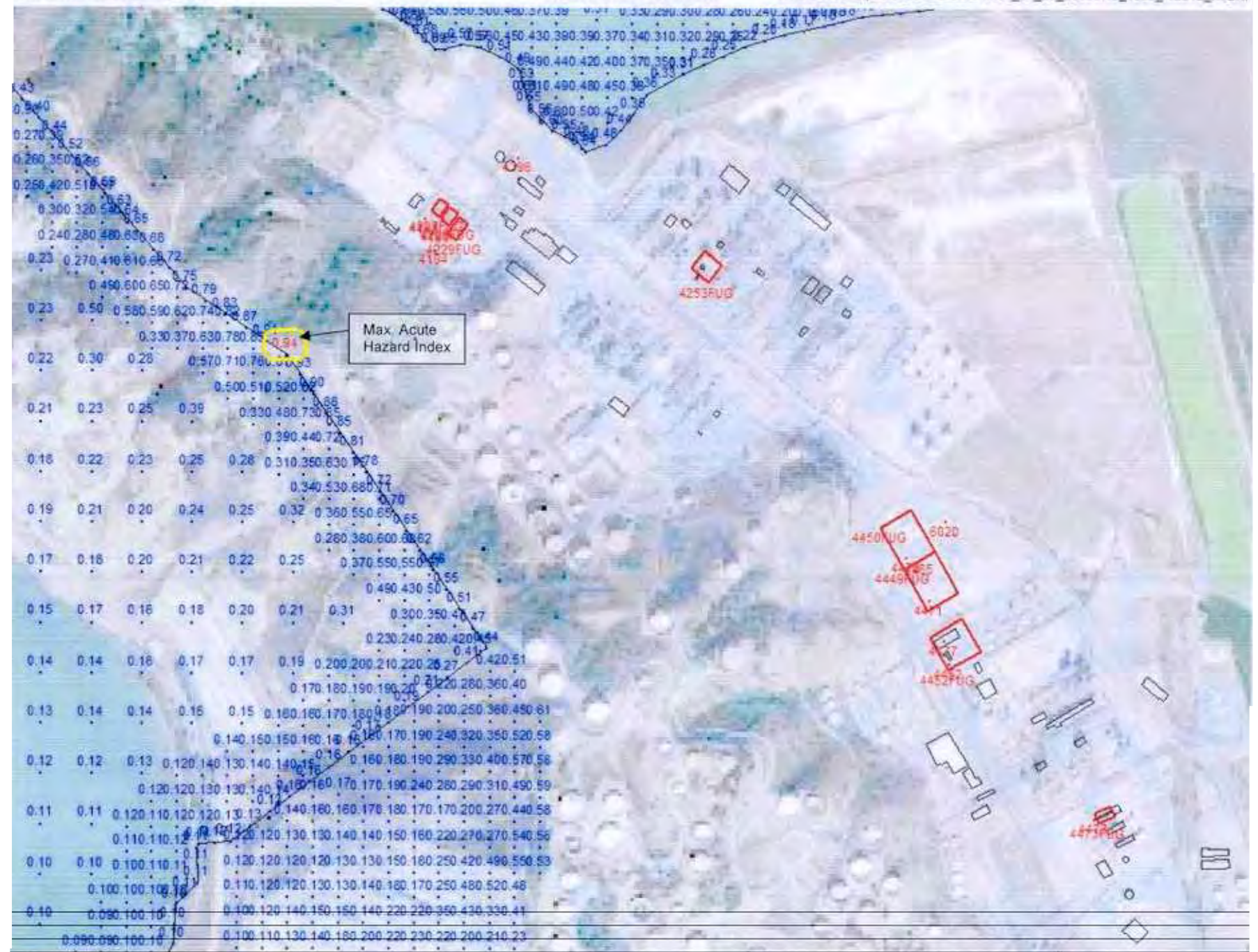
Max = 0.1129 (554375: 4198950)



Scale: 1" = 177.9 Meters

PERIOD VALUES FOR GROUP: ALL

Max = 0.28581 (552540, 4199105)



Input File - C:\riskscreens\P10\al2842\2-5HRA\Run_07_23_2008_1999_WKR_RISK.DTA
Output File - C:\riskscreens\P10\al2842\2-5HRA\Run_07_23_2008_1999_WKR_RISK.LST
Met File - C:\riskscreens\P10\met\CHV99_03_6RA.ASC

*** ISCST3 - VERSION 02035 *** *** Chevron Richmond Refinery P#10
*** Hydrogen and Power Plant Renewal Project AN12842

07/23/08
15:04:06

*** MODEL SETUP OPTIONS SUMMARY ***

-- -- -- -- --
**Intermediate Terrain Processing is Selected
**Model Is Setup For Calculation of Average CONCentration Values.
-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations
**Model Uses RURAL Dispersion.
**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode
**Model Accepts Receptors on ELEV Terrain.
**Model Assumes No FLAGPOLE Receptor Heights.
**Model Calculates PERIOD Averages Only
**This Run Includes: 15 Source(s); 26 Source Group(s); and 4832 Receptor(s)
**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
4192		0.20000E-01	552360.3	4200403.5	3.4	45.72	588.71	4.60	1.98	NO	
4193		0.18900E-01	552383.0	4200387.0	3.4	45.72	588.71	4.60	1.98	NO	
4194		0.36700E-01	552379.2	4200341.5	3.4	45.72	588.71	5.59	2.54	NO	
4452		0.59300E-01	553403.2	4199521.0	5.2	88.39	449.82	7.57	0.20	YES	
4465		0.99900E-03	553343.5	4199728.0	4.3	7.62	302.59	1.80	14.78	NO	
4471		0.14100E+01	553364.1	4199647.0	4.4	35.05	438.71	22.85	2.79	YES	
4472		0.14100E+01	553317.1	4199732.5	4.3	35.05	438.71	22.85	2.79	NO	
4473		0.23300E+01	553690.8	4199214.0	4.9	50.60	366.48	20.73	3.20	YES	
4477		0.76800E+00	553392.9	4199567.5	4.7	86.87	463.71	14.40	4.82	YES	
6020		0.59000E-02	553396.0	4199804.0	4.6	75.76	1273.15	20.00	3.80	NO	

** ISCST3 VERSION 02035 ***
 *** Chevron Richmond Refinery P#10
 *** Hydrogen and Power Plant Renewal Project AN12842

07/23/08
 15:04:06

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS) Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
4253FUG	0	0.53306E-05	552921.5 4200277.5	4.5	1.98	44.17	44.17	-50.00	0.00	
4449FUG	0	0.37293E-06	553312.2 4199709.0	4.3	1.98	95.00	70.00	60.00	0.00	
4450FUG	0	0.37293E-06	553264.8 4199791.5	4.3	1.98	95.00	70.00	60.00	0.00	
4452FUG	0	0.63508E-05	553400.2 4199508.0	5.5	1.98	74.66	74.66	-30.00	0.00	
4473FUG	0	0.14545E-05	553699.4 4199206.0	4.9	1.98	35.00	22.00	-25.00	0.00	

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: 4452

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK				
1	82.3,	19.1,	0	2	82.3,	19.7,	0	3	82.3,	19.7,	0	4	82.3,	19.1,	0	5	82.3,	18.0,	0	6	82.3,	17.9,	0
7	82.3,	18.8,	0	8	82.3,	19.2,	0	9	82.3,	19.0,	0	10	82.3,	18.2,	0	11	82.3,	16.9,	0	12	82.3,	15.0,	0
13	82.3,	12.9,	0	14	82.3,	12.3,	0	15	82.3,	11.3,	0	16	82.3,	13.9,	0	17	82.3,	16.1,	0	18	82.3,	17.9,	0
19	82.3,	19.1,	0	20	82.3,	19.7,	0	21	82.3,	19.7,	0	22	82.3,	19.1,	0	23	82.3,	18.0,	0	24	82.3,	17.9,	0
25	82.3,	18.8,	0	26	82.3,	19.2,	0	27	82.3,	19.0,	0	28	82.3,	18.2,	0	29	82.3,	16.9,	0	30	82.3,	15.0,	0
31	82.3,	12.9,	0	32	82.3,	12.3,	0	33	82.3,	11.3,	0	34	82.3,	13.9,	0	35	82.3,	16.1,	0	36	82.3,	17.9,	0

SOURCE ID: 4471

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK				
1	0.0,	0.0,	0	2	0.0,	0.0,	0	3	0.0,	0.0,	0	4	0.0,	0.0,	0	5	0.0,	0.0,	0	6	0.0,	0.0,	0
7	0.0,	0.0,	0	8	0.0,	0.0,	0	9	0.0,	0.0,	0	10	0.0,	0.0,	0	11	0.0,	0.0,	0	12	0.0,	0.0,	0
13	0.0,	0.0,	0	14	0.0,	0.0,	0	15	0.0,	0.0,	0	16	0.0,	0.0,	0	17	0.0,	0.0,	0	18	0.0,	0.0,	0
19	0.0,	0.0,	0	20	0.0,	0.0,	0	21	0.0,	0.0,	0	22	0.0,	0.0,	0	23	0.0,	0.0,	0	24	0.0,	0.0,	0
25	0.0,	0.0,	0	26	0.0,	0.0,	0	27	0.0,	0.0,	0	28	0.0,	0.0,	0	29	0.0,	0.0,	0	30	0.0,	0.0,	0
31	0.0,	0.0,	0	32	16.1,	51.9,	0	33	16.1,	48.7,	0	34	16.1,	50.3,	0	35	16.1,	51.0,	0	36	16.1,	50.2,	0

SOURCE ID: 4473

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK				
1	11.4,	23.5,	0	2	11.4,	21.0,	0	3	11.4,	17.8,	0	4	11.4,	14.4,	0	5	11.4,	23.2,	0	6	11.4,	14.8,	0
7	11.4,	14.4,	0	8	11.4,	20.1,	0	9	12.2,	27.0,	0	10	11.4,	17.3,	0	11	11.4,	20.4,	0	12	11.4,	23.0,	0
13	11.4,	24.8,	0	14	11.4,	25.9,	0	15	11.4,	26.2,	0	16	11.4,	26.6,	0	17	11.4,	26.4,	0	18	11.4,	25.3,	0
19	11.4,	23.5,	0	20	11.4,	21.0,	0	21	11.4,	17.8,	0	22	11.4,	14.4,	0	23	16.1,	15.9,	0	24	16.1,	14.8,	0
25	16.1,	14.4,	0	26	16.1,	15.9,	0	27	12.2,	27.0,	0	28	12.2,	31.5,	0	29	12.2,	35.0,	0	30	12.2,	37.4,	0
31	12.2,	38.7,	0	32	12.2,	38.8,	0	33	11.4,	26.2,	0	34	11.4,	26.6,	0	35	11.4,	26.4,	0	36	11.4,	25.3,	0

SOURCE ID: 4477

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK				
1	82.3,	18.7,	0	2	82.3,	18.7,	0	3	16.1,	48.3,	0	4	16.1,	49.6,	0	5	16.1,	49.4,	0	6	16.1,	48.6,	0
7	16.1,	55.1,	0	8	16.1,	60.0,	0	9	16.1,	63.0,	0	10	16.1,	64.1,	0	11	16.1,	63.3,	0	12	16.1,	60.5,	0
13	16.1,	56.1,	0	14	16.1,	51.9,	0	15	82.3,	11.3,	0	16	82.3,	13.9,	0	17	82.3,	16.1,	0	18	82.3,	17.9,	0
19	82.3,	18.7,	0	20	82.3,	18.7,	0	21	16.1,	48.3,	0	22	16.1,	49.6,	0	23	16.1,	49.4,	0	24	16.1,	48.6,	0
25	16.1,	55.1,	0	26	16.1,	60.0,	0	27	16.1,	63.0,	0	28	16.1,	64.1,	0	29	16.1,	63.3,	0	30	16.1,	60.5,	0
31	16.1,	56.1,	0	32	16.1,	51.9,	0	33	82.3,	11.3,	0	34	82.3,	13.9,	0	35	82.3,	16.1,	0	36	82.3,	17.9,	0

*** ISCST3 - VERSION 02035 ***

*** Chevron Richmond Refinery P#10

07/23/08

*** Hydrogen and Power Plant Renewal Project AN12842

15:04:06

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL

INCLUDING SOURCE(S): 4192 , 4193 , 4194 , 4452 , 4465 , 4471

4473 , 4477 , 6020 , 4253FUG , 4449FUG , 4450FUG , 4452FUG , 4473FUG ,

4472

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF WKR_RISK IN MICROGRAMS/M**3

**

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
552040.00	4199105.00	0.07705	552090.00	4199105.00	0.08371
552140.00	4199105.00	0.09327	552190.00	4199105.00	0.11153
552240.00	4199105.00	0.15855	552290.00	4199105.00	0.16630
552340.00	4199105.00	0.32197	552390.00	4199105.00	0.78054
552440.00	4199105.00	1.45361	552490.00	4199105.00	1.65595
552540.00	4199105.00	1.94012 worker cancer risk	551990.00	4199155.00	0.07184
552040.00	4199155.00	0.07942	552090.00	4199155.00	0.09792
552140.00	4199155.00	0.11348	552240.00	4199155.00	0.15014
552290.00	4199155.00	0.15576	552340.00	4199155.00	0.21870
552390.00	4199155.00	0.46974	552440.00	4199155.00	0.82090
552090.00	4199205.00	0.10820	552140.00	4199205.00	0.16106
552190.00	4199155.00	0.14210	552140.00	4199255.00	0.18226
552190.00	4199205.00	0.20913	552190.62	4199258.50	0.18288
552240.00	4199205.00	0.22864	552290.00	4199205.00	0.28720
552340.00	4199205.00	0.25585	552390.00	4199205.00	0.24503
552440.00	4199205.00	0.36916	552490.00	4199205.00	0.68051
552540.00	4199205.00	1.55725	552590.00	4199205.00	1.97818
552240.00	4199255.00	0.14985	552290.00	4199255.00	0.26552
552340.00	4199255.00	0.43550	552390.00	4199255.00	0.57985
552440.00	4199255.00	0.76396	552490.00	4199255.00	1.10884
552540.00	4199255.00	1.69495	552590.00	4199255.00	2.02972
552240.00	4199305.00	0.11482	552290.00	4199305.00	0.19230
552340.00	4199305.00	0.22588	552390.00	4199305.00	0.55064
552440.00	4199305.00	1.06721	552490.00	4199305.00	1.42345
552540.00	4199305.00	1.89202	552590.00	4199305.00	2.10455
552240.00	4199355.00	0.09396	552290.00	4199355.00	0.10901
552340.00	4199355.00	0.16513	552390.00	4199355.00	0.33862
552440.00	4199355.00	0.63293	552490.00	4199355.00	0.99275
552540.00	4199355.00	1.75174	552590.00	4199355.00	2.18179
552340.00	4199405.00	0.13200	552390.00	4199405.00	0.17709
552440.00	4199405.00	0.32147	552490.00	4199405.00	0.84961
552540.00	4199405.00	1.56392	552590.00	4199405.00	2.11393
552390.00	4199455.00	0.20077	552440.00	4199455.00	0.35226
552490.00	4199455.00	0.62914	552540.00	4199455.00	1.38373
552490.00	4199155.00	0.92557	552540.00	4199155.00	1.81238
552590.00	4199155.00	1.89051	552490.00	4199505.00	1.02335
552540.00	4199505.00	1.66663	552590.00	4199105.00	1.78842
554271.00	4198245.00	0.06860	554221.00	4198295.00	0.06989
554271.00	4198295.00	0.06848	554321.00	4198295.00	0.06713
554171.00	4198345.00	0.07145	554221.00	4198345.00	0.06969

Input File C:\riskscreens\P10\al2842\2-5HRA\Run_07_23_2008_1999_WKR_CHI.DTA
Output File C:\riskscreens\P10\al2842\2-5HRA\Run_07_23_2008_1999_WKR_CHI.LST
Met File C:\riskscreens\P10\met\CHV99_03_6RA.ASC

*** ISCST3 VERSION 02035 *** *** Chevron Richmond Refinery P#10
*** Hydrogen and Power Plant Renewal Project AN12842

07/23/08
16:33:10

*** MODEL SETUP OPTIONS SUMMARY

-- -- -- -- --
**Intermediate Terrain Processing is Selected
**Model Is Setup For Calculation of Average CONCentration Values.
-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations
**Model Uses RURAL Dispersion.
**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode
**Model Accepts Receptors on ELEV Terrain.
**Model Assumes No FLAGPOLE Receptor Heights.
**Model Calculates PERIOD Averages Only
**This Run Includes: 19 Source(s); 31 Source Group(s); and 4832 Receptor(s)
**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
4192	0	0.20300E-01	552360.3	4200403.5	3.4	45.72	588.71	4.60	1.98	NO	
4193	0	0.13300E-01	552383.0	4200387.0	3.4	45.72	588.71	4.60	1.98	NO	
4194	0	0.24000E-01	552379.2	4200341.5	3.4	45.72	588.71	5.59	2.54	NO	
4396	0	0.24700E-04	552543.4	4200525.5	3.4	15.24	310.93	1.60	0.20	YES	
4452	0	0.27400E-01	553403.2	4199521.0	5.2	88.39	449.82	7.57	0.20	YES	
4465	0	0.16500E-04	553343.5	4199728.0	4.3	7.62	302.59	1.80	14.78	NO	
4471	0	0.53000E-01	553364.1	4199647.0	4.4	35.05	438.71	22.85	2.79	YES	
4472	0	0.53000E-01	553317.1	4199732.5	4.3	35.05	438.71	22.85	2.79	NO	
4473	0	0.76900E+00	553690.8	4199214.0	4.9	50.60	366.48	20.73	3.20	YES	
4477	0	0.39000E-01	553392.9	4199567.5	4.7	86.87	463.71	14.40	4.82	YES	
6020	0	0.35900E-03	553396.0	4199804.0	4.6	75.76	1273.15	20.00	3.80	NO	

** ISCST3 VERSION 02035 *** *** Chevron Richmond Refinery P#10
 *** Hydrogen and Power Plant Renewal Project AN12842

07/23/08
 16:33:10

*** AREA SOURCE DATA ***											
SOURCE	NUMBER	EMISSION RATE	COORD (SW CORNER)		BASE	RELEASE	X-DIM	Y-DIM	ORIENT.	INIT.	EMISSION RATE
ID	PART.	(GRAMS/SEC	X	Y	ELEV.	HEIGHT	OF AREA	OF AREA	OF AREA	SZ	SCALAR VARY
	CATS.	/METER**2)	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	(DEG.)	(METERS)	BY
4227FUG	0	0.86829E-06	552386.8	4200407.0	3.4	1.98	29.08	20.00	-50.00	0.00	
4228FUG	0	0.86829E-06	552406.4	4200390.0	3.4	1.98	29.08	20.00	-50.00	0.00	
4229FUG	0	0.57588E-06	552419.9	4200361.0	3.4	1.98	39.86	22.00	-50.00	0.00	
4253FUG	0	0.28960E-06	552921.5	4200277.5	4.5	1.98	44.17	44.17	-50.00	0.00	
4449FUG	0	0.23308E-08	553312.2	4199709.0	4.3	1.98	95.00	70.00	60.00	0.00	
4450FUG	0	0.23308E-08	553264.8	4199791.5	4.3	1.98	95.00	70.00	60.00	0.00	
4452FUG	0	0.90059E-08	553400.2	4199508.0	5.5	1.98	74.66	74.66	-30.00	0.00	
4473FUG	0	0.93247E-08	553699.4	4199206.0	4.9	1.98	35.00	22.00	-25.00	0.00	

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF WKR_CHI IN MICROGRAMS/M**3

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.28581 AT (552540.00, 4199105.00, 140.40, 0.00)	DC	NA
	2ND HIGHEST VALUE IS	0.27608 AT (552590.00, 4199355.00, 144.20, 0.00)	DC	NA
	3RD HIGHEST VALUE IS	0.27369 AT (552590.00, 4199305.00, 137.80, 0.00)	DC	NA
	4TH HIGHEST VALUE IS	0.27252 AT (552590.00, 4199205.00, 133.40, 0.00)	DC	NA
	5TH HIGHEST VALUE IS	0.26956 AT (552590.00, 4199255.00, 134.40, 0.00)	DC	NA
	6TH HIGHEST VALUE IS	0.26660 AT (552590.00, 4199155.00, 130.60, 0.00)	DC	NA
	7TH HIGHEST VALUE IS	0.26371 AT (552590.00, 4199105.00, 127.40, 0.00)	DC	NA
	8TH HIGHEST VALUE IS	0.26027 AT (552590.00, 4199405.00, 143.10, 0.00)	DC	NA
	9TH HIGHEST VALUE IS	0.25787 AT (552490.00, 4199055.00, 132.00, 0.00)	DC	NA
	10TH HIGHEST VALUE IS	0.25762 AT (552540.00, 4199155.00, 131.50, 0.00)	DC	NA

Worker Chronic HI

Input File - C:\riskscreens\P10\al2842\2-5HRA\Run_07_23_2008_1999_ACUTE_HI.DTA
Output File - C:\riskscreens\P10\al2842\2-5HRA\Run_07_23_2008_1999_ACUTE_HI.LST
Met File - C:\riskscreens\P10\met\CHV99_03_6RA.ASC

*** ISCST3 - VERSION 02035 *** *** Chevron Richmond Refinery P#10
*** Hydrogen and Power Plant Renewal Project AN12842

07/23/08
17:26:12

MODEL SETUP OPTIONS SUMMARY ***

-- -- -- -- --
**Intermediate Terrain Processing is Selected
**Model Is Setup For Calculation of Average CONCentration Values.
-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations
**Model Uses RURAL Dispersion.
**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode
**Model Accepts Receptors on ELEV Terrain.
**Model Assumes No FLAGPOLE Receptor Heights.
**Model Calculates 1 Short Term Average(s) of: 1-HR
**This Run Includes: 19 Source(s); 31 Source Group(s); and 4832 Receptor(s)
**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
4192	0	0.14600E-02	552360.3	4200403.5	3.4	45.72	588.71	4.60	1.98	NO	
4193	0	0.12000E-02	552383.0	4200387.0	3.4	45.72	588.71	4.60	1.98	NO	
4194	0	0.23000E-02	552379.2	4200341.5	3.4	45.72	588.71	5.59	2.54	NO	
4396	0	0.11000E-03	552543.4	4200525.5	3.4	15.24	310.93	1.60	0.20	YES	
4452	0	0.34300E-03	553403.2	4199521.0	5.2	88.39	449.82	7.57	0.20	YES	
4465	0	0.37400E-05	553343.5	4199728.0	4.3	7.62	302.59	1.80	14.78	NO	
4471	0	0.23700E-02	553364.1	4199647.0	4.4	35.05	438.71	22.85	2.79	YES	
4472	0	0.23700E-02	553317.1	4199732.5	4.3	35.05	438.71	22.85	2.79	NO	
4473	0	0.23500E-01	553690.8	4199214.0	4.9	50.60	366.48	20.73	3.20	YES	
4477	0	0.75000E-02	553392.9	4199567.5	4.7	86.87	463.71	14.40	4.82	YES	
6020	0	0.47200E-03	553396.0	4199804.0	4.6	75.76	1273.15	20.00	3.80	NO	

** ISCST3 - VERSION 02035 ***

*** Chevron Richmond Refinery P#10

*** Hydrogen and Power Plant Renewal Project AN12842

07/23/08

17:26:12

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
4227FUG	0	0.17091E-06	552386.8	4200407.0	3.4	1.98	29.08	20.00	-50.00	0.00	
4228FUG	0	0.17091E-06	552406.4	4200390.0	3.4	1.98	29.08	20.00	-50.00	0.00	
4229FUG	0	0.11335E-06	552419.9	4200361.0	3.4	1.98	39.86	22.00	-50.00	0.00	
4253FUG	0	0.27166E-07	552921.5	4200277.5	4.5	1.98	44.17	44.17	-50.00	0.00	
4449FUG	0	0.15940E-08	553312.2	4199709.0	4.3	1.98	95.00	70.00	60.00	0.00	
4450FUG	0	0.15940E-08	553264.8	4199791.5	4.3	1.98	95.00	70.00	60.00	0.00	
4452FUG	0	0.10226E-08	553400.2	4199508.0	5.5	1.98	74.66	74.66	-30.00	0.00	
4473FUG	0	0.62727E-08	553699.4	4199206.0	4.9	1.98	35.00	22.00	-25.00	0.00	

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF ACUTE_HI IN MICROGRAMS/M**3

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR	(XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
HIGH 1ST HIGH VALUE IS	0.94032	ON 03120303:	AT (	552085.38, 4200131.00, 115.60,	0.00)	Acute HI
HIGH 2ND HIGH VALUE IS	0.93917	ON 02122404:	AT (	552085.38, 4200131.00, 115.60,	0.00)	

Input File - C:\riskscreens\P10\al2842\2-5HRA\Run_07_23_2008_1999_LEAD.DTA
Output File - C:\riskscreens\P10\al2842\2-5HRA\Run_07_23_2008_1999_LEAD.LST
Met File - C:\riskscreens\P10\met\CHV99_03_6RA.ASC

*** ISCST3 - VERSION 02035 *** *** Chevron Richmond Refinery P#10
*** Hydrogen and Power Plant Renewal Project AN12842

07/23/08
18:22:15

*** MODEL SETUP OPTIONS SUMMARY ***

**Intermediate Terrain Processing is Selected
**Model Is Setup For Calculation of Average CONCentration Values.
-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations
**Model Uses RURAL Dispersion.
**Model Uses Regulatory DEFAULT Options:
**Model Accepts Receptors on ELEV Terrain.
**Model Assumes No FLAGPOLE Receptor Heights.
**Model Calculates 1 Short Term Average(s) of: MONTH
**This Run Includes: 9 Source(s); 20 Source Group(s); and 4832 Receptor(s)
**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.000 ; Rot. Angle 0.0

*** POINT SOURCE DATA ***

SOURCE ID	PART. CATS.	NUMBER EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
4192	0	0.10200E-04	552360.3	4200403.5	3.4	45.72	588.71	4.60	1.98	NO	
4193	0	0.10200E-04	552383.0	4200387.0	3.4	45.72	588.71	4.60	1.98	NO	
4194	0	0.18800E-04	552379.2	4200341.5	3.4	45.72	588.71	5.59	2.54	NO	
4465	0	0.14100E-07	553343.5	4199728.0	4.3	7.62	302.59	1.80	14.78	NO	
4471	0	0.60400E-03	553364.1	4199647.0	4.4	35.05	438.71	22.85	2.79	YES	
4472	0	0.60400E-03	553317.1	4199732.5	4.3	35.05	438.71	22.85	2.79	NO	
4473	0	0.19200E-03	553690.8	4199214.0	4.9	50.60	366.48	20.73	3.20	YES	
4477	0	0.63900E-03	553392.9	4199567.5	4.7	86.87	463.71	14.40	4.82	YES	
6020	0	0.14900E-03	553396.0	4199804.0	4.6	75.76	1273.15	20.00	3.80	NO	

*** THE SUMMARY OF HIGHEST MONTH RESULTS
CONC OF LEAD IN MICROGRAMS/M**3

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS 0.00222	ON 00113024: AT (	552590.00, 4199355.00, 144.20,	0.00) DC	NA
	HIGH 2ND HIGH VALUE IS 0.00192	ON 99113024: AT (	552590.00, 4199355.00, 144.20,	0.00) DC	NA

Chevron Renewal Project

Revision Notes:

1. TAC emission changes at SRUs # 1, 2, 3; H2 Plt Cooling tower hourly; CCR Regen Vent hourly
2. Chronic Inhalation REL has since been removed for Antimony, Bromine and Compounds, Copper, Phosphorus, and Zinc. New Inhalation cancer potency factor adopted for ethyl benzene.
3. Stack parameters were changed for the SRUs #1, #2, #3 (height, diameter and flowrates); CCR vent (height); CCR Furnaces (flowrate); H2 Plt Cooling Tower (diameter); and Cogen #3 (flowrate and diameter).
4. Stack exit velocity was adjusted for the lower flow rates at the SRUs
 - SRU #1: 17,000 to 15000 scfm (30000 acfm @ 600°F)
 - SRU #2: 17,000 to 15000 scfm (30000 acfm @ 600°F)
 - SRU #3: 34,000 to 30000 scfm (60000 acfm @ 600°F)
5. Model run Run_07_24_2008res high.bst was used to get a fine receptor grid around the high found in Run_07_23_20008.bst.
6. Changes allow Cogen#3 to be below TBACT trigger without having to refine the analysis to sum only chronic HIs that affect the same target organ.

INTEROFFICE MEMORANDUM

August 28, 2008

TO: Barry Young

FROM: Jane H. Lundquist *JHL*

Via: Scott B. Lutz *SBL*
Daphne Y. Chong *dyc*

SUBJECT: Revised Hazard Index Assessment for Chevron Products Company,
Richmond, Plant #10, Application #12842, Energy Plant and Hydrogen
Plant Renewal Project

At your request, I have completed a revised hazard index assessment for the above referenced permit application addressing the change in H₂S emissions out the three SRU stacks. H₂S emissions out each of the SRU stacks were scaled up by a factor of 1.33 -- the ratio of the proposed 4 ppm H₂S permit condition limit to the 3 ppm concentration used in the calculation of the H₂S emissions out the SRU stacks for the July 24, 2008 health risk assessment (HRA). All other parameters remain the same as those used in the previous HRA. Results from this assessment indicate that there is no significant change to the maximum chronic hazard index of **0.3**, and the maximum acute hazard index increases from 0.9 to **1.0**. In accordance with the District's Regulation 2, Rule 5, these risk levels are considered acceptable.

Health Weighted Emissions Inputs: H₂S is only one of many toxic air contaminants (TAC) emitted out the SRU stacks. Thus, the change in the health weighted emissions input for each SRU stack is not linearly proportional to the H₂S emissions change. The table below shows the change in the health weighted emissions inputs for the maximum chronic hazard index and the acute hazard index.

Modeled Point	Previous Worker Chronic HI Model Input	Current Worker Chronic HI Model Input	% difference
SRU #1 stack	2.03E-02	2.06E-02	1.5
SRU #2 stack	1.33E-02	1.35E-02	1.5
SRU #3 stack	2.40E-02	2.45E-02	2.1

Modeled Point	Previous Worker Acute HI Model Input	Current Worker Acute HI Model Input	% difference
SRU #1 stack	1.46E-03	1.70E-03	16.4
SRU #2 stack	1.20E-03	1.44E-03	20.0
SRU #3 stack	2.30E-03	2.78E-03	20.9

The TAC emissions from the remaining 16 modeled points remain unchanged. Based on previous modeling, H₂S emissions from the SRU fugitives have a larger impact on the acute hazard index than H₂S emissions out the SRU stacks; this is confirmed in the results of this assessment.

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842

Table 4 - Combustion Point Sources, Annual Average Emissions

August 28, 2008

Source No(s)/Status Description	S-4227 & S-4192 Modified 1 SRU & Stack Heater						S-4228 & S-4193 Modified 2 SRU & Stack Heater					
	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
Acetaldehyde	1.21E+01	1.73E-04	5.03E-04	9.92E-05	1.93E-05	4.31E-06	1.14E+01	1.64E-04	4.76E-04	9.39E-05	1.82E-05	4.08E-06
Antimony	1.06E-01	1.52E-06					1.00E-01	1.44E-06				
Ammonia @ 10 ppm slip		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Arsenic	1.95E-01	2.81E-06	4.44E-02	1.45E-02	1.74E-04	1.67E-04	1.85E-01	2.66E-06	4.20E-02	1.38E-02	1.65E-04	1.58E-04
Benzene	1.11E+01	1.59E-04	4.62E-03	9.11E-04	2.66E-06	5.94E-07	1.05E+01	1.51E-04	4.37E-03	8.63E-04	2.51E-06	5.62E-07
Benzo(a)anthracene	4.70E-03	6.76E-08	1.12E-04	4.06E-05			4.45E-03	6.40E-08	1.06E-04	3.84E-05		
Benzo(a)pyrene	1.21E-02	1.74E-07	2.87E-03	1.04E-03			1.14E-02	1.64E-07	2.71E-03	9.87E-04		
Benzo(b)fluoranthene	5.84E-03	8.40E-08	1.39E-04	5.04E-05			5.53E-03	7.95E-08	1.31E-04	4.77E-05		
Benzo(k)fluoranthene	3.42E-03	4.92E-08	8.12E-05	2.95E-05			3.24E-03	4.66E-08	7.68E-05	2.79E-05		
Bromine & compounds		0.00E+00						0.00E+00				
1,3-Butadiene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	1.39E-01	1.99E-06	8.66E-03	1.71E-03	1.12E-04	1.10E-04	1.31E-01	1.89E-06	8.20E-03	1.62E-03	1.06E-04	1.04E-04
Carbon disulfide	3.11E+02	4.47E-03			5.59E-06	1.25E-06	1.19E+02	1.71E-03			2.14E-06	4.78E-07
Chlorine		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Chloroform		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	4.37E-04	6.29E-09	1.04E-06	3.78E-07			4.14E-04	5.96E-09	9.83E-07	3.57E-07		
Copper	1.33E+00	1.91E-05					1.26E+00	1.81E-05				
Cresols		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Dibenz(a,h)anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00		
Diethanolamine (DEA)		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Ethylbenzene	4.12E+00	5.92E-05	1.49E-04	2.94E-05	2.96E-08	6.63E-09	3.90E+00	5.61E-05	1.41E-04	2.79E-05	2.80E-08	6.27E-09
Formaldehyde	2.31E+01	3.32E-04	2.02E-03	3.99E-04	1.11E-04	2.48E-05	2.19E+01	3.15E-04	1.91E-03	3.78E-04	1.05E-04	2.35E-05
n-Hexane		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Hydrogen chloride		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide	2.83E+03	4.07E-02			4.07E-03	9.10E-04	2.83E+03	4.07E-02			4.07E-03	9.10E-04
Indeno(1,2,3-cd)pyrene	1.41E-02	2.03E-07	3.35E-04	1.22E-04			1.33E-02	1.92E-07	3.17E-04	1.15E-04		
Lead	5.75E-01	8.27E-06	2.96E-04	1.19E-04			5.44E-01	7.83E-06	2.80E-04	1.13E-04		
Manganese	1.08E+00	1.55E-05			7.75E-05	1.73E-05	1.02E+00	1.47E-05			7.33E-05	1.64E-05
Mercury	5.61E-02	8.07E-07			4.65E-05	4.32E-05	5.31E-02	7.64E-07			4.40E-05	4.09E-05
Methanol		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Naphthalene	1.10E-01	1.59E-06	5.52E-05	1.09E-05	1.76E-07	3.94E-08	1.04E-01	1.50E-06	5.23E-05	1.03E-05	1.67E-07	3.73E-08
Nickel	1.15E+00	1.66E-05	4.37E-03	8.61E-04	3.31E-04	3.31E-04	1.09E+00	1.57E-05	4.14E-03	8.16E-04	3.14E-04	3.14E-04
Perchloroethylene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol	1.08E+00	1.55E-05			7.75E-08	1.73E-08	1.02E+00	1.47E-05			7.33E-08	1.64E-08
Phosphorus	0.00E+00	0.00E+00					0.00E+00	0.00E+00				
Polychlorinated dioxins/furans		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Selenium	1.15E+00	1.66E-05			8.28E-07	1.85E-07	1.09E+00	1.57E-05			7.84E-07	1.75E-07
Styrene		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist	5.89E+03	8.47E-02			8.47E-02	1.90E-02	3.72E+03	5.35E-02			5.35E-02	1.20E-02
Toluene	1.95E+01	2.81E-04			9.36E-07	2.09E-07	1.85E+01	2.66E-04			8.86E-07	1.98E-07
Xylenes	9.68E+00	1.39E-04			1.99E-07	4.45E-08	9.16E+00	1.32E-04			1.88E-07	4.21E-08
Zinc	3.40E+00	4.89E-05					3.22E+00	4.63E-05				
Cyanide		0.00E+00			0.00E+00	0.00E+00		0.00E+00			0.00E+00	0.00E+00
sum			6.86E-02	2.00E-02	8.97E-02	2.06E-02	sum		6.49E-02	1.89E-02	5.84E-02	1.35E-02

SRU stack emissions were originally estimated based on 3ppm H2S. To estimated emissions for 4ppm H2S, original value scaled by 4/3.

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842

Table 4 - Combustion Point Sources, Annual Average Emissions

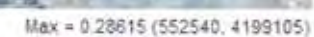
August 28, 2008

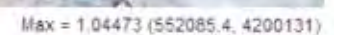
Source No(s)/Status Description	S-4229 & S-4194 Modified 3 SRU & Stack Heater					
	TAC Emissions, lbs/yr	TAC Emissions, g/s	Residential Cancer Risk Model Input (per million) ⁽¹⁾	Offsite Worker Cancer Risk Model Input (per million) ⁽¹⁾	Residential Chronic HI Model Input ⁽²⁾	Offsite Worker Chronic HI Model Input ⁽²⁾
Toxic Air Contaminant						
Acetaldehyde	2.22E+01	3.19E-04	9.25E-04	1.82E-04	3.54E-05	7.93E-06
Antimony	1.95E-01	2.80E-06				
Ammonia @ 10 ppm slip		0.00E+00			0.00E+00	0.00E+00
Arsenic	3.59E-01	5.17E-06	6.16E-02	2.68E-02	3.20E-04	3.07E-04
Benzene	2.04E+01	2.93E-04	8.50E-03	1.68E-03	4.89E-06	1.09E-06
Benzo(a)anthracene	8.65E-03	1.24E-07	2.05E-04	7.46E-05		
Benzo(a)pyrene	2.22E-02	3.20E-07	5.27E-03	1.92E-03		
Benzo(b)fluoranthene	1.07E-02	1.55E-07	2.55E-04	9.27E-05		
Benzo(k)fluoranthene	6.29E-03	9.05E-08	1.49E-04	5.43E-05		
Bromine & compounds		0.00E+00				
1,3-Butadiene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	2.55E-01	3.67E-06	1.59E-02	3.15E-03	2.05E-04	2.01E-04
Carbon disulfide	4.74E+02	6.81E-03			8.52E-06	1.91E-06
Chlorine		0.00E+00			0.00E+00	0.00E+00
Chloroform		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	8.05E-04	1.16E-08	1.91E-06	6.95E-07		
Copper	2.44E+00	3.52E-05				
Cresols		0.00E+00			0.00E+00	0.00E+00
Dibenz(a,h)anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
Diethanolamine (DEA)		0.00E+00			0.00E+00	0.00E+00
Ethylbenzene	7.58E+00	1.09E-04	2.75E-04	5.42E-05	5.45E-08	1.22E-08
Formaldehyde	4.25E+01	6.12E-04	3.72E-03	7.34E-04	2.04E-04	4.56E-05
n-Hexane		0.00E+00			0.00E+00	0.00E+00
Hydrogen chloride		0.00E+00			0.00E+00	0.00E+00
Hydrogen sulfide	5.65E+03	8.13E-02			8.13E-03	1.82E-03
Indeno(1,2,3-cd)pyrene	2.59E-02	3.73E-07	6.16E-04	2.24E-04		
Lead	1.06E+00	1.52E-05	5.45E-04	2.19E-04		
Manganese	1.98E+00	2.85E-05			1.43E-04	3.19E-05
Mercury	1.03E-01	1.48E-06			8.55E-05	7.94E-05
Methanol		0.00E+00			0.00E+00	0.00E+00
Naphthalene	2.03E-01	2.92E-06	1.02E-04	2.00E-05	3.24E-07	7.26E-08
Nickel	2.12E+00	3.05E-05	8.05E-03	1.59E-03	6.10E-04	6.10E-04
Perchloroethylene		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenol	1.98E+00	2.85E-05			1.43E-07	3.19E-08
Phosphorus	0.00E+00	0.00E+00				
Polychlorinated dioxins/furans		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Propylene		0.00E+00			0.00E+00	0.00E+00
Selenium	2.12E+00	3.05E-05			1.52E-06	3.41E-07
Styrene		0.00E+00			0.00E+00	0.00E+00
Sulfuric acid mist	6.64E+03	9.55E-02			9.55E-02	2.14E-02
Toluene	3.59E+01	5.17E-04			1.72E-06	3.85E-07
Xylenes	1.78E+01	2.56E-04			3.66E-07	8.19E-08
Zinc	6.25E+00	8.99E-05				
Cyanide		0.00E+00			0.00E+00	0.00E+00
sum			1.26E-01	3.67E-02	1.05E-01	2.45E-02

Chevron Energy Plant and Hydrogen Plant Renewal Project, P#10, A#12842
Table 7 - Point Sources, Maximum Hourly Emissions
August 28, 2008

Source No(s)/Status Description Sub-Project		S-4227 & S-4192 Modified Note 3 1 SRU & Stack Heater Hydrogen Purify					S-4228 & S-4193 Modified Note 3 2 SRU & Stack Heater Hydrogen Purify					S-4229 & S-4194 Modified Note 3 3 SRU & Stack Heater Hydrogen Purify				
Toxic Air Contaminant	Acute Inhalation (ug/m3)	TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s		TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s		TAC Emissions, lbs/hr	TAC Emissions, g/s	Acute HI Model Input (1)	Lead, g/s	
Acetaldehyde	na	1.69E-03	2.13E-04				1.69E-03	2.13E-04				3.13E-03	3.94E-04			
Antimony	na	1.49E-05	1.87E-06				1.49E-05	1.87E-06				2.75E-05	3.46E-06			
Ammonia @ 10 ppm slip	3.2E+03		0.00E+00	0.00E+00				0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Arsenic	1.9E-01	2.74E-05	3.45E-06	1.82E-05			2.74E-05	3.45E-06	1.82E-05			5.06E-05	6.38E-06	3.38E-05		
Benzene	1.3E+03	1.56E-03	1.96E-04	1.51E-07			1.56E-03	1.96E-04	1.51E-07			2.87E-03	3.62E-04	2.78E-07		
Benzo(a)anthracene	na	6.60E-07	8.32E-08				6.60E-07	8.32E-08				1.22E-06	1.54E-07			
Benzo(a)pyrene	na	1.70E-06	2.14E-07				1.70E-06	2.14E-07				3.13E-06	3.95E-07			
Benzo(b)fluoranthene	na	8.20E-07	1.03E-07				8.20E-07	1.03E-07				1.51E-06	1.91E-07			
Benzo(k)fluoranthene	na	4.80E-07	6.05E-08				4.80E-07	6.05E-08				8.87E-07	1.12E-07			
Bromine & compounds	na		0.00E+00					0.00E+00					0.00E+00			
1,3-Butadiene	na		0.00E+00					0.00E+00					0.00E+00			
Cadmium	na	1.95E-05	2.45E-06				1.95E-05	2.45E-06				3.60E-05	4.53E-06			
Carbon disulfide	6.2E+03	4.26E-02	5.36E-03	8.65E-07			1.63E-02	2.05E-03	3.31E-07			6.49E-02	8.18E-03	1.32E-05		
Chlorine	2.1E+02		0.00E+00	0.00E+00				0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Chloroform	1.5E+02		0.00E+00	0.00E+00				0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Chrysene	na	6.14E-08	7.74E-09				6.14E-08	7.74E-09				1.13E-07	1.43E-08			
Copper	1.0E+02	1.87E-04	2.35E-05	2.35E-07			1.87E-04	2.35E-05	2.35E-07			3.45E-04	4.34E-05	4.34E-07		
Cresols	na		0.00E+00					0.00E+00					0.00E+00			
Dibenz(a,h)anthracene	na	0.00E+00	0.00E+00				0.00E+00	0.00E+00				0.00E+00	0.00E+00			
Diethanolamine (DEA)	na		0.00E+00					0.00E+00					0.00E+00			
Ethylbenzene	na	5.78E-04	7.29E-05				5.78E-04	7.29E-05				1.07E-03	1.35E-04			
Formaldehyde	9.4E+01	3.24E-03	4.09E-04	4.35E-06			3.24E-03	4.09E-04	4.35E-06			5.99E-03	7.55E-04	8.03E-06		
n-Hexane	na		0.00E+00					0.00E+00					0.00E+00			
Hydrogen chloride	2.1E+03		0.00E+00	0.00E+00				0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Hydrogen sulfide	4.2E+01	3.23E-01	4.07E-02	9.68E-04			3.23E-01	4.07E-02	9.68E-04			6.45E-01	8.13E-02	1.94E-03		
Indeno(1,2,3-cd)pyrene	na	1.98E-06	2.50E-07				1.98E-06	2.50E-07				3.66E-06	4.61E-07			
Lead	na	8.07E-05	1.02E-05		1.02E-05		8.07E-05	1.02E-05		1.02E-05		1.49E-04	1.88E-05		1.88E-05	
Manganese	na	1.51E-04	1.91E-05				1.51E-04	1.91E-05				2.79E-04	3.52E-05			
Mercury	1.8E+00	7.88E-06	9.92E-07	5.51E-07			7.88E-06	9.92E-07	5.51E-07			1.45E-05	1.83E-06	1.02E-06		
Methanol	2.8E+04		0.00E+00	0.00E+00				0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Naphthalene	na	1.55E-05	1.95E-06				1.55E-05	1.95E-06				2.88E-05	3.60E-06			
Nickel	6.0E+00	1.62E-04	2.04E-05	3.40E-06			1.62E-04	2.04E-05	3.40E-06			2.99E-04	3.76E-05	6.27E-06		
Perchloroethylene	2.0E+04		0.00E+00	0.00E+00				0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Phenol	5.8E+03	1.51E-04	1.91E-05	3.29E-09			1.51E-04	1.91E-05	3.29E-09			2.79E-04	3.52E-05	5.07E-09		
Phosphorus	na	0.00E+00	0.00E+00				0.00E+00	0.00E+00				0.00E+00	0.00E+00			
Polychlorinated dioxins/furans	na		0.00E+00					0.00E+00					0.00E+00			
Propylene	na		0.00E+00					0.00E+00					0.00E+00			
Selenium	na	1.62E-04	2.04E-05				1.62E-04	2.04E-05				2.99E-04	3.76E-05			
Styrene	2.1E+04		0.00E+00	0.00E+00				0.00E+00	0.00E+00				0.00E+00	0.00E+00		
Sulfuric acid mist	1.2E+02	6.73E-01	8.48E-02	7.07E-04			4.25E-01	5.36E-02	4.46E-04			7.58E-01	9.55E-02	7.96E-04		
Toluene	3.7E+04	2.74E-03	3.45E-04	9.34E-09			2.74E-03	3.45E-04	9.34E-09			5.06E-03	6.38E-04	1.72E-08		
Xylenes	2.2E+04	1.36E-03	1.71E-04	7.79E-09			1.36E-03	1.71E-04	7.79E-09			2.51E-03	3.16E-04	1.44E-08		
Zinc	na	4.77E-04	6.01E-05				4.77E-04	6.01E-05				8.81E-04	1.11E-04			
Cyanide	3.4E+02		0.00E+00	0.00E+00				0.00E+00	0.00E+00				0.00E+00	0.00E+00		
sum				1.70E-03	1.02E-05		sum		1.44E-03	1.02E-05		sum		2.78E-03	1.88E-05	

SRU stack emissions were originally estimated based on 3ppm H2S. To estimated emissions for 4ppm H2S, original value scaled by 4/3.





Input File - C:\riskscreens\p10\al2842\2-5HRA\Run_08_28_2008_SRU4ppm_1999_WKR_CHI.DTA
Output File - C:\riskscreens\p10\al2842\2-5HRA\Run_08_28_2008_SRU4ppm_1999_WKR_CHI.LST
Met File - C:\riskscreens\P10\met\CHV99_03_6RA.ASC

*** ISCST3 - VERSION 02035 *** *** Chevron Richmond Refinery P#10
*** Hydrogen and Power Plant Renewal Project AN12842

08/28/08
10:33:20

*** MODEL SETUP OPTIONS SUMMARY ***

**Intermediate Terrain Processing is Selected
**Model Is Setup For Calculation of Average CONCentration Values.
-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations
**Model Uses RURAL Dispersion.
**Model Uses Regulatory DEFAULT Options:
**Model Accepts Receptors on ELEV Terrain.
**Model Assumes No FLAGPOLE Receptor Heights.
**Model Calculates PERIOD Averages Only
**This Run Includes: 19 Source(s); 31 Source Group(s); and 4832 Receptor(s)
**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.000 ; Rot. Angle 0.0

*** POINT SOURCE DATA ***

SOURCE	NUMBER	EMISSION RATE			BASE	STACK	STACK	STACK	STACK	BUILDING	EMISSION RATE
ID	PART.	(GRAMS/SEC)	X	Y	ELEV.	HEIGHT	TEMP.	EXIT VEL.	DIAMETER	EXISTS	SCALAR VARY
	CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(DEG.K)	(M/SEC)	(METERS)		BY
4192	0	0.20600E-01	552360.3	4200403.5	3.4	45.72	588.71	4.60	1.98	NO	
4193	0	0.13500E-01	552383.0	4200387.0	3.4	45.72	588.71	4.60	1.98	NO	
4194	0	0.24500E-01	552379.2	4200341.5	3.4	45.72	588.71	5.59	2.54	NO	
4396	0	0.24700E-04	552543.4	4200525.5	3.4	15.24	310.93	1.60	0.20	YES	
4452	0	0.27400E-01	553403.2	4199521.0	5.2	88.39	449.82	7.57	0.20	YES	
4465	0	0.16500E-04	553343.5	4199728.0	4.3	7.62	302.59	1.80	14.78	NO	
4471	0	0.53000E-01	553364.1	4199647.0	4.4	35.05	438.71	22.85	2.79	YES	
4472	0	0.53000E-01	553317.1	4199732.5	4.3	35.05	438.71	22.85	2.79	NO	
4473	0	0.76900E+00	553690.8	4199214.0	4.9	50.60	366.48	20.73	3.20	YES	
4477	0	0.39000E-01	553392.9	4199567.5	4.7	86.87	463.71	14.40	4.82	YES	
6020	0	0.35900E-03	553396.0	4199804.0	4.6	75.76	1273.15	20.00	3.80	NO	

*** ISCST3 VERSION 02035 ***

*** Chevron Richmond Refinery P#10
 *** Hydrogen and Power Plant Renewal Project AN12842

08/28/08

10:33:20

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
4227FUG	0	0.86829E-06	552386.8	4200407.0	3.4	1.98	29.08	20.00	-50.00	0.00	
4228FUG	0	0.86829E-06	552406.4	4200390.0	3.4	1.98	29.08	20.00	-50.00	0.00	
4229FUG	0	0.57588E-06	552419.9	4200361.0	3.4	1.98	39.86	22.00	-50.00	0.00	
4253FUG	0	0.28960E-06	552921.5	4200277.5	4.5	1.98	44.17	44.17	-50.00	0.00	
4449FUG	0	0.23308E-08	553312.2	4199709.0	4.3	1.98	95.00	70.00	60.00	0.00	
4450FUG	0	0.23308E-08	553264.8	4199791.5	4.3	1.98	95.00	70.00	60.00	0.00	
4452FUG	0	0.90059E-08	553400.2	4199508.0	5.5	1.98	74.66	74.66	-30.00	0.00	
4473FUG	0	0.93247E-08	553699.4	4199206.0	4.9	1.98	35.00	22.00	-25.00	0.00	

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF WKR_CHI IN MICROGRAMS/M**3

GROUP ID		AVERAGE CONC	RECEPTOR	(XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID	
ALL	1ST HIGHEST VALUE IS	0.28615	AT (	52540.00, 199105.00, 40.40,	00) DC	NA	Worker Chronic Hazard Index
	2ND HIGHEST VALUE IS	0.27648	AT (	52590.00, 199355.00, 44.20,	00) DC	NA	
	3RD HIGHEST VALUE IS	0.27407	AT (	52590.00, 199305.00, 37.80,	00) DC	NA	
	4TH HIGHEST VALUE IS	0.27287	AT (	52590.00, 199205.00, 33.40,	00) DC	NA	
	5TH HIGHEST VALUE IS	0.26992	AT (	52590.00, 199255.00, 34.40,	00) DC	NA	
	6TH HIGHEST VALUE IS	0.26693	AT (	52590.00, 199155.00, 30.60,	00) DC	NA	
	7TH HIGHEST VALUE IS	0.26404	AT (	52590.00, 199105.00, 27.40,	00) DC	NA	
	8TH HIGHEST VALUE IS	0.26069	AT (	52590.00, 199405.00, 43.10,	00) DC	NA	
	9TH HIGHEST VALUE IS	0.25820	AT (	52490.00, 199055.00, 32.00,	00) DC	NA	
	0TH HIGHEST VALUE IS	0.25798	AT (	52540.00, 199155.00, 31.50,	00) DC	NA	

Input File - C:\riskscreens\p10\al2842\2-5HRA\Run_08_28_2008_SRU4ppm_1999_ACUTE_HI.DTA
Output File - C:\riskscreens\p10\al2842\2-5HRA\Run_08_28_2008_SRU4ppm_1999_ACUTE_HI.LST
Met File - C:\riskscreens\P10\met\CHV99_03_6RA.ASC

*** ISCST3 - VERSION 02035 *** *** Chevron Richmond Refinery P#10
*** Hydrogen and Power Plant Renewal Project AN12842

08/28/08
11:24:17

*** MODEL SETUP OPTIONS SUMMARY ***

**Intermediate Terrain Processing is Selected
**Model Is Setup For Calculation of Average CONCentration Values.
-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations
**Model Uses RURAL Dispersion.
**Model Uses Regulatory DEFAULT Options:
**Model Accepts Receptors on ELEV Terrain.
**Model Assumes No FLAGPOLE Receptor Heights.
**Model Calculates 1 Short Term Average(s) of: 1-HR
**This Run Includes: 19 Source(s); 31 Source Group(s); and 4832 Receptor(s)
**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.000 ; Rot. Angle 0.0

*** POINT SOURCE DATA ***

SOURCE	NUMBER	EMISSION RATE			BASE	STACK	STACK	STACK	STACK	BUILDING	EMISSION RATE
ID	PART.	(GRAMS/SEC)	X	Y	ELEV.	HEIGHT	TEMP.	EXIT VEL.	DIAMETER	EXISTS	SCALAR VARY
	CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(DEG.K)	(M/SEC)	(METERS)		BY
4192		.17000E-02	52360.3	4200403.5	.4	5.72	588.71	4.60	1.98	NO	
4193		.14400E-02	52383.0	4200387.0	.4	5.72	588.71	4.60	1.98	NO	
4194		.27800E-02	52379.2	4200341.5	.4	5.72	588.71	5.59	2.54	NO	
4396		.11000E-03	52543.4	4200525.5	.4	5.24	310.93	1.60	0.20	YES	
4452		.34300E-03	53403.2	4199521.0	.2	8.39	449.82	7.57	0.20	YES	
4465		.37400E-05	53343.5	4199728.0	.3	7.62	302.59	1.80	4.78	NO	
4471		.23700E-02	53364.1	4199647.0	.4	5.05	438.71	2.85	2.79	YES	
4472		.23700E-02	53317.1	4199732.5	.3	5.05	438.71	2.85	2.79	NO	
4473		.23500E-01	53690.8	4199214.0	.9	0.60	366.48	0.73	3.20	YES	
4477		.75000E-02	53392.9	4199567.5	.7	6.87	463.71	4.40	4.82	YES	
6020		.47200E-03	53396.0	4199804.0		5.76	273.15	0.00	3.80	NO	

** ISCST3 VERSION 02035 ***

** Chevron Richmond Refinery P#10

08/28/08

** Hydrogen and Power Plant Renewal Project AN12842

11:24:17

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART.	EMISSION RATE (GRAMS/SEC CATS. /METER**2)	COORD (SW CORNER) X Y (METERS) (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ METERS	EMISSION RATE SCALAR VARY BY
4227FUG	0	0.17091E-06	552386.8 4200407.0	3.4	1.98	29.08	20.00	-50.00	0.00	
4228FUG	0	0.17091E-06	552406.4 4200390.0	3.4	1.98	29.08	20.00	-50.00	0.00	
4229FUG	0	0.11335E-06	552419.9 4200361.0	3.4	1.98	39.86	22.00	-50.00	0.00	
4253FUG	0	0.27166E-07	552921.5 4200277.5	4.5	1.98	44.17	44.17	-50.00	0.00	
4449FUG	0	0.15940E-08	553312.2 4199709.0	4.3	1.98	95.00	70.00	60.00	0.00	
4450FUG	0	0.15940E-08	553264.8 4199791.5	4.3	1.98	95.00	70.00	60.00	0.00	
4452FUG	0	0.10226E-08	553400.2 4199508.0	5.5	1.98	74.66	74.66	-30.00	0.00	
4473FUG	0	0.62727E-08	553699.4 4199206.0	4.9	1.98	35.00	22.00	-25.00	0.00	

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF ACUTE HI IN MICROGRAMS/M**3

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR	(XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID		
ALL	HIGH	ST HIGH VALUE IS	1.04473	ON 03120303	52085.38,	200131.00,	15.60,	00)
	HIGH	ND HIGH VALUE IS	1.04360	ON 02122404	52085.38,	200131.00,	15.60,	00)

APPENDIX D
DR. SAHU'S RESPONSES TO COMMENTS FROM CBE

Dr. Ranajit (Ron) Sahu
Consultant
311 North Story Place
Alhambra, CA 91801
Ph: (626) 382 0001
e-mail: sahuron@earthlink.net

To: Lamont Thompson

From: Ranajit (Ron) Sahu

Date: July 15, 2008

Re: Responses to Technical Issues Raised in CBE Letter of July 9, 2008

As you requested, the following are my responses to a letter from the CBE dated July 9, 2008 regarding, among other topics, CBE's proposed oil cap and about my brief summary of then-proposed Conditions C16 and C17 attached to the June 19, 2008 staff report to the Planning Commission. All page numbers cited, below, are to CBE's letter unless otherwise stated.

(1) Type of Analysis Presented on June 19, 2008

CBE misconstrues the intent of what its letter refers to as the "Sahu Report." My June 19 summary was not intended to be a "complete" analysis of the Project or to substitute for the extensive analyses that support the EIR. It was created to describe to the Planning Commission, in summary form, the rationale for the then-proposed Conditions C16 and C17, which were drafted at in response to a request by the Planning Commission at the June 5, 2008 hearing for the staff to explore creating such conditions. The issues raised in CBE's July 9 letter are addressed in my technical memorandum attached to the July 15, 2008 staff report. Similarly, my summary was not designed to "identify the design specifications of the process equipment" as CBE states (page 6). That is properly done as part of the engineering analysis for the Project. As noted in several documents, there is no expansion of the capacity of the Refinery, except for the ability to process higher sulfur feed-stocks. Since the SDA limit properly limits the Refinery to crude-oil feed-stocks that are no different from current feed-stocks, CBE's "oil-switch" premise lacks support. Therefore, all the expected impacts CBE derives from this assumption also lack support

(2) Content of Sahu Analysis

CBE's criticisms on pages 7 through 10 (dealing with Nickel, Vanadium, Mercury limits, etc.) are moot, because they pertain to proposed Conditions C16 and C17, which were not adopted by the Planning Commission.

First, as explained below, even if these criticisms were pertinent, CBE confuses its own proposed limits and actual reported data. It is customary that there be some nominal compliance margin between a

permit limit or condition and actual measured parametric values. Second, CBE's comparisons between concentrations in proposed Condition C17 and that proposed by CBE are also skewed, because CBE's data are based on relatively short time durations. For example, for its proposed Nickel and Vanadium limits, CBE uses actual data from 2007 only. I believe that there is no basis to arbitrarily select one recent year as representative of past performance. In contrast, I used crude oil assay data (upon which crude procurement decisions are made – and which are typically higher than actual constituent data) for the last decade or so in arriving at my earlier proposed limits in C17.

Regarding mercury, I have not been able to verify the various comparisons that CBE had put forth. Nonetheless, the comparisons suffer from the same problem that was noted above. Namely, they compare the Condition C17's proposed limit with recent, actual data. That the two are different is no surprise. Regarding the mass comparisons, CBE assumes that the proposed limit (which will be greater than actual concentrations) is applied against 365-day operation of the Refinery at maximum throughput conditions (i.e., 243,000 bbl/day) in order to arrive at a maximum potential mercury input of 327 kg/year. However, rather than recognizing that this is a maximum, potential mercury input via crude oil, CBE compares this with actual mercury emissions reported for recent time periods. This is like comparing apples to oranges. CBE's proposal also does not discuss the manner in which the actual mercury measurements were made (i.e., what test methods were used). These can also affect the comparisons. For example, the actual measurement methods for measuring crude oil mercury contents and those reported to agencies (which CBE uses) may be different, accounting for the difference in the concentrations. I was not able to investigate these potential issues that can explain the differences in the time available.

(3) Use of Non-Public Data

I have made it clear from the very beginning of my work for the City on this Project that it was not and is not my preference to use non-public data. I asked for and received data that I felt necessary to provide the technical analysis required by the City.

It is my experience, working with all of my clients (industry, government, public interest groups), that proceedings such as permit approvals and the like often require the proper handling of confidential data. Confidentiality is not intended to keep data from stakeholders, as much as from competitors. In the final analysis, I have used very little confidential data in order to support my analysis – namely the SDA limits for Condition C12. To develop this condition, to evaluate CBE's proposed "feedstock limits", and to develop formerly proposed conditions C16 and C17, I reviewed only two documents that were confidential. One document showed the Refinery's SDA throughput level for the past 10 years. The other document was a spreadsheet containing data on the composition of crude oils used at the Refinery. This spreadsheet contained data on the following parameters for blended crude oil, by month, for a period of roughly the last ten years: API gravity, sulfur, acid number, viscosity, nickel, vanadium, selenium, and mercury.

(4) Consideration of Safety Issues

CBE states that its analysis, which I have supposedly “ignored,” is based “among other things” on the tenet of Inherently Safer Systems in the Industrial Safety Ordinance (“ISO”), and “evidence” that the interactions of acids and other oil quality factors could create inherently hazardous conditions (page 9)

First, I have not ignored CBE’s concerns. I do disagree with CBE, but I came to this conclusion after carefully considering CBE’s comments, and after several meeting and telephone calls with Mr. Greg Karras. While CBE may claim that its analysis is based on the tenet of Inherently Safer Systems, it is my opinion, based on numerous discussions with CBE, that its proposal is based on the Precautionary Principle, which is, simply, the idea that if something is not proven to be safe without any margin of error whatsoever, then it should not be implemented. Inherently Safer Systems are not the same as or synonymous with the Precautionary Principle. I have reviewed the ISO as well as federal regulations relating to Process Safety Management (by OSHA) and Risk Management Plans (by USEPA), upon which the ISO is based. Fundamentally, the ISO, taken as a whole, deals with risk management – namely how to understand, analyze, and mitigate potential risks from industrial processes such as the processes at the Refinery. This involves a whole suite of actions, of which designing Inherently Safer Systems is one. Of course, making a system inherently safer is the starting point for achieving an ultimately safer system. But, constraining a system, without any explicit showing of how such constraints reduce risks, is not technically defensible. Even if one were to accept CBE’s unsupported assumption that the Renewal Project will result in higher levels of contaminants in the Refinery’s input feedstock, CBE’s sole focus on these levels as being directly determinant of the resulting risks is overly simplistic. CBE ignores the value of good engineering design, proper operating practices, robust inspections, timely maintenance, careful analysis of “management of change,” and similar factors in minimizing risk, all of which are also part of the ISO.

Lastly, CBE’s belief that simultaneous constraints on the proposed oil quality parameters, without a fundamental understanding of the interactions among the various parameters is alarmist and counterproductive. For instance, CBE uses the TKC expansion as an example of how emissions may increase in the future. Even if CBE’s assumptions were true, CBE’s analysis does not consider that: (a) based on my conversations with catalyst vendors, the type and volume of the TKC catalyst can accommodate the increased loading of contaminants, and can do so in a manner that minimizes the frequency of planned shutdowns of the TKC for catalyst changes; (b) even if there are shut-downs, the volumes of gases generated can be reduced via flare gas management to a minimum level.

(5) CBE’s Claims are Not Supported

In summary, CBE claims that “The Sahu Report does not rebut publicly verified evidence that a comprehensive oil input quality cap is needed to ensure that significant potential impacts resulting from the Project’s expansion of capacity to refine low quality oils will be lessened or avoided” (page 10). This statement is incorrect for the following reasons:

- (a) Even though CBE has submitted voluminous materials into the record (some of it repeatedly), much of it is irrelevant to the Renewal Project (or, at the very least, its relevance to the Renewal Project is

never made clear by CBE). Nor has CBE provided “publicly verified evidence” for its claims. CBE repeatedly cross references its own previous submissions to strengthen its subsequent statements. This is not “evidence,” nor is it “verification.” It is repetition. I note that CBE’s “evidence” includes, among other items: entire copies of textbooks on refining; crude oil production data from California (even though the Richmond Refinery does not and cannot process California crude oil); numerous examples of crude assay data from all over the world (without any explanation as to how these are relevant to the Refinery); flare reports from other refineries in the Bay Area and elsewhere (although the similarity or dissimilarity of crude slates, design, maintenance, and processing between the Refinery and these refineries is not discussed); incorrect and misleading process diagrams; and misleading figures that serve to confuse rather than to illuminate. In spite of this, I have considered all the submitted information.

(b) CBE never explains what it means by “comprehensive” with regard to its proposed oil quality cap. In addition, CBE’s own “comprehensive” cap proposal has undergone transformations during the last few months. For example, some parameters (such as viscosity) that were originally proposed have been dropped, and at least one parameter (Nickel) was added, based on a conversation with me. CBE’s loose collection of parameters, which CBE titles “comprehensive,” is nothing more than a grab-bag of varying conditions without any fundamental technical support. Significantly, CBE has never provided any kind of analysis of the interactions of these parameters, some of which are counterproductive. For example, simultaneously lowering acid number and sulfur content may actually enhance corrosion, as opposed to reducing it. I strongly believe that staff’s proposed conditions, taken as a whole, are more “comprehensive” and address the likely potential impacts of the Project in a more meaningful and technically supportable manner.

(c) CBE’s description of “significant potential impacts” is based on the assumption that the only way to control emissions from the Refinery is to control the characteristics of the inputs to the Refinery. This is not supportable. The Refinery consists of numerous processing facilities that transform input oil quality parameters. That there is a role for process chemistry, design, operations, maintenance, monitoring, and the like, and that all of these, in combination with input quality, together determine output emissions, is not considered by CBE. The staff’s proposed conditions, on the other hand, address critical parameters from input quality, where needed (i.e., at the SDA) to output monitoring (via mass balance and monitoring) in order to ensure that Project emissions are measured and impacts demonstrated to be minimal.

(d) CBE’s assumption that the Project is an “expansion of capacity” is not demonstrated. It rests on the fact, for example, that the TKC will be expanded to 80,000 bbl/day from its current capacity. However, since all of the TKC product feeds into other units (such as the FCC), whose capacities are not proposed for expansion, this increase in the TKC will not translate into an expansion of Refinery capacity.

(e) Finally, CBE’s assumption that the Project is an expansion of capacity to refine “low quality oils” is also not demonstrated, especially given the constraints created by the proposed conditions, such as C12.

CBE's overarching contention appears to be that there are plenty of crudes (and gas oils, although CBE has not provided evidence of this) that Chevron could procure while meeting CBE's proposed oil quality restrictions and implementing the Project. Even if true, this contention is beside the point. The goal of the City's technical analysis is to determine if there are adverse impacts from the Project as proposed. That has not been demonstrated and the proposed conditions, taken as a whole, ensure against it.

Attachment 1 to Staff Report for June 19, 2008

Rationale for Condition C17
by Dr. Ranajit Sahu (June 16, 2008)

I. Parameters for Crude Oil and Gas Oils

(a) CBE's suggestion to include a specific gravity limit for crude oil is based on the following explanation: "Refining heavier (higher-gravity) oil increases pollution by increasing the amounts of non-floating oil components that cause toxic impacts from oil spills during crude shipments to refineries. Heavier crude is also generally higher in pollutants that are not otherwise covered by the proposed cap, such as other metals and polycyclic aromatic hydrocarbons."¹ First, the SDA limit in Condition C12 assures that heavier crudes will not be used in the Refinery. Second, current practices, including the requirement for Chevron to comply with its Spill Prevention Control and Countermeasure (SPCC) Plan, adequately address the potential for future spills during shipping. I reviewed the total quantity of spills in the last five years due to all product transfers at Chevron's Long Wharf, and found that the spill quantity was negligible – and that a significant amount of these spills did not contact water.

(b) CBE's suggestion to include a limit on total acid number (TAN) for crude oil is based on the following explanation: "Refining higher-acidity oils increases pollution because it increases the incidence of malfunctions from corrosion, resulting in more process upsets, flaring, spills, fires and explosions in refineries." The indirect impact of TAN on pollution due to malfunctions is speculative. It assumes that equipment designers are insensitive to materials compatibility issues. It also assumes that it is in Chevron's economic interests to allow additional malfunctions and thereby longer periods of shutdown. Both of these assumptions are incorrect. I could not determine any factual basis for these assumptions.

(c) CBE's suggestion to include limits on nickel and vanadium in crude oil are similar and are based on the following explanation: "Refining higher-vanadium oil increases pollution by increasing the pollution-intensive processing needed to remove this catalyst poison from the oil, by increasing malfunctions that result in upsets, flaring, spills, fires and explosions and by increasing the amounts of toxic gases that are released when these incidents occur." Also, "[r]efining higher-nickel oil increases pollution by increasing the pollution-intensive processing needed to remove this catalyst poison from the oil, by increasing malfunctions that result in upsets, flaring, spills, fires and

¹ This discussion of the rationale for Condition C17, including Parts I (a) through (e) and Part II, below, is intended to apply to both crude oil and gas oils.

explosions and by increasing the amounts of toxic gases that are released when these incidents occur.”

In each case, the rationale provided is indirect or speculative. Nickel and vanadium-containing oils are processed in the same manner as any other oils. These two metals are preferentially partitioned in the heavier fractions during distillation (for crude oils), and generally end up in the heavier product streams or in catalysts (for gas oils). Catalysts designed for use in refineries are specially designed for handling nickel and vanadium and to function in their presence. I could find no basis for the suggestion that there would be more “pollution-intensive processing” nor could I correlate increased nickel and vanadium levels with “increasing malfunctions.” I have also determined that the Refinery currently processes crude oils and gas oils that can have higher levels of nickel and vanadium than is proposed by CBE as the limit for each. I could find no malfunctions have could be correlated to these metals. I have not been able to substantiate that there will be any additional nickel and/or vanadium increases in crude oil or gas oils beyond current levels after imposition of Conditions C12 and C13 and proposed Condition C17(a).

(d) CBE’s suggestion to limit the amount of selenium in crude oil is based on the following explanation: “Refining high-selenium oil increases pollution by increasing the amounts of this toxic pollutant in refinery waste water discharges. Selenium already violates water quality standards in San Francisco Bay.” Based on its properties, most of the selenium entering the Refinery, via either crude oil or gas oils, partitions into the refinery waste water (i.e., sour water) streams, which are then treated to meet RWQCB limits for the Refinery. I have determined that the Refinery is in compliance with its selenium discharge limits to the Bay. In addition, the Refinery has one of the lowest rates of selenium discharge to the Bay for all of the Bay Area refineries. I have not been able to substantiate that there will be any additional selenium increases in crude oil or gas oils beyond current levels after imposition of Conditions C12 and C13 and proposed Condition C17(a). Nonetheless, given the lack of data for selenium in gas oils, implementing Condition C17(b)(i) will help substantiate the fate of selenium at the Refinery. It is my opinion that Condition C17(b)(i) properly accounts for Refinery operating flexibility in addition to environmental considerations.

(e) CBE’s suggestion to limit the amount of mercury in crude oil is based on the following explanation: “Refining high-mercury oil increases pollution by increasing mercury releases to the environment via on site and off site (products combustion) emissions, water and waste discharges; by increasing workers’ exposures in refineries, and by increasing malfunctions in certain process equipment.” I have reviewed the results of sampling conducted pursuant to requirements by the RWQCB for mercury emissions and levels at the Refinery. I have not been able to substantiate that there will be any additional mercury increases in crude oil or gas oils beyond current levels after

imposition of Conditions C12 and C13 and proposed Condition C17(a) nor have I been able to substantiate mercury impacts on worker exposures or increasing malfunctions. Nonetheless, given the lack of data for mercury in gas oils, Staff is proposing Condition C17(b)(ii) in order to substantiate the fate of mercury at the Refinery. It is my opinion that Condition C17(b)(ii) properly accounts for Refinery operating flexibility in addition to environmental considerations.

II. Running Annual Average Throughput Limits for Process Groups

I have reviewed CBE's suggestion for additional limits, beyond proposed Condition C17(a), to further limit the running annual average throughput limits for specified refinery process groups. I could not determine any additional environmental value to these limits, beyond what would be provided by proposed Condition C17.

APPENDIX E
CEQA FINDINGS DOCUMENT

CHEVRON – RICHMOND REFINERY PROPOSED ENERGY AND HYDROGEN RENEWAL PROJECT

FINDINGS AND SUPPORTING FACTS REGARDING THE ENVIRONMENTAL IMPACT REPORT

Chevron Products Co. (Chevron) has proposed to implement the Energy & Hydrogen Renewal Project (Renewal Project) at its Richmond Refinery (the Refinery). The Renewal Project includes new equipment and modifications to existing equipment that would enable the Refinery to increase energy efficiency and increase equipment reliability.

The Renewal Project includes the following four main components: (1) Hydrogen Plant Replacement, (2) Reformer Replacement, (3) Power Plant Replacement, and (4) Hydrogen Purity Improvement.

The City of Richmond (City) acted as Lead Agency under the California Environmental Quality Act (CEQA) for this project. The City prepared and certified an Environmental Impact Report (EIR) pursuant to the provisions of CEQA. As a responsible agency under CEQA, the Bay Area Air Quality Management District (BAAQMD) participated in the EIR process, including reviewing and commenting on the Draft EIR.

The following timeline illustrates the land use permit application's process by the City:

June 15, 2005: the City issued a Notice of Preparation (NOP) that an EIR would be prepared for the Renewal Project. The NOP was filed with the State Clearinghouse and circulated to governmental agencies and the public for 30 days for review and comment. The City extended this review period until August 25, 2005, for a total of 71 days.

June 23, 2005: A public scoping meeting was held at Richmond City Hall. The City received forty comment letters during the public scoping period.

May 11, 2007: The Draft EIR was published for a 45-day public review period. At the request of members of the public, the City extended the review period until July 9, 2007, for a total review period of 59 days. Various governmental agencies, as well as interested individuals and organizations reviewed the Draft EIR. The City received twenty-eight comment letters and numerous "Stop the Chevron Expansion" postcards during the public comment period.

June 7, 2007: A public hearing was held, to which members of the public were invited by formal public notice to submit comments on the Draft EIR. Twenty-four members of the public commented at this hearing.

November 7, 2007: Chevron submitted to the City an application for a Design Review Permit for the Renewal Project.

January 25, 2008: Volumes 3 through 5 of the Final EIR were published.

February 29, 2008 and April 16, 2008: Chevron submitted suggested findings to the City

March 20, 2008, April 10, 2008, and June 5, 2008: Public hearings held, during which the Final EIR was presented to the City's Planning Commission. Responses to twelve additional comment letters received after the close of the comment period were provided in the City's Staff Report. BAAQMD staff participated.

May 23, 2008: The Consolidated Volume (Volume 6) of the Final EIR was published.

June 19, 2008: The City's Planning Commission certified the Final EIR, which was appealed by Communities for a Better Environment, Asian Pacific Environmental Network, West County Toxics Coalition, Richmond Greens, Richmond Progressive Alliance and Atchison Village Environmental Committee, and by Chevron Products Company.

July 15-17, 2008: The City Council denied appeals by Chevron and Communities for a Better Environment et al., and upheld the City's Planning Commission's decision to approve a Conditional Use Permit and Design Review Permit for the Renewal Project. BAAQMD staff participated.

The Final EIR, which consists of six volumes, did not identify any significant and unavoidable adverse impacts. The Final EIR did identify certain significant or potentially significant environmental impacts that could occur as a result of the Renewal Project. The following discussion summarizes the air quality related effects identified in the Final EIR and during BAAQMD's review of the Chevron Renewal Project permit application, makes one or more of the findings required under Section 15091 of the State CEQA Guidelines, and presents facts to support the findings. These impacts are eliminated or reduced to a less-than-significant level by mitigation measures identified in the Final EIR and made conditions of City approval of the Renewal Project. As the Lead Agency, the City determined that the impacts addressed by these mitigation measures would be mitigated to a less-than-significant level or avoided by incorporation of these mitigation measures into the Renewal Project.

Short-Term Construction Emissions

Activities associated with the Renewal Project construction would generate short-term emissions of criteria pollutants, including suspended and inhalable particulate matter and equipment exhaust emissions, during the term of construction. Implementation of Mitigation Measures 4.3-1a, 4.3-1b, and 4.3-1c, set forth in the Final EIR, adopted and made conditions of the Renewal Project approval by the City, would reduce this impact to a less-than-significant level.

2. Operational Emissions

Operational activities associated with the implementation of the Renewal Project could increase air pollutant emissions. Operational emissions from the Renewal Project would be less than significant with the exception of project-related volatile organic compounds (VOC) emissions, which would be significant. After the publication of the Final EIR, BAAQMD staff suggested

changes to Mitigation Measure 4.3-2a. Implementation of Mitigation Measures 4.3-2a and 4.3-2b, set forth in the Final EIR, adopted and made conditions of the Renewal Project approval by the City, would reduce this impact to a less-than-significant level.

3. Temporary Particulate Matter (PM) Emissions

Alternate phasing of the Renewal Project components could lead to temporary increases in PM emissions greater than significance thresholds. Implementation of Mitigation Measure 4.3-3, set forth in the Final EIR, adopted and made a condition of the Renewal Project approval by the City, would reduce this impact to a less-than-significant level.

4. Greenhouse Gas (GHG) Emissions

Operation of the Renewal Project has the potential to increase the Refinery's output of greenhouse gases by 898,000 metric tons per year carbon dioxide equivalent (CO₂e) emissions. Implementation of Mitigation Measures 4.3-5a through 4.3-5g, set forth in the Final EIR, adopted and made conditions of the Renewal Project approval by the City, would reduce this impact to a less-than-significant-level.

5. Cumulative Construction Emissions

Short-term criteria pollutant emissions associated with the construction of the Renewal Project could result in elevated pollutant concentrations when combined with emissions from other construction projects. This impact is potentially significant. Implementation of Mitigation Measures 4.3-1a and 4.3-1b, and 4.3-1c, set forth in the Final EIR, adopted and made conditions of the Renewal Project approval by the City, would reduce this impact to a less-than-significant level.

6. Cumulative Operational VOC Emissions

Operational emissions of Project-related VOC pollutants could be cumulatively significant. Implementation of Mitigation Measures 4.3-2a and 4.3-2b, set forth in the Final EIR, adopted and made conditions of the Renewal Project approval by the City, would reduce this impact to a less-than-significant level.

7. Cumulative Operational GHG Emissions

Operational emissions of GHG from the Renewal Project, in combination with GHG emissions from other projects in the area, would be cumulatively significant. Implementation of Mitigation Measures 4.3-5a through 4.3-5g, set forth in the Final EIR, adopted and made conditions of the Renewal Project approval by the City, would avoid the Renewal Project's contribution to this impact by reducing the Project's net GHG emissions to zero. The Renewal Project would not, therefore, contribute to a cumulatively considerable impact.

As required by the State CEQA Guidelines, BAAQMD, as a Responsible Agency for the Renewal Project, hereby finds that, for each of the impacts identified in the final EIR and

discussed above, changes or alterations have been required in, or incorporated into, the Renewal Project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR. In addition, for those mitigation measures that are identified in the Final EIR to lessen impacts associated with construction activities and vehicle emissions and that are within the responsibility or jurisdiction of another public agency, BAAQMD hereby finds that such measures either have been or can and should be adopted by such other agency.

In accordance with BAAQMD Rules and Regulations, BAAQMD has fully considered the EIR prepared and certified by the City and has incorporated the EIR's analysis into its decision-making process. BAAQMD granted an Authority to Construct for the proposed project on September 19, 2008.

The documents and other materials that constitute the record of proceedings upon which this decision is based are located at the BAAQMD office at 939 Ellis Street, San Francisco, California, and the custodian of the materials is Rochelle Henderson.

A handwritten signature in blue ink, appearing to read "Jack P. Broadbent", is written over a horizontal line.

Jack P. Broadbent
Executive Officer/Air Pollution Control Officer
Bay Area Air Quality Management District

APPENDIX 4.3 - EI

El: Bay Area Air Quality Management District
Emission Inventory Data

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Abated Criteria Pollutant Emissions
for Calendar Year 2008***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	3.00E-01	thou gal/yr	12/31/2007		0	0	0	0	0
55	Tank 55	Distillate oil	T81??315	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
55	Tank 55	Gasoline - unleaded	T81??7551	1.70E+00	thou gal/yr	12/31/2003		0	0.1	0	0	0
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996		0	0	0	0	0
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
232	TANK 232	Hydrocarbon - mixtures, other/	T5422318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997		0	13.9	0	0	0
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997		0	6.1	0	0	0
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
297	TANK 297	Hydrocarbon - mixtures, other/	T5432318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
297	TANK 297	Refinery sour waste water	T5432442	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
297	TANK 297	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
298	TANK 298	Hydrocarbon - mixtures, other/	T5422318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
298	TANK 298	Refinery sour waste water	T5422442	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
298	TANK 298	Gasoline - unleaded	T5422551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997		0	0.4	0	0	0
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	3.65E+04	thou gal/yr	12/31/2007		0	55.4	0	0	0
398	TANK 398	Hydrocarbon - mixtures, other/	T54??2318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
399	TANK	Distillate oil	T54??2315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
399	TANK	Oil - non-fuel, other/not spec	T54??2352	2.41E+04	thou gal/yr	12/31/2008		0	11.9	0	0	0
399	TANK	Tetra-Ethyl Lead (TEL)	T54??2422	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
401	TANK 401	Refinery feedstock - other/not	T44??239	4.70E+04	thou gal/yr	4/30/1997		0	10.9	0	0	0
605	Tank 605: Process Water Tank <1000 ppm (wt) Hydrocarbon	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
605	Tank 605: Process Water Tank <1000 ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
610	Tank 610: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T81??318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
610	Tank 610: Organic Liquid Storage Tank	Water/organics mixture	T81??502	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
634	TANK 634	Fuel - jet 'A'	T54??2158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
634	TANK 634	Petroleum products - other/not	T54??2321	2.66E+04	thou gal/yr	12/31/2008		0	1.6	0	0	0
634	TANK 634	Gasoline - unleaded	T54??2551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
660	Tank 660: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T81??318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
660	Tank 660: Organic Liquid Storage Tank	Water/organics mixture	T81??502	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	2.12E+04	thou gal/yr	12/31/2007		0	0.1	0	0	0
870	Tank 870	Organic liquid - other/not spe	T43??201	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Butane	T42??7416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T42??7419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
955	TANK 955	Paraffins - C3+	T5412052	2.87E+04	thou gal/yr	12/31/2008		0	2.4	0	0	0
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
956	TANK 956	Paraffins - C3+	T5412052	2.61E+04	thou gal/yr	12/31/2008		0	2.5	0	0	0
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
957	Tank 957	Diesel fuel	T44??7098	2.43E+04	thou gal/yr	12/31/2008		0	7.3	0	0	0
957	Tank 957	Fuel - jet 'A'	T44??7158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
979	TANK 979	Distillate oil	T44??315	-6.13E+04	thou gal/yr	4/30/1997		0	7.3	0	0	0
984	TANK 984	Distillate oil	T4417315	-9.67E+03	thou gal/yr	12/31/1997		0	1.4	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
990 TANK 990		Gasoline - unleaded	T5432551	8.37E+04	thou gal/yr	12/31/2008		0	4.6	0	0
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007		0	4.7	0	0
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
992 Storage Tank T-992		Gasoline - unleaded	T5472551	1.02E+05	thou gal/yr	12/31/2008		0	4.5	0	0
1020 Tank 1020: Inorganic Chemical Storage Tank		Diethanolamine	T4477485	4.20E+02	thou gal/yr	3/10/1995		0	0.1	0	0
1052 Tank 1052: Organic Liquid Storage Tank		Kerosene	T4377159	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0
1052 Tank 1052: Organic Liquid Storage Tank		Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1287 TANK 1287		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1287 TANK 1287		Petroleum products - other/not	T5432321	3.39E+04	thou gal/yr	12/31/2008		0	2.2	0	0
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1289 TANK 1289		Toluene	T6472293	1.65E+03	thou gal/yr	12/31/2008		0	1	0	0
1289 TANK 1289		Hydrocarbon - mixtures, other/	T6472318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1292 TANK 1292		Diesel fuel	T5412098	2.18E+05	thou gal/yr	12/31/2008		0	1.4	0	0
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1296 TANK 1296		Gasoline - unleaded	T5412551	8.64E+04	thou gal/yr	12/31/2008		0	5.9	0	0
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T6372502	5.90E+00	thou gal/yr	12/31/2003		0	0	0	0
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04	thou gal/yr	4/30/1997		0	7.1	0	0
1431 Asphalt Tank(T-907)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008		0	1.9	0	0
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03	thou gal/yr	4/30/1997		0	0.1	0	0
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03	thou gal/yr	4/30/1997		0	0.6	0	0
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997		0	0.6	0	0
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1459 TANK 1459		Gasoline - unleaded	T5432551	3.16E+04	thou gal/yr	12/31/2008		0	4	0	0
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1488 TANK 1488		Oil/water mixture	T5472503	3.73E+03	thou gal/yr	12/31/2008		0	31.3	0	0
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1489 TANK 1489		Alkylate	T5432389	1.01E+04	thou gal/yr	12/31/2008		0	4.7	0	0
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1491 TANK 1491		Gasoline - unleaded	T5432551	4.55E+04	thou gal/yr	12/31/2008		0	3.9	0	0
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997		0	3.5	0	0
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997		0	4.3	0	0
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	2.87E+04	thou gal/yr	12/31/2008		0	2.3	0	0
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997		0	0.8	0	0
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997		0	0	0	0
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1514 TANK 1514		Gasoline - unleaded	T5432551	9.05E+04	thou gal/yr	12/31/2008		0	5.1	0	0
1518 TANK 1518		Fuel - jet 'A'	T5432158	1.30E+04	thou gal/yr	12/31/2007		0	0.1	0	0
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998		0	0	0	0
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	1.79E+03	thou gal/yr	12/31/2007		0	0.1	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007		0	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007		0	0.7	0	0
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997		0	1.3	0	0
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
1637 TANK 1637		Gasoline - unleaded	T6H32551	1.14E+04	thou gal/yr	12/31/2008		0	1.2	0	0
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
1645	TANK 1645	Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1653	TANK 1653	Fuel - jet 'A'	T4417158	3.19E+03	thou gal/yr	12/31/2008		0	2.2	0	0	0
1653	TANK 1653	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1653	TANK 1653	Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1686	TANK 1686	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1687	TANK 1687	Gasoline - unleaded	T5432551	1.43E+05	thou gal/yr	12/31/2008		0	5.5	0	0	0
1688	TANK 1688	Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007		0	5.5	0	0	0
1798	Tank 1798	Fuel - jet 'A'	T5422158	2.29E+05	thou gal/yr	12/31/2008		0	7.6	0	0	0
1798	Tank 1798	Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1799	TANK 1799	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1799	TANK 1799	Fuel - jet 'A'	T5472158	2.09E+05	thou gal/yr	12/31/2008		0	1.6	0	0	0
1821	Tank 1821 Fresh Sulfuric Acid Tank	H2SO4 - other/not spec	G5999146	1.16E+05	tons/yr	12/31/2008		0	0	0	0	0
1825	Tank 1825	Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1828	TANK 1828	Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1828	TANK 1828	Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1828	TANK 1828	Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006		0	0	0	0	0
1843	TANK 1843	Paraffins - C3+	T5412052	2.95E+02	thou gal/yr	12/31/2007		0	0	0	0	0
1894	Tank 1894: Phosphoric Acid Storage Tank	Phosphoric acid	G5999217	3.76E+02	tons/yr	12/31/2008		0	0	0	0	0
1899	TANK 1899	Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997		0	0.4	0	0	0
1908	Asphalt Tank (T-908)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1909	Tank 1909	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1910	Tank 1910	Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994		0	0	0	0	0
1911	Tank 1911	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1911	Tank 1911	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1966	TANK 1966	Fuel - jet 'A'	T5432158	2.02E+04	thou gal/yr	12/31/2007		0	0.2	0	0	0
2520	Wastewater/MEA Storage Tank	Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005		0	0	0	0	0
2520	Wastewater/MEA Storage Tank	Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005		0	6.3	0	0	0
2540	Tank 2540: Organic Liquid Storage Tank	Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997		0	0.1	0	0	0
2903	Tank 903: Organic Liquid Storage Tank	Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
2903	Tank 903: Organic Liquid Storage Tank	Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
2917	Asphalt Tank (T-917)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2007		0	0	0	0	0
2918	Asphalt Tank (T-918)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2007		0	0	0	0	0
2921	Asphalt Tank (T-921)	Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3038	TANK 3038 (Spherical Pressure Tank)	Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3038	TANK 3038 (Spherical Pressure Tank)	Pentane	T3477209	1.19E+04	thou gal/yr	12/31/2008		0	0	0	0	0
3050	TANK 3050 SPHERE	Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3066	TANK 3066	Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998		0	0	0	0	0
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3071	TANK 3071	Gasoline - unleaded	T5472551	1.04E+05	thou gal/yr	12/31/2008		0	121.7	0	0	0
3072	TANK 3072	Gasoline - unleaded	T5472551	1.05E+05	thou gal/yr	12/31/2007		0	5.2	0	0	0
3073	TANK 3073,external floating roof storage tank w/primary and	Paraffins - C3+	T5472052	1.16E+05	thou gal/yr	12/31/2008		0	0.3	0	0	0
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3074	TANK 3074	Distillate oil	T5472315	1.14E+05	thou gal/yr	12/31/2007		0	0.7	0	0	0
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	9.84E+03	thou gal/yr	12/31/2008		0	3	0	0	0
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3076	TANK T3076	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3076	TANK T3076	Hydrocarbon - mixtures, other/	T5472318	1.71E+04	thou gal/yr	12/31/2008		0	3.4	0	0	0
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Crude oil	T5472089	4.59E+05	thou gal/yr	12/31/2008		0	21.8	0	0	0
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Bunker C fuel oil	T5472242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3101	TANK 3101	Crude oil	T5432089	4.87E+05	thou gal/yr	12/31/2008		0	30.8	0	0	0
3101	TANK 3101	Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3101	TANK 3101	Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3102	TANK 3102	Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3102	TANK 3102	Hydrocarbon - mixtures, other/	T5432318	3.26E+05	thou gal/yr	12/31/2008		0	11.1	0	0	0
3103	TANK 3103	Crude oil	T5432089	3.43E+05	thou gal/yr	12/31/2007		0	35.5	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3104	TANK 3104	Crude oil	T5432089	7.74E+05	thou gal/yr	12/31/2007		0	5.9	0	0	0
3105	TANK 3105	Crude oil	T5432089	7.36E+05	thou gal/yr	12/31/2007		0	65.3	0	0	0
3106	TANK 3106	Crude oil	T5432089	3.21E+05	thou gal/yr	12/31/2007		0	34.6	0	0	0
3107	TANK 3107	Crude oil	T5472089	3.40E+05	thou gal/yr	12/31/2008		0	3.5	0	0	0
3110	Desalter Effluent Surge Tank A	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007		0	7.1	0	0	0
3111	Desalter Effluent Surge Tank B	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007		0	6.4	0	0	0
3126	TANK 3126	Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3126	TANK 3126	Oil/water mixture	T5432503	1.15E+05	thou gal/yr	12/31/2008		0	1.4	0	0	0
3127	TANK 3127	Oil/water mixture	T5412503	2.38E+03	thou gal/yr	12/31/2007		0	1.7	0	0	0
3128	TANK 3128	Aromatic hydrocarbons - other/	T5472027	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3128	TANK 3128	Water/organics mixture	T5472502	1.64E+03	thou gal/yr	12/31/2008		0	1.2	0	0	0
3129	TANK 3129	Fuel - jet 'A'	T5412158	1.16E+05	thou gal/yr	12/31/2007		0	1.1	0	0	0
3132	Tank 3132	Distillate oil	T5472315	8.12E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
3133	TANK 3133	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3133	TANK 3133	Gasoline - unleaded	T5412551	4.50E+05	thou gal/yr	12/31/2008		0	103.8	0	0	0
3133	TANK 3133	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3134	TANK 3134	Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3134	TANK 3134	Gasoline - unleaded	T5412551	3.09E+05	thou gal/yr	12/31/2008		0	83.3	0	0	0
3134	TANK 3134	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3138	TANK 3138	Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
3139	TANK 3139	Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997		0	8.1	0	0	0
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	1.57E+05	tons/yr	12/31/2008		0	0	0	5.2	0
3142	TANK 3142	Refinery feedstock - other/not	T4417239	4.42E+02	thou gal/yr	12/31/2008		0	0	0	0	0
3144	TANK 3144	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3145	TANK 3145, Sphere	Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998		0	0	0	0	0
3146	Tank 3146: 20% Aqueous Ammonia	Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994		0	14.6	0	0	0
3147	Tank 3147: Organic Liquid Storage Tank	Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3148	Tank 3148: Organic Liquid Storage Tank	Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3157	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	12.4	0	0	0
3158	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3159	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3160	Tank 3160: Organic Liquid Storage Tank	Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994		0	13.4	0	0	0
3161	Tank Lube Oil	Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3162	Tank Lube Oil	Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3163	Tank Lube Oil	Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3164	Tank Lube Oil	Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
3165	Tank Lube Oil	Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3166	Tank Lube Oil	Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3167	Tank Lube Oil	Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3168	Tank Lube Oil	Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3169	organic liquid storage tank, lube oil products	Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995		0	0.2	0	0	0
3170	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3171	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3172	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	9.6	0	0	0
3179	Tank 3179: Organic Liquid Storage Tank	Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997		0	0.2	0	0	0
3180	Tank	Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3180	Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3180	Tank	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3180	Tank	Alkylate	T5472389	2.86E+04	thou gal/yr	12/31/2008		0	113.5	0	0	0
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3182	Tank 3182: Organic Liquid Storage Tank	Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997		0	0.3	0	0	0
3185	Tank 3185 (previously T-982)	Fuel - jet 'A'	T5472158	2.10E+05	thou gal/yr	12/31/2007		0	6.4	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3186	Gas Oil Tank	Organic liquid - other/not spe	T447?201	0.00E+00		4/21/1997		0	8.7	0	0	0
3189	Gasoline component and Diesel Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	3.34E+05	thou gal/yr	12/31/2008		0	6.6	0	0	0
3189	Gasoline component and Diesel Tank	Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3190	Storage Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3190	Storage Tank	Fuel - jet 'A'	T5472158	2.44E+05	thou gal/yr	12/31/2008		0	2	0	0	0
3191	Storage Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3191	Storage Tank	Gasoline - leaded	T5472128	2.69E+04	thou gal/yr	12/31/2008		0	4.3	0	0	0
3191	Storage Tank	Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3191	Storage Tank	Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3191	Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3191	Storage Tank	Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3192	Desalter Effluent Skim Tank	Crude oil	T3H?7089	3.15E+04	thou gal/yr	12/31/2008		0	0	0	0	0
3193	Gasoline component Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3193	Gasoline component Tank	Isooctane	T5472154	3.81E+04	thou gal/yr	12/31/2008		0	2.4	0	0	0
3193	Gasoline component Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3193	Gasoline component Tank	Alkylate	T5472389	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3193	Gasoline component Tank	Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3193	Gasoline component Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3194	Storage Tank T-3194	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
3194	Storage Tank T-3194	Gas oil	T5472394	1.44E+05	thou gal/yr	12/31/2003		0	1	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Diesel fuel	T5477098	1.29E+05	thou gal/yr	12/31/2006		0	2.4	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Distillate oil	T5477315	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Lube oil	T5477419	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3196	Gasoline Components Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3196	Gasoline Components Tank	Organic liquid - other/not spe	T5472201	1.15E+05	thou gal/yr	12/31/2008		0	1.3	0	0	0
3196	Gasoline Components Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3196	Gasoline Components Tank	Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3196	Gasoline Components Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3196	Gasoline Components Tank	Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3197	Gasoline component Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3197	Gasoline component Tank	Naphtha	T5572188	1.87E+04	thou gal/yr	12/31/2008		0	6.2	0	0	0
3197	Gasoline component Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3197	Gasoline component Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Fuel - jet 'A'	T5437158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Toluene	T5437293	3.20E+03	thou gal/yr	12/31/2008		0	18.5	0	0	0
3198	3198 tank; organic liquid storage tank	Distillate oil	T5437315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	2.75E+03	thou barre/yr	12/31/2008		0	0	0	0	0
3201	Tank 3201: Whole Alkylate	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3201	Tank 3201: Whole Alkylate	Alkylate	T5472389	1.15E+05	thou gal/yr	12/31/2008		0	112.3	0	0	0
3202	Tank 3202: Methanol	Methyl alcohol	T5472179	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3202	Tank 3202: Methanol	Naphtha	T5472188	8.29E+03	thou gal/yr	12/31/2008		0	73	0	0	0
3202	Tank 3202: Methanol	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3202	Tank 3202: Methanol	Petroleum products - other/not	T5472321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3204	Tank 3204: Organic Liquid Storage Tank	Lube oil	T4277419	2.54E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3207	Butane Sphere: Organic Liquid Storage Tank	Butane	T3477416	-9.20E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3208	Propane Sphere: Organic Liquid Storage Tank	Propane	T3477417	-7.67E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3211	Sphere	Butane	T3477416	-3.83E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3212	Sphere	Propane	T3477417	-2.76E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T5472098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T5472419	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	3.56E+05	thou gal/yr	12/31/2008		0	267.8	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008		0	66.4	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T5472315	-1.29E+05	thou gal/yr	12/31/1997		0	1.2	0	0	0
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T4477315	8.40E+04	thou gal/yr	7/9/1997		0	22.7	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	1.54E+04	thou gal/yr	12/31/2008		0	142.5	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	1.49E+04	thou gal/yr	12/31/2008		0	182	0	0	0
3225	Organic Liquid Storage Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T4377419	-3.37E+02	thou gal/yr	12/31/1997		0	0	0	0	0
3910	LPG Tank; # 3910	LPG	T3477160	-3.97E+04	thou gal/yr	6/10/1998		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
3911	LPG Tank, # 3911	LPG	T3477160	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0
4032	#3 RHENIFORMER, F101	Process gas - other/not spec	C1540237	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4032	#3 RHENIFORMER, F101	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
4032	#3 RHENIFORMER, F101	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4033	#3 RHENIFORMER, F102	Process gas - other/not spec	C1540237	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4033	#3 RHENIFORMER, F102	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
4033	#3 RHENIFORMER, F102	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008		25.4	7.6	104	8.5
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008		17.4	5.2	71	5.8
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008		7.7	2.3	31.6	2.6
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008		5.2	1.6	21.3	1.7
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008		14.4	4.3	58.8	4.8
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008		8.4	2.5	34.2	2.8
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008		6.4	1.9	26	2.1
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008		2.9	0.9	11.8	1
4046	ASPHALT PLANT F1 H.O. HEATER	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008		9.7	2.9	33.9	3.2
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008		10.1	3	35.4	3.4
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008		11.4	3.4	57.7	3.8
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008		16.1	4.8	81.6	5.4
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008		9	2.7	144.3	3
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008		2	0.6	38.9	0.7
4070	#4 CRUDE UNIT F 1100A	Naphtha	C1520188	0.00E+00	/yr	12/31/2008		0	0	0	0
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008		61.3	18.4	171.7	164.3
4071	#4 CRUDE UNIT F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2008		0	0	0	0
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008		56.4	16.9	157.9	151.1
4072	#4 CRUDE UNIT F1160	Naphtha	C1520188	0.00E+00	/yr	12/31/2008		0	0	0	0
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008		18	5.4	50.4	48.2
4073	LSFO COOLING TOWER	Fresh water	G5005415	7.62E+04	thou gallo/yr	12/31/2008		0	1.3	0	0
4076	3 CAT COOLING TOWER E460	Fresh water	G5005415	1.02E+05	thou gallo/yr	12/31/2008		0	1.7	0	0
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008		0	0	0.1	0
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008		18.4	5.5	64.5	6.2
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008		11.3	3.4	39.9	3.8
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008		19.8	5.9	69.3	6.6
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008		12.9	3.9	45.2	4.3
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008		23.7	7.1	82.8	7.9
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	3.83E+04	thou barre/yr	12/31/2008		0	0.5	0	0
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008		2.5	0.7	10.2	0.8
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008		2.6	0.8	10.5	0.9
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008		33.2	9.9	152.1	11.1
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008		8.5	2.5	34.7	7.1
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008		7.5	2.2	21	2.5
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008		8	2.4	22.5	2.7
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008		0	0	0	0
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008		8.1	2.4	121.7	4.2
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008		0	0	0	0
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008		9.3	2.8	140.1	4.8
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008		0	0	0	0
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008		0.1	2.4	126.4	4.4

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4164	F-630 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008		5.6	1.7	19.6	1.9	9.4
4165	F620 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008		3.7	1.1	12.8	1.2	6.2
4166	F-610 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008		4.6	1.4	16.2	1.6	7.8
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	6.40E+05	thou cu ft/yr	12/31/2008		0.1	5	72.3	5.9	29.8
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008		42.6	12.7	119.2	14.3	71.8
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008		33.7	10.1	94.3	11.3	56.8
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008		118.1	35.4	20.8	39.5	199.1
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008		122.3	36.6	342.1	102.3	206
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	1.07E+00	thou gallo/yr	12/31/2008		0	0	0	0	0
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	6.57E+05	thou gallo/yr	12/31/2008		0	10.8	0	0	0
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	4.07E+04	thou gallo/yr	12/31/2008		0	0.7	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008		0	0	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008		2.9	0.9	83.1	1.5	4.9
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008		0	0	0	0	0
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008		1.6	0.5	46	0.8	2.7
4191	Alkane Cooling Water Tower	Fresh water	G5005415	7.29E+04	thou gallo/yr	12/31/2008		0	1.2	0	0	0
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008		0.5	1	24	4.6	6
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008		0.6	1.2	28.6	0.1	7.1
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008		0.7	1.3	31.3	6	7.8
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	3.37E+03	thou barre/yr	12/31/2008		0	9.2	0	0	0
4227	SRU #1 TRAIN	Sulfur	G7055267	4.59E+04	tons/yr	12/31/2008		0	0	0	87.5	0
4228	SRU #2 TRAIN	Sulfur	G7055267	4.68E+04	tons/yr	12/31/2008		0	0	0	125	0
4229	SRU #3 TRAIN	Sulfur	G7055267	6.42E+04	tons/yr	12/31/2008		0	0	0	136.4	0
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997		0	0	0	0	0
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	2.25E+01	thou barre/yr	12/31/2008		0	0.1	0	0	0
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	1.80E+04	thou barre/yr	12/31/2008		0	49.4	0	0	0
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	9.55E+03	thou barre/yr	12/31/2008		0	7.8	0	0	0
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	8.80E+04	thou barre/yr	12/31/2008		0	241.1	0	0	0
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	8.36E+03	thou barre/yr	12/31/2008		0	34.3	0	0	0
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	3.44E+04	thou gal/yr	12/31/2008		0	15.1	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	5.99E+04	million cu/yr	12/31/2008		0	8.4	0	0	90.2
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	1.38E+04	thou barre/yr	12/31/2008		0	0	0	0	0
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	0.00E+00	thou gallo/yr	12/31/2008		0	0	0	0	0
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	1.74E+04	thou barre/yr	12/31/2008		0	0	0	0	0
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	1.50E+04	thou barre/yr	12/31/2008		0	0	0	0	0
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	2.30E+03	thou barre/yr	12/31/2008		0	0	0	0	0
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	8.96E+03	thou barre/yr	12/31/2008		0	0	0	0	0
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008		14.5	156.6	665.6	964.9	179.5
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008		501.1	0.2	0	0	0
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	1.64E+04	thou barre/yr	12/31/2008		0	0.4	0	0	0
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	8.51E+03	thou barre/yr	12/31/2008		0	11.7	0	0	0
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	2.43E+03	thou barre/yr	12/31/2008		0	10	0	0	0
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4329	RLOP Cooling Tower	Fresh water	G5005415	1.30E+05	thou gallo/yr	12/31/2008		0	0.3	0	0	0
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008		1.4	0.4	1.2	0.5	2.3
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008		2.4	0.7	2	0.8	4
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008		7	2.1	6.1	2.3	11.8
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008		0	1.5	4.6	1.8	9
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008		4.3	1.3	3.7	1.4	7.2
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008		3.1	0.9	2.7	1	5.2
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008		3.8	1.1	3.3	1.3	6.4
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008		3.4	1	3	1.1	5.8
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008		4.9	1.5	4.3	1.6	8.2
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008		2	0.6	1.8	0.7	3.4
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	7.30E+05	tons/yr	12/31/2008		0	0.7	0	0	0
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	4.82E+03	thou barre/yr	12/31/2008		0	0.7	0	0	0
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	1.19E+06	tons/yr	12/31/2008		0	1.2	0	0	0
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	2.99E+05	tons/yr	12/31/2008		0	0.3	0	0	0
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G598318	4.95E+05	tons/yr	12/31/2008		0	2.5	0	0	0
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008		0.9	1.7	39.8	2.4	9.9
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008		0.6	0.9	30.2	4.3	2.1
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008		12	2.4	252.5	3.6	37.2
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2008		0	0	0	0	0
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008		9.5	9.5	49.6	10.7	22.2
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008		0.6	0.9	30.2	0	2.1
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008		11.6	2.4	252.5	3.5	36
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2008		0	0	0	0	0
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008		9	9	49.6	5	20.9
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2008		0	0	0	0	0
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2008		0	0	0	0	0
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T3377210	5.02E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T4177210	0.00E+00				0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4362	Perc Surge Control Vessel V-3591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4363	Perc Storage Tank V-3592	Perchloroethylene	T4277210	5.38E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4364	Perc Storage Tank V-4091	Perchloroethylene	T4277210	3.27E+01	thou gal/yr	12/31/2008		0	0	0	0	0
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	0.00E+00	thou barre/yr	12/31/2008		0	0	0	0	0
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	1.31E+04	thou barre/yr	12/31/2008		0	27.4	0	0	0
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	7.91E+04	thou barre/yr	12/31/2008		0	165.6	0	0	0
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	1.57E+05	tons/yr	12/31/2008		0	0	0	0	0
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE871052	3.47E+03	thou gal/yr	12/31/1996		0	2.8	0	0	0
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE871052	1.33E+04	thou gal/yr	12/31/1996		0	5.3	0	0	0
4405	Heavy Oil Transloading Operations	Waste oil	TE672549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	6.00E+00	gal/yr	5/14/2007		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	5.00E+00	gal/yr	5/14/2007		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4413	#2a Separator	Waste water - refin, other/not	G5017300	2.44E+04	thou barre/yr	12/31/2008		0	561.5	0	0	0
4414	#1a Separator	Waste water - refin, other/not	G5017300	1.62E+04	thou barre/yr	12/31/2008		0	108.6	0	0	0
4415	Asphalt Tank Truck Loading Racks	Asphalt	T9871030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2006		0	0	0	0
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2006		0	0	0	0
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E+01	tons/yr	12/31/2000		0	0	0	0
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997		0	0	0	0
4424	Equipment Painting Area	Coating/Ink/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006		0	0	0	0
4424	Equipment Painting Area	Mineral spirits	SG700184	4.00E+00	gal/yr	12/31/2006		0	0.1	0	0
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998		0	0	0	0
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006		0	0	0	0
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2006		0	0	0	0
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006		0	0	0	0
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006		0	0	0	0
4433	#3H2S Plant	Waste gases	G5998338	3.00E+02	million cu/yr	12/31/2008		0	0.1	0	0
4434	#4H2S Plant	Waste gases	G5998338	1.47E+03	million cu/yr	12/31/2008		0	0.4	0	0
4435	#5H2S Plant	Waste gases	G5998338	1.94E+03	million cu/yr	12/31/2008		0	0.5	0	0
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T42??201	3.28E+00	thou gal/yr	12/31/2007		0	0.1	0	0
5101	Tank-Marketing T-101	Lube oil	T44??7419	1.85E+04	thou gal/yr	3/31/1997		0	62.2	0	0
5103	Tank-Marketing T-103	Lube oil	T44??7419	1.28E+04	thou gal/yr	3/31/1997		0	48.8	0	0
5105	Tank-Marketing T-105	Lube oil	T44??7419	1.12E+04	thou gal/yr	3/31/1997		0	45	0	0
5107	Tank-Marketing T-107	Lube oil	T44??7419	3.26E+02	thou gal/yr	3/31/1997		0	4	0	0
5108	Tank-Marketing T-108	Lube oil	T44??7419	2.51E+02	thou gal/yr	3/31/1997		0	3.8	0	0
5109	Tank-Marketing T-109	Lube oil	T44??7419	4.98E+02	thou gal/yr	3/31/1997		0	4.4	0	0
5110	Tank-Marketing T-110	Lube oil	T44??7419	1.33E+03	thou gal/yr	3/31/1997		0	6.3	0	0
5112	Tank-Marketing T-112	Lube oil	T43??7419	5.80E+01	thou gal/yr	3/31/1997		0	0.9	0	0
5113	Tank-Marketing T-113	Lube oil	T43??7419	5.00E+00	thou gal/yr	3/31/1997		0	0.8	0	0
5115	Tank-Marketing T-115	Lube oil	T43??7419	5.70E+01	thou gal/yr	3/31/1997		0	0.9	0	0
5117	Tank-Marketing T-117	Lube oil	T44??7419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0
5118	Tank-Marketing T-118	Lube oil	T44??7419	4.60E+01	thou gal/yr	3/31/1997		0	1.5	0	0
5119	Tank-Marketing T-119	Lube oil	T44??7419	6.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0
5121	Tank-Marketing T-121	Lube oil	T44??7419	5.70E+01	thou gal/yr	3/31/1997		0	2	0	0
5122	Tank-Marketing T-122	Lube oil	T44??7419	6.70E+01	thou gal/yr	3/31/1997		0	1.7	0	0
5123	Tank-Marketing T-123	Lube oil	T44??7419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0
5125	Tank-Marketing T-125	Lube oil	T43??7419	2.60E+01	thou gal/yr	3/31/1997		0	0.8	0	0
5126	Tank-Marketing T-126	Lube oil	T43??7419	1.04E+02	thou gal/yr	3/31/1997		0	1	0	0
5127	Tank-Marketing T-127	Lube oil	T43??7419	1.92E+02	thou gal/yr	3/31/1997		0	1.2	0	0
5128	Tank-Marketing T-128	Lube oil	T43??7419	6.40E+01	thou gal/yr	3/31/1997		0	0.9	0	0
5129	Tank-Marketing T-129	Lube oil	T43??7419	3.20E+01	thou gal/yr	3/31/1997		0	0.4	0	0
5130	Tank-Marketing T-130	Lube oil	T43??7419	8.00E+01	thou gal/yr	3/31/1997		0	0.5	0	0
5131	Tank-Marketing T-131	Lube oil	T43??7419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0
5132	Tank-Marketing T-132	Lube oil	T43??7419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0
5133	Tank-Marketing T-133	Lube oil	T43??7419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0
5134	Tank-Marketing T-134	Lube oil	T43??7419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0
5135	Tank-Marketing T-135	Lube oil	T43??7419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0
5136	Tank-Marketing T-136	Lube oil	T43??7419	1.36E+02	thou gal/yr	3/31/1997		0	0.7	0	0
5137	Tank-Marketing T-137	Lube oil	T43??7419	1.20E+02	thou gal/yr	3/31/1997		0	0.6	0	0
5138	Tank-Marketing T-138	Lube oil	T43??7419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0
5139	Tank-Marketing T-139	Lube oil	T43??7419	2.60E+01	thou gal/yr	3/31/1997		0	0.4	0	0
5140	Tank-Marketing T-140	Lube oil	T43??7419	1.30E+01	thou gal/yr	3/31/1997		0	0	0	0
5201	Tank-Marketing T-201	Lube oil	T44??7419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0
5202	Tank-Marketing T-202	Lube oil	T44??7419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
5203	Tank-Marketing T-203	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5204	Tank-Marketing T-204	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997		0	6.6	0	0	0
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997		0	8.7	0	0	0
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997		0	5.1	0	0	0
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997		0	3.5	0	0	0
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997		0	2.3	0	0	0
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997		0	4.2	0	0	0
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997		0	2	0	0	0
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0	0
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0	0
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997		0	2.2	0	0	0
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997		0	2.4	0	0	0
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997		0	1.4	0	0	0
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997		0	1.2	0	0	0
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997		0	1.3	0	0	0
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997		0	0.9	0	0	0
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997		0	3.6	0	0	0
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997		0	0.9	0	0	0
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997		0	1.8	0	0	0
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0	0
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0	0
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997		0	0.6	0	0	0
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.4	0	0	0
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.9	0	0	0
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0	0
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0	0
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0	0
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0	0
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0	0
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997		0	5.7	0	0	0
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008		0.4	33.2	2.6	0	5
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008		0.4	35.3	2.8	0	5.3
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008		0.2	17.5	1.4	0	2.6
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
	6015 Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2008		0	0	0	0	0
	6016 FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008		0.4	32.3	2.5	0	4.8
	6016 FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
	6019 V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008		0.2	16.8	1.3	0	2.5
	6019 V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
	6039 Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008		0.4	34.3	2.7	0	5.1
	6039 Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
	6042 Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
	6045 Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998		0	0	0	0	0
	6046 Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
	6047 Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
	6050 MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2008		0	0	0	0	0
	6051 Alky Cooling Tower	Fresh water	G5005415	2.26E+05	thou gallo/yr	12/31/2008		0.2	0.4	0	0	0
	6061 Alkane Treatment Plant	Refinery feedstock - other/not	G5023239	0.00E+00	thou barre/yr	12/31/2008		0	0	0	0	0
	6066 Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6125 Tank 6125	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6200 Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6200 Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6200 Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6200 Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6200 Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6201 Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6201 Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6201 Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6201 Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6202 Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6202 Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6202 Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6202 Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6202 Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6203 Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6203 Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6203 Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6203 Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6204 Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6204 Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6204 Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6204 Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6205 Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6205 Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6205 Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6205 Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6206 Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6206 Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6206 Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6206 Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6207 Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6207 Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6207 Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6207 Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6208 Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6208 Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6208 Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6208 Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6209 Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6209 Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6209 Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6209 Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6210 Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6210 Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6210 Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6210 Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6211 PORTABLE POLYETHYLENE STORAGE CONTAINER	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6211 PORTABLE POLYETHYLENE STORAGE CONTAINER	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6211 PORTABLE POLYETHYLENE STORAGE CONTAINER	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6211 PORTABLE POLYETHYLENE STORAGE CONTAINER	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6212 Portable Polyethylene Storge Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6212 Portable Polyethylene Storge Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6212 Portable Polyethylene Storge Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
	6212 Portable Polyethylene Storge Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0

Printed: AUG 1, 2013

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day				
								Org	NOx	SO2	CO	
6213	Portable Polyethylene Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6213	Portable Polyethylene Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6213	Portable Polyethylene Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6213	Portable Polyethylene Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6214	Portable Polyethyene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6214	Portable Polyethyene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6214	Portable Polyethyene Storage Container	Petroleum products - other/not	T437??321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6214	Portable Polyethyene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6216	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6216	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6216	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6216	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6218	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6218	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6218	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6218	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6219	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6219	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6219	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6219	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6220	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6220	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6220	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	3.04E+01	thou gal/yr	12/31/2008		0	0	0	0	
6220	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6220	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6221	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6221	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	2.66E+01	thou gal/yr	12/31/2008		0	0	0	0	
6221	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	2.66E+01	thou gal/yr	12/31/2008		0	0	0	0	
6221	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6221	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6222	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6222	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6222	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	2.39E+01	thou gal/yr	12/31/2008		0	0	0	0	
6222	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6222	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6223	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6223	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6223	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6223	Portable Steel Storage Container	Oil/water mixture	T437?503	6.30E-01	thou gal/yr	12/31/2008		0	0	0	0	
6223	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6224	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6224	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6224	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	1.03E+01	thou gal/yr	12/31/2008		0	0	0	0	
6224	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6224	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6224	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6225	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6225	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	9.45E+00	thou gal/yr	12/31/2008		0	0.1	0	0	
6225	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6225	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6225	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6226	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6226	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	8.44E+00	thou gal/yr	12/31/2008		0	0.1	0	0	
6226	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6226	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6226	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6227	Portable Steel Storage	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6227	Portable Steel Storage	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6227	Portable Steel Storage	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6227	Portable Steel Storage	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6227	Portable Steel Storage	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6228	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	1.49E+01	thou gal/yr	12/31/2008		0	0	0	0	
6228	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6228	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6228	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	2.39E+00	thou gal/yr	12/31/2008		0	0	0	0	
6229	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	
6229	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6229	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6230	Portable Steel Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6230	Portable Steel Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6230	Portable Steel Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6230	Portable Steel Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	1.20E+01	thou gal/yr	12/31/2008		0	0	0	0	0
6231	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6231	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6231	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6232	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	8.44E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6232	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6232	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6233	Portable Steel Storage Container	Paraffins - C3+	T43??7052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	1.76E+01	thou gal/yr	12/31/2008		0	0	0	0	0
6233	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6233	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6233	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6234	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6234	Portable Steel Storage Container	Oil/water mixture	T43??7503	8.40E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6234	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6235	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6235	Portable Steel Storage Container	Oil/water mixture	T43??7503	1.26E+01	thou gal/yr	12/31/2008		0	0	0	0	0
6235	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	2.52E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6236	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6236	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6236	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	1.02E+01	thou gal/yr	12/31/2008		0	0	0	0	0
6237	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6237	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6237	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	1.85E+01	thou gal/yr	12/31/2008		0	0	0	0	0
6238	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6238	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6238	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6239	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6239	Portable Steel Storage Container	Oil/water mixture	T43??7503	1.68E+01	thou gal/yr	12/31/2008		0	0	0	0	0
6239	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2008		0	0	0	0	0
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997		0	0	0	0	0
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008		0.5	0.6	4.8	0	1.7
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008		0	0	0.1	0	0
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008		0	0	0.3	0	0.3
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008		0	0	0.4	0	0.1
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008		0	0	0.2	0	0
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008		0	0	0.2	0	0
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008		0	0	0.2	0	0.1
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008		0	0	0.5	0	0.1
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008		0	0	0.4	0	0
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008		0	0	1.1	0	0.1
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008		0.4	0.5	6	0	1.3
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008		1.1	1.2	15.5	0	3.4

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008		0.3	0.4	4.4	0	1
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008		0.8	0.9	11.7	0	2.5
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008		0.4	0.4	5.5	0	1.2
7522	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008		0	0	1.2	0	0.3
7525	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008		0	0	0.7	0	0
7527	Diesel Engine, Deutz model F4L912HO	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008		0	0	0.1	0	0
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007		0	0	0.3	0	0.3
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007		0	0	0.6	0	0.1
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007		0	0	0.6	0	0.1
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008		0.2	1	36.8	0	3
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006		0	0	0	0	0
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	1.80E+01	gal/yr	12/31/2006		0	0.3	0	0	0
9047	Tank 6047	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??090	-5.45E+01	thou gal/yr	12/31/1997		0	0	0	0	0
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??419	-3.51E+00	thou gal/yr	12/31/1997		0	0.1	0	0	0
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998		0	0.3	0	0	0
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003		0	1.5	0	0	0
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??7052	5.29E+05	thou gal/yr	12/31/2008		0	10.3	0	0	0
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??242	1.15E+05	thou gal/yr	12/31/2008		0	0	0	0	0
9321	Marine Loading Berth #1	Distillate oil	TB8??315	6.53E+04	thou gal/yr	12/31/2008		0	0.1	0	0	0
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9321	Marine Loading Berth #1	Crude oil	TF8??089	5.13E+04	thou gal/yr	12/31/2008		0	0	0	0	0
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??7052	1.50E+05	thou gal/yr	12/31/2008		0	2.9	0	0	0
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008		0	4.2	0	0	0
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??158	2.02E+05	thou gal/yr	12/31/2008		0	0.2	0	0	0
9322	Marine Loading Berth #2	Methyl alcohol	TB8??179	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??201	6.70E+02	thou gal/yr	12/31/2008		0	0	0	0	0
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??242	1.11E+05	thou gal/yr	12/31/2008		0	0	0	0	0
9322	Marine Loading Berth #2	Toluene	TB8??293	3.50E+03	thou gal/yr	12/31/2008		0	0.1	0	0	0
9322	Marine Loading Berth #2	Distillate oil	TB8??315	1.96E+05	thou gal/yr	12/31/2008		0	0.2	0	0	0
9322	Marine Loading Berth #2	Lube oil	TB8??419	2.01E+05	thou gal/yr	12/31/2008		0	0.1	0	0	0
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	1.38E+05	thou gal/yr	12/31/2008		0	63.7	0	0	0
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??628	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9322	Marine Loading Berth #2	Crude oil	TF8??089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??7052	6.02E+04	thou gal/yr	12/31/2008		0	1.2	0	0	0
9323	Marine Loading Berth #3	Crude oil	TB8??089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008		0	5.4	0	0	0
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB8??158	8.29E+04	thou gal/yr	12/31/2008		0	0.1	0	0	0
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB8??201	7.43E+03	thou gal/yr	12/31/2008		0	7	0	0	0
9323	Marine Loading Berth #3	Bunker C fuel oil	TB8??242	2.00E+04	thou gal/yr	12/31/2008		0	0	0	0	0
9323	Marine Loading Berth #3	Toluene	TB8??293	1.55E+03	thou gal/yr	12/31/2008		0	0.1	0	0	0
9323	Marine Loading Berth #3	Distillate oil	TB8??315	1.95E+05	thou gal/yr	12/31/2008		0	0.2	0	0	0
9323	Marine Loading Berth #3	Lube oil	TB8??419	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	6.14E+05	thou gal/yr	12/31/2008		0	283.2	0	0	0
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB4??2318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9324	Marine Loading Berth #4	Bunker C fuel oil	TB8??242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9324	Marine Loading Berth #4	Distillate oil	TB8??315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9324	Marine Loading Berth #4	Crude oil	TF8??089	3.61E+06	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Paraffins - C3+	TB8??7052	2.04E+03	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB8??158	1.01E+03	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Bunker C fuel oil	TB8??242	1.67E+05	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Toluene	TB8??293	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Distillate oil	TB8??315	3.51E+03	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB8??318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Lube oil	TB8??419	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Crude oil	TF8??089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9326	Marine Loading Berth #11	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9326	Marine Loading Berth #11	Bunker C fuel oil	TB8??242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9326	Marine Loading Berth #11	Distillate oil	TB8??315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

Newtron Products Company (# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	----- Emissions in lbs/day -----				
								Org	NOx	SO2	CO	
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00				0	0	0	0	0
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00				0	0	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00				0	30.9	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00				0	636.2	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00				0	0.3	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00				0	6.3	0	0	0
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00				0	9.8	0	0	0
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00				0	76.5	0	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00				0	0.1	0	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00				0	0	0.8	141	1.8

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Unabated Criteria Pollutant Emissions
for Calendar Year 2008***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	3.00E-01	thou gal/yr	12/31/2007		0	0	0	0	0
55	Tank 55	Distillate oil	T81??7315	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
55	Tank 55	Gasoline - unleaded	T81??7551	1.70E+00	thou gal/yr	12/31/2003		0	0.1	0	0	0
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996		0	0	0	0	0
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
232	TANK 232	Hydrocarbon - mixtures, other/	T5422318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997		0	13.9	0	0	0
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997		0	6.1	0	0	0
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
297	TANK 297	Hydrocarbon - mixtures, other/	T5432318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
297	TANK 297	Refinery sour waste water	T5432442	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
297	TANK 297	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
298	TANK 298	Hydrocarbon - mixtures, other/	T5422318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
298	TANK 298	Refinery sour waste water	T5422442	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
298	TANK 298	Gasoline - unleaded	T5422551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997		0	0.4	0	0	0
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	3.65E+04	thou gal/yr	12/31/2007		0	55.4	0	0	0
398	TANK 398	Hydrocarbon - mixtures, other/	T54??2318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
399	TANK	Distillate oil	T54??2315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
399	TANK	Oil - non-fuel, other/not spec	T54??2352	2.41E+04	thou gal/yr	12/31/2008		0	11.9	0	0	0
399	TANK	Tetra-Ethyl Lead (TEL)	T54??2422	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
401	TANK 401	Refinery feedstock - other/not	T44??2239	4.70E+04	thou gal/yr	4/30/1997		0	10.9	0	0	0
605	Tank 605: Process Water Tank <1000 ppm (wt) Hydrocarbon	Hydrocarbon - mixtures, other/	T42??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
605	Tank 605: Process Water Tank <1000 ppm (wt) Hydrocarbon	Water/organics mixture	T42??7502	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
610	Tank 610: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T81??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
610	Tank 610: Organic Liquid Storage Tank	Water/organics mixture	T81??7502	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
634	TANK 634	Fuel - jet 'A'	T54??2158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
634	TANK 634	Petroleum products - other/not	T54??2321	2.66E+04	thou gal/yr	12/31/2008		0	1.6	0	0	0
634	TANK 634	Gasoline - unleaded	T54??2551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
660	Tank 660: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T81??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
660	Tank 660: Organic Liquid Storage Tank	Water/organics mixture	T81??7502	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	2.12E+04	thou gal/yr	12/31/2007		0	0.1	0	0	0
870	Tank 870	Organic liquid - other/not spe	T43??7201	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T42??7502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T42??7502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Butane	T42??7416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T42??7419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
955	TANK 955	Paraffins - C3+	T5412052	2.87E+04	thou gal/yr	12/31/2008		0	2.4	0	0	0
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
956	TANK 956	Paraffins - C3+	T5412052	2.61E+04	thou gal/yr	12/31/2008		0	2.5	0	0	0
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
957	Tank 957	Diesel fuel	T44??7098	2.43E+04	thou gal/yr	12/31/2008		0	7.3	0	0	0
957	Tank 957	Fuel - jet 'A'	T44??7158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
979	TANK 979	Distillate oil	T44??7315	-6.13E+04	thou gal/yr	4/30/1997		0	7.3	0	0	0
984	TANK 984	Distillate oil	T4417315	-9.67E+03	thou gal/yr	12/31/1997		0	1.4	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
990 TANK 990		Gasoline - unleaded	T5432551	8.37E+04	thou gal/yr	12/31/2008		0	4.6	0	0	0
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007		0	4.7	0	0	0
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
992 Storage Tank T-992		Gasoline - unleaded	T5472551	1.02E+05	thou gal/yr	12/31/2008		0	4.5	0	0	0
1020 Tank 1020: Inorganic Chemical Storage Tank		Diethanolamine	T4477485	4.20E+02	thou gal/yr	3/10/1995		0	0.1	0	0	0
1052 Tank 1052: Organic Liquid Storage Tank		Kerosene	T4377159	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1052 Tank 1052: Organic Liquid Storage Tank		Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1287 TANK 1287		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1287 TANK 1287		Petroleum products - other/not	T5432321	3.39E+04	thou gal/yr	12/31/2008		0	2.2	0	0	0
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1289 TANK 1289		Toluene	T6472293	1.65E+03	thou gal/yr	12/31/2008		0	1	0	0	0
1289 TANK 1289		Hydrocarbon - mixtures, other/	T6472318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1292 TANK 1292		Diesel fuel	T5412098	2.18E+05	thou gal/yr	12/31/2008		0	1.4	0	0	0
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1296 TANK 1296		Gasoline - unleaded	T5412551	8.64E+04	thou gal/yr	12/31/2008		0	5.9	0	0	0
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T6372502	5.90E+00	thou gal/yr	12/31/2003		0	0	0	0	0
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04	thou gal/yr	4/30/1997		0	7.1	0	0	0
1431 Asphalt Tank(T-907)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008		0	1.9	0	0	0
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1459 TANK 1459		Gasoline - unleaded	T5432551	3.16E+04	thou gal/yr	12/31/2008		0	4	0	0	0
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1488 TANK 1488		Oil/water mixture	T5472503	3.73E+03	thou gal/yr	12/31/2008		0	31.3	0	0	0
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1489 TANK 1489		Alkylate	T5432389	1.01E+04	thou gal/yr	12/31/2008		0	4.7	0	0	0
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1491 TANK 1491		Gasoline - unleaded	T5432551	4.55E+04	thou gal/yr	12/31/2008		0	3.9	0	0	0
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997		0	3.5	0	0	0
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	2.87E+04	thou gal/yr	12/31/2008		0	2.3	0	0	0
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997		0	0.8	0	0	0
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997		0	0	0	0	0
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1514 TANK 1514		Gasoline - unleaded	T5432551	9.05E+04	thou gal/yr	12/31/2008		0	5.1	0	0	0
1518 TANK 1518		Fuel - jet 'A'	T5432158	1.30E+04	thou gal/yr	12/31/2007		0	0.1	0	0	0
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998		0	0	0	0	0
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	1.79E+03	thou gal/yr	12/31/2007		0	0.1	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007		0	0	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007		0	0.7	0	0	0
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997		0	1.3	0	0	0
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1637 TANK 1637		Gasoline - unleaded	T6H32551	1.14E+04	thou gal/yr	12/31/2008		0	1.2	0	0	0
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
1645	TANK 1645	Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1653	TANK 1653	Fuel - jet 'A'	T4417158	3.19E+03	thou gal/yr	12/31/2008		0	2.2	0	0	0
1653	TANK 1653	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1653	TANK 1653	Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1686	TANK 1686	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1687	TANK 1687	Gasoline - unleaded	T5432551	1.43E+05	thou gal/yr	12/31/2008		0	5.5	0	0	0
1688	TANK 1688	Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007		0	5.5	0	0	0
1798	Tank 1798	Fuel - jet 'A'	T5422158	2.29E+05	thou gal/yr	12/31/2008		0	7.6	0	0	0
1798	Tank 1798	Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1799	TANK 1799	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1799	TANK 1799	Fuel - jet 'A'	T5472158	2.09E+05	thou gal/yr	12/31/2008		0	1.6	0	0	0
1821	Tank 1821 Fresh Sulfuric Acid Tank	H2SO4 - other/not spec	G5999146	1.16E+05	tons/yr	12/31/2008		0	0	0	0	0
1825	Tank 1825	Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1828	TANK 1828	Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1828	TANK 1828	Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1828	TANK 1828	Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006		0	0	0	0	0
1843	TANK 1843	Paraffins - C3+	T5412052	2.95E+02	thou gal/yr	12/31/2007		0	0	0	0	0
1894	Tank 1894: Phosphoric Acid Storage Tank	Phosphoric acid	G5999217	3.76E+02	tons/yr	12/31/2008		0	0	0	0	0
1899	TANK 1899	Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997		0	0.4	0	0	0
1908	Asphalt Tank (T-908)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1909	Tank 1909	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1910	Tank 1910	Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994		0	0	0	0	0
1911	Tank 1911	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1911	Tank 1911	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1966	TANK 1966	Fuel - jet 'A'	T5432158	2.02E+04	thou gal/yr	12/31/2007		0	0.2	0	0	0
2520	Wastewater/MEA Storage Tank	Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005		0	0	0	0	0
2520	Wastewater/MEA Storage Tank	Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005		0	6.3	0	0	0
2540	Tank 2540: Organic Liquid Storage Tank	Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997		0	0.1	0	0	0
2903	Tank 903: Organic Liquid Storage Tank	Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
2903	Tank 903: Organic Liquid Storage Tank	Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
2917	Asphalt Tank (T-917)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2007		0	0	0	0	0
2918	Asphalt Tank (T-918)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2007		0	0	0	0	0
2921	Asphalt Tank (T-921)	Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3038	TANK 3038 (Spherical Pressure Tank)	Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3038	TANK 3038 (Spherical Pressure Tank)	Pentane	T3477209	1.19E+04	thou gal/yr	12/31/2008		0	0	0	0	0
3050	TANK 3050 SPHERE	Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3066	TANK 3066	Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998		0	0	0	0	0
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3071	TANK 3071	Gasoline - unleaded	T5472551	1.04E+05	thou gal/yr	12/31/2008		0	121.7	0	0	0
3072	TANK 3072	Gasoline - unleaded	T5472551	1.05E+05	thou gal/yr	12/31/2007		0	5.2	0	0	0
3073	TANK 3073,external floating roof storage tank w/primary and	Paraffins - C3+	T5472052	1.16E+05	thou gal/yr	12/31/2008		0	6.8	0	0	0
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3074	TANK 3074	Distillate oil	T5472315	1.14E+05	thou gal/yr	12/31/2007		0	0.7	0	0	0
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	9.84E+03	thou gal/yr	12/31/2008		0	3	0	0	0
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3076	TANK T3076	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3076	TANK T3076	Hydrocarbon - mixtures, other/	T5472318	1.71E+04	thou gal/yr	12/31/2008		0	3.4	0	0	0
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Crude oil	T5472089	4.59E+05	thou gal/yr	12/31/2008		0	21.8	0	0	0
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Bunker C fuel oil	T5472242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3101	TANK 3101	Crude oil	T5432089	4.87E+05	thou gal/yr	12/31/2008		0	30.8	0	0	0
3101	TANK 3101	Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3101	TANK 3101	Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3102	TANK 3102	Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3102	TANK 3102	Hydrocarbon - mixtures, other/	T5432318	3.26E+05	thou gal/yr	12/31/2008		0	11.1	0	0	0
3103	TANK 3103	Crude oil	T5432089	3.43E+05	thou gal/yr	12/31/2007		0	35.5	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3104	TANK 3104	Crude oil	T5432089	7.74E+05	thou gal/yr	12/31/2007		0	5.9	0	0	0
3105	TANK 3105	Crude oil	T5432089	7.36E+05	thou gal/yr	12/31/2007		0	65.3	0	0	0
3106	TANK 3106	Crude oil	T5432089	3.21E+05	thou gal/yr	12/31/2007		0	34.6	0	0	0
3107	TANK 3107	Crude oil	T5472089	3.40E+05	thou gal/yr	12/31/2008		0	3.5	0	0	0
3110	Desalter Effluent Surge Tank A	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007		0	7.1	0	0	0
3111	Desalter Effluent Surge Tank B	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007		0	6.4	0	0	0
3126	TANK 3126	Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3126	TANK 3126	Oil/water mixture	T5432503	1.15E+05	thou gal/yr	12/31/2008		0	1.4	0	0	0
3127	TANK 3127	Oil/water mixture	T5412503	2.38E+03	thou gal/yr	12/31/2007		0	1.7	0	0	0
3128	TANK 3128	Aromatic hydrocarbons - other/	T5472027	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3128	TANK 3128	Water/organics mixture	T5472502	1.64E+03	thou gal/yr	12/31/2008		0	1.2	0	0	0
3129	TANK 3129	Fuel - jet 'A'	T5412158	1.16E+05	thou gal/yr	12/31/2007		0	1.1	0	0	0
3132	Tank 3132	Distillate oil	T5472315	8.12E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
3133	TANK 3133	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3133	TANK 3133	Gasoline - unleaded	T5412551	4.50E+05	thou gal/yr	12/31/2008		0	103.8	0	0	0
3133	TANK 3133	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3134	TANK 3134	Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3134	TANK 3134	Gasoline - unleaded	T5412551	3.09E+05	thou gal/yr	12/31/2008		0	83.3	0	0	0
3134	TANK 3134	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3138	TANK 3138	Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
3139	TANK 3139	Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997		0	8.1	0	0	0
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	1.57E+05	tons/yr	12/31/2008		6.1	0	0	171.9	0
3142	TANK 3142	Refinery feedstock - other/not	T4417239	4.42E+02	thou gal/yr	12/31/2008		0	0	0	0	0
3144	TANK 3144	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3145	TANK 3145, Sphere	Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998		0	0	0	0	0
3146	Tank 3146: 20% Aqueous Ammonia	Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994		0	14.6	0	0	0
3147	Tank 3147: Organic Liquid Storage Tank	Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3148	Tank 3148: Organic Liquid Storage Tank	Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3157	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	12.4	0	0	0
3158	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3159	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3160	Tank 3160: Organic Liquid Storage Tank	Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994		0	13.4	0	0	0
3161	Tank Lube Oil	Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3162	Tank Lube Oil	Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3163	Tank Lube Oil	Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3164	Tank Lube Oil	Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
3165	Tank Lube Oil	Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3166	Tank Lube Oil	Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3167	Tank Lube Oil	Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3168	Tank Lube Oil	Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3169	organic liquid storage tank, lube oil products	Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995		0	0.2	0	0	0
3170	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3171	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3172	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	9.6	0	0	0
3179	Tank 3179: Organic Liquid Storage Tank	Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997		0	0.2	0	0	0
3180	Tank	Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3180	Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3180	Tank	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3180	Tank	Alkylate	T5472389	2.86E+04	thou gal/yr	12/31/2008		0	113.5	0	0	0
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3182	Tank 3182: Organic Liquid Storage Tank	Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997		0	0.3	0	0	0
3185	Tank 3185 (previously T-982)	Fuel - jet 'A'	T5472158	2.10E+05	thou gal/yr	12/31/2007		0	6.4	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3186	Gas Oil Tank	Organic liquid - other/not spe	T447?201	0.00E+00		4/21/1997		0	8.7	0	0	0
3189	Gasoline component and Diesel Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	3.34E+05	thou gal/yr	12/31/2008		0	6.6	0	0	0
3189	Gasoline component and Diesel Tank	Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3190	Storage Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3190	Storage Tank	Fuel - jet 'A'	T5472158	2.44E+05	thou gal/yr	12/31/2008		0	2	0	0	0
3191	Storage Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3191	Storage Tank	Gasoline - leaded	T5472128	2.69E+04	thou gal/yr	12/31/2008		0	4.3	0	0	0
3191	Storage Tank	Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3191	Storage Tank	Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3191	Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3191	Storage Tank	Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3192	Desalter Effluent Skim Tank	Crude oil	T3H?7089	3.15E+04	thou gal/yr	12/31/2008		0	0	0	0	0
3193	Gasoline component Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3193	Gasoline component Tank	Isooctane	T5472154	3.81E+04	thou gal/yr	12/31/2008		0	2.4	0	0	0
3193	Gasoline component Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3193	Gasoline component Tank	Alkylate	T5472389	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3193	Gasoline component Tank	Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3193	Gasoline component Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3194	Storage Tank T-3194	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
3194	Storage Tank T-3194	Gas oil	T5472394	1.44E+05	thou gal/yr	12/31/2003		0	1	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Diesel fuel	T5477098	1.29E+05	thou gal/yr	12/31/2006		0	2.4	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Distillate oil	T5477315	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Lube oil	T5477419	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3196	Gasoline Components Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3196	Gasoline Components Tank	Organic liquid - other/not spe	T5472201	1.15E+05	thou gal/yr	12/31/2008		0	1.3	0	0	0
3196	Gasoline Components Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3196	Gasoline Components Tank	Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3196	Gasoline Components Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3196	Gasoline Components Tank	Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3197	Gasoline component Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3197	Gasoline component Tank	Naphtha	T5572188	1.87E+04	thou gal/yr	12/31/2008		0	6.2	0	0	0
3197	Gasoline component Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3197	Gasoline component Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Fuel - jet 'A'	T5437158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Toluene	T5437293	3.20E+03	thou gal/yr	12/31/2008		0	18.5	0	0	0
3198	3198 tank; organic liquid storage tank	Distillate oil	T5437315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	2.75E+03	thou barre/yr	12/31/2008		0	60.2	0	0	0
3201	Tank 3201: Whole Alkylate	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3201	Tank 3201: Whole Alkylate	Alkylate	T5472389	1.15E+05	thou gal/yr	12/31/2008		0	112.3	0	0	0
3202	Tank 3202: Methanol	Methyl alcohol	T5472179	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3202	Tank 3202: Methanol	Naphtha	T5472188	8.29E+03	thou gal/yr	12/31/2008		0	73	0	0	0
3202	Tank 3202: Methanol	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3202	Tank 3202: Methanol	Petroleum products - other/not	T5472321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3204	Tank 3204: Organic Liquid Storage Tank	Lube oil	T4277419	2.54E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3207	Butane Sphere: Organic Liquid Storage Tank	Butane	T3477416	-9.20E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3208	Propane Sphere: Organic Liquid Storage Tank	Propane	T3477417	-7.67E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3211	Sphere	Butane	T3477416	-3.83E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3212	Sphere	Propane	T3477417	-2.76E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T5472098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T5472419	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	3.56E+05	thou gal/yr	12/31/2008		0	267.8	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008		0	66.4	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T5472315	-1.29E+05	thou gal/yr	12/31/1997		0	1.2	0	0	0
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T4477315	8.40E+04	thou gal/yr	7/9/1997		0	22.7	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	1.54E+04	thou gal/yr	12/31/2008		0	142.5	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	1.49E+04	thou gal/yr	12/31/2008		0	182	0	0	0
3225	Organic Liquid Storage Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T4377419	-3.37E+02	thou gal/yr	12/31/1997		0	0	0	0	0
3910	LPG Tank; # 3910	LPG	T3477160	-3.97E+04	thou gal/yr	6/10/1998		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
3911	LPG Tank, # 3911	LPG	T3477160	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0
4032	#3 RHENIFORMER, F101	Process gas - other/not spec	C1540237	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4032	#3 RHENIFORMER, F101	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
4032	#3 RHENIFORMER, F101	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4033	#3 RHENIFORMER, F102	Process gas - other/not spec	C1540237	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4033	#3 RHENIFORMER, F102	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
4033	#3 RHENIFORMER, F102	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008		25.4	7.6	104	8.5
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008		17.4	5.2	71	5.8
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008		7.7	2.3	31.6	2.6
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008		5.2	1.6	21.3	1.7
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008		14.4	4.3	58.8	4.8
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008		8.4	2.5	34.2	2.8
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008		6.4	1.9	26	2.1
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008		2.9	0.9	11.8	1
4046	ASPHALT PLANT F1 H.O. HEATER	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008		9.7	2.9	33.9	3.2
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008		10.1	3	35.4	3.4
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008		11.4	3.4	57.7	3.8
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008		16.1	4.8	81.6	5.4
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008		9	2.7	144.3	3
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008		2	0.6	38.9	0.7
4070	#4 CRUDE UNIT F 1100A	Naphtha	C1520188	0.00E+00	/yr	12/31/2008		0	0	0	0
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008		61.3	18.4	171.7	164.3
4071	#4 CRUDE UNIT F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2008		0	0	0	0
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008		56.4	16.9	157.9	151.1
4072	#4 CRUDE UNIT F1160	Naphtha	C1520188	0.00E+00	/yr	12/31/2008		0	0	0	0
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008		18	5.4	50.4	48.2
4073	LSFO COOLING TOWER	Fresh water	G5005415	7.62E+04	thou gallo/yr	12/31/2008		0	1.3	0	0
4076	3 CAT COOLING TOWER E460	Fresh water	G5005415	1.02E+05	thou gallo/yr	12/31/2008		0	1.7	0	0
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008		0	0	0.1	0
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008		18.4	5.5	64.5	6.2
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008		11.3	3.4	39.9	3.8
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008		19.8	5.9	69.3	6.6
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008		12.9	3.9	45.2	4.3
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008		23.7	7.1	82.8	7.9
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	3.83E+04	thou barre/yr	12/31/2008		0	5.3	0	0
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008		2.5	0.7	10.2	0.8
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008		2.6	0.8	10.5	0.9
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008		33.2	9.9	152.1	11.1
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008		8.5	2.5	34.7	7.1
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008		7.5	2.2	21	2.5
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008		8	2.4	22.5	2.7
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008		0	0	0	0
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008		8.1	2.4	121.7	4.2
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008		0	0	0	0
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008		9.3	2.8	140.1	4.8
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008		0	0	0	0
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008		0.1	2.4	126.4	4.4

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4164	F-630 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008		5.6	1.7	19.6	1.9	9.4
4165	F620 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008		3.7	1.1	12.8	1.2	6.2
4166	F-610 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008		4.6	1.4	16.2	1.6	7.8
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	6.40E+05	thou cu ft/yr	12/31/2008		0.1	5	72.3	5.9	29.8
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008		42.6	12.7	119.2	14.3	71.8
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008		33.7	10.1	94.3	11.3	56.8
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008		118.1	35.4	260.3	39.5	199.1
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008		122.3	36.6	342.1	102.3	206
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	1.07E+00	thou gallo/yr	12/31/2008		0	0	0	0	0
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	6.57E+05	thou gallo/yr	12/31/2008		0	10.8	0	0	0
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	4.07E+04	thou gallo/yr	12/31/2008		0	0.7	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008		0	0	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008		2.9	0.9	83.1	1.5	4.9
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008		0	0	0	0	0
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008		1.6	0.5	46	0.8	2.7
4191	Alkane Cooling Water Tower	Fresh water	G5005415	7.29E+04	thou gallo/yr	12/31/2008		0	1.2	0	0	0
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008		0.5	1	24	4.6	6
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008		0.6	1.2	28.6	0.1	7.1
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008		0.7	1.3	31.3	6	7.8
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	3.37E+03	thou barre/yr	12/31/2008		0	9.2	0	0	0
4227	SRU #1 TRAIN	Sulfur	G7055267	4.59E+04	tons/yr	12/31/2008		0	0	0	8750	0
4228	SRU #2 TRAIN	Sulfur	G7055267	4.68E+04	tons/yr	12/31/2008		0	0	0	12500	0
4229	SRU #3 TRAIN	Sulfur	G7055267	6.42E+04	tons/yr	12/31/2008		0	0	0	13640	0
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997		0	0	0	0	0
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	2.25E+01	thou barre/yr	12/31/2008		0	0.1	0	0	0
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	1.80E+04	thou barre/yr	12/31/2008		0	49.4	0	0	0
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	9.55E+03	thou barre/yr	12/31/2008		0	7.8	0	0	0
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	8.80E+04	thou barre/yr	12/31/2008		0	241.1	0	0	0
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	8.36E+03	thou barre/yr	12/31/2008		0	34.3	0	0	0
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	3.44E+04	thou gal/yr	12/31/2008		0	752.9	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	5.99E+04	million cu/yr	12/31/2008		0	835.1	0	0	90.2
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	1.38E+04	thou barre/yr	12/31/2008		0	0	0	0	0
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	0.00E+00	thou gallo/yr	12/31/2008		0	0	0	0	0
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	1.74E+04	thou barre/yr	12/31/2008		0	0	0	0	0
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	1.50E+04	thou barre/yr	12/31/2008		0	0	0	0	0
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	2.30E+03	thou barre/yr	12/31/2008		0	0	0	0	0
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	8.96E+03	thou barre/yr	12/31/2008		0	0	0	0	0
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008		1452.9	156.6	665.6	964.9	179.5
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008		50110.6	0.2	0	0	0
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	1.64E+04	thou barre/yr	12/31/2008		0	44.9	0	0	0
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	8.51E+03	thou barre/yr	12/31/2008		0	11.7	0	0	0
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	2.43E+03	thou barre/yr	12/31/2008		0	10	0	0	0
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
4329	RLOP Cooling Tower	Fresh water	G5005415	1.30E+05	thou gallo/yr	12/31/2008		0	0.3	0	0
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008		1.4	0.4	4	0.5
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008		2.4	0.7	6.8	0.8
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008		7	2.1	20.2	2.3
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008		0	1.5	15.4	1.8
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008		4.3	1.3	12.3	1.4
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008		3.1	0.9	9	1
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008		3.8	1.1	11.1	1.3
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008		3.4	1	9.9	1.1
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008		4.9	1.5	14.2	1.6
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008		2	0.6	5.9	0.7
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	7.30E+05	tons/yr	12/31/2008		0	14.6	0	0
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	4.82E+03	thou barre/yr	12/31/2008		0	13.2	0	0
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	1.19E+06	tons/yr	12/31/2008		0	23.9	0	0
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	2.99E+05	tons/yr	12/31/2008		0	6	0	0
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	4.95E+05	tons/yr	12/31/2008		0	50.2	0	0
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008		0.9	1.7	39.8	2.4
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008		0.6	1.8	300.2	4.3
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008		12	4.9	2525	3.6
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2008		0	0	0	0
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008		9.5	19	496	10.7
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008		0.6	1.8	302	0
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008		11.6	4.7	2525	3.5
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2008		0	0	0	0
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008		9	17.9	496	5
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2008		0	0	0	0
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2008		0	0	0	0
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T3377210	5.02E+00	thou gal/yr	12/31/2008		0	0	0	0
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T4177210	0.00E+00				0	0	0	0
4361	Perc Surge Control Vessel V-591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0
4362	Perc Surge Control Vessel V-3591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0
4363	Perc Storage Tank V-3592	Perchloroethylene	T4277210	5.38E+00	thou gal/yr	12/31/2008		0	0	0	0
4364	Perc Storage Tank V-4091	Perchloroethylene	T4277210	3.27E+01	thou gal/yr	12/31/2008		0	0.1	0	0
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	0.00E+00	thou barre/yr	12/31/2008		0	0	0	0
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	1.31E+04	thou barre/yr	12/31/2008		0	27.4	0	0
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	7.91E+04	thou barre/yr	12/31/2008		0	165.6	0	0
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	1.57E+05	tons/yr	12/31/2008		4.3	0	0	0
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE871052	3.47E+03	thou gal/yr	12/31/1996		0	2.8	0	0
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE871052	1.33E+04	thou gal/yr	12/31/1996		0	5.3	0	0
4405	Heavy Oil Transloading Operations	Waste oil	TE672549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	0.00E+00	gal/yr	12/31/2006		0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	6.00E+00	gal/yr	5/14/2007		0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007		0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	5.00E+00	gal/yr	5/14/2007		0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2006		0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2006		0	0	0	0
4413	#2a Separator	Waste water - refin, other/not	G5017300	2.44E+04	thou barre/yr	12/31/2008		0	561.5	0	0
4414	#1a Separator	Waste water - refin, other/not	G5017300	1.62E+04	thou barre/yr	12/31/2008		0	108.6	0	0
4415	Asphalt Tank Truck Loading Racks	Asphalt	T9871030	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E+01	tons/yr	12/31/2000		0.5	0	0	0	0
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997		0	0	0	0	0
4424	Equipment Painting Area	Coating/Ink/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4424	Equipment Painting Area	Mineral spirits	SG700184	4.00E+00	gal/yr	12/31/2006		0	0.1	0	0	0
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998		0	0	0	0	0
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4433	#3H2S Plant	Waste gases	G5998338	3.00E+02	million cu/yr	12/31/2008		0	0.1	0	0	0
4434	#4H2S Plant	Waste gases	G5998338	1.47E+03	million cu/yr	12/31/2008		0	0.4	0	0	0
4435	#5H2S Plant	Waste gases	G5998338	1.94E+03	million cu/yr	12/31/2008		0	0.5	0	0	0
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T42??7201	3.28E+00	thou gal/yr	12/31/2007		0	0.1	0	0	0
5101	Tank-Marketing T-101	Lube oil	T44??7419	1.85E+04	thou gal/yr	3/31/1997		0	62.2	0	0	0
5103	Tank-Marketing T-103	Lube oil	T44??7419	1.28E+04	thou gal/yr	3/31/1997		0	48.8	0	0	0
5105	Tank-Marketing T-105	Lube oil	T44??7419	1.12E+04	thou gal/yr	3/31/1997		0	45	0	0	0
5107	Tank-Marketing T-107	Lube oil	T44??7419	3.26E+02	thou gal/yr	3/31/1997		0	4	0	0	0
5108	Tank-Marketing T-108	Lube oil	T44??7419	2.51E+02	thou gal/yr	3/31/1997		0	3.8	0	0	0
5109	Tank-Marketing T-109	Lube oil	T44??7419	4.98E+02	thou gal/yr	3/31/1997		0	4.4	0	0	0
5110	Tank-Marketing T-110	Lube oil	T44??7419	1.33E+03	thou gal/yr	3/31/1997		0	6.3	0	0	0
5112	Tank-Marketing T-112	Lube oil	T43??7419	5.80E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5113	Tank-Marketing T-113	Lube oil	T43??7419	5.00E+00	thou gal/yr	3/31/1997		0	0.8	0	0	0
5115	Tank-Marketing T-115	Lube oil	T43??7419	5.70E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5117	Tank-Marketing T-117	Lube oil	T44??7419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5118	Tank-Marketing T-118	Lube oil	T44??7419	4.60E+01	thou gal/yr	3/31/1997		0	1.5	0	0	0
5119	Tank-Marketing T-119	Lube oil	T44??7419	6.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5121	Tank-Marketing T-121	Lube oil	T44??7419	5.70E+01	thou gal/yr	3/31/1997		0	2	0	0	0
5122	Tank-Marketing T-122	Lube oil	T44??7419	6.70E+01	thou gal/yr	3/31/1997		0	1.7	0	0	0
5123	Tank-Marketing T-123	Lube oil	T44??7419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5125	Tank-Marketing T-125	Lube oil	T43??7419	2.60E+01	thou gal/yr	3/31/1997		0	0.8	0	0	0
5126	Tank-Marketing T-126	Lube oil	T43??7419	1.04E+02	thou gal/yr	3/31/1997		0	1	0	0	0
5127	Tank-Marketing T-127	Lube oil	T43??7419	1.92E+02	thou gal/yr	3/31/1997		0	1.2	0	0	0
5128	Tank-Marketing T-128	Lube oil	T43??7419	6.40E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5129	Tank-Marketing T-129	Lube oil	T43??7419	3.20E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5130	Tank-Marketing T-130	Lube oil	T43??7419	8.00E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5131	Tank-Marketing T-131	Lube oil	T43??7419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5132	Tank-Marketing T-132	Lube oil	T43??7419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5133	Tank-Marketing T-133	Lube oil	T43??7419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5134	Tank-Marketing T-134	Lube oil	T43??7419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5135	Tank-Marketing T-135	Lube oil	T43??7419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5136	Tank-Marketing T-136	Lube oil	T43??7419	1.36E+02	thou gal/yr	3/31/1997		0	0.7	0	0	0
5137	Tank-Marketing T-137	Lube oil	T43??7419	1.20E+02	thou gal/yr	3/31/1997		0	0.6	0	0	0
5138	Tank-Marketing T-138	Lube oil	T43??7419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5139	Tank-Marketing T-139	Lube oil	T43??7419	2.60E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5140	Tank-Marketing T-140	Lube oil	T43??7419	1.30E+01	thou gal/yr	3/31/1997		0	0	0	0	0
5201	Tank-Marketing T-201	Lube oil	T44??7419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5202	Tank-Marketing T-202	Lube oil	T44??7419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 CRITERIA POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
5203	Tank-Marketing T-203	Lube oil	T44??7419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5204	Tank-Marketing T-204	Lube oil	T44??7419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5205	Tank-Marketing T-205	Lube oil	T44??7419	1.69E+03	thou gal/yr	3/31/1997		0	6.6	0	0	0
5206	Tank-Marketing T-5206	Lube oil	T44??7419	3.62E+03	thou gal/yr	3/31/1997		0	8.7	0	0	0
5207	Tank-Marketing T-207	Lube oil	T44??7419	1.25E+03	thou gal/yr	3/31/1997		0	5.1	0	0	0
5208	Tank-Marketing T-208	Lube oil	T44??7419	9.09E+02	thou gal/yr	3/31/1997		0	3.5	0	0	0
5209	Tank-Marketing T-209	Lube oil	T44??7419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0
5210	Tank-Marketing T-210	Lube oil	T44??7419	4.02E+02	thou gal/yr	3/31/1997		0	2.3	0	0	0
5211	Tank-Marketing T-211	Lube oil	T44??7419	1.20E+03	thou gal/yr	3/31/1997		0	4.2	0	0	0
5212	Tank-Marketing T-212	Lube oil	T44??7419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0
5213	Tank-Marketing T-213	Lube oil	T44??7419	2.46E+02	thou gal/yr	3/31/1997		0	2	0	0	0
5214	Tank-Marketing T-214	Lube oil	T44??7419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0
5215	Tank-Marketing T-215	Lube oil	T44??7419	9.80E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5216	Tank-Marketing T-216	Lube oil	T43??7419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0	0
5217	Tank-Marketing T-217	Lube oil	T43??7419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0	0
5218	Tank-Marketing T-218	Lube oil	T43??7419	5.99E+02	thou gal/yr	3/31/1997		0	2.2	0	0	0
5219	Tank-Marketing T-219	Lube oil	T43??7419	6.84E+02	thou gal/yr	3/31/1997		0	2.4	0	0	0
5220	Tank-Marketing T-220	Lube oil	T43??7419	3.49E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5221	Tank-Marketing T-221	Lube oil	T43??7419	3.36E+02	thou gal/yr	3/31/1997		0	1.4	0	0	0
5222	Tank-Marketing T-222	Lube oil	T43??7419	2.49E+02	thou gal/yr	3/31/1997		0	1.2	0	0	0
5223	Tank-Marketing T-223	Lube oil	T43??7419	3.07E+02	thou gal/yr	3/31/1997		0	1.3	0	0	0
5224	Tank-Marketing T-224	Lube oil	T43??7419	1.41E+02	thou gal/yr	3/31/1997		0	0.9	0	0	0
5227	Tank-Marketing T-227	Lube oil	T43??7419	1.25E+03	thou gal/yr	3/31/1997		0	3.6	0	0	0
5228	Tank-Marketing T-228	Lube oil	T43??7419	1.28E+02	thou gal/yr	3/31/1997		0	0.9	0	0	0
5229	Tank-Marketing T-229	Lube oil	T44??7419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5230	Tank-Marketing T-230	Lube oil	T43??7419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5232	Tank-Marketing T-232	Lube oil	T43??7419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5233	Tank-Marketing T-233	Lube oil	T43??7419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5234	Tank-Marketing T-234	Lube oil	T43??7419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5237	Tank-Marketing T-237	Lube oil	T43??7419	1.26E+03	thou gal/yr	3/31/1997		0	1.8	0	0	0
5240	Tank-Marketing T-240	Lube oil	T43??7419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5241	Tank-Marketing T-241	Lube oil	T43??7419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5301	Tank-Marketing T-301	Lube oil	T43??7419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0	0
5302	Tank-Marketing T-302	Lube oil	T43??7419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0	0
5303	Tank-Marketing T-303	Lube oil	T43??7419	3.60E+02	thou gal/yr	3/31/1997		0	0.6	0	0	0
5304	Tank-Marketing T-304	Lube oil	T43??7419	4.20E+02	thou gal/yr	3/31/1997		0	0.4	0	0	0
5305	Tank-Marketing T-305	Lube oil	T43??7419	4.20E+02	thou gal/yr	3/31/1997		0	0.9	0	0	0
5306	Tank-Marketing T-306	Lube oil	T43??7419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0	0
5307	Tank-Marketing T-307	Lube oil	T43??7419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0	0
5308	Tank-Marketing T-308	Lube oil	T43??7419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0	0
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??7419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0	0
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??7419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0	0
5603	Tank-Marketing T-603	Lube oil	T43??7419	5.10E+03	thou gal/yr	3/31/1997		0	5.7	0	0	0
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008		0.4	33.2	2.6	0	5
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008		0.4	35.3	2.8	0	5.3
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008		0.2	17.5	1.4	0	2.6
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2008		0	0	0	0	0
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008		0.4	32.3	2.5	0	4.8
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008		0.2	16.8	1.3	0	2.5
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008		0.4	34.3	2.7	0	5.1
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008		0	0	0	0	0
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998		0	0	0	0	0
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2008		0	0	0	0	0
6051	Alky Cooling Tower	Fresh water	G5005415	2.26E+05	thou gallo/yr	12/31/2008		0.2	0.4	0	0	0
6061	Alkane Treatment Plant	Refinery feedstock - other/not	G5023239	0.00E+00	thou barre/yr	12/31/2008		0	0	0	0	0
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6125	Tank 6125	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0

Printed: AUG 1, 2013

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day				
								Org	NOx	SO2	CO	
6213	Portable Polyethylene Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6213	Portable Polyethylene Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6213	Portable Polyethylene Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6213	Portable Polyethylene Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6214	Portable Polyethyene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6214	Portable Polyethyene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6214	Portable Polyethyene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6214	Portable Polyethyene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6215	Portabel Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6215	Portabel Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6215	Portabel Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6215	Portabel Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6216	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6216	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6216	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6216	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6218	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6218	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6218	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6218	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6219	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6219	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6219	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6219	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6220	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6220	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6220	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	3.04E+01	thou gal/yr	12/31/2008	0	1.8	0	0	0	
6220	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6220	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6221	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6221	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	2.66E+01	thou gal/yr	12/31/2008	0	0.6	0	0	0	
6221	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	2.66E+01	thou gal/yr	12/31/2008	0	1.1	0	0	0	
6221	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6221	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6222	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6222	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6222	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	2.39E+01	thou gal/yr	12/31/2008	0	1.2	0	0	0	
6222	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6222	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6223	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6223	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6223	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6223	Portable Steel Storage Container	Oil/water mixture	T437?503	6.30E-01	thou gal/yr	12/31/2008	0	0.2	0	0	0	
6223	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6224	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6224	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6224	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	1.03E+01	thou gal/yr	12/31/2008	0	0	0	0	0	
6224	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6224	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6224	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6225	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6225	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	9.45E+00	thou gal/yr	12/31/2008	0	5.3	0	0	0	
6225	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6225	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6225	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6226	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6226	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	8.44E+00	thou gal/yr	12/31/2008	0	5.2	0	0	0	
6226	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6226	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6226	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6227	Portable Steel Storage	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6227	Portable Steel Storage	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6227	Portable Steel Storage	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6227	Portable Steel Storage	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6227	Portable Steel Storage	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6228	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	1.49E+01	thou gal/yr	12/31/2008	0	0.7	0	0	0	
6228	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6228	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6228	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	2.39E+00	thou gal/yr	12/31/2008	0	0.5	0	0	0	
6229	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	
6229	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6229	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6230	Portable Steel Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6230	Portable Steel Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6230	Portable Steel Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6230	Portable Steel Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	1.20E+01	thou gal/yr	12/31/2008		0	0.1	0	0	0
6231	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6231	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6231	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6232	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	8.44E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6232	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6232	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6233	Portable Steel Storage Container	Paraffins - C3+	T43??7052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	1.76E+01	thou gal/yr	12/31/2008		0	0.1	0	0	0
6233	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6233	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6233	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6234	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6234	Portable Steel Storage Container	Oil/water mixture	T43??7503	8.40E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6234	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6235	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6235	Portable Steel Storage Container	Oil/water mixture	T43??7503	1.26E+01	thou gal/yr	12/31/2008		0	0	0	0	0
6235	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	2.52E+00	thou gal/yr	12/31/2008		0	0.1	0	0	0
6236	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6236	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6236	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	1.02E+01	thou gal/yr	12/31/2008		0	0.1	0	0	0
6237	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6237	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6237	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	1.85E+01	thou gal/yr	12/31/2008		0	0.1	0	0	0
6238	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6238	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6238	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6239	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6239	Portable Steel Storage Container	Oil/water mixture	T43??7503	1.68E+01	thou gal/yr	12/31/2008		0	0	0	0	0
6239	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2008		0	0	0	0	0
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997		0	0	0	0	0
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008		0.5	0.6	4.8	0	1.7
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008		0	0	0.1	0	0
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008		0	0	0.3	0	0.3
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008		0	0	0.4	0	0.1
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008		0	0	0.2	0	0
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008		0	0	0.2	0	0
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008		0	0	0.2	0	0.1
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008		0	0	0.5	0	0.1
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008		0	0	0.4	0	0.1
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008		0	0	1.1	0	0.2
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008		0.4	0.5	6	0	1.3
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008		1.1	1.2	15.5	0	3.4

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day				
								Org	NOx	SO2	CO	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008		0.3	0.4	4.4	0	1
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008		0.8	0.9	11.7	0	2.5
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008		0.4	0.4	5.5	0	1.2
7522	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008		0.1	0	1.2	0	0.7
7525	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008		0	0	0.7	0	0.1
7527	Diesel Engine, Deutz model F4L912HO	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008		0	0	0.1	0	0
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007		0	0	0.3	0	0.3
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007		0	0	0.6	0	0.1
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007		0	0	0.6	0	0.1
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008		1.3	1.9	36.8	0	7.5
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006		0	0	0	0	0
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	1.80E+01	gal/yr	12/31/2006		0	0.3	0	0	0
9047	Tank 6047	Organic liquid - other/not spe	T42??2201	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??7090	-5.45E+01	thou gal/yr	12/31/1997		0	0	0	0	0
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??7419	-3.51E+00	thou gal/yr	12/31/1997		0	0.1	0	0	0
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998		0	0.3	0	0	0
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003		0	1.5	0	0	0
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??7052	5.29E+05	thou gal/yr	12/31/2008		0	205.3	0	0	0
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??7158	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??7242	1.15E+05	thou gal/yr	12/31/2008		0	0	0	0	0
9321	Marine Loading Berth #1	Distillate oil	TB8??7315	6.53E+04	thou gal/yr	12/31/2008		0	1.6	0	0	0
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9321	Marine Loading Berth #1	Crude oil	TF8??7089	5.13E+04	thou gal/yr	12/31/2008		0	0	0	0	0
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??7052	1.50E+05	thou gal/yr	12/31/2008		0	58.2	0	0	0
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	1.13E+04	thou gal/yr	12/31/2008		0	83.7	0	0	0
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??7158	2.02E+05	thou gal/yr	12/31/2008		0	5	0	0	0
9322	Marine Loading Berth #2	Methyl alcohol	TB8??7179	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??7201	6.70E+02	thou gal/yr	12/31/2008		0	0.2	0	0	0
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??7242	1.11E+05	thou gal/yr	12/31/2008		0	0	0	0	0
9322	Marine Loading Berth #2	Toluene	TB8??7293	3.50E+03	thou gal/yr	12/31/2008		0	2.9	0	0	0
9322	Marine Loading Berth #2	Distillate oil	TB8??7315	1.96E+05	thou gal/yr	12/31/2008		0	4.8	0	0	0
9322	Marine Loading Berth #2	Lube oil	TB8??7419	2.01E+05	thou gal/yr	12/31/2008		0	1.6	0	0	0
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	1.38E+05	thou gal/yr	12/31/2008		0	1273.2	0	0	0
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??7628	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9322	Marine Loading Berth #2	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??7052	6.02E+04	thou gal/yr	12/31/2008		0	23.4	0	0	0
9323	Marine Loading Berth #3	Crude oil	TB8??7089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??7128	1.45E+04	thou gal/yr	12/31/2008		0	107.3	0	0	0
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB8??7158	8.29E+04	thou gal/yr	12/31/2008		0	2	0	0	0
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB8??7201	7.43E+03	thou gal/yr	12/31/2008		0	140.8	0	0	0
9323	Marine Loading Berth #3	Bunker C fuel oil	TB8??7242	2.00E+04	thou gal/yr	12/31/2008		0	0	0	0	0
9323	Marine Loading Berth #3	Toluene	TB8??7293	1.55E+03	thou gal/yr	12/31/2008		0	1.3	0	0	0
9323	Marine Loading Berth #3	Distillate oil	TB8??7315	1.95E+05	thou gal/yr	12/31/2008		0	4.8	0	0	0
9323	Marine Loading Berth #3	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??7551	6.14E+05	thou gal/yr	12/31/2008		0	5664.1	0	0	0
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB4??2318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9324	Marine Loading Berth #4	Bunker C fuel oil	TB8??7242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9324	Marine Loading Berth #4	Distillate oil	TB8??7315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9324	Marine Loading Berth #4	Crude oil	TF8??7089	3.61E+06	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Paraffins - C3+	TB8??7052	2.04E+03	thou gal/yr	12/31/2008		0	0.4	0	0	0
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??7128	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB8??7158	1.01E+03	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Bunker C fuel oil	TB8??7242	1.67E+05	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Distillate oil	TB8??7315	3.51E+03	thou gal/yr	12/31/2008		0	0.1	0	0	0
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB8??7318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9325	Marine Loading Berth #9	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9326	Marine Loading Berth #11	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9326	Marine Loading Berth #11	Bunker C fuel oil	TB8??7242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9326	Marine Loading Berth #11	Distillate oil	TB8??7315	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day			
								Org	NOx	SO2	CO
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00				0	0	0	0
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00				0	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00				0	30.9	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00				0	636.2	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00				0	6.5	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00				0	126.6	0	0
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00				0	9.8	0	0
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00				0	76.5	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00				0	0.1	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00				0	0	0.8	141

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Abated Criteria Pollutant Emissions
for Calendar Year 2009***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	3.00E-01	thou gal/yr	12/31/2007		0	0	0	0	0
55	Tank 55	Distillate oil	T81??7315	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
55	Tank 55	Gasoline - unleaded	T81??7551	1.70E+00	thou gal/yr	12/31/2003		0	0.1	0	0	0
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996		0	0	0	0	0
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997		0	13.9	0	0	0
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997		0	6.1	0	0	0
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997		0	0.4	0	0	0
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	3.65E+04	thou gal/yr	12/31/2007		0	55.4	0	0	0
399	TANK	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
399	TANK	Oil - non-fuel, other/not spec	T5472352	-1.70E+04	thou gal/yr	12/31/2009		0	11.9	0	0	0
399	TANK	Tetra-Ethyl Lead (TEL)	T5472422	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
401	TANK 401	Refinery feedstock - other/not	T44??239	4.70E+04	thou gal/yr	4/30/1997		0	10.9	0	0	0
634	TANK 634	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
634	TANK 634	Petroleum products - other/not	T5472321	-2.55E+04	thou gal/yr	12/31/2008		0	1.6	0	0	0
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	2.12E+04	thou gal/yr	12/31/2007		0	0.1	0	0	0
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Butane	T42??7416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T42??7419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
955	TANK 955	Paraffins - C3+	T5412052	-8.70E+03	thou gal/yr	12/31/2009		0	2.3	0	0	0
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
956	TANK 956	Paraffins - C3+	T5412052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
957	Tank 957	Diesel fuel	T44??7098	-1.32E+04	thou gal/yr	12/31/2009		0	6.3	0	0	0
957	Tank 957	Fuel - jet 'A'	T44??7158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
979	TANK 979	Distillate oil	T44??7315	-6.13E+04	thou gal/yr	4/30/1997		0	7.3	0	0	0
984	TANK 984	Distillate oil	T4417315	-9.67E+03	thou gal/yr	12/31/1997		0	1.4	0	0	0
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
990	TANK 990	Gasoline - unleaded	T5432551	-9.31E+04	thou gal/yr	12/31/2009		0	4.6	0	0	0
991	TANK 991	Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007		0	4.7	0	0	0
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-1.02E+05	thou gal/yr	12/31/2009		0	4.5	0	0	0
1020	Tank 1020: Inorganic Chemical Storage Tank	Diethanolamine	T44??7485	4.20E+02	thou gal/yr	3/10/1995		0	0.1	0	0	0
1052	Tank 1052: Organic Liquid Storage Tank	Kerosene	T43??7159	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1052	Tank 1052: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1287	TANK 1287	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1287	TANK 1287	Petroleum products - other/not	T5432321	-3.06E+04	thou gal/yr	12/31/2009		0	2.2	0	0	0
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1289	TANK 1289	Toluene	T6472293	-9.88E+02	thou gal/yr	12/31/2009		0	1	0	0	0
1289	TANK 1289	Hydrocarbon - mixtures, other/	T6472318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
1292 TANK 1292		Diesel fuel	T5412098	-2.63E+04	thou gal/yr	12/31/2009		0	0.3	0	0	0
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.40E+04	thou gal/yr	12/31/2009		0	5.8	0	0	0
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T6372502	5.90E+00	thou gal/yr	12/31/2003		0	0	0	0	0
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04	thou gal/yr	4/30/1997		0	7.1	0	0	0
1431 Asphalt Tank(T-907)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1444 TANK 1444		Gasoline - leaded	T5432128	-7.89E+02	thou gal/yr	12/31/2009		0	1.9	0	0	0
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.98E+04	thou gal/yr	12/31/2009		0	3.9	0	0	0
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1488 TANK 1488		Oil/water mixture	T5472503	-3.27E+03	thou gal/yr	12/31/2009		0	31.3	0	0	0
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1489 TANK 1489		Alkylate	T5432389	-3.60E+04	thou gal/yr	12/31/2009		0	4.9	0	0	0
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1491 TANK 1491		Gasoline - unleaded	T5432551	-3.40E+04	thou gal/yr	12/31/2008		0	3.8	0	0	0
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997		0	3.5	0	0	0
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	-3.64E+03	thou gal/yr	12/31/2009		0	2	0	0	0
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997		0	0.8	0	0	0
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997		0	0	0	0	0
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1514 TANK 1514		Gasoline - unleaded	T5432551	-1.07E+05	thou gal/yr	12/31/2009		0	5.1	0	0	0
1518 TANK 1518		Fuel - jet 'A'	T5432158	1.30E+04	thou gal/yr	12/31/2007		0	0.1	0	0	0
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998		0	0	0	0	0
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	1.79E+03	thou gal/yr	12/31/2007		0	0.1	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007		0	0	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007		0	0.7	0	0	0
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997		0	1.3	0	0	0
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.10E+04	thou gal/yr	12/31/2009		0	1.2	0	0	0
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1653 TANK 1653		Fuel - jet 'A'	T4417158	-2.74E+03	thou gal/yr	12/31/2009		0	2.1	0	0	0
1653 TANK 1653		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1653 TANK 1653		Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.20E+05	thou gal/yr	12/31/2009		0	5.4	0	0	0
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007		0	5.5	0	0	0
1798 Tank 1798		Fuel - jet 'A'	T5422158	-2.06E+05	thou gal/yr	12/31/2009		0	7.5	0	0	0
1798 Tank 1798		Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1799 TANK 1799		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1799 TANK 1799		Fuel - jet 'A'	T5472158	-1.89E+05	thou gal/yr	12/31/2009		0	1.4	0	0	0
1821 Tank 1821 Fresh Sulfuric Acid Tank		H2SO4 - other/not spec	G5999146	-1.25E+05	tons/yr	12/31/2009		0	0	0	0	0
1825 Tank 1825		Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1828 TANK 1828		Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1828 TANK 1828		Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
1828	TANK 1828	Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006		0	0	0	0	0
1843	TANK 1843	Paraffins - C3+	T5412052	2.95E+02	thou gal/yr	12/31/2007		0	0	0	0	0
1894	Tank 1894: Phosphoric Acid Storage Tank	Phosphoric acid	G5999217	-8.10E+01	tons/yr	12/31/2009		0	0	0	0	0
1899	TANK 1899	Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997		0	0.4	0	0	0
1908	Asphalt Tank (T-908)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1909	Tank 1909	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1910	Tank 1910	Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994		0	0	0	0	0
1911	Tank 1911	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1911	Tank 1911	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1966	TANK 1966	Fuel - jet 'A'	T5432158	2.02E+04	thou gal/yr	12/31/2007		0	0.2	0	0	0
2520	Wastewater/MEA Storage Tank	Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005		0	0	0	0	0
2520	Wastewater/MEA Storage Tank	Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005		0	6.3	0	0	0
2540	Tank 2540: Organic Liquid Storage Tank	Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997		0	0.1	0	0	0
2903	Tank 903: Organic Liquid Storage Tank	Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
2903	Tank 903: Organic Liquid Storage Tank	Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
2917	Asphalt Tank (T-917)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
2918	Asphalt Tank (T-918)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
2921	Asphalt Tank (T-921)	Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3038	TANK 3038 (Spherical Pressure Tank)	Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3038	TANK 3038 (Spherical Pressure Tank)	Pentane	T3477209	-1.23E+03	thou gal/yr	12/31/2009		0	0	0	0	0
3050	TANK 3050 SPHERE	Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3066	TANK 3066	Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998		0	0	0	0	0
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3071	TANK 3071	Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2009		0	121.8	0	0	0
3072	TANK 3072	Gasoline - unleaded	T5472551	1.05E+05	thou gal/yr	12/31/2007		0	5.2	0	0	0
3073	TANK 3073,external floating roof storage tank w/primary and	Paraffins - C3+	T5472052	-1.27E+05	thou gal/yr	12/31/2009		0	0.3	0	0	0
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3074	TANK 3074	Distillate oil	T5472315	1.14E+05	thou gal/yr	12/31/2007		0	0.7	0	0	0
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	-1.60E+03	thou gal/yr	12/31/2009		0	2.9	0	0	0
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3076	TANK T3076	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3076	TANK T3076	Hydrocarbon - mixtures, other/	T5472318	-1.04E+04	thou gal/yr	12/31/2009		0	3.3	0	0	0
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Crude oil	T5472089	-5.11E+05	thou gal/yr	12/31/2009		0	22.2	0	0	0
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Bunker C fuel oil	T5472242	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3101	TANK 3101	Crude oil	T5432089	-3.98E+05	thou gal/yr	12/31/2009		0	30.2	0	0	0
3101	TANK 3101	Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3101	TANK 3101	Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3102	TANK 3102	Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3102	TANK 3102	Hydrocarbon - mixtures, other/	T5432318	-3.66E+05	thou gal/yr	12/31/2009		0	11.2	0	0	0
3103	TANK 3103	Crude oil	T5432089	3.43E+05	thou gal/yr	12/31/2007		0	35.5	0	0	0
3104	TANK 3104	Crude oil	T5432089	7.74E+05	thou gal/yr	12/31/2007		0	5.9	0	0	0
3105	TANK 3105	Crude oil	T5432089	7.36E+05	thou gal/yr	12/31/2007		0	65.3	0	0	0
3106	TANK 3106	Crude oil	T5432089	3.21E+05	thou gal/yr	12/31/2007		0	34.6	0	0	0
3107	TANK 3107	Crude oil	T5472089	3.40E+05	thou gal/yr	12/31/2008		0	3.5	0	0	0
3110	Desalter Effluent Surge Tank A	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007		0	7.1	0	0	0
3111	Desalter Effluent Surge Tank B	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007		0	6.4	0	0	0
3126	TANK 3126	Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3126	TANK 3126	Oil/water mixture	T5432503	-2.64E+03	thou gal/yr	12/31/2009		0	0.3	0	0	0
3127	TANK 3127	Oil/water mixture	T5412503	2.38E+03	thou gal/yr	12/31/2007		0	1.7	0	0	0
3128	TANK 3128	Aromatic hydrocarbons - other/	T5472027	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3128	TANK 3128	Water/organics mixture	T5472502	-2.22E+03	thou gal/yr	12/31/2009		0	1.2	0	0	0
3129	TANK 3129	Fuel - jet 'A'	T5412158	1.16E+05	thou gal/yr	12/31/2007		0	1.1	0	0	0
3132	Tank 3132	Distillate oil	T5472315	8.12E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
3133	TANK 3133	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3133	TANK 3133	Gasoline - unleaded	T5412551	-4.71E+05	thou gal/yr	12/31/2009		0	103.9	0	0	0
3133	TANK 3133	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3134	TANK 3134	Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3134	TANK 3134	Gasoline - unleaded	T5412551	-3.17E+05	thou gal/yr	12/31/2009		0	83.4	0	0	0
3134	TANK 3134	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3138	TANK 3138	Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
3139	TANK 3139	Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997		0	8.1	0	0	0
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	-1.58E+05	tons/yr	12/31/2009		0	0	0	5.2	0
3142	TANK 3142	Refinery feedstock - other/not	T4417239	4.42E+02	thou gal/yr	12/31/2008		0	0	0	0	0
3144	TANK 3144	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3145	TANK 3145, Sphere	Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998		0	0	0	0	0
3146	Tank 3146: 20% Aqueous Ammonia	Organic liquid - other/not spe	T4472201	9.66E+01	thou gal/yr	12/13/1994		0	14.6	0	0	0
3147	Tank 3147: Organic Liquid Storage Tank	Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3148	Tank 3148: Organic Liquid Storage Tank	Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3157	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	12.4	0	0	0
3158	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3159	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3160	Tank 3160: Organic Liquid Storage Tank	Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994		0	13.4	0	0	0
3161	Tank Lube Oil	Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3162	Tank Lube Oil	Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3163	Tank Lube Oil	Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3164	Tank Lube Oil	Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
3165	Tank Lube Oil	Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3166	Tank Lube Oil	Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3167	Tank Lube Oil	Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3168	Tank Lube Oil	Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3169	organic liquid storage tank, lube oil products	Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995		0	0.2	0	0	0
3170	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3171	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3172	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	9.6	0	0	0
3179	Tank 3179: Organic Liquid Storage Tank	Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997		0	0.2	0	0	0
3180	Tank	Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3180	Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3180	Tank	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3180	Tank	Alkylate	T5472389	-2.76E+04	thou gal/yr	12/31/2009		0	113.5	0	0	0
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3182	Tank 3182: Organic Liquid Storage Tank	Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997		0	0.3	0	0	0
3185	Tank 3185 (previously T-982)	Fuel - jet 'A'	T5472158	2.10E+05	thou gal/yr	12/31/2007		0	6.4	0	0	0
3186	Gas Oil Tank	Organic liquid - other/not spe	T4472201	0.00E+00		4/21/1997		0	8.7	0	0	0
3189	Gasoline component and Diesel Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	-3.52E+05	thou gal/yr	12/31/2009		0	6.6	0	0	0
3189	Gasoline component and Diesel Tank	Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3190	Storage Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3190	Storage Tank	Fuel - jet 'A'	T5472158	-2.28E+05	thou gal/yr	12/31/2009		0	1.8	0	0	0
3191	Storage Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3191	Storage Tank	Gasoline - leaded	T5472128	-1.08E+04	thou gal/yr	12/31/2008		0	4.2	0	0	0
3191	Storage Tank	Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3191	Storage Tank	Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3191	Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3191	Storage Tank	Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3192	Desalter Effluent Skim Tank	Crude oil	T3H77089	3.15E+04	thou gal/yr	12/31/2008		0	0	0	0	0
3193	Gasoline component Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3193	Gasoline component Tank	Isocotane	T5472154	-3.43E+04	thou gal/yr	12/31/2009		0	2.4	0	0	0
3193	Gasoline component Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3193	Gasoline component Tank	Alkylate	T5472389	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3193	Gasoline component Tank	Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3193	Gasoline component Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3194	Storage Tank T-3194	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
3194	Storage Tank T-3194	Gas oil	T5472394	1.44E+05	thou gal/yr	12/31/2003		0	1	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Diesel fuel	T5477098	1.29E+05	thou gal/yr	12/31/2006		0	2.4	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Distillate oil	T5477315	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Lube oil	T5477419	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3196	Gasoline Components Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3196	Gasoline Components Tank	Organic liquid - other/not spe	T5472201	-2.17E+05	thou gal/yr	12/31/2009		0	1.9	0	0	0
3196	Gasoline Components Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3196	Gasoline Components Tank	Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3196	Gasoline Components Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3196	Gasoline Components Tank	Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3197	Gasoline component Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3197	Gasoline component Tank	Naphtha	T5572188	-2.65E+04	thou gal/yr	12/31/2009		0	6.2	0	0	0
3197	Gasoline component Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3197	Gasoline component Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Fuel - jet 'A'	T5437158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Toluene	T5437293	-4.30E+03	thou gal/yr	12/31/2009		0	18.5	0	0	0
3198	3198 tank; organic liquid storage tank	Distillate oil	T5437315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	-2.41E+03	thou barre/yr	12/31/2009		0	0	0	0	0
3201	Tank 3201: Whole Alkylate	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3201	Tank 3201: Whole Alkylate	Alkylate	T5472389	-1.28E+05	thou gal/yr	12/31/2009		0	112.4	0	0	0
3202	Tank 3202: Methanol	Methyl alcohol	T5472179	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3202	Tank 3202: Methanol	Naphtha	T5472188	-7.38E+03	thou gal/yr	12/31/2009		0	73	0	0	0
3202	Tank 3202: Methanol	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3202	Tank 3202: Methanol	Petroleum products - other/not	T5472321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3204	Tank 3204: Organic Liquid Storage Tank	Lube oil	T4277419	2.54E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3207	Butane Sphere: Organic Liquid Storage Tank	Butane	T3477416	-9.20E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3208	Propane Sphere: Organic Liquid Storage Tank	Propane	T3477417	-7.67E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3211	Sphere	Butane	T3477416	-3.83E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3212	Sphere	Propane	T3477417	-2.76E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T5472098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T5472419	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	-3.11E+05	thou gal/yr	12/31/2009		0	267.7	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009		0	66.5	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T5472315	-1.29E+05	thou gal/yr	12/31/1997		0	1.2	0	0	0
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T4477315	8.40E+04	thou gal/yr	7/9/1997		0	22.7	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	-7.18E+03	thou gal/yr	12/31/2009		0	142.4	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	-1.31E+04	thou gal/yr	12/31/2009		0	182	0	0	0
3225	Organic Liquid Storage Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.52E+05	tons/yr	12/31/2009		0	0	0	5	0
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T4377419	-3.37E+02	thou gal/yr	12/31/1997		0	0	0	0	0
3910	LPG Tank; # 3910	LPG	T3477160	-3.97E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3911	LPG Tank, # 3911	LPG	T3477160	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009		24.7	7.4	100.9	8.3	41.6
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009		17.6	5.3	72	5.9	29.7
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009		9.2	2.7	37.5	3.1	15.4
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009		5	1.5	20.4	1.7	8.4
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009		13.7	4.1	56.1	4.6	23.1
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009		6.5	1.9	26.5	2.2	10.9
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009		34.7	10.4	141.8	11.6	58.5
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009		3	0.9	12.2	1	5
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009		8.3	2.5	29.2	2.8	14.1
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009		9.4	2.8	32.9	3.2	15.9

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009		12	3.6	60.8	4	20.2
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009		15.1	4.5	76.7	5.1	25.5
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009		8.1	2.4	129.6	2.7	13.6
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009		3.1	0.9	60.5	1	5.2
4070	#4 CRUDE UNIT F 1100A	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009		57.6	17.2	161.1	154.2	97
4071	#4 CRUDE UNIT F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009		52.6	15.7	147.2	140.9	88.6
4072	#4 CRUDE UNIT F1160	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009		16.7	5	46.7	44.7	28.1
4073	LSFO COOLING TOWER	Fresh water	G5005415	-1.03E+05	thou gallo/yr	12/31/2009		0	1.7	0	0	0
4076	3 CAT COOLING TOWER E460	Fresh water	G5005415	-1.12E+05	thou gallo/yr	12/31/2009		0	1.8	0	0	0
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009		0	0	0	0	0
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009		14.6	4.4	51.1	4.9	24.7
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009		9.5	2.9	33.6	3.2	16.2
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009		10.9	3.3	38.2	3.7	18.4
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009		12.6	3.8	44.1	4.2	21.3
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009		22.2	6.7	77.7	7.4	37.5
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	-3.88E+04	thou barre/yr	12/31/2009		0	0.5	0	0	0
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009		2	0.6	8.4	0.7	3.4
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009		1.8	0.5	7.3	0.6	3
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009		27.9	8.4	128	9.3	115.2
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009		8.7	2.6	35.5	7.3	14.6
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009		6.3	1.9	17.6	2.1	10.6
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009		6	1.8	16.8	2	10.1
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009		8.1	2.4	120.9	4.2	13.6
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009		6.6	2	98.9	3.4	11.1
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009		0.1	2.1	109.1	3.8	12.3
4164	F-630 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009		6.2	1.8	21.5	2.1	10.4
4165	F620 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.33E+05	thou cu ft/yr	12/31/2009		3.7	1.1	12.9	1.2	6.2
4166	F-610 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009		5.2	1.6	18.1	1.7	8.8
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009		0.1	4.5	65.3	5.3	26.9
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009		37.7	11.3	105.6	12.6	63.6
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009		30.8	9.2	86.3	10.3	52
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009		57.8	17.3	10.2	19.3	97.4
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009		123	36.8	344.2	103	207.3
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	-9.89E+05	thou gallo/yr	12/31/2009		0	16.3	0	0	0
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	-5.40E+05	thou gallo/yr	12/31/2009		0	8.9	0	0	0
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	-4.86E+04	thou gallo/yr	12/31/2009		0	0.8	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009		3.8	1.1	109.8	2	6.4
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009		1.8	0.5	51.9	0.9	3
4191	Alkane Cooling Water Tower	Fresh water	G5005415	-6.00E+04	thou gallo/yr	12/31/2009		0	1	0	0	0
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009		0	0.1	2.3	0.4	0.6

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009		0.5	1	23.5	0.1	5.9
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009		0.7	1.3	31.4	6.1	7.8
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	-5.95E+03	thou barre/yr	12/31/2009		0	16.3	0	0	0
4227	SRU #1 TRAIN	Sulfur	G7055267	-4.28E+04	tons/yr	12/31/2009		0	0	0	247.5	0
4228	SRU #2 TRAIN	Sulfur	G7055267	-4.04E+04	tons/yr	12/31/2009		0	0	0	233.4	0
4229	SRU #3 TRAIN	Sulfur	G7055267	-6.89E+04	tons/yr	12/31/2009		0	0	0	398.2	0
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997		0	0	0	0	0
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	-2.17E+04	thou barre/yr	12/31/2009		0	59.4	0	0	0
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	-1.80E+04	thou barre/yr	12/31/2009		0	49.4	0	0	0
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	-1.01E+04	thou barre/yr	12/31/2009		0	8.3	0	0	0
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	-8.05E+04	thou barre/yr	12/31/2009		0	220.5	0	0	0
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	-7.74E+03	thou barre/yr	12/31/2009		0	31.8	0	0	0
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	-1.08E+05	thou gal/yr	12/31/2009		0	47.3	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.79E+04	million cu/yr	12/31/2009		0	8.1	0	0	87.2
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.10E+04	thou barre/yr	12/31/2009		0	0	0	0	0
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	-2.14E+05	thou gallo/yr	12/31/2009		0	58.7	0	0	0
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	-1.73E+04	thou barre/yr	12/31/2009		0	0	0	0	0
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	-1.22E+04	thou barre/yr	12/31/2009		0	0	0	0	0
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	-8.67E+03	thou barre/yr	12/31/2009		0	0	0	0	0
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	-9.30E+03	thou barre/yr	12/31/2009		0	0	0	0	0
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	1881.5	158.7	582.1	957.1	256	
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	0.4	0.2	0	0	0	
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.78E+04	thou barre/yr	12/31/2009		0	0.5	0	0	0
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	-9.40E+03	thou barre/yr	12/31/2009		0	12.9	0	0	0
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	-2.23E+03	thou barre/yr	12/31/2009		0	9.2	0	0	0
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4329	RLOP Cooling Tower	Fresh water	G5005415	-1.39E+05	thou gallo/yr	12/31/2009		0	0.3	0	0	0
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009		1.4	0.4	1.2	0.5	2.4
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009		2.3	0.7	2	0.8	3.8
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009		5.6	1.7	4.8	1.9	9.4
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009		0.2	8.1	25.1	9.7	48.6
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009		3.6	1.1	3.1	1.2	6
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009		2.9	0.9	2.5	1	4.8
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009		3.2	1	2.8	1.1	5.4
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009		3.3	1	2.8	1.1	5.5
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009		4.4	1.3	3.8	1.5	7.4
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009		29	8.6	25.1	9.7	48.6
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.74E+05	tons/yr	12/31/2009		0	0.7	0	0	0
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.44E+03	thou barre/yr	12/31/2009		0	0.7	0	0	0
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.19E+06	tons/yr	12/31/2009		0	1.2	0	0	0
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.17E+05	tons/yr	12/31/2009		0	0.3	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-4.63E+05	tons/yr	12/31/2009		0	2.3	0	0	0
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009		0.7	1.4	33.4	2	8.3
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009		2.9	4	57.4	19.1	9.2
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009		24.8	5	479.7	7.4	77.1
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009		9.4	9.4	44.1	10.6	22
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009		2.8	3.9	56.2	0.2	9
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009		24.4	5	471.9	7.3	75.8
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009		10	10	46.8	5.6	23.4
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2009		0	0	0	0	0
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2009		0	0	0	0	0
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T33??7210	7.23E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T41??7210	0.00E+00				0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Reformate	T41??7398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4362	Perc Surge Control Vessel V-3591	Reformate	T41??7398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4363	Perc Storage Tank V-3592	Perchloroethylene	T42??7210	-3.27E+01	thou gal/yr	12/31/2009		0	0	0	0	0
4364	Perc Storage Tank V-4091	Perchloroethylene	T42??7210	2.56E+01	thou gal/yr	12/31/2009		0	0	0	0	0
4365	Tri-Act 1825 Chemical Tote	Hydrocarbon - mixtures, other/	T4??7318	3.00E+00	thou gal/yr	Unknown		0	0	0	0	0
4366	Tri-Act 1803 & 1825 Chemical Tote - Power Plant	Hydrocarbon - mixtures, other/	T82??7318	2.00E+00	thou gal/yr	5/10/2010		0	0	0	0	0
4367	Tri-Act 1803 & 1825 Chemical Tote - RLOP	Hydrocarbon - mixtures, other/	T82??7318	1.20E+00	thou gal/yr	5/10/2010		0	0	0	0	0
4368	Tri-Act 1803 & 1825 Chemical Tote - SRU	Hydrocarbon - mixtures, other/	T82??7318	4.00E-01	thou gal/yr	5/10/2010		0	0	0	0	0
4369	Tri-Act 1803 & 1825 Chemical Tote - LSFQ/D&R	Hydrocarbon - mixtures, other/	T82??7318	4.00E-01	thou gal/yr	5/10/2010		0	0	0	0	0
4370	Chemical Tote, Custamine CA-066P - FCC	Hydrocarbon - mixtures, other/	T82??7318	4.00E-01	thou gal/yr	5/10/2010		0	0	0	0	0
4372	NALCO EC9085A Tote	Amine - other/not spec	T42??7021	5.00E+00	thou gal/yr	5/5/2010		0	0	0	0	0
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	0.00E+00	thou barre/yr	12/31/2009		0	0	0	0	0
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2009		0	27.4	0	0	0
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-5.51E+04	thou barre/yr	12/31/2009		0	115.4	0	0	0
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	-1.52E+05	tons/yr	12/31/2009		0	0	0	0	0
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE8?1052	3.47E+03	thou gal/yr	12/31/1996		0	2.8	0	0	0
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE8?1052	1.33E+04	thou gal/yr	12/31/1996		0	5.3	0	0	0
4405	Heavy Oil Transloading Operations	Waste oil	TE6?2549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	6.00E+00	gal/yr	5/14/2007		0	0.1	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	5.00E+00	gal/yr	5/14/2007		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4413	#2a Separator	Waste water - refin, other/not	G5017300	-9.52E+03	thou barre/yr	12/31/2009		0	219.2	0	0	0
4414	#1a Separator	Waste water - refin, other/not	G5017300	-6.33E+03	thou barre/yr	12/31/2009		0	42.4	0	0	0
4415	Asphalt Tank Truck Loading Racks	Asphalt	T98?1030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E-01	tons/yr	12/31/2000		0	0	0	0	0
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997		0	0	0	0	0
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4424	Equipment Painting Area	Mineral spirits	SG700184	4.00E+00	gal/yr	12/31/2006		0	0.1	0	0	0
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998		0	0	0	0	0
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4433	#3H2S Plant	Waste gases	G5998338	-2.97E+02	million cu/yr	12/31/2009		0	0.1	0	0	0
4434	#4H2S Plant	Waste gases	G5998338	-1.16E+03	million cu/yr	12/31/2009		0	0.3	0	0	0
4435	#5H2S Plant	Waste gases	G5998338	-1.77E+03	million cu/yr	12/31/2009		0	0.5	0	0	0
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T42??201	3.28E+00	thou gal/yr	12/31/2007		0	0.1	0	0	0
5101	Tank-Marketing T-101	Lube oil	T44??7419	1.85E+04	thou gal/yr	3/31/1997		0	62.2	0	0	0
5103	Tank-Marketing T-103	Lube oil	T44??7419	1.28E+04	thou gal/yr	3/31/1997		0	48.8	0	0	0
5105	Tank-Marketing T-105	Lube oil	T44??7419	1.12E+04	thou gal/yr	3/31/1997		0	45	0	0	0
5107	Tank-Marketing T-107	Lube oil	T44??7419	3.26E+02	thou gal/yr	3/31/1997		0	4	0	0	0
5108	Tank-Marketing T-108	Lube oil	T44??7419	2.51E+02	thou gal/yr	3/31/1997		0	3.8	0	0	0
5109	Tank-Marketing T-109	Lube oil	T44??7419	4.98E+02	thou gal/yr	3/31/1997		0	4.4	0	0	0
5110	Tank-Marketing T-110	Lube oil	T44??7419	1.33E+03	thou gal/yr	3/31/1997		0	6.3	0	0	0
5112	Tank-Marketing T-112	Lube oil	T43??7419	5.80E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5113	Tank-Marketing T-113	Lube oil	T43??7419	5.00E+00	thou gal/yr	3/31/1997		0	0.8	0	0	0
5115	Tank-Marketing T-115	Lube oil	T43??7419	5.70E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5117	Tank-Marketing T-117	Lube oil	T44??7419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5118	Tank-Marketing T-118	Lube oil	T44??7419	4.60E+01	thou gal/yr	3/31/1997		0	1.5	0	0	0
5119	Tank-Marketing T-119	Lube oil	T44??7419	6.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5121	Tank-Marketing T-121	Lube oil	T44??7419	5.70E+01	thou gal/yr	3/31/1997		0	2	0	0	0
5122	Tank-Marketing T-122	Lube oil	T44??7419	6.70E+01	thou gal/yr	3/31/1997		0	1.7	0	0	0
5123	Tank-Marketing T-123	Lube oil	T44??7419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5125	Tank-Marketing T-125	Lube oil	T43??7419	2.60E+01	thou gal/yr	3/31/1997		0	0.8	0	0	0
5126	Tank-Marketing T-126	Lube oil	T43??7419	1.04E+02	thou gal/yr	3/31/1997		0	1	0	0	0
5127	Tank-Marketing T-127	Lube oil	T43??7419	1.92E+02	thou gal/yr	3/31/1997		0	1.2	0	0	0
5128	Tank-Marketing T-128	Lube oil	T43??7419	6.40E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5129	Tank-Marketing T-129	Lube oil	T43??7419	3.20E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5130	Tank-Marketing T-130	Lube oil	T43??7419	8.00E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5131	Tank-Marketing T-131	Lube oil	T43??7419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5132	Tank-Marketing T-132	Lube oil	T43??7419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5133	Tank-Marketing T-133	Lube oil	T43??7419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5134	Tank-Marketing T-134	Lube oil	T43??7419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5135	Tank-Marketing T-135	Lube oil	T43??7419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5136	Tank-Marketing T-136	Lube oil	T43??7419	1.36E+02	thou gal/yr	3/31/1997		0	0.7	0	0	0
5137	Tank-Marketing T-137	Lube oil	T43??7419	1.20E+02	thou gal/yr	3/31/1997		0	0.6	0	0	0
5138	Tank-Marketing T-138	Lube oil	T43??7419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5139	Tank-Marketing T-139	Lube oil	T43??7419	2.60E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5140	Tank-Marketing T-140	Lube oil	T43??7419	1.30E+01	thou gal/yr	3/31/1997		0	0	0	0	0
5201	Tank-Marketing T-201	Lube oil	T44??7419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5202	Tank-Marketing T-202	Lube oil	T44??7419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5203	Tank-Marketing T-203	Lube oil	T44??7419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5204	Tank-Marketing T-204	Lube oil	T44??7419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5205	Tank-Marketing T-205	Lube oil	T44??7419	1.69E+03	thou gal/yr	3/31/1997		0	6.6	0	0	0
5206	Tank-Marketing T-5206	Lube oil	T44??7419	3.62E+03	thou gal/yr	3/31/1997		0	8.7	0	0	0
5207	Tank-Marketing T-207	Lube oil	T44??7419	1.25E+03	thou gal/yr	3/31/1997		0	5.1	0	0	0
5208	Tank-Marketing T-208	Lube oil	T44??7419	9.09E+02	thou gal/yr	3/31/1997		0	3.5	0	0	0
5209	Tank-Marketing T-209	Lube oil	T44??7419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0
5210	Tank-Marketing T-210	Lube oil	T44??7419	4.02E+02	thou gal/yr	3/31/1997		0	2.3	0	0	0
5211	Tank-Marketing T-211	Lube oil	T44??7419	1.20E+03	thou gal/yr	3/31/1997		0	4.2	0	0	0
5212	Tank-Marketing T-212	Lube oil	T44??7419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997		0	2	0	0
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997		0	1.6	0	0
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997		0	2.2	0	0
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997		0	2.4	0	0
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997		0	1.4	0	0
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997		0	1.2	0	0
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997		0	1.3	0	0
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997		0	0.9	0	0
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997		0	3.6	0	0
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997		0	0.9	0	0
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997		0	1.8	0	0
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997		0	0.6	0	0
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.4	0	0
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.9	0	0
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997		0	5.7	0	0
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009		0.4	32.5	2.6	0
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	4.9
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009		0.2	19.8	1.6	0
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	3
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009		0.4	36.2	2.9	0
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	5.4
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2009		0	0	0	0
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009		0.4	30.9	2.4	0
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	4.6
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009		0.2	16.5	1.3	0
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	2.5
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009		0.4	33.5	2.6	0
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	5
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998		0	0	0	0
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0

Printed: AUG 1, 2013

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day				
								Org	NOx	SO2	CO	
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2009		0	0	0	0	
6051	Alky Cooling Tower	Fresh water	G5005415	-7.97E+04	thou gallo/yr	12/31/2009		0.1	0.2	0	0	
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6125	Tank 6125	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6200	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6200	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6201	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6201	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6202	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6202	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6203	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6204	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6205	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6206	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6207	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6208	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6209	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6209	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6209	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6209	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6210	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6210	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6210	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6210	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6212	Portable Polyethylene Storge Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6212	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6212	Portable Polyethylene Storge Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6212	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6213	Portable Polyethylene Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6213	Portable Polyethylene Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6213	Portable Polyethylene Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6213	Portable Polyethylene Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6214	Portable Polyethyene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6214	Portable Polyethyene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6214	Portable Polyethyene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6214	Portable Polyethyene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6216	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6216	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6216	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6216	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	

Printed: AUG 1, 2013

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day				
								Org	NOx	SO2	CO	
6217	Portable Polyethylene Sotrage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6217	Portable Polyethylene Sotrage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6217	Portable Polyethylene Sotrage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6217	Portable Polyethylene Sotrage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6218	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6218	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6218	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6218	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6219	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6219	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6219	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6219	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6220	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6220	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6220	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-3.36E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6220	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6220	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6221	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6221	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6221	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-2.23E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6221	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6221	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6222	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6222	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6222	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-3.33E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6222	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6222	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6223	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6223	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.53E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6223	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6223	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6223	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6224	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6224	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6224	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6224	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6224	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6224	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6225	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6225	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6225	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6225	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6225	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6226	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6226	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6226	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6226	Portable Steel Storage Container	Oil/water mixture	T43??503	-8.40E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6226	Portable Steel Storage Container	Waste oil	T43??549	-6.50E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6227	Portable Steel Storage	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6227	Portable Steel Storage	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6227	Portable Steel Storage	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6227	Portable Steel Storage	Oil/water mixture	T43??503	-8.40E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6227	Portable Steel Storage	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6228	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.71E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6228	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6228	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6228	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.53E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6229	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6229	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6229	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6230	Portable Steel Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6230	Portable Steel Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6230	Portable Steel Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6230	Portable Steel Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.71E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6231	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6231	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6231	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.74E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6232	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6232	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6232	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6233	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.78E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6233	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6233	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6233	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.78E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6234	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6234	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6234	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.71E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6235	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6235	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6235	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.84E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6236	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6236	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6236	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.80E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6237	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6237	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6237	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.72E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6238	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6238	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6238	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.78E+01	thou gal/yr	12/31/2009		0	0	0	0	0
6239	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6239	Portable Steel Storage Container	Oil/water mixture	T4377503	1.68E+01	thou gal/yr	12/31/2008		0	0	0	0	0
6239	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2009		0	0	0	0	0
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997		0	0	0	0	0
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009		0.7	0.7	5.9	0	2
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009		0	0	0.1	0	0
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009		0	0	0.1	0	0.1
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009		0	0	0	0	0
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009		0	0	0.2	0	0
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009		0	0	0.3	0	0
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009		0	0	0.9	0	0.1
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009		0	0.1	0.7	0	0.1
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009		0	0	0.1	0	0
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009		0.1	0.1	0.7	0	0.2
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009		0	0	0.2	0	0
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009		0	0	0.2	0	0.1
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009		0	0	0.2	0	0
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009		0	0	0	0	0
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009		0	0	0.1	0	0
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009		0	0	0.1	0	0
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009		0	0	0.9	0	0.2

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006		0	0	0	0	0
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	1.80E+01	gal/yr	12/31/2006		0	0.3	0	0	0
9047	Tank 6047	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??090	-5.45E+01	thou gal/yr	12/31/1997		0	0	0	0	0
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??7419	-3.51E+00	thou gal/yr	12/31/1997		0	0.1	0	0	0
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998		0	0.3	0	0	0
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003		0	1.5	0	0	0
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??7052	-1.50E+01	thou gal/yr	12/31/2009		0	0	0	0	0
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??7158	-3.95E+04	thou gal/yr	12/31/2009		0	0	0	0	0
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??7242	-1.03E+05	thou gal/yr	12/31/2009		0	0	0	0	0
9321	Marine Loading Berth #1	Distillate oil	TB8??7315	1.10E+03	thou gal/yr	12/31/2009		0	0	0	0	0
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9321	Marine Loading Berth #1	Crude oil	TF8??7089	-1.02E+05	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-1.55E+04	thou gal/yr	12/31/2009		0	5.7	0	0	0
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??7158	-9.81E+04	thou gal/yr	12/31/2009		0	0.1	0	0	0
9322	Marine Loading Berth #2	Methyl alcohol	TB8??7179	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??7201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??7242	-1.09E+05	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Distillate oil	TB8??7315	-8.39E+04	thou gal/yr	12/31/2009		0	0.1	0	0	0
9322	Marine Loading Berth #2	Lube oil	TB8??7419	-1.98E+05	thou gal/yr	12/31/2009		0	0.1	0	0	0
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.54E+05	thou gal/yr	12/31/2009		0	117	0	0	0
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??7628	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Crude oil	TB8??7089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??7128	-6.28E+03	thou gal/yr	12/31/2009		0	2.3	0	0	0
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB8??7158	-1.23E+05	thou gal/yr	12/31/2009		0	0.2	0	0	0
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB8??7201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Bunker C fuel oil	TB8??7242	-1.11E+05	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Distillate oil	TB8??7315	-1.29E+05	thou gal/yr	12/31/2009		0	0.2	0	0	0
9323	Marine Loading Berth #3	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??7551	-4.94E+05	thou gal/yr	12/31/2009		0	227.7	0	0	0
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB4??2318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9324	Marine Loading Berth #4	Bunker C fuel oil	TB8??7242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9324	Marine Loading Berth #4	Distillate oil	TB8??7315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9324	Marine Loading Berth #4	Crude oil	TF8??7089	-3.27E+06	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Paraffins - C3+	TB8??7052	-3.32E+03	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??7128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB8??7158	-1.85E+03	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Bunker C fuel oil	TB8??7242	-1.18E+05	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Distillate oil	TB8??7315	-2.62E+02	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB8??7318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9326	Marine Loading Berth #11	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9326	Marine Loading Berth #11	Bunker C fuel oil	TB8??7242	-2.88E+04	thou gal/yr	12/31/2009		0	0	0	0	0
9326	Marine Loading Berth #11	Distillate oil	TB8??7315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00				0	0	0	0	0
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00				0	0	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00				0	20	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00				0	508.9	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00				0	0.3	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00				0	6.4	0	0	0
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00				0	0	0	0	0
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00				0	75.3	0	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00				0	0.2	0	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00				0.1	0	0.9	32.2	5.1

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Unabated Criteria Pollutant Emissions
for Calendar Year 2009***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	3.00E-01	thou gal/yr	12/31/2007		0	0	0	0	0
55	Tank 55	Distillate oil	T81??7315	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
55	Tank 55	Gasoline - unleaded	T81??7551	1.70E+00	thou gal/yr	12/31/2003		0	0.1	0	0	0
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996		0	0	0	0	0
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997		0	13.9	0	0	0
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997		0	6.1	0	0	0
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997		0	0.4	0	0	0
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	3.65E+04	thou gal/yr	12/31/2007		0	55.4	0	0	0
399	TANK	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
399	TANK	Oil - non-fuel, other/not spec	T54?2352	-1.70E+04	thou gal/yr	12/31/2009		0	11.9	0	0	0
399	TANK	Tetra-Ethyl Lead (TEL)	T54?2422	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
401	TANK 401	Refinery feedstock - other/not	T44??239	4.70E+04	thou gal/yr	4/30/1997		0	10.9	0	0	0
634	TANK 634	Fuel - jet 'A'	T54?2158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
634	TANK 634	Petroleum products - other/not	T54?2321	-2.55E+04	thou gal/yr	12/31/2008		0	1.6	0	0	0
634	TANK 634	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	2.12E+04	thou gal/yr	12/31/2007		0	0.1	0	0	0
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Butane	T42??7416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T42??7419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
955	TANK 955	Paraffins - C3+	T5412052	-8.70E+03	thou gal/yr	12/31/2009		0	2.3	0	0	0
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
956	TANK 956	Paraffins - C3+	T5412052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
957	Tank 957	Diesel fuel	T44??7098	-1.32E+04	thou gal/yr	12/31/2009		0	6.3	0	0	0
957	Tank 957	Fuel - jet 'A'	T44??7158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
979	TANK 979	Distillate oil	T44??7315	-6.13E+04	thou gal/yr	4/30/1997		0	7.3	0	0	0
984	TANK 984	Distillate oil	T4417315	-9.67E+03	thou gal/yr	12/31/1997		0	1.4	0	0	0
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
990	TANK 990	Gasoline - unleaded	T5432551	-9.31E+04	thou gal/yr	12/31/2009		0	4.6	0	0	0
991	TANK 991	Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007		0	4.7	0	0	0
992	Storage Tank T-992	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
992	Storage Tank T-992	Gasoline - unleaded	T54?2551	-1.02E+05	thou gal/yr	12/31/2009		0	4.5	0	0	0
1020	Tank 1020: Inorganic Chemical Storage Tank	Diethanolamine	T44??7485	4.20E+02	thou gal/yr	3/10/1995		0	0.1	0	0	0
1052	Tank 1052: Organic Liquid Storage Tank	Kerosene	T43??7159	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1052	Tank 1052: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1287	TANK 1287	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1287	TANK 1287	Petroleum products - other/not	T5432321	-3.06E+04	thou gal/yr	12/31/2009		0	2.2	0	0	0
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1289	TANK 1289	Gasoline - leaded	T64?2128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1289	TANK 1289	Toluene	T64?2293	-9.88E+02	thou gal/yr	12/31/2009		0	1	0	0	0
1289	TANK 1289	Hydrocarbon - mixtures, other/	T64?2318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
1292 TANK 1292		Diesel fuel	T5412098	-2.63E+04	thou gal/yr	12/31/2009		0	0.3	0	0	0
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.40E+04	thou gal/yr	12/31/2009		0	5.8	0	0	0
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T6372502	5.90E+00	thou gal/yr	12/31/2003		0	0	0	0	0
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04	thou gal/yr	4/30/1997		0	7.1	0	0	0
1431 Asphalt Tank(T-907)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1444 TANK 1444		Gasoline - leaded	T5432128	-7.89E+02	thou gal/yr	12/31/2009		0	1.9	0	0	0
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.98E+04	thou gal/yr	12/31/2009		0	3.9	0	0	0
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1488 TANK 1488		Oil/water mixture	T5472503	-3.27E+03	thou gal/yr	12/31/2009		0	31.3	0	0	0
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1489 TANK 1489		Alkyate	T5432389	-3.60E+04	thou gal/yr	12/31/2009		0	4.9	0	0	0
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1491 TANK 1491		Gasoline - unleaded	T5432551	-3.40E+04	thou gal/yr	12/31/2008		0	3.8	0	0	0
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997		0	3.5	0	0	0
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	-3.64E+03	thou gal/yr	12/31/2009		0	2	0	0	0
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997		0	0.8	0	0	0
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997		0	0	0	0	0
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1514 TANK 1514		Gasoline - unleaded	T5432551	-1.07E+05	thou gal/yr	12/31/2009		0	5.1	0	0	0
1518 TANK 1518		Fuel - jet 'A'	T5432158	1.30E+04	thou gal/yr	12/31/2007		0	0.1	0	0	0
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998		0	0	0	0	0
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	1.79E+03	thou gal/yr	12/31/2007		0	0.1	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007		0	0	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007		0	0.7	0	0	0
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997		0	1.3	0	0	0
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.10E+04	thou gal/yr	12/31/2009		0	1.2	0	0	0
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1653 TANK 1653		Fuel - jet 'A'	T4417158	-2.74E+03	thou gal/yr	12/31/2009		0	2.1	0	0	0
1653 TANK 1653		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1653 TANK 1653		Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.20E+05	thou gal/yr	12/31/2009		0	5.4	0	0	0
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007		0	5.5	0	0	0
1798 Tank 1798		Fuel - jet 'A'	T5422158	-2.06E+05	thou gal/yr	12/31/2009		0	7.5	0	0	0
1798 Tank 1798		Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1799 TANK 1799		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1799 TANK 1799		Fuel - jet 'A'	T5472158	-1.89E+05	thou gal/yr	12/31/2009		0	1.4	0	0	0
1821 Tank 1821 Fresh Sulfuric Acid Tank		H2SO4 - other/not spec	G5999146	-1.25E+05	tons/yr	12/31/2009		0	0	0	0	0
1825 Tank 1825		Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1828 TANK 1828		Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1828 TANK 1828		Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
1828	TANK 1828	Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006		0	0	0	0	0
1843	TANK 1843	Paraffins - C3+	T5412052	2.95E+02	thou gal/yr	12/31/2007		0	0	0	0	0
1894	Tank 1894: Phosphoric Acid Storage Tank	Phosphoric acid	G5999217	-8.10E+01	tons/yr	12/31/2009		0	0	0	0	0
1899	TANK 1899	Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997		0	0.4	0	0	0
1908	Asphalt Tank (T-908)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1909	Tank 1909	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1910	Tank 1910	Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994		0	0	0	0	0
1911	Tank 1911	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1911	Tank 1911	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
1966	TANK 1966	Fuel - jet 'A'	T5432158	2.02E+04	thou gal/yr	12/31/2007		0	0.2	0	0	0
2520	Wastewater/MEA Storage Tank	Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005		0	0	0	0	0
2520	Wastewater/MEA Storage Tank	Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005		0	6.3	0	0	0
2540	Tank 2540: Organic Liquid Storage Tank	Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997		0	0.1	0	0	0
2903	Tank 903: Organic Liquid Storage Tank	Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
2903	Tank 903: Organic Liquid Storage Tank	Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
2917	Asphalt Tank (T-917)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
2918	Asphalt Tank (T-918)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
2921	Asphalt Tank (T-921)	Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3038	TANK 3038 (Spherical Pressure Tank)	Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3038	TANK 3038 (Spherical Pressure Tank)	Pentane	T3477209	-1.23E+03	thou gal/yr	12/31/2009		0	0	0	0	0
3050	TANK 3050 SPHERE	Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3066	TANK 3066	Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998		0	0	0	0	0
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3071	TANK 3071	Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2009		0	121.8	0	0	0
3072	TANK 3072	Gasoline - unleaded	T5472551	1.05E+05	thou gal/yr	12/31/2007		0	5.2	0	0	0
3073	TANK 3073,external floating roof storage tank w/primary and	Paraffins - C3+	T5472052	-1.27E+05	thou gal/yr	12/31/2009		0	6.8	0	0	0
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3074	TANK 3074	Distillate oil	T5472315	1.14E+05	thou gal/yr	12/31/2007		0	0.7	0	0	0
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	-1.60E+03	thou gal/yr	12/31/2009		0	2.9	0	0	0
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3076	TANK T3076	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3076	TANK T3076	Hydrocarbon - mixtures, other/	T5472318	-1.04E+04	thou gal/yr	12/31/2009		0	3.3	0	0	0
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Crude oil	T5472089	-5.11E+05	thou gal/yr	12/31/2009		0	22.2	0	0	0
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Bunker C fuel oil	T5472242	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3101	TANK 3101	Crude oil	T5432089	-3.98E+05	thou gal/yr	12/31/2009		0	30.2	0	0	0
3101	TANK 3101	Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3101	TANK 3101	Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3102	TANK 3102	Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3102	TANK 3102	Hydrocarbon - mixtures, other/	T5432318	-3.66E+05	thou gal/yr	12/31/2009		0	11.2	0	0	0
3103	TANK 3103	Crude oil	T5432089	3.43E+05	thou gal/yr	12/31/2007		0	35.5	0	0	0
3104	TANK 3104	Crude oil	T5432089	7.74E+05	thou gal/yr	12/31/2007		0	5.9	0	0	0
3105	TANK 3105	Crude oil	T5432089	7.36E+05	thou gal/yr	12/31/2007		0	65.3	0	0	0
3106	TANK 3106	Crude oil	T5432089	3.21E+05	thou gal/yr	12/31/2007		0	34.6	0	0	0
3107	TANK 3107	Crude oil	T5472089	3.40E+05	thou gal/yr	12/31/2008		0	3.5	0	0	0
3110	Desalter Effluent Surge Tank A	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007		0	7.1	0	0	0
3111	Desalter Effluent Surge Tank B	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007		0	6.4	0	0	0
3126	TANK 3126	Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3126	TANK 3126	Oil/water mixture	T5432503	-2.64E+03	thou gal/yr	12/31/2009		0	0.3	0	0	0
3127	TANK 3127	Oil/water mixture	T5412503	2.38E+03	thou gal/yr	12/31/2007		0	1.7	0	0	0
3128	TANK 3128	Aromatic hydrocarbons - other/	T5472027	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3128	TANK 3128	Water/organics mixture	T5472502	-2.22E+03	thou gal/yr	12/31/2009		0	1.2	0	0	0
3129	TANK 3129	Fuel - jet 'A'	T5412158	1.16E+05	thou gal/yr	12/31/2007		0	1.1	0	0	0
3132	Tank 3132	Distillate oil	T5472315	8.12E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
3133	TANK 3133	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.71E+05	thou gal/yr	12/31/2009		0	103.9	0	0	0
3133 TANK 3133		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3134 TANK 3134		Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3134 TANK 3134		Gasoline - unleaded	T5412551	-3.17E+05	thou gal/yr	12/31/2009		0	83.4	0	0	0
3134 TANK 3134		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3138 TANK 3138		Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
3139 TANK 3139		Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997		0	8.1	0	0	0
3141 SULFUR STORAGE TANK 3141		Sulfur	G7014267	-1.58E+05	tons/yr	12/31/2009		6.2	0	0	173.5	0
3142 TANK 3142		Refinery feedstock - other/not	T4417239	4.42E+02	thou gal/yr	12/31/2008		0	0	0	0	0
3144 TANK 3144		Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3145 TANK 3145, Sphere		Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998		0	0	0	0	0
3146 Tank 3146: 20% Aqueous Ammonia		Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994		0	14.6	0	0	0
3147 Tank 3147: Organic Liquid Storage Tank		Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3148 Tank 3148: Organic Liquid Storage Tank		Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3157 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	12.4	0	0	0
3158 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3159 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3160 Tank 3160: Organic Liquid Storage Tank		Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994		0	13.4	0	0	0
3161 Tank Lube Oil		Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3162 Tank Lube Oil		Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3163 Tank Lube Oil		Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3164 Tank Lube Oil		Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
3165 Tank Lube Oil		Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3166 Tank Lube Oil		Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3167 Tank Lube Oil		Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3168 Tank Lube Oil		Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3169 organic liquid storage tank, lube oil products		Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995		0	0.2	0	0	0
3170 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3171 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3172 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	9.6	0	0	0
3179 Tank 3179: Organic Liquid Storage Tank		Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997		0	0.2	0	0	0
3180 Tank		Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3180 Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3180 Tank		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3180 Tank		Alkylate	T5472389	-2.76E+04	thou gal/yr	12/31/2009		0	113.5	0	0	0
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3182 Tank 3182: Organic Liquid Storage Tank		Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997		0	0.3	0	0	0
3185 Tank 3185 (previously T-982)		Fuel - jet 'A'	T5472158	2.10E+05	thou gal/yr	12/31/2007		0	6.4	0	0	0
3186 Gas Oil Tank		Organic liquid - other/not spe	T4477201	0.00E+00		4/21/1997		0	8.7	0	0	0
3189 Gasoline component and Diesel Tank		Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-3.52E+05	thou gal/yr	12/31/2009		0	6.6	0	0	0
3189 Gasoline component and Diesel Tank		Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3190 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3190 Storage Tank		Fuel - jet 'A'	T5472158	-2.28E+05	thou gal/yr	12/31/2009		0	1.8	0	0	0
3191 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3191 Storage Tank		Gasoline - leaded	T5472128	-1.08E+04	thou gal/yr	12/31/2008		0	4.2	0	0	0
3191 Storage Tank		Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3191 Storage Tank		Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3191 Storage Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3191 Storage Tank		Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3192 Desalter Effluent Skim Tank		Crude oil	T3H77089	3.15E+04	thou gal/yr	12/31/2008		0	0	0	0	0
3193 Gasoline component Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3193 Gasoline component Tank		Isocotane	T5472154	-3.43E+04	thou gal/yr	12/31/2009		0	2.4	0	0	0
3193 Gasoline component Tank		Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3193	Gasoline component Tank	Alkylate	T5472389	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3193	Gasoline component Tank	Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3193	Gasoline component Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3194	Storage Tank T-3194	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
3194	Storage Tank T-3194	Gas oil	T5472394	1.44E+05	thou gal/yr	12/31/2003		0	1	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Diesel fuel	T5477098	1.29E+05	thou gal/yr	12/31/2006		0	2.4	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Distillate oil	T5477315	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Lube oil	T5477419	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3196	Gasoline Components Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3196	Gasoline Components Tank	Organic liquid - other/not spe	T5472201	-2.17E+05	thou gal/yr	12/31/2009		0	1.9	0	0	0
3196	Gasoline Components Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3196	Gasoline Components Tank	Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3196	Gasoline Components Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3196	Gasoline Components Tank	Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3197	Gasoline component Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3197	Gasoline component Tank	Naphtha	T5572188	-2.65E+04	thou gal/yr	12/31/2009		0	6.2	0	0	0
3197	Gasoline component Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3197	Gasoline component Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Fuel - jet 'A'	T5437158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Toluene	T5437293	-4.30E+03	thou gal/yr	12/31/2009		0	18.5	0	0	0
3198	3198 tank; organic liquid storage tank	Distillate oil	T5437315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	-2.41E+03	thou barre/yr	12/31/2009		0	52.8	0	0	0
3201	Tank 3201: Whole Alkylate	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3201	Tank 3201: Whole Alkylate	Alkylate	T5472389	-1.28E+05	thou gal/yr	12/31/2009		0	112.4	0	0	0
3202	Tank 3202: Methanol	Methyl alcohol	T5472179	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3202	Tank 3202: Methanol	Naphtha	T5472188	-7.38E+03	thou gal/yr	12/31/2009		0	73	0	0	0
3202	Tank 3202: Methanol	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3202	Tank 3202: Methanol	Petroleum products - other/not	T5472321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3204	Tank 3204: Organic Liquid Storage Tank	Lube oil	T4277419	2.54E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3207	Butane Sphere: Organic Liquid Storage Tank	Butane	T3477416	-9.20E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3208	Propane Sphere: Organic Liquid Storage Tank	Propane	T3477417	-7.67E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3211	Sphere	Butane	T3477416	-3.83E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3212	Sphere	Propane	T3477417	-2.76E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T5472098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T5472419	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	-3.11E+05	thou gal/yr	12/31/2009		0	267.7	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009		0	66.5	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T5472315	-1.29E+05	thou gal/yr	12/31/1997		0	1.2	0	0	0
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T4477315	8.40E+04	thou gal/yr	7/9/1997		0	22.7	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	-7.18E+03	thou gal/yr	12/31/2009		0	142.4	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	-1.31E+04	thou gal/yr	12/31/2009		0	182	0	0	0
3225	Organic Liquid Storage Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.52E+05	tons/yr	12/31/2009		6	0	0	166.7	0
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T4377419	-3.37E+02	thou gal/yr	12/31/1997		0	0	0	0	0
3910	LPG Tank; # 3910	LPG	T3477160	-3.97E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3911	LPG Tank, # 3911	LPG	T3477160	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009		24.7	7.4	100.9	8.3	41.6
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009		17.6	5.3	72	5.9	29.7
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009		9.2	2.7	37.5	3.1	15.4
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009		5	1.5	20.4	1.7	8.4
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009		13.7	4.1	56.1	4.6	23.1
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009		6.5	1.9	26.5	2.2	10.9
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009		34.7	10.4	141.8	11.6	58.5
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009		3	0.9	12.2	1	5
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009		8.3	2.5	29.2	2.8	14.1
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009		9.4	2.8	32.9	3.2	15.9

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009		12	3.6	60.8	4	20.2
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009		15.1	4.5	76.7	5.1	25.5
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009		8.1	2.4	129.6	2.7	13.6
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009		3.1	0.9	60.5	1	5.2
4070	#4 CRUDE UNIT F 1100A	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009		57.6	17.2	161.1	154.2	97
4071	#4 CRUDE UNIT F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009		52.6	15.7	147.2	140.9	88.6
4072	#4 CRUDE UNIT F1160	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009		16.7	5	46.7	44.7	28.1
4073	LSFO COOLING TOWER	Fresh water	G5005415	-1.03E+05	thou gallo/yr	12/31/2009		0	1.7	0	0	0
4076	3 CAT COOLING TOWER E460	Fresh water	G5005415	-1.12E+05	thou gallo/yr	12/31/2009		0	1.8	0	0	0
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009		0	0	0	0	0
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009		14.6	4.4	51.1	4.9	24.7
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009		9.5	2.9	33.6	3.2	16.2
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009		10.9	3.3	38.2	3.7	18.4
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009		12.6	3.8	44.1	4.2	21.3
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009		22.2	6.7	77.7	7.4	37.5
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	-3.88E+04	thou barre/yr	12/31/2009		0	5.3	0	0	0
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009		2	0.6	8.4	0.7	3.4
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009		1.8	0.5	7.3	0.6	3
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009		27.9	8.4	128	9.3	115.2
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009		8.7	2.6	35.5	7.3	14.6
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009		6.3	1.9	17.6	2.1	10.6
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009		6	1.8	16.8	2	10.1
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009		8.1	2.4	120.9	4.2	13.6
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009		6.6	2	98.9	3.4	11.1
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009		0.1	2.1	109.1	3.8	12.3
4164	F-630 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009		6.2	1.8	21.5	2.1	10.4
4165	F620 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.33E+05	thou cu ft/yr	12/31/2009		3.7	1.1	12.9	1.2	6.2
4166	F-610 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009		5.2	1.6	18.1	1.7	8.8
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009		0.1	4.5	65.3	5.3	26.9
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009		37.7	11.3	105.6	12.6	63.6
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009		30.8	9.2	86.3	10.3	52
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009		57.8	17.3	127.3	19.3	97.4
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009		123	36.8	344.2	103	207.3
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	-9.89E+05	thou gallo/yr	12/31/2009		0	16.3	0	0	0
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	-5.40E+05	thou gallo/yr	12/31/2009		0	8.9	0	0	0
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	-4.86E+04	thou gallo/yr	12/31/2009		0	0.8	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009		3.8	1.1	109.8	2	6.4
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009		1.8	0.5	51.9	0.9	3
4191	Alkane Cooling Water Tower	Fresh water	G5005415	-6.00E+04	thou gallo/yr	12/31/2009		0	1	0	0	0
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009		0	0.1	2.3	0.4	0.6

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009		0.5	1	23.5	0.1	5.9
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009		0.7	1.3	31.4	6.1	7.8
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	-5.95E+03	thou barre/yr	12/31/2009		0	16.3	0	0	0
4227	SRU #1 TRAIN	Sulfur	G7055267	-4.28E+04	tons/yr	12/31/2009		0	0	0	24754.1	0
4228	SRU #2 TRAIN	Sulfur	G7055267	-4.04E+04	tons/yr	12/31/2009		0	0	0	23336.6	0
4229	SRU #3 TRAIN	Sulfur	G7055267	-6.89E+04	tons/yr	12/31/2009		0	0	0	39820	0
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997		0	0	0	0	0
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	-2.17E+04	thou barre/yr	12/31/2009		0	59.4	0	0	0
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	-1.80E+04	thou barre/yr	12/31/2009		0	49.4	0	0	0
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	-1.01E+04	thou barre/yr	12/31/2009		0	8.3	0	0	0
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	-8.05E+04	thou barre/yr	12/31/2009		0	220.5	0	0	0
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	-7.74E+03	thou barre/yr	12/31/2009		0	31.8	0	0	0
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	-1.08E+05	thou gal/yr	12/31/2009		0	2366.5	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.79E+04	million cu/yr	12/31/2009		0	807.2	0	0	87.2
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.10E+04	thou barre/yr	12/31/2009		0	0	0	0	0
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	-2.14E+05	thou gallo/yr	12/31/2009		0	58.7	0	0	0
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	-1.73E+04	thou barre/yr	12/31/2009		0	0	0	0	0
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	-1.22E+04	thou barre/yr	12/31/2009		0	0	0	0	0
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	-8.67E+03	thou barre/yr	12/31/2009		0	0	0	0	0
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	-9.30E+03	thou barre/yr	12/31/2009		0	0	0	0	0
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	188151	158.7	582.1	957.1	256	
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	38.9	0.2	0	0	0	
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.78E+04	thou barre/yr	12/31/2009		0	48.7	0	0	0
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	-9.40E+03	thou barre/yr	12/31/2009		0	12.9	0	0	0
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	-2.23E+03	thou barre/yr	12/31/2009		0	9.2	0	0	0
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4329	RLOP Cooling Tower	Fresh water	G5005415	-1.39E+05	thou gallo/yr	12/31/2009		0	0.3	0	0	0
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009		1.4	0.4	4.1	0.5	2.4
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009		2.3	0.7	6.5	0.8	3.8
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009		5.6	1.7	16.1	1.9	9.4
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009		0.2	8.1	83.5	9.7	48.6
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009		3.6	1.1	10.3	1.2	6
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009		2.9	0.9	8.3	1	4.8
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009		3.2	1	9.3	1.1	5.4
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009		3.3	1	9.5	1.1	5.5
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009		4.4	1.3	12.7	1.5	7.4
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009		29	8.6	83.5	9.7	48.6
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.74E+05	tons/yr	12/31/2009		0	13.5	0	0	0
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.44E+03	thou barre/yr	12/31/2009		0	14.9	0	0	0
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.19E+06	tons/yr	12/31/2009		0	23.8	0	0	0
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.17E+05	tons/yr	12/31/2009		0	6.4	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-4.63E+05	tons/yr	12/31/2009		0	46.9	0	0	0
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009		0.7	1.4	33.4	2	8.3
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009		2.9	8.1	574.1	19.1	45.8
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009		24.8	10.1	4796.6	7.4	385.4
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009		9.4	18.8	440.6	10.6	110
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009		2.8	7.9	562.1	0.2	44.8
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009		24.4	9.9	4719.5	7.3	379.2
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009		10	20	467.9	5.6	116.8
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2009		0	0	0	0	0
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2009		0	0	0	0	0
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T3377210	7.23E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T4177210	0.00E+00				0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4362	Perc Surge Control Vessel V-3591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4363	Perc Storage Tank V-3592	Perchloroethylene	T4277210	-3.27E+01	thou gal/yr	12/31/2009		0	0.1	0	0	0
4364	Perc Storage Tank V-4091	Perchloroethylene	T4277210	2.56E+01	thou gal/yr	12/31/2009		0	0	0	0	0
4365	Tri-Act 1825 Chemical Tote	Hydrocarbon - mixtures, other/	T4777318	3.00E+00	thou gal/yr	Unknown		0	0	0	0	0
4366	Tri-Act 1803 & 1825 Chemical Tote - Power Plant	Hydrocarbon - mixtures, other/	T8277318	2.00E+00	thou gal/yr	5/10/2010		0	0	0	0	0
4367	Tri-Act 1803 & 1825 Chemical Tote - RLOP	Hydrocarbon - mixtures, other/	T8277318	1.20E+00	thou gal/yr	5/10/2010		0	0	0	0	0
4368	Tri-Act 1803 & 1825 Chemical Tote - SRU	Hydrocarbon - mixtures, other/	T8277318	4.00E-01	thou gal/yr	5/10/2010		0	0	0	0	0
4369	Tri-Act 1803 & 1825 Chemical Tote - LSF/D&R	Hydrocarbon - mixtures, other/	T8277318	4.00E-01	thou gal/yr	5/10/2010		0	0	0	0	0
4370	Chemical Tote, Custamine CA-066P - FCC	Hydrocarbon - mixtures, other/	T8277318	4.00E-01	thou gal/yr	5/10/2010		0	0	0	0	0
4372	NALCO EC9085A Tote	Amine - other/not spec	T4277021	5.00E+00	thou gal/yr	5/5/2010		0	0	0	0	0
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	0.00E+00	thou barre/yr	12/31/2009		0	0	0	0	0
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2009		0	27.4	0	0	0
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-5.51E+04	thou barre/yr	12/31/2009		0	115.4	0	0	0
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	-1.52E+05	tons/yr	12/31/2009		4.2	0	0	0	0
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE871052	3.47E+03	thou gal/yr	12/31/1996		0	2.8	0	0	0
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE871052	1.33E+04	thou gal/yr	12/31/1996		0	5.3	0	0	0
4405	Heavy Oil Transloading Operations	Waste oil	TE672549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	6.00E+00	gal/yr	5/14/2007		0	0.1	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	5.00E+00	gal/yr	5/14/2007		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4413	#2a Separator	Waste water - refin, other/not	G5017300	-9.52E+03	thou barre/yr	12/31/2009		0	219.2	0	0	0
4414	#1a Separator	Waste water - refin, other/not	G5017300	-6.33E+03	thou barre/yr	12/31/2009		0	42.4	0	0	0
4415	Asphalt Tank Truck Loading Racks	Asphalt	T9871030	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E-01	tons/yr	12/31/2000		0.5	0	0	0	0
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997		0	0	0	0	0
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4424	Equipment Painting Area	Mineral spirits	SG700184	4.00E+00	gal/yr	12/31/2006		0	0.1	0	0	0
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998		0	0	0	0	0
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2010

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4433	#3H2S Plant	Waste gases	G5998338	-2.97E+02	million cu/yr	12/31/2009		0	0.1	0	0	0
4434	#4H2S Plant	Waste gases	G5998338	-1.16E+03	million cu/yr	12/31/2009		0	0.3	0	0	0
4435	#5H2S Plant	Waste gases	G5998338	-1.77E+03	million cu/yr	12/31/2009		0	0.5	0	0	0
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T4277201	3.28E+00	thou gal/yr	12/31/2007		0	0.1	0	0	0
5101	Tank-Marketing T-101	Lube oil	T4477419	1.85E+04	thou gal/yr	3/31/1997		0	62.2	0	0	0
5103	Tank-Marketing T-103	Lube oil	T4477419	1.28E+04	thou gal/yr	3/31/1997		0	48.8	0	0	0
5105	Tank-Marketing T-105	Lube oil	T4477419	1.12E+04	thou gal/yr	3/31/1997		0	45	0	0	0
5107	Tank-Marketing T-107	Lube oil	T4477419	3.26E+02	thou gal/yr	3/31/1997		0	4	0	0	0
5108	Tank-Marketing T-108	Lube oil	T4477419	2.51E+02	thou gal/yr	3/31/1997		0	3.8	0	0	0
5109	Tank-Marketing T-109	Lube oil	T4477419	4.98E+02	thou gal/yr	3/31/1997		0	4.4	0	0	0
5110	Tank-Marketing T-110	Lube oil	T4477419	1.33E+03	thou gal/yr	3/31/1997		0	6.3	0	0	0
5112	Tank-Marketing T-112	Lube oil	T4377419	5.80E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5113	Tank-Marketing T-113	Lube oil	T4377419	5.00E+00	thou gal/yr	3/31/1997		0	0.8	0	0	0
5115	Tank-Marketing T-115	Lube oil	T4377419	5.70E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5117	Tank-Marketing T-117	Lube oil	T4477419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5118	Tank-Marketing T-118	Lube oil	T4477419	4.60E+01	thou gal/yr	3/31/1997		0	1.5	0	0	0
5119	Tank-Marketing T-119	Lube oil	T4477419	6.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5121	Tank-Marketing T-121	Lube oil	T4477419	5.70E+01	thou gal/yr	3/31/1997		0	2	0	0	0
5122	Tank-Marketing T-122	Lube oil	T4477419	6.70E+01	thou gal/yr	3/31/1997		0	1.7	0	0	0
5123	Tank-Marketing T-123	Lube oil	T4477419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5125	Tank-Marketing T-125	Lube oil	T4377419	2.60E+01	thou gal/yr	3/31/1997		0	0.8	0	0	0
5126	Tank-Marketing T-126	Lube oil	T4377419	1.04E+02	thou gal/yr	3/31/1997		0	1	0	0	0
5127	Tank-Marketing T-127	Lube oil	T4377419	1.92E+02	thou gal/yr	3/31/1997		0	1.2	0	0	0
5128	Tank-Marketing T-128	Lube oil	T4377419	6.40E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5129	Tank-Marketing T-129	Lube oil	T4377419	3.20E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5130	Tank-Marketing T-130	Lube oil	T4377419	8.00E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5131	Tank-Marketing T-131	Lube oil	T4377419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5132	Tank-Marketing T-132	Lube oil	T4377419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5133	Tank-Marketing T-133	Lube oil	T4377419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5134	Tank-Marketing T-134	Lube oil	T4377419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5135	Tank-Marketing T-135	Lube oil	T4377419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5136	Tank-Marketing T-136	Lube oil	T4377419	1.36E+02	thou gal/yr	3/31/1997		0	0.7	0	0	0
5137	Tank-Marketing T-137	Lube oil	T4377419	1.20E+02	thou gal/yr	3/31/1997		0	0.6	0	0	0
5138	Tank-Marketing T-138	Lube oil	T4377419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5139	Tank-Marketing T-139	Lube oil	T4377419	2.60E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5140	Tank-Marketing T-140	Lube oil	T4377419	1.30E+01	thou gal/yr	3/31/1997		0	0	0	0	0
5201	Tank-Marketing T-201	Lube oil	T4477419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5202	Tank-Marketing T-202	Lube oil	T4477419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5203	Tank-Marketing T-203	Lube oil	T4477419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5204	Tank-Marketing T-204	Lube oil	T4477419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5205	Tank-Marketing T-205	Lube oil	T4477419	1.69E+03	thou gal/yr	3/31/1997		0	6.6	0	0	0
5206	Tank-Marketing T-5206	Lube oil	T4477419	3.62E+03	thou gal/yr	3/31/1997		0	8.7	0	0	0
5207	Tank-Marketing T-207	Lube oil	T4477419	1.25E+03	thou gal/yr	3/31/1997		0	5.1	0	0	0
5208	Tank-Marketing T-208	Lube oil	T4477419	9.09E+02	thou gal/yr	3/31/1997		0	3.5	0	0	0
5209	Tank-Marketing T-209	Lube oil	T4477419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0
5210	Tank-Marketing T-210	Lube oil	T4477419	4.02E+02	thou gal/yr	3/31/1997		0	2.3	0	0	0
5211	Tank-Marketing T-211	Lube oil	T4477419	1.20E+03	thou gal/yr	3/31/1997		0	4.2	0	0	0
5212	Tank-Marketing T-212	Lube oil	T4477419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
5213	Tank-Marketing T-213	Lube oil	T4477419	2.46E+02	thou gal/yr	3/31/1997		0	2	0	0	0
5214	Tank-Marketing T-214	Lube oil	T4477419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0
5215	Tank-Marketing T-215	Lube oil	T4477419	9.80E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5216	Tank-Marketing T-216	Lube oil	T4377419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0	0
5217	Tank-Marketing T-217	Lube oil	T4377419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0	0
5218	Tank-Marketing T-218	Lube oil	T4377419	5.99E+02	thou gal/yr	3/31/1997		0	2.2	0	0	0
5219	Tank-Marketing T-219	Lube oil	T4377419	6.84E+02	thou gal/yr	3/31/1997		0	2.4	0	0	0
5220	Tank-Marketing T-220	Lube oil	T4377419	3.49E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5221	Tank-Marketing T-221	Lube oil	T4377419	3.36E+02	thou gal/yr	3/31/1997		0	1.4	0	0	0
5222	Tank-Marketing T-222	Lube oil	T4377419	2.49E+02	thou gal/yr	3/31/1997		0	1.2	0	0	0
5223	Tank-Marketing T-223	Lube oil	T4377419	3.07E+02	thou gal/yr	3/31/1997		0	1.3	0	0	0
5224	Tank-Marketing T-224	Lube oil	T4377419	1.41E+02	thou gal/yr	3/31/1997		0	0.9	0	0	0
5227	Tank-Marketing T-227	Lube oil	T4377419	1.25E+03	thou gal/yr	3/31/1997		0	3.6	0	0	0
5228	Tank-Marketing T-228	Lube oil	T4377419	1.28E+02	thou gal/yr	3/31/1997		0	0.9	0	0	0
5229	Tank-Marketing T-229	Lube oil	T4477419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5230	Tank-Marketing T-230	Lube oil	T4377419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5232	Tank-Marketing T-232	Lube oil	T4377419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5233	Tank-Marketing T-233	Lube oil	T4377419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5234	Tank-Marketing T-234	Lube oil	T4377419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5237	Tank-Marketing T-237	Lube oil	T4377419	1.26E+03	thou gal/yr	3/31/1997		0	1.8	0	0	0
5240	Tank-Marketing T-240	Lube oil	T4377419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5241	Tank-Marketing T-241	Lube oil	T4377419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5301	Tank-Marketing T-301	Lube oil	T4377419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0	0
5302	Tank-Marketing T-302	Lube oil	T4377419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0	0
5303	Tank-Marketing T-303	Lube oil	T4377419	3.60E+02	thou gal/yr	3/31/1997		0	0.6	0	0	0
5304	Tank-Marketing T-304	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997		0	0.4	0	0	0
5305	Tank-Marketing T-305	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997		0	0.9	0	0	0
5306	Tank-Marketing T-306	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0	0
5307	Tank-Marketing T-307	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0	0
5308	Tank-Marketing T-308	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0	0
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0	0
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0	0
5603	Tank-Marketing T-603	Lube oil	T4377419	5.10E+03	thou gal/yr	3/31/1997		0	5.7	0	0	0
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009		0.4	32.5	2.6	0	4.9
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009		0.2	19.8	1.6	0	3
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009		0.4	36.2	2.9	0	5.4
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2009		0	0	0	0	0
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009		0.4	30.9	2.4	0	4.6
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009		0.2	16.5	1.3	0	2.5
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009		0.4	33.5	2.6	0	5
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009		0	0	0	0	0
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998		0	0	0	0	0
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0

Printed: AUG 1, 2013

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day				
								Org	NOx	SO2	CO	
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2009		0	0	0	0	
6051	Alky Cooling Tower	Fresh water	G5005415	-7.97E+04	thou gallo/yr	12/31/2009		0.1	0.2	0	0	
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T427?502	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6125	Tank 6125	Organic liquid - other/not spe	T427?201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6200	Portable Polyethylene Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6200	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6201	Portable Polyethylene Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6201	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6202	Portable Polyethylene Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6202	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6203	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6204	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6205	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6206	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6207	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6208	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6209	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6209	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6209	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6209	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6210	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6210	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6210	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6210	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6212	Portable Polyethylene Storge Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6212	Portable Polyethylene Storge Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6212	Portable Polyethylene Storge Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6212	Portable Polyethylene Storge Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6213	Portable Polyethylene Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6213	Portable Polyethylene Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6213	Portable Polyethylene Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6213	Portable Polyethylene Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6214	Portable Polyethyene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6214	Portable Polyethyene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6214	Portable Polyethyene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6214	Portable Polyethyene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6216	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6216	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6216	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6216	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	

Printed: AUG 1, 2013

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day				
								Org	NOx	SO2	CO	
6217	Portable Polyethylene Sotrage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6218	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6218	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6218	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6218	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6219	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6219	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6219	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6219	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6220	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6220	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6220	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-3.36E+01	thou gal/yr	12/31/2009		0	1.8	0	0	
6220	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6220	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6221	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6221	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6221	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-2.23E+01	thou gal/yr	12/31/2009		0	1	0	0	
6221	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6221	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6222	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6222	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6222	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-3.33E+01	thou gal/yr	12/31/2009		0	1.5	0	0	
6222	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6222	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6223	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6223	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.53E+01	thou gal/yr	12/31/2009		0	0.5	0	0	
6223	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6223	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2009		0	0.2	0	0	
6223	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6224	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6224	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6224	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6224	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6224	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2009		0	0	0	0	
6224	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6225	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6225	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6225	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6225	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2009		0	0	0	0	
6225	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6226	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6226	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6226	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6226	Portable Steel Storage Container	Oil/water mixture	T43??503	-8.40E+00	thou gal/yr	12/31/2009		0	0	0	0	
6226	Portable Steel Storage Container	Waste oil	T43??549	-6.50E+01	thou gal/yr	12/31/2009		0	0	0	0	
6227	Portable Steel Storage	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6227	Portable Steel Storage	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6227	Portable Steel Storage	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6227	Portable Steel Storage	Oil/water mixture	T43??503	-8.40E+00	thou gal/yr	12/31/2009		0	0	0	0	
6227	Portable Steel Storage	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6228	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.71E+01	thou gal/yr	12/31/2009		0	0.7	0	0	
6228	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6228	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6228	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.53E+01	thou gal/yr	12/31/2009		0	0.7	0	0	
6229	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6229	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6229	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6230	Portable Steel Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6230	Portable Steel Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6230	Portable Steel Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6230	Portable Steel Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.71E+01	thou gal/yr	12/31/2009		0	0.1	0	0	
6231	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6231	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6231	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.74E+01	thou gal/yr	12/31/2009		0	0.1	0	0	
6232	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6232	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6232	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6233	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.78E+01	thou gal/yr	12/31/2009		0	0.1	0	0	0
6233	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6233	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6233	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.78E+01	thou gal/yr	12/31/2009		0	0.1	0	0	0
6234	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6234	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6234	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.71E+01	thou gal/yr	12/31/2009		0	0.1	0	0	0
6235	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6235	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6235	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.84E+01	thou gal/yr	12/31/2009		0	0.1	0	0	0
6236	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6236	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6236	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.80E+01	thou gal/yr	12/31/2009		0	0.1	0	0	0
6237	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6237	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6237	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.72E+01	thou gal/yr	12/31/2009		0	0.1	0	0	0
6238	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6238	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6238	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.78E+01	thou gal/yr	12/31/2009		0	0.8	0	0	0
6239	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6239	Portable Steel Storage Container	Oil/water mixture	T4377503	1.68E+01	thou gal/yr	12/31/2008		0	0	0	0	0
6239	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2009		0	0	0	0	0
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997		0	0	0	0	0
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009		0.7	0.7	5.9	0	2
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009		0	0	0.1	0	0
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009		0	0	0.1	0	0.1
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009		0	0	0	0	0
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009		0	0	0.2	0	0
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009		0	0	0.3	0	0.1
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009		0	0	0.9	0	0.2
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009		0	0.1	0.7	0	0.1
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009		0	0	0.1	0	0
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009		0.1	0.1	0.7	0	0.2
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009		0	0	0.2	0	0
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009		0	0	0.2	0	0.1
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009		0	0	0.2	0	0.1
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009		0	0	0	0	0
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009		0	0	0.1	0	0
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009		0	0	0.1	0	0
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009		0	0	0.9	0	0.2

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006		0	0	0	0	0
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	1.80E+01	gal/yr	12/31/2006		0	0.3	0	0	0
9047	Tank 6047	Organic liquid - other/not spe	T42??2201	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??7090	-5.45E+01	thou gal/yr	12/31/1997		0	0	0	0	0
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??7419	-3.51E+00	thou gal/yr	12/31/1997		0	0.1	0	0	0
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998		0	0.3	0	0	0
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003		0	1.5	0	0	0
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??7052	-1.50E+01	thou gal/yr	12/31/2009		0	0	0	0	0
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??7158	-3.95E+04	thou gal/yr	12/31/2009		0	1	0	0	0
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??7242	-1.03E+05	thou gal/yr	12/31/2009		0	0	0	0	0
9321	Marine Loading Berth #1	Distillate oil	TB8??7315	1.10E+03	thou gal/yr	12/31/2009		0	0	0	0	0
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9321	Marine Loading Berth #1	Crude oil	TF8??7089	-1.02E+05	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-1.55E+04	thou gal/yr	12/31/2009		0	114.9	0	0	0
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??7158	-9.81E+04	thou gal/yr	12/31/2009		0	2.4	0	0	0
9322	Marine Loading Berth #2	Methyl alcohol	TB8??7179	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??7201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??7242	-1.09E+05	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Distillate oil	TB8??7315	-8.39E+04	thou gal/yr	12/31/2009		0	2.1	0	0	0
9322	Marine Loading Berth #2	Lube oil	TB8??7419	-1.98E+05	thou gal/yr	12/31/2009		0	1.6	0	0	0
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.54E+05	thou gal/yr	12/31/2009		0	2340.7	0	0	0
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??7628	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9322	Marine Loading Berth #2	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Crude oil	TB8??7089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??7128	-6.28E+03	thou gal/yr	12/31/2009		0	46.5	0	0	0
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB8??7158	-1.23E+05	thou gal/yr	12/31/2009		0	3	0	0	0
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB8??7201	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Bunker C fuel oil	TB8??7242	-1.11E+05	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Distillate oil	TB8??7315	-1.29E+05	thou gal/yr	12/31/2009		0	3.2	0	0	0
9323	Marine Loading Berth #3	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??7551	-4.94E+05	thou gal/yr	12/31/2009		0	4554.4	0	0	0
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB4??2318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9324	Marine Loading Berth #4	Bunker C fuel oil	TB8??7242	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9324	Marine Loading Berth #4	Distillate oil	TB8??7315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9324	Marine Loading Berth #4	Crude oil	TF8??7089	-3.27E+06	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Paraffins - C3+	TB8??7052	-3.32E+03	thou gal/yr	12/31/2009		0	0.6	0	0	0
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??7128	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB8??7158	-1.85E+03	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Bunker C fuel oil	TB8??7242	-1.18E+05	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Distillate oil	TB8??7315	-2.62E+02	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB8??7318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9325	Marine Loading Berth #9	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9326	Marine Loading Berth #11	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
9326	Marine Loading Berth #11	Bunker C fuel oil	TB8??7242	-2.88E+04	thou gal/yr	12/31/2009		0	0	0	0	0
9326	Marine Loading Berth #11	Distillate oil	TB8??7315	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0	0
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00				0	0	0	0	0
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00				0	0	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00				0	20	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00				0	508.9	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00				0	6.8	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00				0	127.7	0	0	0
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00				0	0	0	0	0
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00				0	75.3	0	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00				0	0.2	0	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00				0.1	0	0.9	32.2	5.1

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Abated Criteria Pollutant Emissions
for Calendar Year 2010***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEE
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	3.00E-01	thou gal/yr	12/31/2007		0	0	0	0	0
55	Tank 55	Distillate oil	T81??7315	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
55	Tank 55	Gasoline - unleaded	T81??7551	1.70E+00	thou gal/yr	12/31/2003		0	0.1	0	0	0
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996		0	0	0	0	0
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997		0	13.9	0	0	0
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997		0	6.1	0	0	0
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997		0	0.4	0	0	0
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	3.65E+04	thou gal/yr	12/31/2007		0	55.4	0	0	0
399	TANK	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
399	TANK	Oil - non-fuel, other/not spec	T5472352	-1.89E+04	thou gal/yr	12/31/2010		0	11.9	0	0	0
399	TANK	Tetra-Ethyl Lead (TEL)	T5472422	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
401	TANK 401	Refinery feedstock - other/not	T447?239	4.70E+04	thou gal/yr	4/30/1997		0	10.9	0	0	0
634	TANK 634	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
634	TANK 634	Petroleum products - other/not	T5472321	-2.03E+04	thou gal/yr	12/31/2010		0	1.6	0	0	0
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	2.12E+04	thou gal/yr	12/31/2007		0	0.1	0	0	0
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Butane	T42??7416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T42??7419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
955	TANK 955	Paraffins - C3+	T5412052	-2.07E+04	thou gal/yr	12/31/2010		0	2.4	0	0	0
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
956	TANK 956	Paraffins - C3+	T5412052	-1.12E+04	thou gal/yr	12/31/2010		0	2.4	0	0	0
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
957	Tank 957	Diesel fuel	T447?098	-1.47E+04	thou gal/yr	12/31/2010		0	6.4	0	0	0
957	Tank 957	Fuel - jet 'A'	T447?158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
979	TANK 979	Distillate oil	T447?315	-6.13E+04	thou gal/yr	4/30/1997		0	7.3	0	0	0
984	TANK 984	Distillate oil	T4417315	-9.67E+03	thou gal/yr	12/31/1997		0	1.4	0	0	0
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
990	TANK 990	Gasoline - unleaded	T5432551	-9.39E+04	thou gal/yr	12/31/2010		0	4.6	0	0	0
991	TANK 991	Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007		0	4.7	0	0	0
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-1.06E+05	thou gal/yr	12/31/2010		0	4.5	0	0	0
1020	Tank 1020: Inorganic Chemical Storage Tank	Diethanolamine	T447?485	4.20E+02	thou gal/yr	3/10/1995		0	0.1	0	0	0
1052	Tank 1052: Organic Liquid Storage Tank	Kerosene	T43??159	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1052	Tank 1052: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1287	TANK 1287	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1287	TANK 1287	Petroleum products - other/not	T5432321	-2.65E+04	thou gal/yr	12/31/2010		0	2.2	0	0	0
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1289	TANK 1289	Toluene	T6472293	-7.11E+02	thou gal/yr	12/31/2010		0	1	0	0	0
1289	TANK 1289	Hydrocarbon - mixtures, other/	T6472318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEE
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
1292 TANK 1292		Diesel fuel	T5412098	-5.02E+04	thou gal/yr	12/31/2010		0	0.4	0	0	0
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1296 TANK 1296		Gasoline - unleaded	T5412551	-8.00E+04	thou gal/yr	12/31/2010		0	5.8	0	0	0
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T6372502	5.90E+00	thou gal/yr	12/31/2003		0	0	0	0	0
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04	thou gal/yr	4/30/1997		0	7.1	0	0	0
1431 Asphalt Tank(T-907)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.38E+04	thou gal/yr	12/31/2010		0	3.9	0	0	0
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1488 TANK 1488		Oil/water mixture	T5472503	-3.08E+03	thou gal/yr	12/31/2010		0	31.3	0	0	0
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1489 TANK 1489		Alkylate	T5432389	-3.88E+04	thou gal/yr	12/31/2010		0	4.9	0	0	0
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1491 TANK 1491		Gasoline - unleaded	T5432551	-6.05E+04	thou gal/yr	12/31/2010		0	4	0	0	0
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997		0	3.5	0	0	0
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997		0	0.8	0	0	0
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997		0	0	0	0	0
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1514 TANK 1514		Gasoline - unleaded	T5432551	-9.19E+04	thou gal/yr	12/31/2010		0	5.1	0	0	0
1518 TANK 1518		Fuel - jet 'A'	T5432158	1.30E+04	thou gal/yr	12/31/2007		0	0.1	0	0	0
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998		0	0	0	0	0
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	1.79E+03	thou gal/yr	12/31/2007		0	0.1	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007		0	0	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007		0	0.7	0	0	0
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997		0	1.3	0	0	0
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1637 TANK 1637		Gasoline - unleaded	T6H32551	-6.14E+03	thou gal/yr	12/31/2010		0	1.1	0	0	0
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1653 TANK 1653		Fuel - jet 'A'	T4417158	-6.97E+03	thou gal/yr	12/31/2010		0	2.5	0	0	0
1653 TANK 1653		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1653 TANK 1653		Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.33E+05	thou gal/yr	12/31/2010		0	5.4	0	0	0
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007		0	5.5	0	0	0
1798 Tank 1798		Fuel - jet 'A'	T5422158	-1.78E+05	thou gal/yr	12/31/2010		0	7.3	0	0	0
1798 Tank 1798		Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1799 TANK 1799		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1799 TANK 1799		Fuel - jet 'A'	T5472158	-2.32E+05	thou gal/yr	12/31/2010		0	1.7	0	0	0
1821 Tank 1821 Fresh Sulfuric Acid Tank		H2SO4 - other/not spec	G5999146	-1.02E+05	tons/yr	12/31/2010		0	0	0	0	0
1825 Tank 1825		Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1828 TANK 1828		Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1828 TANK 1828		Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEC
P/O APPROVED (2011)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
	1828 TANK 1828	Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006		0	0	0	0	0
	1843 TANK 1843	Paraffins - C3+	T5412052	2.95E+02	thou gal/yr	12/31/2007		0	0	0	0	0
	1894 Tank 1894: Phosphoric Acid Storage Tank	Phosphoric acid	G5999217	-1.07E+02	tons/yr	12/31/2010		0	0	0	0	0
	1899 TANK 1899	Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997		0	0.4	0	0	0
	1908 Asphalt Tank (T-908)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	1909 Tank 1909	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	1910 Tank 1910	Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994		0	0	0	0	0
	1911 Tank 1911	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	1911 Tank 1911	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	1966 TANK 1966	Fuel - jet 'A'	T5432158	2.02E+04	thou gal/yr	12/31/2007		0	0.2	0	0	0
	2520 Wastewater/MEA Storage Tank	Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005		0	0	0	0	0
	2520 Wastewater/MEA Storage Tank	Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005		0	6.3	0	0	0
	2540 Tank 2540: Organic Liquid Storage Tank	Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997		0	0.1	0	0	0
	2903 Tank 903: Organic Liquid Storage Tank	Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
	2903 Tank 903: Organic Liquid Storage Tank	Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
	2917 Asphalt Tank (T-917)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	2918 Asphalt Tank (T-918)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	2921 Asphalt Tank (T-921)	Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3038 TANK 3038 (Spherical Pressure Tank)	Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3038 TANK 3038 (Spherical Pressure Tank)	Pentane	T3477209	-2.93E+04	thou gal/yr	12/31/2010		0	0	0	0	0
	3050 TANK 3050 SPHERE	Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
	3066 TANK 3066	Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998		0	0	0	0	0
	3071 TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3071 TANK 3071	Gasoline - unleaded	T5472551	-1.53E+05	thou gal/yr	12/31/2010		0	121.9	0	0	0
	3072 TANK 3072	Gasoline - unleaded	T5472551	1.05E+05	thou gal/yr	12/31/2007		0	5.2	0	0	0
	3073 TANK 3073,external floating roof storage tank w/primary and	Paraffins - C3+	T5472052	-1.26E+05	thou gal/yr	12/31/2010		0	0.3	0	0	0
	3073 TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3073 TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3074 TANK 3074	Distillate oil	T5472315	1.14E+05	thou gal/yr	12/31/2007		0	0.7	0	0	0
	3075 External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	-6.87E+02	thou gal/yr	12/31/2010		0	2.9	0	0	0
	3075 External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3076 TANK T3076	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3076 TANK T3076	Hydrocarbon - mixtures, other/	T5472318	-1.46E+04	thou gal/yr	12/31/2010		0	3.3	0	0	0
	3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Crude oil	T5472089	-4.51E+05	thou gal/yr	12/31/2010		0	21.7	0	0	0
	3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Bunker C fuel oil	T5472242	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3101 TANK 3101	Crude oil	T5432089	-4.62E+05	thou gal/yr	12/31/2010		0	30.6	0	0	0
	3101 TANK 3101	Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3101 TANK 3101	Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3102 TANK 3102	Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3102 TANK 3102	Hydrocarbon - mixtures, other/	T5432318	-3.17E+05	thou gal/yr	12/31/2010		0	11.1	0	0	0
	3103 TANK 3103	Crude oil	T5432089	3.43E+05	thou gal/yr	12/31/2007		0	35.5	0	0	0
	3104 TANK 3104	Crude oil	T5432089	7.74E+05	thou gal/yr	12/31/2007		0	5.9	0	0	0
	3105 TANK 3105	Crude oil	T5432089	7.36E+05	thou gal/yr	12/31/2007		0	65.3	0	0	0
	3106 TANK 3106	Crude oil	T5432089	3.21E+05	thou gal/yr	12/31/2007		0	34.6	0	0	0
	3107 TANK 3107	Crude oil	T5472089	3.40E+05	thou gal/yr	12/31/2008		0	3.5	0	0	0
	3110 Desalter Effluent Surge Tank A	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007		0	7.1	0	0	0
	3111 Desalter Effluent Surge Tank B	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007		0	6.4	0	0	0
	3126 TANK 3126	Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3126 TANK 3126	Oil/water mixture	T5432503	-9.59E+04	thou gal/yr	12/31/2010		0	1.2	0	0	0
	3127 TANK 3127	Oil/water mixture	T5412503	2.38E+03	thou gal/yr	12/31/2007		0	1.7	0	0	0
	3128 TANK 3128	Aromatic hydrocarbons - other/	T5472027	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3128 TANK 3128	Water/organics mixture	T5472502	-3.30E+03	thou gal/yr	12/31/2010		0	1.2	0	0	0
	3129 TANK 3129	Fuel - jet 'A'	T5412158	1.16E+05	thou gal/yr	12/31/2007		0	1.1	0	0	0
	3132 Tank 3132	Distillate oil	T5472315	8.12E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
	3133 TANK 3133	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.00E+05	thou gal/yr	12/31/2010		0	103.6	0	0	0
3133 TANK 3133		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3134 TANK 3134		Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.78E+05	thou gal/yr	12/31/2010		0	83.2	0	0	0
3134 TANK 3134		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3138 TANK 3138		Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
3139 TANK 3139		Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997		0	8.1	0	0	0
3141 SULFUR STORAGE TANK 3141		Sulfur	G7014267	0.00E+00	tons/yr	12/31/2010		0	0	0	0	0
3142 TANK 3142		Refinery feedstock - other/not	T4417239	4.42E+02	thou gal/yr	12/31/2008		0	0	0	0	0
3144 TANK 3144		Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3145 TANK 3145, Sphere		Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998		0	0	0	0	0
3146 Tank 3146: 20% Aqueous Ammonia		Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994		0	14.6	0	0	0
3147 Tank 3147: Organic Liquid Storage Tank		Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3148 Tank 3148: Organic Liquid Storage Tank		Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3157 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	12.4	0	0	0
3158 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3159 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3160 Tank 3160: Organic Liquid Storage Tank		Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994		0	13.4	0	0	0
3161 Tank Lube Oil		Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3162 Tank Lube Oil		Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3163 Tank Lube Oil		Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3164 Tank Lube Oil		Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
3165 Tank Lube Oil		Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3166 Tank Lube Oil		Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3167 Tank Lube Oil		Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3168 Tank Lube Oil		Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3169 organic liquid storage tank, lube oil products		Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995		0	0.2	0	0	0
3170 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3171 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3172 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	9.6	0	0	0
3179 Tank 3179: Organic Liquid Storage Tank		Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997		0	0.2	0	0	0
3180 Tank		Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3180 Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3180 Tank		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3180 Tank		Alkylate	T5472389	-3.82E+04	thou gal/yr	12/31/2010		0	113.5	0	0	0
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3182 Tank 3182: Organic Liquid Storage Tank		Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997		0	0.3	0	0	0
3185 Tank 3185 (previously T-982)		Fuel - jet 'A'	T5472158	2.10E+05	thou gal/yr	12/31/2007		0	6.4	0	0	0
3186 Gas Oil Tank		Organic liquid - other/not spe	T4477201	0.00E+00		4/21/1997		0	8.7	0	0	0
3189 Gasoline component and Diesel Tank		Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-2.97E+05	thou gal/yr	12/31/2010		0	6.4	0	0	0
3189 Gasoline component and Diesel Tank		Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3190 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3190 Storage Tank		Fuel - jet 'A'	T5472158	-2.26E+05	thou gal/yr	12/31/2010		0	1.8	0	0	0
3191 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3191 Storage Tank		Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3191 Storage Tank		Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3191 Storage Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3191 Storage Tank		Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3191 Storage Tank		Avgas	T5472662	-1.52E+04	thou gal/yr	5/16/2011		0	2.5	0	0	0
3192 Desalter Effluent Skim Tank		Crude oil	T3H77089	-1.56E+04	thou gal/yr	12/31/2010		0	0	0	0	0
3193 Gasoline component Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3193 Gasoline component Tank		Isocotane	T5472154	-1.77E+04	thou gal/yr	12/31/2010		0	2.3	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEC
P/O APPROVED (2011
Chevron Products Company (P# 10)

Printed: AUG 1, 2015

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3193	Gasoline component Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3193	Gasoline component Tank	Alkylate	T5472389	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3193	Gasoline component Tank	Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3193	Gasoline component Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3194	Storage Tank T-3194	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2003	0	0	0	0	0	0
3194	Storage Tank T-3194	Gas oil	T5472394	1.44E+05	thou gal/yr	12/31/2003	0	1	0	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Diesel fuel	T5477098	1.29E+05	thou gal/yr	12/31/2006	0	2.4	0	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Distillate oil	T5477315	0.00E+00	thou gal/yr	12/31/2006	0	0	0	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Lube oil	T5477419	0.00E+00	thou gal/yr	12/31/2006	0	0	0	0	0	0
3196	Gasoline Components Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3196	Gasoline Components Tank	Organic liquid - other/not spe	T5472201	-1.03E+05	thou gal/yr	12/31/2010	0	1.2	0	0	0	0
3196	Gasoline Components Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3196	Gasoline Components Tank	Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3196	Gasoline Components Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3196	Gasoline Components Tank	Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3197	Gasoline component Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3197	Gasoline component Tank	Naphtha	T5572188	-2.97E+04	thou gal/yr	12/31/2010	0	6.2	0	0	0	0
3197	Gasoline component Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3197	Gasoline component Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Fuel - jet 'A'	T5437158	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Toluene	T5437293	-2.53E+03	thou gal/yr	12/31/2010	0	18.4	0	0	0	0
3198	3198 tank; organic liquid storage tank	Distillate oil	T5437315	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	-2.28E+03	thou barre/yr	12/31/2010	0	0	0	0	0	0
3201	Tank 3201: Whole Alkylate	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3201	Tank 3201: Whole Alkylate	Alkylate	T5472389	-1.30E+05	thou gal/yr	12/31/2010	0	112.4	0	0	0	0
3202	Tank 3202: Methanol	Methyl alcohol	T5472179	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3202	Tank 3202: Methanol	Naphtha	T5472188	-4.20E+03	thou gal/yr	12/31/2010	0	73	0	0	0	0
3202	Tank 3202: Methanol	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3202	Tank 3202: Methanol	Petroleum products - other/not	T5472321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3204	Tank 3204: Organic Liquid Storage Tank	Lube oil	T4277419	2.54E+00	thou gal/yr	12/31/1997	0	0	0	0	0	0
3207	Butane Sphere: Organic Liquid Storage Tank	Butane	T3477416	-9.20E+04	thou gal/yr	6/10/1998	0	0	0	0	0	0
3208	Propane Sphere: Organic Liquid Storage Tank	Propane	T3477417	-7.67E+04	thou gal/yr	6/10/1998	0	0	0	0	0	0
3211	Sphere	Butane	T3477416	-3.83E+04	thou gal/yr	6/10/1998	0	0	0	0	0	0
3212	Sphere	Propane	T3477417	-2.76E+04	thou gal/yr	6/10/1998	0	0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T5472098	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T5472419	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	-2.85E+05	thou gal/yr	12/31/2010	0	267.6	0	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	0	66.4	0	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T5472315	-1.29E+05	thou gal/yr	12/31/1997	0	1.2	0	0	0	0
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T4477315	8.40E+04	thou gal/yr	7/9/1997	0	22.7	0	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	-1.73E+04	thou gal/yr	12/31/2010	0	142.5	0	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	-1.60E+04	thou gal/yr	12/31/2010	0	182	0	0	0	0
3225	Organic Liquid Storage Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	0
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.41E+05	tons/yr	12/31/2010	0	0	0	4.6	0	0
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T4377419	-3.37E+02	thou gal/yr	12/31/1997	0	0	0	0	0	0
3910	LPG Tank; # 3910	LPG	T3477160	-3.97E+04	thou gal/yr	6/10/1998	0	0	0	0	0	0
3911	LPG Tank, # 3911	LPG	T3477160	-2.30E+04	thou gal/yr	6/10/1998	0	0	0	0	0	0
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	22.2	6.7	90.9	7.4	37.5	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	8.8	2.6	36	3	14.9	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	9.8	2.9	39.9	3.3	16.4	
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	7.9	2.4	32.1	2.6	13.2	
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	15.5	4.6	63.4	5.2	26.1	
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	7.3	2.2	29.9	2.4	12.3	
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	9.5	2.9	39	3.2	16.1	
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	4.5	1.4	18.5	1.5	7.6	
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	9.3	2.8	32.6	3.1	15.7	
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	10.7	3.2	37.5	3.6	18.1	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010		15.1	4.5	76.8	5.1	25.5
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010		16.7	5	84.9	5.6	28.2
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010		8.4	2.5	134.9	2.8	14.1
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010		2.5	0.8	49.9	0.9	4.3
4070	#4 CRUDE UNIT F 1100A	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010		66.2	19.8	185.4	177.4	111.6
4071	#4 CRUDE UNIT F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010		60.9	18.2	170.4	163.1	102.6
4072	#4 CRUDE UNIT F1160	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010		22.5	6.7	63	60.3	37.9
4073	LSFO COOLING TOWER	Fresh water	G5005415	-6.15E+04	thou gallo/yr	12/31/2010		0	1	0	0	0
4076	3 CAT COOLING TOWER E460	Fresh water	G5005415	-1.01E+05	thou gallo/yr	12/31/2010		0	1.7	0	0	0
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010		0	0	0	0	0
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010		9.2	2.8	32.3	3.1	15.6
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010		25.1	7.5	88.5	8.5	42.7
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010		1.8	0.5	6.3	0.6	3
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010		1.7	0.5	6	0.6	2.9
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010		22.2	6.7	77.6	7.4	37.5
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	-5.18E+04	thou barre/yr	12/31/2010		0	0.7	0	0	0
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010		1.8	0.5	7.4	0.6	3
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010		1.7	0.5	7	0.6	2.9
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010		22.2	6.7	101.9	7.4	91.7
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010		9.7	2.9	39.8	8.2	16.4
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010		6.2	1.9	17.3	2.1	10.4
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010		6.4	1.9	17.8	2.1	10.7
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010		7.3	2.2	110.1	3.8	12.4
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010		9.8	2.9	146.2	5	16.4
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010		0.1	2.1	111.2	3.8	12.5
4164	F-630 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010		6.7	2	23.4	2.2	11.3
4165	F620 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010		4.8	1.4	16.9	1.6	8.1
4166	F-610 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010		6.9	2.1	24.1	2.3	11.6
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12/31/2010		0.1	5.7	82.4	6.8	34
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.32E+06	thou cu ft/yr	12/31/2010		36.5	10.9	102.3	12.2	61.6
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010		33.1	9.9	92.7	11.1	55.8
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010		156	46.7	27.5	52.2	262.9
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010		139.2	41.7	389.6	116.5	234.6
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	-9.37E+05	thou gallo/yr	12/31/2010		0	15.4	0	0	0
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	-4.13E+05	thou gallo/yr	12/31/2010		0	6.8	0	0	0
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	-3.73E+04	thou gallo/yr	12/31/2010		0	0.6	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010		4.3	1.3	123.3	2.2	7.2
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010		1.5	0.4	42.6	0.8	2.5
4191	Alkane Cooling Water Tower	Fresh water	G5005415	-3.82E+04	thou gallo/yr	12/31/2010		0	0.6	0	0	0
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010		0.5	0.9	21.1	4.1	5.3

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEC
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010		0.5	1	25	0.1	6.2
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010		0.7	1.3	31.8	6.1	7.9
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	-4.79E+03	thou barre/yr	12/31/2010		0	13.1	0	0	0
4227	SRU #1 TRAIN	Sulfur	G7055267	-3.17E+04	tons/yr	12/31/2010		0	0	0	95.2	0
4228	SRU #2 TRAIN	Sulfur	G7055267	-4.09E+04	tons/yr	12/31/2010		0	0	0	131.2	0
4229	SRU #3 TRAIN	Sulfur	G7055267	-6.88E+04	tons/yr	12/31/2010		0	0	0	199.9	0
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997		0	0	0	0	0
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	-2.19E+04	thou barre/yr	12/31/2010		0	59.9	0	0	0
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	-1.85E+04	thou barre/yr	12/31/2010		0	50.6	0	0	0
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	-1.13E+04	thou barre/yr	12/31/2010		0	9.3	0	0	0
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	-8.43E+04	thou barre/yr	12/31/2010		0	231.1	0	0	0
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	-8.36E+03	thou barre/yr	12/31/2010		0	34.3	0	0	0
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	-1.07E+05	thou gal/yr	12/31/2010		0	46.7	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.72E+04	million cu/yr	12/31/2010		0	8	0	0	86.2
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.21E+04	thou barre/yr	12/31/2010		0	0	0	0	0
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	-2.15E+05	thou gallo/yr	12/31/2010		0	59	0	0	0
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	-1.49E+04	thou barre/yr	12/31/2010		0	0	0	0	0
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	-1.26E+04	thou barre/yr	12/31/2010		0	0	0	0	0
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	-9.02E+03	thou barre/yr	12/31/2010		0	0	0	0	0
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	-7.96E+03	thou barre/yr	12/31/2010		0	0	0	0	0
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	1571.5	132.6	486.2	799.4	213.9	
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	0.3	0.2	0	0	0	
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.39E+04	thou barre/yr	12/31/2010		0	0.4	0	0	0
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	-7.58E+03	thou barre/yr	12/31/2010		0	10.4	0	0	0
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	-2.32E+03	thou barre/yr	12/31/2010		0	9.5	0	0	0
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4329	RLOP Cooling Tower	Fresh water	G5005415	-1.33E+05	thou gallo/yr	12/31/2010		0	0.3	0	0	0
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010		2.1	0.6	1.9	0.7	3.6
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010		2.8	0.8	2.4	0.9	4.6
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010		8.1	2.4	7	2.7	13.5
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010		0	1.7	5.2	2	10
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010		4.5	1.3	3.9	1.5	7.5
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010		4	1.2	3.4	1.3	6.6
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010		2	0.6	1.8	0.7	3.4
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010		4.2	1.3	3.6	1.4	7
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010		5.6	1.7	4.9	1.9	9.5
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010		1.7	0.5	1.5	0.6	2.9
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.90E+05	tons/yr	12/31/2010		0	0.7	0	0	0
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.51E+03	thou barre/yr	12/31/2010		0	0.8	0	0	0
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.35E+06	tons/yr	12/31/2010		0	1.4	0	0	0
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.77E+05	tons/yr	12/31/2010		0	0.4	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4345	Misc.PET REF,Refinery Sour Waste Water No 2NH3-H2S	Waste gases	G5037338	-2.40E+02	million cu/yr	12/31/2010		0	0	0	0	0
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-5.10E+05	tons/yr	12/31/2010		0	2.6	0	0	0
4348	H2 Recovery Plant	Hydrocarbon - mixtures, other/	G5998318	-4.63E+04	tons/yr	12/31/2010		0	0.2	0	0	0
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010		0.9	1.8	42.9	2.6	10.7
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4350	Gas Turbine with Steam Injection	LPG	C7120160	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010		24.1	4.9	466.2	7.2	74.9
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010		10.1	10.1	47.1	11.3	23.5
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4352	Gas Turbine with Steam Injection	LPG	C7120160	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010		24.1	4.9	466.2	7.2	74.9
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010		10.1	10.1	47.1	5.7	23.5
4354	Butamer Plant	Paraffins - C3+	G5031052	-8.16E+04	thou gallo/yr	12/31/2010		0	0	0	0	0
4355	Deisobutanizer Plant	Paraffins - C3+	G5031052	-2.56E+05	thou gallo/yr	12/31/2010		0	0	0	0	0
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2010		0	0	0	0	0
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2010		0	0	0	0	0
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T3377210	-5.96E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T4177210	0.00E+00				0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4362	Perc Surge Control Vessel V-3591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4363	Perc Storage Tank V-3592	Perchloroethylene	T4277210	-2.54E+01	thou gal/yr	12/31/2010		0	0	0	0	0
4364	Perc Storage Tank V-4091	Perchloroethylene	T4277210	-3.79E+01	thou gal/yr	12/31/2010		0	0	0	0	0
4365	Tri-Act 1825 Chemical Tote	Hydrocarbon - mixtures, other/	T4777318	-5.40E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4366	Tri-Act 1803 & 1825 Chemical Tote - Power Plant	Hydrocarbon - mixtures, other/	T8277318	2.00E+00	thou gal/yr	5/10/2010		0	0	0	0	0
4367	Tri-Act 1803 & 1825 Chemical Tote - RLOP	Hydrocarbon - mixtures, other/	T8277318	1.20E+00	thou gal/yr	5/10/2010		0	0	0	0	0
4368	Tri-Act 1803 & 1825 Chemical Tote - SRU	Hydrocarbon - mixtures, other/	T8277318	4.00E-01	thou gal/yr	5/10/2010		0	0	0	0	0
4369	Tri-Act 1803 & 1825 Chemical Tote - LSFQ/D&R	Hydrocarbon - mixtures, other/	T8277318	4.00E-01	thou gal/yr	5/10/2010		0	0	0	0	0
4370	Chemical Tote, Custamine CA-066P - FCC	Hydrocarbon - mixtures, other/	T8277318	4.00E-01	thou gal/yr	5/10/2010		0	0	0	0	0
4372	NALCO EC9085A Tote	Amine - other/not spec	T4277021	5.00E+00	thou gal/yr	5/5/2010		0	0	0	0	0
4373	Custamine CA-0660P RO Plant	Water/organics mixture	T4277502	2.80E+01	thou gal/yr	Unknown		0	0.3	0	0	0
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-4.40E+04	thou barre/yr	12/31/2010		0	92.1	0	0	0
4391	NO. 1 OXIDATION POND	Fresh water	G5033415	0.00E+00	thou gallo/yr	12/31/2010		0	0	0	0	0
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.30E+04	thou barre/yr	12/31/2010		0	27.3	0	0	0
4392	Wetland Marsh	Waste water - other/not spec	G5033443	0.00E+00	thou gallo/yr	12/31/2010		0	0	0	0	0
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.74E+04	thou barre/yr	12/31/2010		0	141	0	0	0
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	-1.41E+05	tons/yr	12/31/2010		0	0	0	0	0
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE871052	3.47E+03	thou gal/yr	12/31/1996		0	2.8	0	0	0
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE871052	1.33E+04	thou gal/yr	12/31/1996		0	5.3	0	0	0
4405	Heavy Oil Transloading Operations	Waste oil	TE672549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	-4.13E+01	gal/yr	12/31/2010		0	0.1	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4413	#2a Separator	Waste water - refin, other/not	G5017300	-9.79E+03	thou barre/yr	12/31/2010		0	225.3	0	0	0
4414	#1a Separator	Waste water - refin, other/not	G5017300	-6.53E+03	thou barre/yr	12/31/2010		0	43.7	0	0	0
4415	Asphalt Tank Truck Loading Racks	Asphalt	T9871030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E-01	tons/yr	12/31/2000		0	0	0	0	0
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEC
P/O APPROVED (2011)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4424	Equipment Painting Area	Coating/Ink/etc.	SG52A048	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4424	Equipment Painting Area	Mineral spirits	SG700184	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998		0	0	0	0	0
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-5.00E+00	gal/yr	12/31/2010		0	0.1	0	0	0
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-2.50E+01	gal/yr	12/31/2010		0	0.4	0	0	0
4429	#8(NH3-H2S)Plant	Waste gases	G5037338	-2.64E+02	million cu/yr	12/31/2010		0	0	0	0	0
4433	#3H2S Plant	Waste gases	G5998338	-2.59E+02	million cu/yr	12/31/2010		0	0.1	0	0	0
4434	#4H2S Plant	Waste gases	G5998338	-1.19E+03	million cu/yr	12/31/2010		0	0.3	0	0	0
4435	#5H2S Plant	Waste gases	G5998338	-1.82E+03	million cu/yr	12/31/2010		0	0.5	0	0	0
4440	Jet Additive Project Fugitive Sources	Petroleum products - other/not	G9000321	0.00E+00	thou gallo/yr			0	0	0	0	0
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T42??201	3.28E+00	thou gal/yr	12/31/2007		0	0.1	0	0	0
5101	Tank-Marketing T-101	Lube oil	T44??7419	1.85E+04	thou gal/yr	3/31/1997		0	62.2	0	0	0
5103	Tank-Marketing T-103	Lube oil	T44??7419	1.28E+04	thou gal/yr	3/31/1997		0	48.8	0	0	0
5105	Tank-Marketing T-105	Lube oil	T44??7419	1.12E+04	thou gal/yr	3/31/1997		0	45	0	0	0
5107	Tank-Marketing T-107	Lube oil	T44??7419	3.26E+02	thou gal/yr	3/31/1997		0	4	0	0	0
5108	Tank-Marketing T-108	Lube oil	T44??7419	2.51E+02	thou gal/yr	3/31/1997		0	3.8	0	0	0
5109	Tank-Marketing T-109	Lube oil	T44??7419	4.98E+02	thou gal/yr	3/31/1997		0	4.4	0	0	0
5110	Tank-Marketing T-110	Lube oil	T44??7419	1.33E+03	thou gal/yr	3/31/1997		0	6.3	0	0	0
5112	Tank-Marketing T-112	Lube oil	T43??7419	5.80E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5113	Tank-Marketing T-113	Lube oil	T43??7419	5.00E+00	thou gal/yr	3/31/1997		0	0.8	0	0	0
5115	Tank-Marketing T-115	Lube oil	T43??7419	5.70E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5117	Tank-Marketing T-117	Lube oil	T44??7419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5118	Tank-Marketing T-118	Lube oil	T44??7419	4.60E+01	thou gal/yr	3/31/1997		0	1.5	0	0	0
5119	Tank-Marketing T-119	Lube oil	T44??7419	6.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5121	Tank-Marketing T-121	Lube oil	T44??7419	5.70E+01	thou gal/yr	3/31/1997		0	2	0	0	0
5122	Tank-Marketing T-122	Lube oil	T44??7419	6.70E+01	thou gal/yr	3/31/1997		0	1.7	0	0	0
5123	Tank-Marketing T-123	Lube oil	T44??7419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5125	Tank-Marketing T-125	Lube oil	T43??7419	2.60E+01	thou gal/yr	3/31/1997		0	0.8	0	0	0
5126	Tank-Marketing T-126	Lube oil	T43??7419	1.04E+02	thou gal/yr	3/31/1997		0	1	0	0	0
5127	Tank-Marketing T-127	Lube oil	T43??7419	1.92E+02	thou gal/yr	3/31/1997		0	1.2	0	0	0
5128	Tank-Marketing T-128	Lube oil	T43??7419	6.40E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5129	Tank-Marketing T-129	Lube oil	T43??7419	3.20E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5130	Tank-Marketing T-130	Lube oil	T43??7419	8.00E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5131	Tank-Marketing T-131	Lube oil	T43??7419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5132	Tank-Marketing T-132	Lube oil	T43??7419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5133	Tank-Marketing T-133	Lube oil	T43??7419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5134	Tank-Marketing T-134	Lube oil	T43??7419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5135	Tank-Marketing T-135	Lube oil	T43??7419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5136	Tank-Marketing T-136	Lube oil	T43??7419	1.36E+02	thou gal/yr	3/31/1997		0	0.7	0	0	0
5137	Tank-Marketing T-137	Lube oil	T43??7419	1.20E+02	thou gal/yr	3/31/1997		0	0.6	0	0	0
5138	Tank-Marketing T-138	Lube oil	T43??7419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5139	Tank-Marketing T-139	Lube oil	T43??7419	2.60E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5140	Tank-Marketing T-140	Lube oil	T43??7419	1.30E+01	thou gal/yr	3/31/1997		0	0	0	0	0
5201	Tank-Marketing T-201	Lube oil	T44??7419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5202	Tank-Marketing T-202	Lube oil	T44??7419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5203	Tank-Marketing T-203	Lube oil	T44??7419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5204	Tank-Marketing T-204	Lube oil	T44??7419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEC
P/O APPROVED (2011)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997		0	6.6	0	0
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997		0	8.7	0	0
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997		0	5.1	0	0
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997		0	3.5	0	0
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997		0	2.3	0	0
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997		0	4.2	0	0
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997		0	2	0	0
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997		0	1.6	0	0
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997		0	2.2	0	0
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997		0	2.4	0	0
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997		0	1.4	0	0
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997		0	1.2	0	0
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997		0	1.3	0	0
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997		0	0.9	0	0
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997		0	3.6	0	0
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997		0	0.9	0	0
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997		0	1.8	0	0
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997		0	0.6	0	0
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.4	0	0
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.9	0	0
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997		0	5.7	0	0
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010		0.4	33.6	2.6	0
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010		0.4	31.6	2.5	0
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010		0.3	28.2	2.2	0
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2010		0	0	0	0
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010		0.3	28.5	2.2	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEE
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010		0.2	15.1	1.2	0	2.3
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05	therms/yr	12/31/2010		0.4	35.4	2.8	0	5.3
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998		0	0	0	0	0
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2010		0	0	0	0	0
6051	Alky Cooling Tower	Fresh water	G5005415	-4.34E+04	thou gallo/yr	12/31/2010		0	0.1	0	0	0
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T4277502	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6125	Tank 6125	Organic liquid - other/not spe	T4277201	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6213	Portable Polyethylene Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6213	Portable Polyethylene Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6213	Portable Polyethylene Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6213	Portable Polyethylene Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0

Printed: AUG 1, 2013

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day				
								Org	NOx	SO2	CO	
6214	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6214	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6214	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6214	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6215	Portabel Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6215	Portabel Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6215	Portabel Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6215	Portabel Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6216	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6216	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6216	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6216	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6217	Portable Polyethylene Sotrage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6217	Portable Polyethylene Sotrage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6217	Portable Polyethylene Sotrage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6217	Portable Polyethylene Sotrage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6218	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6218	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6218	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6218	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6219	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6219	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6219	Portable Polyethylene Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6219	Portable Polyethylene Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6220	Portable Steel Storage Container	Paraffins - C3+	T4377052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6220	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6220	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-6.85E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6220	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6220	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6221	Portable Steel Storage Container	Paraffins - C3+	T4377052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6221	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6221	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.47E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6221	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6221	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6222	Portable Steel Storage Container	Paraffins - C3+	T4377052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6222	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6222	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.34E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6222	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6222	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6223	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6223	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-2.06E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6223	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6223	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6223	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6224	Portable Steel Storage Container	Paraffins - C3+	T4377052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6224	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6224	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-3.43E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6224	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6224	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6224	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6225	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6225	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-3.52E+01	thou gal/yr	12/31/2010		0	0.1	0	0	0
6225	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6225	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6225	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6226	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6226	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.31E+01	thou gal/yr	12/31/2010		0	0.1	0	0	0
6226	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6226	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6226	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6227	Portable Steel Storage	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6227	Portable Steel Storage	Hydrocarbon - mixtures, other/	T4377318	-1.88E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6227	Portable Steel Storage	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6227	Portable Steel Storage	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6227	Portable Steel Storage	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6228	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.45E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6228	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6228	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6228	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.72E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6229	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6229	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6229	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6230	Portable Steel Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6230	Portable Steel Container	Hydrocarbon - mixtures, other/	T4377318	-1.45E+01	thou gal/yr	12/31/2010		0	0.1	0	0	0
6230	Portable Steel Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEE
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6230	Portable Steel Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6230	Portable Steel Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-2.18E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6231	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6231	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6231	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.26E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6232	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6232	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6232	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6233	Portable Steel Storage Container	Paraffins - C3+	T4377052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.26E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6233	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6233	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6233	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-3.36E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6234	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6234	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6234	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.76E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6235	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6235	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6235	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.76E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6236	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6236	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6236	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.76E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6237	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6237	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6237	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.76E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6238	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6238	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6238	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.76E+01	thou gal/yr	12/31/2010		0	0	0	0	0
6239	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6239	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6239	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2010		0	0	0	0	0
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997		0	0	0	0	0
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010		0	0	0.1	0	0
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010		0.1	0.2	1.1	0	1.3
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010		0	0	0	0	0
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010		0	0	0	0	0
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010		0	0	0.1	0	0
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010		0	0	0.1	0	0
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010		0	0	0.8	0	0.1
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010		0	0	2.6	0	0.2
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010		0.1	0.1	1.2	0	0.3
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010		0	0	0.2	0	0
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010		0	0.1	2.7	0	0.2
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010		0	0.1	3.6	0	0.3
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010		0	0	0.3	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEC
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010		0	0	1.5	0	0.3
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010		0	0	0.1	0	0
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010		0	0	0.2	0	0
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010		0	0	0.2	0	0
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008		0	0	0.4	0	0.1
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010		0	0	0	0	0
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	-4.00E+00	gal/yr	12/31/2010		0	0.1	0	0	0
9047	Tank 6047	Organic liquid - other/not spe	T4277201	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T4377090	-5.45E+01	thou gal/yr	12/31/1997		0	0	0	0	0
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T4377419	-3.51E+00	thou gal/yr	12/31/1997		0	0.1	0	0	0
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998		0	0.3	0	0	0
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003		0	1.5	0	0	0
9321	Marine Loading Berth #1	Paraffins - C3+	TB877052	-5.23E+05	thou gal/yr	12/31/2010		0	10.1	0	0	0
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB877158	-1.02E+04	thou gal/yr	12/31/2010		0	0	0	0	0
9321	Marine Loading Berth #1	Bunker C fuel oil	TB877242	-7.30E+04	thou gal/yr	12/31/2010		0	0	0	0	0
9321	Marine Loading Berth #1	Distillate oil	TB877315	-3.64E+04	thou gal/yr	12/31/2010		0	0	0	0	0
9321	Marine Loading Berth #1	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9321	Marine Loading Berth #1	Crude oil	TF877089	-7.73E+04	thou gal/yr	12/31/2010		0	0	0	0	0
9322	Marine Loading Berth #2	Paraffins - C3+	TB877052	-7.78E+04	thou gal/yr	12/31/2010		0	1.5	0	0	0
9322	Marine Loading Berth #2	Gasoline - leaded	TB877128	-8.57E+03	thou gal/yr	12/31/2010		0	3.2	0	0	0
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB877158	-9.54E+04	thou gal/yr	12/31/2010		0	0.1	0	0	0
9322	Marine Loading Berth #2	Methyl alcohol	TB877179	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB877201	-2.54E+03	thou gal/yr	12/31/2010		0	0	0	0	0
9322	Marine Loading Berth #2	Bunker C fuel oil	TB877242	-1.32E+05	thou gal/yr	12/31/2010		0	0	0	0	0
9322	Marine Loading Berth #2	Toluene	TB877293	-4.21E+03	thou gal/yr	12/31/2010		0	0.2	0	0	0
9322	Marine Loading Berth #2	Distillate oil	TB877315	-1.42E+05	thou gal/yr	12/31/2010		0	0.2	0	0	0
9322	Marine Loading Berth #2	Lube oil	TB877419	-2.01E+05	thou gal/yr	12/31/2010		0	0.1	0	0	0
9322	Marine Loading Berth #2	Gasoline - unleaded	TB877551	-2.59E+05	thou gal/yr	12/31/2010		0	119.5	0	0	0
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB877628	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9322	Marine Loading Berth #2	Crude oil	TF877089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9323	Marine Loading Berth #3	Paraffins - C3+	TB877052	-4.74E+04	thou gal/yr	12/31/2010		0	0.9	0	0	0
9323	Marine Loading Berth #3	Crude oil	TB877089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-1.54E+04	thou gal/yr	12/31/2010		0	5.7	0	0	0
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB877158	-8.93E+04	thou gal/yr	12/31/2010		0	0.1	0	0	0
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB877201	-2.00E+03	thou gal/yr	12/31/2010		0	1.9	0	0	0
9323	Marine Loading Berth #3	Bunker C fuel oil	TB877242	-8.15E+04	thou gal/yr	12/31/2010		0	0	0	0	0
9323	Marine Loading Berth #3	Toluene	TB877293	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9323	Marine Loading Berth #3	Distillate oil	TB877315	-1.64E+05	thou gal/yr	12/31/2010		0	0.2	0	0	0
9323	Marine Loading Berth #3	Lube oil	TB877419	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-5.05E+05	thou gal/yr	12/31/2010		0	232.8	0	0	0
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB472318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9324	Marine Loading Berth #4	Gasoline - unleaded	TB472551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9324	Marine Loading Berth #4	Bunker C fuel oil	TB877242	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9324	Marine Loading Berth #4	Distillate oil	TB877315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9324	Marine Loading Berth #4	Crude oil	TF877089	-3.42E+06	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Paraffins - C3+	TB877052	-1.60E+03	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB877158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Bunker C fuel oil	TB877242	-1.07E+05	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Toluene	TB877293	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Distillate oil	TB877315	-1.27E+03	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB877318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Lube oil	TB877419	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Crude oil	TF877089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9326	Marine Loading Berth #11	Paraffins - C3+	TB877052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9326	Marine Loading Berth #11	Bunker C fuel oil	TB877242	-1.29E+04	thou gal/yr	12/31/2010		0	0	0	0	0
9326	Marine Loading Berth #11	Distillate oil	TB877315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00				0	0	0	0	0
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00				0	0.1	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00				0	15.9	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00				0	996.5	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00				0	0.3	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00				0	28.8	0	0	0
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00				0	0	0	0	0
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00				0	152.2	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2011

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00				0	0.4	0	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00				0.1	0	0.6	11.9	3.3

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Unabated Criteria Pollutant Emissions
for Calendar Year 2010***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
21 4042	Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
21 4042	Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
21 4042	Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
21 4042	Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
25 Tank 25:	Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	3.00E-01	thou gal/yr	12/31/2007		0	0	0	0	0
55 Tank 55		Distillate oil	T81??7315	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
55 Tank 55		Gasoline - unleaded	T81??7551	1.70E+00	thou gal/yr	12/31/2003		0	0.1	0	0	0
200 TANK 200A		Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996		0	0	0	0	0
204 TANK 204		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
223 TANK 223		Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
225 TANK 225		Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
231 TANK 231		Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
231 TANK 231		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
231 TANK 231		Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
231 TANK 231		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
234 TANK 234		Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997		0	13.9	0	0	0
290 TANK 290		Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997		0	6.1	0	0	0
291 TANK 291		Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
319 TANK 319		Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997		0	0.4	0	0	0
397 TANK 397		Hydrocarbon - mixtures, other/	T4417318	3.65E+04	thou gal/yr	12/31/2007		0	55.4	0	0	0
399 TANK		Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
399 TANK		Oil - non-fuel, other/not spec	T5472352	-1.89E+04	thou gal/yr	12/31/2010		0	11.9	0	0	0
399 TANK		Tetra-Ethyl Lead (TEL)	T5472422	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
401 TANK 401		Refinery feedstock - other/not	T447??239	4.70E+04	thou gal/yr	4/30/1997		0	10.9	0	0	0
634 TANK 634		Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
634 TANK 634		Petroleum products - other/not	T5472321	-2.03E+04	thou gal/yr	12/31/2010		0	1.6	0	0	0
634 TANK 634		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
679 TANK 679		Hydrocarbon - mixtures, other/	T5412318	2.12E+04	thou gal/yr	12/31/2007		0	0.1	0	0	0
892 Tank 892:	Inorganic Chemical Storage	Water/organics mixture	T42??7502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
893 Tank 893:	Water Storage Tank (No Organics)	Water/organics mixture	T42??7502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
902 Tank 902:	Organic Liquid Storage Tank	Butane	T42??7416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
902 Tank 902:	Organic Liquid Storage Tank	Lube oil	T42??7419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
953 TANK 953		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
953 TANK 953		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
954 TANK 954		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
955 TANK 955		Paraffins - C3+	T5412052	-2.07E+04	thou gal/yr	12/31/2010		0	2.4	0	0	0
955 TANK 955		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
955 TANK 955		Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
956 TANK 956		Paraffins - C3+	T5412052	-1.12E+04	thou gal/yr	12/31/2010		0	2.4	0	0	0
956 TANK 956		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
957 Tank 957		Diesel fuel	T447?7098	-1.47E+04	thou gal/yr	12/31/2010		0	6.4	0	0	0
957 Tank 957		Fuel - jet 'A'	T447?7158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
979 TANK 979		Distillate oil	T447?7315	-6.13E+04	thou gal/yr	4/30/1997		0	7.3	0	0	0
984 TANK 984		Distillate oil	T4417315	-9.67E+03	thou gal/yr	12/31/1997		0	1.4	0	0	0
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
990 TANK 990		Gasoline - unleaded	T5432551	-9.39E+04	thou gal/yr	12/31/2010		0	4.6	0	0	0
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007		0	4.7	0	0	0
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
992 Storage Tank T-992		Gasoline - unleaded	T5472551	-1.06E+05	thou gal/yr	12/31/2010		0	4.5	0	0	0
1020 Tank 1020:	Inorganic Chemical Storage Tank	Diethanolamine	T447?7485	4.20E+02	thou gal/yr	3/10/1995		0	0.1	0	0	0
1052 Tank 1052:	Organic Liquid Storage Tank	Kerosene	T43??7159	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1052 Tank 1052:	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1287 TANK 1287		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1287 TANK 1287		Petroleum products - other/not	T5432321	-2.65E+04	thou gal/yr	12/31/2010		0	2.2	0	0	0
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1289 TANK 1289		Toluene	T6472293	-7.11E+02	thou gal/yr	12/31/2010		0	1	0	0	0
1289 TANK 1289		Hydrocarbon - mixtures, other/	T6472318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
1292 TANK 1292		Diesel fuel	T5412098	-5.02E+04	thou gal/yr	12/31/2010		0	0.4	0	0	0
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1296 TANK 1296		Gasoline - unleaded	T5412551	-8.00E+04	thou gal/yr	12/31/2010		0	5.8	0	0	0
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T6372502	5.90E+00	thou gal/yr	12/31/2003		0	0	0	0	0
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04	thou gal/yr	4/30/1997		0	7.1	0	0	0
1431 Asphalt Tank(T-907)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.38E+04	thou gal/yr	12/31/2010		0	3.9	0	0	0
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1488 TANK 1488		Oil/water mixture	T5472503	-3.08E+03	thou gal/yr	12/31/2010		0	31.3	0	0	0
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1489 TANK 1489		Alkylate	T5432389	-3.88E+04	thou gal/yr	12/31/2010		0	4.9	0	0	0
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1491 TANK 1491		Gasoline - unleaded	T5432551	-6.05E+04	thou gal/yr	12/31/2010		0	4	0	0	0
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997		0	3.5	0	0	0
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997		0	0.8	0	0	0
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997		0	0	0	0	0
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1514 TANK 1514		Gasoline - unleaded	T5432551	-9.19E+04	thou gal/yr	12/31/2010		0	5.1	0	0	0
1518 TANK 1518		Fuel - jet 'A'	T5432158	1.30E+04	thou gal/yr	12/31/2007		0	0.1	0	0	0
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998		0	0	0	0	0
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	1.79E+03	thou gal/yr	12/31/2007		0	0.1	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007		0	0	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007		0	0.7	0	0	0
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997		0	1.3	0	0	0
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1637 TANK 1637		Gasoline - unleaded	T6H32551	-6.14E+03	thou gal/yr	12/31/2010		0	1.1	0	0	0
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1653 TANK 1653		Fuel - jet 'A'	T4417158	-6.97E+03	thou gal/yr	12/31/2010		0	2.5	0	0	0
1653 TANK 1653		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1653 TANK 1653		Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.33E+05	thou gal/yr	12/31/2010		0	5.4	0	0	0
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007		0	5.5	0	0	0
1798 Tank 1798		Fuel - jet 'A'	T5422158	-1.78E+05	thou gal/yr	12/31/2010		0	7.3	0	0	0
1798 Tank 1798		Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1799 TANK 1799		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
1799 TANK 1799		Fuel - jet 'A'	T5472158	-2.32E+05	thou gal/yr	12/31/2010		0	1.7	0	0	0
1821 Tank 1821 Fresh Sulfuric Acid Tank		H2SO4 - other/not spec	G5999146	-1.02E+05	tons/yr	12/31/2010		0	0	0	0	0
1825 Tank 1825		Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1828 TANK 1828		Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1828 TANK 1828		Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
	1828 TANK 1828	Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006		0	0	0	0	0
	1843 TANK 1843	Paraffins - C3+	T5412052	2.95E+02	thou gal/yr	12/31/2007		0	0	0	0	0
	1894 Tank 1894: Phosphoric Acid Storage Tank	Phosphoric acid	G5999217	-1.07E+02	tons/yr	12/31/2010		0	0	0	0	0
	1899 TANK 1899	Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997		0	0.4	0	0	0
	1908 Asphalt Tank (T-908)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	1909 Tank 1909	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	1910 Tank 1910	Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994		0	0	0	0	0
	1911 Tank 1911	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	1911 Tank 1911	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	1966 TANK 1966	Fuel - jet 'A'	T5432158	2.02E+04	thou gal/yr	12/31/2007		0	0.2	0	0	0
	2520 Wastewater/MEA Storage Tank	Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005		0	0	0	0	0
	2520 Wastewater/MEA Storage Tank	Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005		0	6.3	0	0	0
	2540 Tank 2540: Organic Liquid Storage Tank	Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997		0	0.1	0	0	0
	2903 Tank 903: Organic Liquid Storage Tank	Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
	2903 Tank 903: Organic Liquid Storage Tank	Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
	2917 Asphalt Tank (T-917)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	2918 Asphalt Tank (T-918)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	2921 Asphalt Tank (T-921)	Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3038 TANK 3038 (Spherical Pressure Tank)	Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3038 TANK 3038 (Spherical Pressure Tank)	Pentane	T3477209	-2.93E+04	thou gal/yr	12/31/2010		0	0	0	0	0
	3050 TANK 3050 SPHERE	Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
	3066 TANK 3066	Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998		0	0	0	0	0
	3071 TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3071 TANK 3071	Gasoline - unleaded	T5472551	-1.53E+05	thou gal/yr	12/31/2010		0	121.9	0	0	0
	3072 TANK 3072	Gasoline - unleaded	T5472551	1.05E+05	thou gal/yr	12/31/2007		0	5.2	0	0	0
	3073 TANK 3073,external floating roof storage tank w/primary and	Paraffins - C3+	T5472052	-1.26E+05	thou gal/yr	12/31/2010		0	6.8	0	0	0
	3073 TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3073 TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3074 TANK 3074	Distillate oil	T5472315	1.14E+05	thou gal/yr	12/31/2007		0	0.7	0	0	0
	3075 External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	-6.87E+02	thou gal/yr	12/31/2010		0	2.9	0	0	0
	3075 External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3076 TANK T3076	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3076 TANK T3076	Hydrocarbon - mixtures, other/	T5472318	-1.46E+04	thou gal/yr	12/31/2010		0	3.3	0	0	0
	3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Crude oil	T5472089	-4.51E+05	thou gal/yr	12/31/2010		0	21.7	0	0	0
	3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Bunker C fuel oil	T5472242	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3101 TANK 3101	Crude oil	T5432089	-4.62E+05	thou gal/yr	12/31/2010		0	30.6	0	0	0
	3101 TANK 3101	Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3101 TANK 3101	Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3102 TANK 3102	Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3102 TANK 3102	Hydrocarbon - mixtures, other/	T5432318	-3.17E+05	thou gal/yr	12/31/2010		0	11.1	0	0	0
	3103 TANK 3103	Crude oil	T5432089	3.43E+05	thou gal/yr	12/31/2007		0	35.5	0	0	0
	3104 TANK 3104	Crude oil	T5432089	7.74E+05	thou gal/yr	12/31/2007		0	5.9	0	0	0
	3105 TANK 3105	Crude oil	T5432089	7.36E+05	thou gal/yr	12/31/2007		0	65.3	0	0	0
	3106 TANK 3106	Crude oil	T5432089	3.21E+05	thou gal/yr	12/31/2007		0	34.6	0	0	0
	3107 TANK 3107	Crude oil	T5472089	3.40E+05	thou gal/yr	12/31/2008		0	3.5	0	0	0
	3110 Desalter Effluent Surge Tank A	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007		0	7.1	0	0	0
	3111 Desalter Effluent Surge Tank B	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007		0	6.4	0	0	0
	3126 TANK 3126	Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3126 TANK 3126	Oil/water mixture	T5432503	-9.59E+04	thou gal/yr	12/31/2010		0	1.2	0	0	0
	3127 TANK 3127	Oil/water mixture	T5412503	2.38E+03	thou gal/yr	12/31/2007		0	1.7	0	0	0
	3128 TANK 3128	Aromatic hydrocarbons - other/	T5472027	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
	3128 TANK 3128	Water/organics mixture	T5472502	-3.30E+03	thou gal/yr	12/31/2010		0	1.2	0	0	0
	3129 TANK 3129	Fuel - jet 'A'	T5412158	1.16E+05	thou gal/yr	12/31/2007		0	1.1	0	0	0
	3132 Tank 3132	Distillate oil	T5472315	8.12E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
	3133 TANK 3133	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.00E+05	thou gal/yr	12/31/2010		0	103.6	0	0	0
3133 TANK 3133		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3134 TANK 3134		Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.78E+05	thou gal/yr	12/31/2010		0	83.2	0	0	0
3134 TANK 3134		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3138 TANK 3138		Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
3139 TANK 3139		Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997		0	8.1	0	0	0
3141 SULFUR STORAGE TANK 3141		Sulfur	G7014267	0.00E+00	tons/yr	12/31/2010		0	0	0	0	0
3142 TANK 3142		Refinery feedstock - other/not	T4417239	4.42E+02	thou gal/yr	12/31/2008		0	0	0	0	0
3144 TANK 3144		Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3145 TANK 3145, Sphere		Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998		0	0	0	0	0
3146 Tank 3146: 20% Aqueous Ammonia		Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994		0	14.6	0	0	0
3147 Tank 3147: Organic Liquid Storage Tank		Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3148 Tank 3148: Organic Liquid Storage Tank		Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3157 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	12.4	0	0	0
3158 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3159 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3160 Tank 3160: Organic Liquid Storage Tank		Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994		0	13.4	0	0	0
3161 Tank Lube Oil		Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3162 Tank Lube Oil		Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3163 Tank Lube Oil		Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3164 Tank Lube Oil		Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
3165 Tank Lube Oil		Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3166 Tank Lube Oil		Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3167 Tank Lube Oil		Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3168 Tank Lube Oil		Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3169 organic liquid storage tank, lube oil products		Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995		0	0.2	0	0	0
3170 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3171 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3172 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	9.6	0	0	0
3179 Tank 3179: Organic Liquid Storage Tank		Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997		0	0.2	0	0	0
3180 Tank		Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3180 Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3180 Tank		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3180 Tank		Alkylate	T5472389	-3.82E+04	thou gal/yr	12/31/2010		0	113.5	0	0	0
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3182 Tank 3182: Organic Liquid Storage Tank		Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997		0	0.3	0	0	0
3185 Tank 3185 (previously T-982)		Fuel - jet 'A'	T5472158	2.10E+05	thou gal/yr	12/31/2007		0	6.4	0	0	0
3186 Gas Oil Tank		Organic liquid - other/not spe	T4477201	0.00E+00		4/21/1997		0	8.7	0	0	0
3189 Gasoline component and Diesel Tank		Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-2.97E+05	thou gal/yr	12/31/2010		0	6.4	0	0	0
3189 Gasoline component and Diesel Tank		Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3190 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3190 Storage Tank		Fuel - jet 'A'	T5472158	-2.26E+05	thou gal/yr	12/31/2010		0	1.8	0	0	0
3191 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3191 Storage Tank		Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3191 Storage Tank		Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3191 Storage Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3191 Storage Tank		Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3191 Storage Tank		Avgas	T5472662	-1.52E+04	thou gal/yr	5/16/2011		0	2.5	0	0	0
3192 Desalter Effluent Skim Tank		Crude oil	T3H77089	-1.56E+04	thou gal/yr	12/31/2010		0	0	0	0	0
3193 Gasoline component Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3193 Gasoline component Tank		Isooctane	T5472154	-1.77E+04	thou gal/yr	12/31/2010		0	2.3	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3193	Gasoline component Tank	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3193	Gasoline component Tank	Alkylate	T54?2389	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3193	Gasoline component Tank	Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3194	Storage Tank T-3194	Hydrocarbon - mixtures, other/	T54?2318	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
3194	Storage Tank T-3194	Gas oil	T54?2394	1.44E+05	thou gal/yr	12/31/2003		0	1	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Diesel fuel	T54?7098	1.29E+05	thou gal/yr	12/31/2006		0	2.4	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Distillate oil	T54?7315	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Lube oil	T54?7419	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3196	Gasoline Components Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3196	Gasoline Components Tank	Organic liquid - other/not spe	T54?2201	-1.03E+05	thou gal/yr	12/31/2010		0	1.2	0	0	0
3196	Gasoline Components Tank	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3196	Gasoline Components Tank	Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3196	Gasoline Components Tank	Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3196	Gasoline Components Tank	Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3197	Gasoline component Tank	Ethers	T55?2103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3197	Gasoline component Tank	Naphtha	T55?2188	-2.97E+04	thou gal/yr	12/31/2010		0	6.2	0	0	0
3197	Gasoline component Tank	Distillate oil	T55?2315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3197	Gasoline component Tank	Gas oil	T55?2394	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Fuel - jet 'A'	T543?158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Toluene	T543?293	-2.53E+03	thou gal/yr	12/31/2010		0	18.4	0	0	0
3198	3198 tank; organic liquid storage tank	Distillate oil	T543?315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	-2.28E+03	thou barre/yr	12/31/2010		0	50	0	0	0
3201	Tank 3201: Whole Alkylate	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3201	Tank 3201: Whole Alkylate	Alkylate	T54?2389	-1.30E+05	thou gal/yr	12/31/2010		0	112.4	0	0	0
3202	Tank 3202: Methanol	Methyl alcohol	T54?2179	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3202	Tank 3202: Methanol	Naphtha	T54?2188	-4.20E+03	thou gal/yr	12/31/2010		0	73	0	0	0
3202	Tank 3202: Methanol	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3202	Tank 3202: Methanol	Petroleum products - other/not	T54?2321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3204	Tank 3204: Organic Liquid Storage Tank	Lube oil	T42?7419	2.54E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3207	Butane Sphere: Organic Liquid Storage Tank	Butane	T34?7416	-9.20E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3208	Propane Sphere: Organic Liquid Storage Tank	Propane	T34?7417	-7.67E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3211	Sphere	Butane	T34?7416	-3.83E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3212	Sphere	Propane	T34?7417	-2.76E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T54?2098	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T54?2158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T54?2419	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	-2.85E+05	thou gal/yr	12/31/2010		0	267.6	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T533?128	-2.48E+04	thou gal/yr	12/31/2010		0	66.4	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T533?2551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T54?2315	-1.29E+05	thou gal/yr	12/31/1997		0	1.2	0	0	0
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T44?7315	8.40E+04	thou gal/yr	7/9/1997		0	22.7	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-1.73E+04	thou gal/yr	12/31/2010		0	142.5	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-1.60E+04	thou gal/yr	12/31/2010		0	182	0	0	0
3225	Organic Liquid Storage Tank	Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.41E+05	tons/yr	12/31/2010		5.5	0	0	155	0
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T43?7419	-3.37E+02	thou gal/yr	12/31/1997		0	0	0	0	0
3910	LPG Tank; # 3910	LPG	T34?7160	-3.97E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3911	LPG Tank, # 3911	LPG	T34?7160	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010		22.2	6.7	90.9	7.4	37.5
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010		8.8	2.6	36	3	14.9
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010		9.8	2.9	39.9	3.3	16.4
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010		7.9	2.4	32.1	2.6	13.2
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010		15.5	4.6	63.4	5.2	26.1
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010		7.3	2.2	29.9	2.4	12.3
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010		9.5	2.9	39	3.2	16.1
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010		4.5	1.4	18.5	1.5	7.6
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010		9.3	2.8	32.6	3.1	15.7
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010		10.7	3.2	37.5	3.6	18.1

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010		15.1	4.5	76.8	5.1	25.5
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010		16.7	5	84.9	5.6	28.2
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010		8.4	2.5	134.9	2.8	14.1
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010		2.5	0.8	49.9	0.9	4.3
4070	#4 CRUDE UNIT F 1100A	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010		66.2	19.8	185.4	177.4	111.6
4071	#4 CRUDE UNIT F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010		60.9	18.2	170.4	163.1	102.6
4072	#4 CRUDE UNIT F1160	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010		22.5	6.7	63	60.3	37.9
4073	LSFO COOLING TOWER	Fresh water	G5005415	-6.15E+04	thou gallo/yr	12/31/2010		0	1	0	0	0
4076	3 CAT COOLING TOWER E460	Fresh water	G5005415	-1.01E+05	thou gallo/yr	12/31/2010		0	1.7	0	0	0
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010		0	0	0	0	0
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010		9.2	2.8	32.3	3.1	15.6
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010		25.1	7.5	88.5	8.5	42.7
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010		1.8	0.5	6.3	0.6	3
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010		1.7	0.5	6	0.6	2.9
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010		22.2	6.7	77.6	7.4	37.5
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	-5.18E+04	thou barre/yr	12/31/2010		0	7.1	0	0	0
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010		1.8	0.5	7.4	0.6	3
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010		1.7	0.5	7	0.6	2.9
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010		22.2	6.7	101.9	7.4	91.7
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010		9.7	2.9	39.8	8.2	16.4
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010		6.2	1.9	17.3	2.1	10.4
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010		6.4	1.9	17.8	2.1	10.7
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010		7.3	2.2	110.1	3.8	12.4
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010		9.8	2.9	146.2	5	16.4
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010		0.1	2.1	111.2	3.8	12.5
4164	F-630 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010		6.7	2	23.4	2.2	11.3
4165	F620 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010		4.8	1.4	16.9	1.6	8.1
4166	F-610 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010		6.9	2.1	24.1	2.3	11.6
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12/31/2010		0.1	5.7	82.4	6.8	34
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.32E+06	thou cu ft/yr	12/31/2010		36.5	10.9	102.3	12.2	61.6
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010		33.1	9.9	92.7	11.1	55.8
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010		156	46.7	343.7	52.2	262.9
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010		139.2	41.7	389.6	116.5	234.6
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	-9.37E+05	thou gallo/yr	12/31/2010		0	15.4	0	0	0
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	-4.13E+05	thou gallo/yr	12/31/2010		0	6.8	0	0	0
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	-3.73E+04	thou gallo/yr	12/31/2010		0	0.6	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010		4.3	1.3	123.3	2.2	7.2
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010		1.5	0.4	42.6	0.8	2.5
4191	Alkane Cooling Water Tower	Fresh water	G5005415	-3.82E+04	thou gallo/yr	12/31/2010		0	0.6	0	0	0
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010		0.5	0.9	21.1	4.1	5.3

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010		0.5	1	25	0.1	6.2
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010		0.7	1.3	31.8	6.1	7.9
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	-4.79E+03	thou barre/yr	12/31/2010		0	13.1	0	0	0
4227	SRU #1 TRAIN	Sulfur	G7055267	-3.17E+04	tons/yr	12/31/2010		0	0	0	9523.3	0
4228	SRU #2 TRAIN	Sulfur	G7055267	-4.09E+04	tons/yr	12/31/2010		0	0	0	13117.8	0
4229	SRU #3 TRAIN	Sulfur	G7055267	-6.88E+04	tons/yr	12/31/2010		0	0	0	19989	0
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997		0	0	0	0	0
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	-2.19E+04	thou barre/yr	12/31/2010		0	59.9	0	0	0
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	-1.85E+04	thou barre/yr	12/31/2010		0	50.6	0	0	0
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	-1.13E+04	thou barre/yr	12/31/2010		0	9.3	0	0	0
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	-8.43E+04	thou barre/yr	12/31/2010		0	231.1	0	0	0
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	-8.36E+03	thou barre/yr	12/31/2010		0	34.3	0	0	0
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	-1.07E+05	thou gal/yr	12/31/2010		0	2334	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.72E+04	million cu/yr	12/31/2010		0	797.6	0	0	86.2
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.21E+04	thou barre/yr	12/31/2010		0	0	0	0	0
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	-2.15E+05	thou gallo/yr	12/31/2010		0	59	0	0	0
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	-1.49E+04	thou barre/yr	12/31/2010		0	0	0	0	0
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	-1.26E+04	thou barre/yr	12/31/2010		0	0	0	0	0
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	-9.02E+03	thou barre/yr	12/31/2010		0	0	0	0	0
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	-7.96E+03	thou barre/yr	12/31/2010		0	0	0	0	0
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	157147	132.6	486.2	799.4	213.9	
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	31.9	0.2	0	0	0	0
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.39E+04	thou barre/yr	12/31/2010		0	38.2	0	0	0
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	-7.58E+03	thou barre/yr	12/31/2010		0	10.4	0	0	0
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	-2.32E+03	thou barre/yr	12/31/2010		0	9.5	0	0	0
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4329	RLOP Cooling Tower	Fresh water	G5005415	-1.33E+05	thou gallo/yr	12/31/2010		0	0.3	0	0	0
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010		2.1	0.6	6.2	0.7	3.6
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010		2.8	0.8	8	0.9	4.6
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010		8.1	2.4	23.3	2.7	13.5
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010		0	1.7	17.3	2	10
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010		4.5	1.3	12.9	1.5	7.5
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010		4	1.2	11.4	1.3	6.6
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010		2	0.6	5.9	0.7	3.4
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010		4.2	1.3	12.1	1.4	7
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010		5.6	1.7	16.3	1.9	9.5
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010		1.7	0.5	5	0.6	2.9
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.90E+05	tons/yr	12/31/2010		0	13.8	0	0	0
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.51E+03	thou barre/yr	12/31/2010		0	15.1	0	0	0
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.35E+06	tons/yr	12/31/2010		0	27	0	0	0
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.77E+05	tons/yr	12/31/2010		0	7.6	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4345	Misc.PET REF,Refinery Sour Waste Water No 2NH3-H2S	Waste gases	G5037338	-2.40E+02	million cu/yr	12/31/2010		0	0	0	0	0
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-5.10E+05	tons/yr	12/31/2010		0	51.7	0	0	0
4348	H2 Recovery Plant	Hydrocarbon - mixtures, other/	G5998318	-4.63E+04	tons/yr	12/31/2010		0	4.7	0	0	0
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010		0.9	1.8	42.9	2.6	10.7
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4350	Gas Turbine with Steam Injection	LPG	C7120160	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010		24.1	9.8	4661.9	7.2	374.6
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010		10.1	20.1	471.1	11.3	117.6
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4352	Gas Turbine with Steam Injection	LPG	C7120160	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010		24.1	9.8	4661.9	7.2	374.6
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2010		0	0	0	0	0
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010		10.1	20.1	471.1	5.7	117.6
4354	Butamer Plant	Paraffins - C3+	G5031052	-8.16E+04	thou gallo/yr	12/31/2010		0	0	0	0	0
4355	Deisobutanizer Plant	Paraffins - C3+	G5031052	-2.56E+05	thou gallo/yr	12/31/2010		0	0	0	0	0
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2010		0	0	0	0	0
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2010		0	0	0	0	0
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T3377210	-5.96E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T4177210	0.00E+00				0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4362	Perc Surge Control Vessel V-3591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4363	Perc Storage Tank V-3592	Perchloroethylene	T4277210	-2.54E+01	thou gal/yr	12/31/2010		0	0.1	0	0	0
4364	Perc Storage Tank V-4091	Perchloroethylene	T4277210	-3.79E+01	thou gal/yr	12/31/2010		0	0.1	0	0	0
4365	Tri-Act 1825 Chemical Tote	Hydrocarbon - mixtures, other/	T4777318	-5.40E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4366	Tri-Act 1803 & 1825 Chemical Tote - Power Plant	Hydrocarbon - mixtures, other/	T8277318	2.00E+00	thou gal/yr	5/10/2010		0	0	0	0	0
4367	Tri-Act 1803 & 1825 Chemical Tote - RLOP	Hydrocarbon - mixtures, other/	T8277318	1.20E+00	thou gal/yr	5/10/2010		0	0	0	0	0
4368	Tri-Act 1803 & 1825 Chemical Tote - SRU	Hydrocarbon - mixtures, other/	T8277318	4.00E-01	thou gal/yr	5/10/2010		0	0	0	0	0
4369	Tri-Act 1803 & 1825 Chemical Tote - LSFO/D&R	Hydrocarbon - mixtures, other/	T8277318	4.00E-01	thou gal/yr	5/10/2010		0	0	0	0	0
4370	Chemical Tote, Custamine CA-066P - FCC	Hydrocarbon - mixtures, other/	T8277318	4.00E-01	thou gal/yr	5/10/2010		0	0	0	0	0
4372	NALCO EC9085A Tote	Amine - other/not spec	T4277021	5.00E+00	thou gal/yr	5/5/2010		0	0	0	0	0
4373	Custamine CA-0660P RO Plant	Water/organics mixture	T4277502	2.80E+01	thou gal/yr	Unknown		0	0.3	0	0	0
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-4.40E+04	thou barre/yr	12/31/2010		0	92.1	0	0	0
4391	NO. 1 OXIDATION POND	Fresh water	G5033415	0.00E+00	thou gallo/yr	12/31/2010		0	0	0	0	0
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.30E+04	thou barre/yr	12/31/2010		0	27.3	0	0	0
4392	Wetland Marsh	Waste water - other/not spec	G5033443	0.00E+00	thou gallo/yr	12/31/2010		0	0	0	0	0
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.74E+04	thou barre/yr	12/31/2010		0	141	0	0	0
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	-1.41E+05	tons/yr	12/31/2010		3.9	0	0	0	0
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE871052	3.47E+03	thou gal/yr	12/31/1996		0	2.8	0	0	0
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE871052	1.33E+04	thou gal/yr	12/31/1996		0	5.3	0	0	0
4405	Heavy Oil Transloading Operations	Waste oil	TE672549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	-4.13E+01	gal/yr	12/31/2010		0	0.1	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4413	#2a Separator	Waste water - refin, other/not	G5017300	-9.79E+03	thou barre/yr	12/31/2010		0	225.3	0	0	0
4414	#1a Separator	Waste water - refin, other/not	G5017300	-6.53E+03	thou barre/yr	12/31/2010		0	43.7	0	0	0
4415	Asphalt Tank Truck Loading Racks	Asphalt	T9871030	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E-01	tons/yr	12/31/2000		0.5	0	0	0	0
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4424	Equipment Painting Area	Coating/Ink/etc.	SG52A048	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4424	Equipment Painting Area	Mineral spirits	SG700184	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998		0	0	0	0	0
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-5.00E+00	gal/yr	12/31/2010		0	0.1	0	0	0
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-2.50E+01	gal/yr	12/31/2010		0	0.4	0	0	0
4429	#8(NH3-H2S)Plant	Waste gases	G5037338	-2.64E+02	million cu/yr	12/31/2010		0	0	0	0	0
4433	#3H2S Plant	Waste gases	G5998338	-2.59E+02	million cu/yr	12/31/2010		0	0.1	0	0	0
4434	#4H2S Plant	Waste gases	G5998338	-1.19E+03	million cu/yr	12/31/2010		0	0.3	0	0	0
4435	#5H2S Plant	Waste gases	G5998338	-1.82E+03	million cu/yr	12/31/2010		0	0.5	0	0	0
4440	Jet Additive Project Fugitive Sources	Petroleum products - other/not	G9000321	0.00E+00	thou gallo/yr			0	0	0	0	0
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T42??201	3.28E+00	thou gal/yr	12/31/2007		0	0.1	0	0	0
5101	Tank-Marketing T-101	Lube oil	T44??7419	1.85E+04	thou gal/yr	3/31/1997		0	62.2	0	0	0
5103	Tank-Marketing T-103	Lube oil	T44??7419	1.28E+04	thou gal/yr	3/31/1997		0	48.8	0	0	0
5105	Tank-Marketing T-105	Lube oil	T44??7419	1.12E+04	thou gal/yr	3/31/1997		0	45	0	0	0
5107	Tank-Marketing T-107	Lube oil	T44??7419	3.26E+02	thou gal/yr	3/31/1997		0	4	0	0	0
5108	Tank-Marketing T-108	Lube oil	T44??7419	2.51E+02	thou gal/yr	3/31/1997		0	3.8	0	0	0
5109	Tank-Marketing T-109	Lube oil	T44??7419	4.98E+02	thou gal/yr	3/31/1997		0	4.4	0	0	0
5110	Tank-Marketing T-110	Lube oil	T44??7419	1.33E+03	thou gal/yr	3/31/1997		0	6.3	0	0	0
5112	Tank-Marketing T-112	Lube oil	T43??7419	5.80E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5113	Tank-Marketing T-113	Lube oil	T43??7419	5.00E+00	thou gal/yr	3/31/1997		0	0.8	0	0	0
5115	Tank-Marketing T-115	Lube oil	T43??7419	5.70E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5117	Tank-Marketing T-117	Lube oil	T44??7419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5118	Tank-Marketing T-118	Lube oil	T44??7419	4.60E+01	thou gal/yr	3/31/1997		0	1.5	0	0	0
5119	Tank-Marketing T-119	Lube oil	T44??7419	6.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5121	Tank-Marketing T-121	Lube oil	T44??7419	5.70E+01	thou gal/yr	3/31/1997		0	2	0	0	0
5122	Tank-Marketing T-122	Lube oil	T44??7419	6.70E+01	thou gal/yr	3/31/1997		0	1.7	0	0	0
5123	Tank-Marketing T-123	Lube oil	T44??7419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5125	Tank-Marketing T-125	Lube oil	T43??7419	2.60E+01	thou gal/yr	3/31/1997		0	0.8	0	0	0
5126	Tank-Marketing T-126	Lube oil	T43??7419	1.04E+02	thou gal/yr	3/31/1997		0	1	0	0	0
5127	Tank-Marketing T-127	Lube oil	T43??7419	1.92E+02	thou gal/yr	3/31/1997		0	1.2	0	0	0
5128	Tank-Marketing T-128	Lube oil	T43??7419	6.40E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5129	Tank-Marketing T-129	Lube oil	T43??7419	3.20E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5130	Tank-Marketing T-130	Lube oil	T43??7419	8.00E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5131	Tank-Marketing T-131	Lube oil	T43??7419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5132	Tank-Marketing T-132	Lube oil	T43??7419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5133	Tank-Marketing T-133	Lube oil	T43??7419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5134	Tank-Marketing T-134	Lube oil	T43??7419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5135	Tank-Marketing T-135	Lube oil	T43??7419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5136	Tank-Marketing T-136	Lube oil	T43??7419	1.36E+02	thou gal/yr	3/31/1997		0	0.7	0	0	0
5137	Tank-Marketing T-137	Lube oil	T43??7419	1.20E+02	thou gal/yr	3/31/1997		0	0.6	0	0	0
5138	Tank-Marketing T-138	Lube oil	T43??7419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5139	Tank-Marketing T-139	Lube oil	T43??7419	2.60E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5140	Tank-Marketing T-140	Lube oil	T43??7419	1.30E+01	thou gal/yr	3/31/1997		0	0	0	0	0
5201	Tank-Marketing T-201	Lube oil	T44??7419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5202	Tank-Marketing T-202	Lube oil	T44??7419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5203	Tank-Marketing T-203	Lube oil	T44??7419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5204	Tank-Marketing T-204	Lube oil	T44??7419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997		0	6.6	0	0
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997		0	8.7	0	0
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997		0	5.1	0	0
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997		0	3.5	0	0
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997		0	2.3	0	0
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997		0	4.2	0	0
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997		0	2	0	0
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997		0	1.6	0	0
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997		0	2.2	0	0
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997		0	2.4	0	0
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997		0	1.4	0	0
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997		0	1.2	0	0
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997		0	1.3	0	0
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997		0	0.9	0	0
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997		0	3.6	0	0
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997		0	0.9	0	0
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997		0	1.8	0	0
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997		0	0.6	0	0
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.4	0	0
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.9	0	0
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997		0	5.7	0	0
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010		0.4	33.6	2.6	0
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010		0.4	31.6	2.5	0
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010		0.3	28.2	2.2	0
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2010		0	0	0	0
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010		0.3	28.5	2.2	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010		0.2	15.1	1.2	0	2.3
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05	therms/yr	12/31/2010		0.4	35.4	2.8	0	5.3
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010		0	0	0	0	0
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998		0	0	0	0	0
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2010		0	0	0	0	0
6051	Alky Cooling Tower	Fresh water	G5005415	-4.34E+04	thou gallo/yr	12/31/2010		0	0.1	0	0	0
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??7502	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6125	Tank 6125	Organic liquid - other/not spe	T42??7201	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6213	Portable Polyethylene Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6213	Portable Polyethylene Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6213	Portable Polyethylene Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6213	Portable Polyethylene Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0

Printed: AUG 1, 2013

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day				
								Org	Nox	SO2	CO	
6214	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6214	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6214	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6214	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6215	Portabel Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6215	Portabel Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6215	Portabel Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6215	Portabel Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6216	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6216	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6216	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6216	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6218	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6218	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6218	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6218	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6219	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6219	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6219	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6219	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6220	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6220	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6220	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	-6.85E+00	thou gal/yr	12/31/2010	0	1.1	0	0	0	
6220	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6220	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6221	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6221	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6221	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	-1.47E+01	thou gal/yr	12/31/2010	0	0.9	0	0	0	
6221	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6221	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6222	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6222	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6222	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	-1.34E+01	thou gal/yr	12/31/2010	0	1	0	0	0	
6222	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6222	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6223	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6223	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	-2.06E+01	thou gal/yr	12/31/2010	0	0.5	0	0	0	
6223	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6223	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6223	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6224	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6224	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6224	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	-3.43E+01	thou gal/yr	12/31/2010	0	0	0	0	0	
6224	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6224	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6224	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6225	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6225	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	-3.52E+01	thou gal/yr	12/31/2010	0	7.9	0	0	0	
6225	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6225	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6225	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6226	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6226	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	-1.31E+01	thou gal/yr	12/31/2010	0	5.6	0	0	0	
6226	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6226	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6226	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6227	Portable Steel Storage	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6227	Portable Steel Storage	Hydrocarbon - mixtures, other/	T437?318	-1.88E+01	thou gal/yr	12/31/2010	0	0.7	0	0	0	
6227	Portable Steel Storage	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6227	Portable Steel Storage	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6227	Portable Steel Storage	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6228	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	-1.45E+01	thou gal/yr	12/31/2010	0	0.7	0	0	0	
6228	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6228	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6228	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	-1.72E+01	thou gal/yr	12/31/2010	0	0.7	0	0	0	
6229	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6229	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6229	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6230	Portable Steel Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	
6230	Portable Steel Container	Hydrocarbon - mixtures, other/	T437?318	-1.45E+01	thou gal/yr	12/31/2010	0	5.8	0	0	0	
6230	Portable Steel Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2010	0	0	0	0	0	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6230	Portable Steel Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6230	Portable Steel Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-2.18E+00	thou gal/yr	12/31/2010		0	0.1	0	0	0
6231	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6231	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6231	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.26E+01	thou gal/yr	12/31/2010		0	0.1	0	0	0
6232	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6232	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6232	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6233	Portable Steel Storage Container	Paraffins - C3+	T4377052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.26E+01	thou gal/yr	12/31/2010		0	0.1	0	0	0
6233	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6233	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6233	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-3.36E+01	thou gal/yr	12/31/2010		0	0.2	0	0	0
6234	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6234	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6234	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.76E+01	thou gal/yr	12/31/2010		0	0.1	0	0	0
6235	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6235	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6235	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.76E+01	thou gal/yr	12/31/2010		0	0.1	0	0	0
6236	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6236	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6236	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.76E+01	thou gal/yr	12/31/2010		0	0.1	0	0	0
6237	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6237	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6237	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.76E+01	thou gal/yr	12/31/2010		0	0.1	0	0	0
6238	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6238	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6238	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	-1.76E+01	thou gal/yr	12/31/2010		0	0.8	0	0	0
6239	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6239	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6239	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2010		0	0	0	0	0
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997		0	0	0	0	0
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010		0	0	0.1	0	0
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010		0.1	0.2	1.1	0	1.3
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010		0	0	0	0	0
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010		0	0	0	0	0
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010		0	0	0.1	0	0
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010		0	0	0.1	0	0
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010		0	0	0.8	0	0.2
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010		0.1	0	2.6	0	0.5
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010		0.1	0.1	1.2	0	0.3
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010		0	0	0.2	0	0
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010		0.2	0.2	2.7	0	0.6
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010		0.3	0.3	3.6	0	0.8
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010		0	0	0.3	0	0.1

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2011

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010		0.1	0	1.5	0	0.9
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010		0	0	0.1	0	0
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010		0	0	0.2	0	0
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010		0	0	0.2	0	0
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008		0	0	0.4	0	0.3
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010		0	0	0	0	0
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	-4.00E+00	gal/yr	12/31/2010		0	0.1	0	0	0
9047	Tank 6047	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??7090	-5.45E+01	thou gal/yr	12/31/1997		0	0	0	0	0
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??7419	-3.51E+00	thou gal/yr	12/31/1997		0	0.1	0	0	0
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998		0	0.3	0	0	0
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003		0	1.5	0	0	0
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??7052	-5.23E+05	thou gal/yr	12/31/2010		0	202.7	0	0	0
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??7158	-1.02E+04	thou gal/yr	12/31/2010		0	0.3	0	0	0
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??7242	-7.30E+04	thou gal/yr	12/31/2010		0	0	0	0	0
9321	Marine Loading Berth #1	Distillate oil	TB8??7315	-3.64E+04	thou gal/yr	12/31/2010		0	0.9	0	0	0
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9321	Marine Loading Berth #1	Crude oil	TF8??7089	-7.73E+04	thou gal/yr	12/31/2010		0	0	0	0	0
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??7052	-7.78E+04	thou gal/yr	12/31/2010		0	30.2	0	0	0
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-8.57E+03	thou gal/yr	12/31/2010		0	63.4	0	0	0
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??7158	-9.54E+04	thou gal/yr	12/31/2010		0	2.4	0	0	0
9322	Marine Loading Berth #2	Methyl alcohol	TB8??7179	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??7201	-2.54E+03	thou gal/yr	12/31/2010		0	0.8	0	0	0
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??7242	-1.32E+05	thou gal/yr	12/31/2010		0	0	0	0	0
9322	Marine Loading Berth #2	Toluene	TB8??7293	-4.21E+03	thou gal/yr	12/31/2010		0	3.5	0	0	0
9322	Marine Loading Berth #2	Distillate oil	TB8??7315	-1.42E+05	thou gal/yr	12/31/2010		0	3.5	0	0	0
9322	Marine Loading Berth #2	Lube oil	TB8??7419	-2.01E+05	thou gal/yr	12/31/2010		0	1.6	0	0	0
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.59E+05	thou gal/yr	12/31/2010		0	2389.2	0	0	0
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??7628	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9322	Marine Loading Berth #2	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??7052	-4.74E+04	thou gal/yr	12/31/2010		0	18.4	0	0	0
9323	Marine Loading Berth #3	Crude oil	TB8??7089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??7128	-1.54E+04	thou gal/yr	12/31/2010		0	113.7	0	0	0
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB8??7158	-8.93E+04	thou gal/yr	12/31/2010		0	2.2	0	0	0
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB8??7201	-2.00E+03	thou gal/yr	12/31/2010		0	37.8	0	0	0
9323	Marine Loading Berth #3	Bunker C fuel oil	TB8??7242	-8.15E+04	thou gal/yr	12/31/2010		0	0	0	0	0
9323	Marine Loading Berth #3	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9323	Marine Loading Berth #3	Distillate oil	TB8??7315	-1.64E+05	thou gal/yr	12/31/2010		0	4	0	0	0
9323	Marine Loading Berth #3	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??7551	-5.05E+05	thou gal/yr	12/31/2010		0	4655.7	0	0	0
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB4??2318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9324	Marine Loading Berth #4	Bunker C fuel oil	TB8??7242	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9324	Marine Loading Berth #4	Distillate oil	TB8??7315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9324	Marine Loading Berth #4	Crude oil	TF8??7089	-3.42E+06	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Paraffins - C3+	TB8??7052	-1.60E+03	thou gal/yr	12/31/2010		0	0.3	0	0	0
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??7128	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB8??7158	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Bunker C fuel oil	TB8??7242	-1.07E+05	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Distillate oil	TB8??7315	-1.27E+03	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB8??7318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9325	Marine Loading Berth #9	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9326	Marine Loading Berth #11	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
9326	Marine Loading Berth #11	Bunker C fuel oil	TB8??7242	-1.29E+04	thou gal/yr	12/31/2010		0	0	0	0	0
9326	Marine Loading Berth #11	Distillate oil	TB8??7315	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0	0
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00				0	0	0	0	0
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00				0	0.1	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00				0	15.9	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00				0	996.5	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00				0	6.4	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00				0	575.7	0	0	0
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00				0	0	0	0	0
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00				0	152.2	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 CRITERIA POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2011

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00				0	0.4	0	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00				0.1	0	0.6	11.9	3.3

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Abated Criteria Pollutant Emissions
for Calendar Year 2011***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEE
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	-3.10E-02	thou gal/yr	12/31/2011		0	0	0	0	0
55	Tank 55	Distillate oil	T81??7315	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
55	Tank 55	Gasoline - unleaded	T81??7551	1.70E+00	thou gal/yr	12/31/2003		0	0.1	0	0	0
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996		0	0	0	0	0
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997		0	13.9	0	0	0
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997		0	6.1	0	0	0
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997		0	0.4	0	0	0
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	-2.98E+04	thou gal/yr	12/31/2011		0	49.2	0	0	0
399	TANK	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
399	TANK	Oil - non-fuel, other/not spec	T54?2352	-2.30E+04	thou gal/yr	12/31/2011		0	11.9	0	0	0
399	TANK	Tetra-Ethyl Lead (TEL)	T54?2422	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
401	TANK 401	Refinery feedstock - other/not	T44??239	4.70E+04	thou gal/yr	4/30/1997		0	10.9	0	0	0
634	TANK 634	Fuel - jet 'A'	T54?2158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
634	TANK 634	Petroleum products - other/not	T54?2321	-1.84E+04	thou gal/yr	12/31/2011		0	1.6	0	0	0
634	TANK 634	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	-1.32E+04	thou gal/yr	12/31/2011		0	0.1	0	0	0
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Butane	T42??7416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T42??7419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
955	TANK 955	Paraffins - C3+	T5412052	-2.94E+04	thou gal/yr	12/31/2011		0	2.4	0	0	0
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
956	TANK 956	Paraffins - C3+	T5412052	-4.56E+03	thou gal/yr	12/31/2011		0	2.4	0	0	0
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
957	Tank 957	Diesel fuel	T44??7098	-2.62E+04	thou gal/yr	12/31/2011		0	7.4	0	0	0
957	Tank 957	Fuel - jet 'A'	T44??7158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
979	TANK 979	Distillate oil	T44??7315	-6.13E+04	thou gal/yr	4/30/1997		0	7.3	0	0	0
984	TANK 984	Distillate oil	T4417315	-9.67E+03	thou gal/yr	12/31/1997		0	1.4	0	0	0
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
990	TANK 990	Gasoline - unleaded	T5432551	-9.22E+04	thou gal/yr	12/31/2011		0	4.6	0	0	0
991	TANK 991	Gasoline - unleaded	T5432551	-1.08E+05	thou gal/yr	12/31/2011		0	4.6	0	0	0
992	Storage Tank T-992	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
992	Storage Tank T-992	Gasoline - unleaded	T54?2551	-9.79E+04	thou gal/yr	12/31/2011		0	4.5	0	0	0
1020	Tank 1020: Inorganic Chemical Storage Tank	Diethanolamine	T44??7485	4.20E+02	thou gal/yr	3/10/1995		0	0.1	0	0	0
1052	Tank 1052: Organic Liquid Storage Tank	Kerosene	T43??7159	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1052	Tank 1052: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1287	TANK 1287	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1287	TANK 1287	Petroleum products - other/not	T5432321	-2.45E+04	thou gal/yr	12/31/2011		0	2.2	0	0	0
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1289	TANK 1289	Gasoline - leaded	T64?2128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1289	TANK 1289	Toluene	T64?2293	-1.49E+03	thou gal/yr	12/31/2011		0	1	0	0	0
1289	TANK 1289	Hydrocarbon - mixtures, other/	T64?2318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEC
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
1292 TANK 1292		Diesel fuel	T5412098	-5.56E+04	thou gal/yr	12/31/2011		0	0.4	0	0	0
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.91E+04	thou gal/yr	12/31/2011		0	5.8	0	0	0
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T6372502	5.90E+00	thou gal/yr	12/31/2003		0	0	0	0	0
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04	thou gal/yr	4/30/1997		0	7.1	0	0	0
1431 Asphalt Tank(T-907)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.16E+04	thou gal/yr	12/31/2011		0	3.9	0	0	0
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1488 TANK 1488		Oil/water mixture	T5472503	-1.01E+04	thou gal/yr	12/31/2011		0	31.4	0	0	0
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1489 TANK 1489		Alkylate	T5432389	-3.34E+04	thou gal/yr	12/31/2011		0	4.9	0	0	0
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1491 TANK 1491		Gasoline - unleaded	T5432551	-4.98E+04	thou gal/yr	12/31/2011		0	3.9	0	0	0
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997		0	3.5	0	0	0
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	-1.34E+04	thou gal/yr	12/31/2011		0	2.1	0	0	0
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997		0	0.8	0	0	0
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997		0	0	0	0	0
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1514 TANK 1514		Gasoline - unleaded	T5432551	-7.53E+04	thou gal/yr	12/31/2011		0	5	0	0	0
1518 TANK 1518		Fuel - jet 'A'	T5432158	-1.34E+04	thou gal/yr	12/31/2011		0	0.1	0	0	0
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998		0	0	0	0	0
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	-3.00E+03	thou gal/yr	12/31/2011		0	0.1	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997		0	1.3	0	0	0
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.67E+04	thou gal/yr	12/31/2011		0	1.4	0	0	0
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1653 TANK 1653		Fuel - jet 'A'	T4417158	-6.21E+03	thou gal/yr	12/31/2011		0	2.4	0	0	0
1653 TANK 1653		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1653 TANK 1653		Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.10E+05	thou gal/yr	12/31/2011		0	5.3	0	0	0
1688 TANK 1688		Gasoline - unleaded	T5432551	-1.49E+05	thou gal/yr	12/31/2011		0	5.5	0	0	0
1798 Tank 1798		Fuel - jet 'A'	T5422158	-2.12E+05	thou gal/yr	12/31/2011		0	7.5	0	0	0
1798 Tank 1798		Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1799 TANK 1799		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1799 TANK 1799		Fuel - jet 'A'	T5472158	-2.04E+05	thou gal/yr	12/31/2011		0	1.5	0	0	0
1821 Tank 1821 Fresh Sulfuric Acid Tank		H2SO4 - other/not spec	G5999146	-1.25E+05	tons/yr	12/31/2011		0	0	0	0	0
1825 Tank 1825		Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1828 TANK 1828		Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1828 TANK 1828		Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEC
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
	1828 TANK 1828	Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006		0	0	0	0	0
	1843 TANK 1843	Paraffins - C3+	T5412052	-1.56E+02	thou gal/yr	12/31/2011		0	0	0	0	0
	1894 Tank 1894: Phosphoric Acid Storage Tank	Phosphoric acid	G5999217	-8.70E+01	tons/yr	12/31/2011		0	0	0	0	0
	1899 TANK 1899	Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997		0	0.4	0	0	0
	1908 Asphalt Tank (T-908)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	1909 Tank 1909	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	1910 Tank 1910	Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994		0	0	0	0	0
	1911 Tank 1911	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	1911 Tank 1911	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	1966 TANK 1966	Fuel - jet 'A'	T5432158	-1.46E+04	thou gal/yr	12/31/2011		0	0.2	0	0	0
	2520 Wastewater/MEA Storage Tank	Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005		0	0	0	0	0
	2520 Wastewater/MEA Storage Tank	Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005		0	6.3	0	0	0
	2540 Tank 2540: Organic Liquid Storage Tank	Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997		0	0.1	0	0	0
	2903 Tank 903: Organic Liquid Storage Tank	Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
	2903 Tank 903: Organic Liquid Storage Tank	Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
	2917 Asphalt Tank (T-917)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	2918 Asphalt Tank (T-918)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	2921 Asphalt Tank (T-921)	Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3038 TANK 3038 (Spherical Pressure Tank)	Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3038 TANK 3038 (Spherical Pressure Tank)	Pentane	T3477209	-4.32E+03	thou gal/yr	12/31/2011		0	0	0	0	0
	3050 TANK 3050 SPHERE	Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
	3066 TANK 3066	Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998		0	0	0	0	0
	3071 TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3071 TANK 3071	Gasoline - unleaded	T5472551	-1.56E+05	thou gal/yr	12/31/2011		0	121.9	0	0	0
	3072 TANK 3072	Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2011		0	5.3	0	0	0
	3073 TANK 3073,external floating roof storage tank w/primary and	Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3073 TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3073 TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	-9.70E+04	thou gal/yr	12/31/2011		0	0.2	0	0	0
	3074 TANK 3074	Distillate oil	T5472315	-6.37E+04	thou gal/yr	12/31/2011		0	0.4	0	0	0
	3075 External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	-1.90E+01	thou gal/yr	12/31/2011		0	2.9	0	0	0
	3075 External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3076 TANK T3076	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3076 TANK T3076	Hydrocarbon - mixtures, other/	T5472318	-5.42E+03	thou gal/yr	12/31/2011		0	3.3	0	0	0
	3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Crude oil	T5472089	-2.99E+05	thou gal/yr	12/31/2011		0	20.6	0	0	0
	3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Bunker C fuel oil	T5472242	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3101 TANK 3101	Crude oil	T5432089	-3.29E+05	thou gal/yr	12/31/2011		0	29.7	0	0	0
	3101 TANK 3101	Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3101 TANK 3101	Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3102 TANK 3102	Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3102 TANK 3102	Hydrocarbon - mixtures, other/	T5432318	-3.05E+05	thou gal/yr	12/31/2011		0	11	0	0	0
	3103 TANK 3103	Crude oil	T5432089	-3.47E+05	thou gal/yr	12/31/2011		0	35.5	0	0	0
	3104 TANK 3104	Crude oil	T5432089	-2.39E+05	thou gal/yr	12/31/2011		0	2.8	0	0	0
	3105 TANK 3105	Crude oil	T5432089	-7.21E+05	thou gal/yr	12/31/2011		0	65.2	0	0	0
	3106 TANK 3106	Crude oil	T5432089	-7.62E+05	thou gal/yr	12/31/2011		0	37.1	0	0	0
	3107 TANK 3107	Crude oil	T5472089	-4.59E+05	thou gal/yr	12/31/2011		0	4.2	0	0	0
	3110 Desalter Effluent Surge Tank A	Crude oil	T4377089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3111 Desalter Effluent Surge Tank B	Crude oil	T4377089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3126 TANK 3126	Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3126 TANK 3126	Oil/water mixture	T5432503	-8.15E+04	thou gal/yr	12/31/2011		0	1.1	0	0	0
	3127 TANK 3127	Oil/water mixture	T5412503	-4.27E+03	thou gal/yr	12/31/2011		0	1.7	0	0	0
	3128 TANK 3128	Aromatic hydrocarbons - other/	T5472027	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3128 TANK 3128	Water/organics mixture	T5472502	-6.52E+03	thou gal/yr	12/31/2011		0	1.2	0	0	0
	3129 TANK 3129	Fuel - jet 'A'	T5412158	-1.78E+05	thou gal/yr	12/31/2011		0	1.6	0	0	0
	3132 Tank 3132	Distillate oil	T5472315	8.12E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
	3133 TANK 3133	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.16E+05	thou gal/yr	12/31/2011		0	103.7	0	0	0
3133 TANK 3133		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3134 TANK 3134		Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.19E+05	thou gal/yr	12/31/2011		0	83	0	0	0
3134 TANK 3134		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3138 TANK 3138		Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
3139 TANK 3139		Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997		0	8.1	0	0	0
3141 SULFUR STORAGE TANK 3141		Sulfur	G7014267	0.00E+00	tons/yr	12/31/2011		0	0	0	0	0
3142 TANK 3142		Refinery feedstock - other/not	T4417239	-3.33E+02	thou gal/yr	12/31/2011		0	0	0	0	0
3144 TANK 3144		Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3145 TANK 3145, Sphere		Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998		0	0	0	0	0
3146 Tank 3146: 20% Aqueous Ammonia		Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994		0	14.6	0	0	0
3147 Tank 3147: Organic Liquid Storage Tank		Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3148 Tank 3148: Organic Liquid Storage Tank		Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3157 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	12.4	0	0	0
3158 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3159 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3160 Tank 3160: Organic Liquid Storage Tank		Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994		0	13.4	0	0	0
3161 Tank Lube Oil		Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3162 Tank Lube Oil		Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3163 Tank Lube Oil		Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3164 Tank Lube Oil		Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
3165 Tank Lube Oil		Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3166 Tank Lube Oil		Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3167 Tank Lube Oil		Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3168 Tank Lube Oil		Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3169 organic liquid storage tank, lube oil products		Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995		0	0.2	0	0	0
3170 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3171 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3172 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997		0	9.6	0	0	0
3179 Tank 3179: Organic Liquid Storage Tank		Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997		0	0.2	0	0	0
3180 Tank		Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3180 Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3180 Tank		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3180 Tank		Alkylate	T5472389	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3180 Tank		Gasoline - unleaded	T5472551	-5.29E+04	thou gal/yr	12/31/2011		0	76.8	0	0	0
3182 Tank 3182: Organic Liquid Storage Tank		Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997		0	0.3	0	0	0
3185 Tank 3185 (previously T-982)		Fuel - jet 'A'	T5472158	-2.08E+05	thou gal/yr	12/31/2011		0	6.4	0	0	0
3186 Gas Oil Tank		Organic liquid - other/not spe	T4477201	0.00E+00		4/21/1997		0	8.7	0	0	0
3189 Gasoline component and Diesel Tank		Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-3.02E+05	thou gal/yr	12/31/2011		0	6.4	0	0	0
3189 Gasoline component and Diesel Tank		Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3190 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3190 Storage Tank		Fuel - jet 'A'	T5472158	-2.16E+05	thou gal/yr	12/31/2011		0	1.8	0	0	0
3191 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3191 Storage Tank		Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3191 Storage Tank		Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3191 Storage Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3191 Storage Tank		Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3191 Storage Tank		Avgas	T5472662	-1.12E+04	thou gal/yr	12/31/2011		0	2.5	0	0	0
3192 Desalter Effluent Skim Tank		Crude oil	T3H77089	-1.56E+04	thou gal/yr	12/31/2010		0	0	0	0	0
3193 Gasoline component Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3193 Gasoline component Tank		Isocotane	T5472154	-1.31E+04	thou gal/yr	12/31/2011		0	2.3	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEC
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3193	Gasoline component Tank	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3193	Gasoline component Tank	Alkylate	T54?2389	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3193	Gasoline component Tank	Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3194	Storage Tank T-3194	Hydrocarbon - mixtures, other/	T54?2318	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
3194	Storage Tank T-3194	Gas oil	T54?2394	1.44E+05	thou gal/yr	12/31/2003		0	1	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Diesel fuel	T54??7098	1.29E+05	thou gal/yr	12/31/2006		0	2.4	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Distillate oil	T54??7315	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Lube oil	T54??7419	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3196	Gasoline Components Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3196	Gasoline Components Tank	Organic liquid - other/not spe	T54?2201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3196	Gasoline Components Tank	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3196	Gasoline Components Tank	Gas oil	T54?2394	-1.18E+05	thou gal/yr	12/31/2011		0	0.7	0	0	0
3196	Gasoline Components Tank	Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3196	Gasoline Components Tank	Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3197	Gasoline component Tank	Ethers	T55?2103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3197	Gasoline component Tank	Naphtha	T55?2188	-2.67E+04	thou gal/yr	12/31/2011		0	6.2	0	0	0
3197	Gasoline component Tank	Distillate oil	T55?2315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3197	Gasoline component Tank	Gas oil	T55?2394	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Fuel - jet 'A'	T543?158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Toluene	T543?293	-2.69E+03	thou gal/yr	12/31/2011		0	18.5	0	0	0
3198	3198 tank; organic liquid storage tank	Distillate oil	T543?7315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	-1.94E+03	thou barre/yr	12/31/2011		0	0	0	0	0
3201	Tank 3201: Whole Alkylate	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3201	Tank 3201: Whole Alkylate	Alkylate	T54?2389	-1.24E+05	thou gal/yr	12/31/2011		0	112.4	0	0	0
3202	Tank 3202: Methanol	Methyl alcohol	T54?2179	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3202	Tank 3202: Methanol	Naphtha	T54?2188	-1.48E+04	thou gal/yr	12/31/2011		0	73	0	0	0
3202	Tank 3202: Methanol	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3202	Tank 3202: Methanol	Petroleum products - other/not	T54?2321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3204	Tank 3204: Organic Liquid Storage Tank	Lube oil	T42??7419	2.54E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3207	Butane Sphere: Organic Liquid Storage Tank	Butane	T34??7416	-9.20E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3208	Propane Sphere: Organic Liquid Storage Tank	Propane	T34??7417	-7.67E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3211	Sphere	Butane	T34??7416	-3.83E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3212	Sphere	Propane	T34??7417	-2.76E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T54?2098	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T54?2158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T54?2419	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	-2.69E+05	thou gal/yr	12/31/2011		0	267.5	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T533?128	-2.00E+04	thou gal/yr	12/31/2011		0	66.4	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T533?2551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T54?2315	-1.29E+05	thou gal/yr	12/31/1997		0	1.2	0	0	0
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T44??7315	8.40E+04	thou gal/yr	7/9/1997		0	22.7	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-1.23E+04	thou gal/yr	12/31/2011		0	142.5	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-2.12E+04	thou gal/yr	12/31/2011		0	182	0	0	0
3225	Organic Liquid Storage Tank	Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.28E+05	tons/yr	12/31/2011		0	0	0	4.2	0
3232	Tank 3232 - Propylene Tetramer Storage Tank	Propylene tetramer	T44??7842	1.60E+06	thou gal/yr	Unknown		0	412.7	0	0	0
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T43??7419	-3.37E+02	thou gal/yr	12/31/1997		0	0	0	0	0
3910	LPG Tank; # 3910	LPG	T34??7160	-3.97E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3911	LPG Tank, # 3911	LPG	T34??7160	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011		19.7	5.9	80.5	6.6	33.2
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011		7.2	2.2	29.5	2.4	12.2
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011		7.8	2.3	31.8	2.6	13.1
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011		7.7	2.3	31.6	2.6	13
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011		14.3	4.3	58.6	4.8	24.2
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011		5.6	1.7	23	1.9	9.5
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011		10	3	40.7	3.3	16.8
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011		4.5	1.4	18.5	1.5	7.6
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011		8.9	2.7	31	3	14.9

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEC
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011		9.3	2.8	32.3	3.1	15.6
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011		14.7	4.4	74.5	4.9	24.7
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011		14.8	4.4	75	4.9	24.9
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011		8.7	2.6	140.2	2.9	14.7
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011		3.5	1	68.1	1.2	5.9
4070	#4 CRUDE UNIT F 1100A	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011		60.3	18.1	168.9	161.6	101.7
4071	#4 CRUDE UNIT F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011		58	17.4	162.2	155.3	97.7
4072	#4 CRUDE UNIT F1160	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011		21.4	6.4	59.8	57.2	36
4073	LSFO COOLING TOWER	Fresh water	G5005415	-1.35E+07	thou gallo/yr	12/31/2011		0	222	0	0	0
4076	3 CAT COOLING TOWER E460	Fresh water	G5005415	-1.53E+07	thou gallo/yr	12/31/2011		0	252	0	0	0
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011		0	0	0	0	0
4129	800# STM BLR #1 #IPP	Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011		15.2	4.6	53.2	5.1	25.7
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011		10.5	3.2	37	3.5	17.9
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011		10	3	34.9	3.3	16.8
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011		15.9	4.8	55.5	5.3	26.8
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011		27	8.1	94.4	9	45.5
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	-4.40E+04	thou barre/yr	12/31/2011		0	0.6	0	0	0
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011		1.3	0.4	5.5	0.5	2.3
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011		1.6	0.5	6.4	0.5	2.6
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011		20.7	6.2	95	6.9	85.5
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011		9.6	2.9	39.2	8	16.2
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011		6.7	2	18.8	2.2	11.3
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011		6.7	2	18.7	2.2	11.2
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011		8.1	2.4	121.8	4.2	13.7
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011		10.9	3.3	163	5.6	18.3
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr	12/31/2011		0.1	2.9	156.7	5.4	17.6
4164	F-630 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011		7.3	2.2	25.6	2.5	12.4
4165	F620 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011		5	1.5	17.4	1.7	8.4
4166	F-610 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011		7	2.1	24.3	2.3	11.7
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011		0.1	6	87.4	7.2	36.1
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011		44.5	13.3	124.5	14.9	75
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011		38.7	11.6	108.4	13	65.3
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011		164.9	49.4	29.1	55.2	277.8
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011		139	41.6	389	116.3	234.2
4172	ISOMAX COOLING TOWER E-261	Fresh water	G5005415	-3.37E+07	thou gallo/yr	12/31/2011		0	553.2	0	0	0
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	-2.81E+07	thou gallo/yr	12/31/2011		0	461.7	0	0	0
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	-8.64E+05	thou gallo/yr	12/31/2011		0	14.2	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011		4.7	1.4	136.2	2.4	8
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011		1.9	0.6	54.2	1	3.2
4191	Alkane Cooling Water Tower	Fresh water	G5005415	-2.28E+06	thou gallo/yr	12/31/2011		0	37.5	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2012)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011		0.5	0.9	22.7	4.4	5.7
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011		0.6	1.1	27.1	0.1	6.8
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011		0.5	1	25.3	4.9	6.3
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	-6.11E+03	thou barre/yr	12/31/2011		0	16.7	0	0	0
4227	SRU #1 TRAIN	Sulfur	G7055267	-3.45E+04	tons/yr	12/31/2011		0	0	0	103.8	0
4228	SRU #2 TRAIN	Sulfur	G7055267	-4.23E+04	tons/yr	12/31/2011		0	0	0	135.5	0
4229	SRU #3 TRAIN	Sulfur	G7055267	-4.29E+04	tons/yr	12/31/2011		0	0	0	124.8	0
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997		0	0	0	0	0
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	-1.83E+04	thou barre/yr	12/31/2011		0	50.2	0	0	0
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	-1.40E+04	thou barre/yr	12/31/2011		0	38.4	0	0	0
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	-9.37E+03	thou barre/yr	12/31/2011		0	7.7	0	0	0
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	-7.27E+04	thou barre/yr	12/31/2011		0	199.1	0	0	0
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	-7.51E+03	thou barre/yr	12/31/2011		0	30.8	0	0	0
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	-1.58E+05	thou gal/yr	12/31/2011		0	69.1	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.64E+04	million cu/yr	12/31/2011		0	7.9	0	0	84.9
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.05E+04	thou barre/yr	12/31/2011		0	0	0	0	0
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	-4.12E+03	thou gallo/yr	12/31/2011		0	1.1	0	0	0
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	-1.62E+04	thou barre/yr	12/31/2011		0	0	0	0	0
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	-1.23E+04	thou barre/yr	12/31/2011		0	0	0	0	0
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	-6.87E+03	thou barre/yr	12/31/2011		0	0	0	0	0
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	-6.63E+03	thou barre/yr	12/31/2011		0	0	0	0	0
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	1753.3	147.9	542.4	891.9	238.6	
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	0.4	0.2	0	0	0	0
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.47E+04	thou barre/yr	12/31/2011		0	0.4	0	0	0
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	-7.96E+03	thou barre/yr	12/31/2011		0	10.9	0	0	0
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	-2.56E+03	thou barre/yr	12/31/2011		0	10.5	0	0	0
4315	POINT ORIENT WHARF	Benzene	T8872041	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4315	POINT ORIENT WHARF	Xylene	T8872307	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4315	POINT ORIENT WHARF	Distillate oil	T8872315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	T8872318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4329	RLOP Cooling Tower	Fresh water	G5005415	-1.05E+07	thou gallo/yr	12/31/2011		0	20.2	0	0	0
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011		2	0.6	1.8	0.7	3.4
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011		1.9	0.6	1.7	0.6	3.2
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011		7.7	2.3	6.7	2.6	13
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011		0	1.4	4.4	1.7	8.6
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011		3.2	1	2.8	1.1	5.4
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011		3.4	1	2.9	1.1	5.6
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011		1.8	0.5	1.6	0.6	3
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011		3.5	1	3	1.2	5.9
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011		5.2	1.5	4.5	1.7	8.7
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011		1.8	0.5	1.5	0.6	3
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.13E+05	tons/yr	12/31/2011		0	0.6	0	0	0
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.10E+03	thou barre/yr	12/31/2011		0	0.7	0	0	0
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.21E+06	tons/yr	12/31/2011		0	1.2	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4343	Heavy Neutral Hydrofinisher (HNNF)	Hydrocarbon - mixtures, other/	G5022318	-3.50E+05	tons/yr	12/31/2011		0	0.4	0	0	0
4345	Misc.PET REF,Refinery Sour Waste Water No 2NH3-H2S	Waste gases	G5037338	-1.17E+02	million cu/yr	12/31/2011		0	0	0	0	0
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-2.31E+05	tons/yr	12/31/2011		0	1.2	0	0	0
4348	H2 Recovery Plant	Hydrocarbon - mixtures, other/	G5998318	-5.33E+04	tons/yr	12/31/2011		0	0.3	0	0	0
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011		0.8	1.7	39.1	2.4	9.8
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011		0.1	0.1	1.1	0.4	0.2
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011		16.4	3.3	317.9	4.9	51.1
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012		7.7	1.6	148.1	2.3	23.8
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011		11.7	11.6	54.5	13.1	27.2
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011		0.1	0.1	1.1	0	0.2
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011		16.4	3.3	317.9	4.9	51.1
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012		7.7	1.6	148.1	2.3	23.8
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011		11.7	11.6	54.5	6.6	27.2
4354	Butamer Plant	Paraffins - C3+	G5031052	-8.17E+04	thou gallo/yr	12/31/2011		0	0	0	0	0
4355	Deisobutanizer Plant	Paraffins - C3+	G5031052	-2.83E+05	thou gallo/yr	12/31/2011		0	0	0	0	0
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2011		0	0	0	0	0
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2011		0	0	0	0	0
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T3377210	-5.77E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T4177210	0.00E+00				0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4362	Perc Surge Control Vessel V-3591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4363	Perc Storage Tank V-3592	Perchloroethylene	T4277210	-2.53E+01	thou gal/yr	12/31/2011		0	0	0	0	0
4364	Perc Storage Tank V-4091	Perchloroethylene	T4277210	-2.18E+01	thou gal/yr	12/31/2011		0	0	0	0	0
4365	Tri-Act 1825 Chemical Tote	Hydrocarbon - mixtures, other/	T4777318	-7.07E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4366	Tri-Act 1803 & 1825 Chemical Tote - Power Plant	Hydrocarbon - mixtures, other/	T8277318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4367	Tri-Act 1803 & 1825 Chemical Tote - RLOP	Hydrocarbon - mixtures, other/	T8277318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4368	Tri-Act 1803 & 1825 Chemical Tote - SRU	Hydrocarbon - mixtures, other/	T8277318	-3.60E-01	thou gal/yr	12/31/2011		0	0	0	0	0
4369	Tri-Act 1803 & 1825 Chemical Tote - LSFO/D&R	Hydrocarbon - mixtures, other/	T8277318	-2.12E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4370	Chemical Tote, Custamine CA-066P - FCC	Hydrocarbon - mixtures, other/	T8277318	-1.43E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4372	NALCO EC9085A Tote	Amine - other/not spec	T4277201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4373	Custamine CA-0660P RO Plant	Water/organics mixture	T4277502	-1.64E+01	thou gal/yr	12/31/2011		0	0.3	0	0	0
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-5.00E+02	thou barre/yr	12/31/2011		0	1	0	0	0
4391	NO. 1 OXIDATION POND	Fresh water	G5033415	0.00E+00	thou gallo/yr	12/31/2011		0	0	0	0	0
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2011		0	27.4	0	0	0
4392	Wetland Marsh	Waste water - other/not spec	G5033443	0.00E+00	thou gallo/yr	12/31/2011		0	0	0	0	0
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.20E+04	thou barre/yr	12/31/2011		0	129.7	0	0	0
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	-1.20E+05	tons/yr	12/31/2011		0	0	0	0	0
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE871052	3.47E+03	thou gal/yr	12/31/1996		0	2.8	0	0	0
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE871052	1.33E+04	thou gal/yr	12/31/1996		0	5.3	0	0	0
4405	Heavy Oil Transloading Operations	Waste oil	TE672549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	-4.13E+01	gal/yr	12/31/2010		0	0.1	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4413	#2a Separator	Waste water - refin, other/not	G5017300	-1.05E+04	thou barre/yr	12/31/2011		0	242.4	0	0	0
4414	#1a Separator	Waste water - refin, other/not	G5017300	-7.44E+03	thou barre/yr	12/31/2011		0	49.8	0	0	0
4415	Asphalt Tank Truck Loading Racks	Asphalt	T9871030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E+01	tons/yr	12/31/2000		0	0	0	0	0
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997		0	0	0	0	0
4424	Equipment Painting Area	Coating/Ink/etc.	SG52A048	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4424	Equipment Painting Area	Mineral spirits	SG700184	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998		0	0	0	0	0
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-5.00E+00	gal/yr	12/31/2010		0	0.1	0	0	0
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-2.50E+01	gal/yr	12/31/2010		0	0.4	0	0	0
4429	#8(NH3-H2S)Plant	Waste gases	G5037338	-2.88E+02	million cu/yr	12/31/2011		0	0	0	0	0
4433	#3H2S Plant	Waste gases	G5998338	-2.66E+02	million cu/yr	12/31/2011		0	0.1	0	0	0
4434	#4H2S Plant	Waste gases	G5998338	-1.25E+03	million cu/yr	12/31/2011		0	0.3	0	0	0
4435	#5H2S Plant	Waste gases	G5998338	-1.56E+03	million cu/yr	12/31/2011		0	0.4	0	0	0
4440	Jet Additive Project Fugitive Sources	Petroleum products - other/not	G9000321	0.00E+00	thou gallo/yr			0	0	0	0	0
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T4277201	-2.00E+00	thou gal/yr	12/31/2011		0	0.1	0	0	0
5101	Tank-Marketing T-101	Lube oil	T4477419	1.85E+04	thou gal/yr	3/31/1997		0	62.2	0	0	0
5103	Tank-Marketing T-103	Lube oil	T4477419	1.28E+04	thou gal/yr	3/31/1997		0	48.8	0	0	0
5105	Tank-Marketing T-105	Lube oil	T4477419	1.12E+04	thou gal/yr	3/31/1997		0	45	0	0	0
5107	Tank-Marketing T-107	Lube oil	T4477419	3.26E+02	thou gal/yr	3/31/1997		0	4	0	0	0
5108	Tank-Marketing T-108	Lube oil	T4477419	2.51E+02	thou gal/yr	3/31/1997		0	3.8	0	0	0
5109	Tank-Marketing T-109	Lube oil	T4477419	4.98E+02	thou gal/yr	3/31/1997		0	4.4	0	0	0
5110	Tank-Marketing T-110	Lube oil	T4477419	1.33E+03	thou gal/yr	3/31/1997		0	6.3	0	0	0
5112	Tank-Marketing T-112	Lube oil	T4377419	5.80E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5113	Tank-Marketing T-113	Lube oil	T4377419	5.00E+00	thou gal/yr	3/31/1997		0	0.8	0	0	0
5115	Tank-Marketing T-115	Lube oil	T4377419	5.70E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5117	Tank-Marketing T-117	Lube oil	T4477419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5118	Tank-Marketing T-118	Lube oil	T4477419	4.60E+01	thou gal/yr	3/31/1997		0	1.5	0	0	0
5119	Tank-Marketing T-119	Lube oil	T4477419	6.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5121	Tank-Marketing T-121	Lube oil	T4477419	5.70E+01	thou gal/yr	3/31/1997		0	2	0	0	0
5122	Tank-Marketing T-122	Lube oil	T4477419	6.70E+01	thou gal/yr	3/31/1997		0	1.7	0	0	0
5123	Tank-Marketing T-123	Lube oil	T4477419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5125	Tank-Marketing T-125	Lube oil	T4377419	2.60E+01	thou gal/yr	3/31/1997		0	0.8	0	0	0
5126	Tank-Marketing T-126	Lube oil	T4377419	1.04E+02	thou gal/yr	3/31/1997		0	1	0	0	0
5127	Tank-Marketing T-127	Lube oil	T4377419	1.92E+02	thou gal/yr	3/31/1997		0	1.2	0	0	0
5128	Tank-Marketing T-128	Lube oil	T4377419	6.40E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5129	Tank-Marketing T-129	Lube oil	T4377419	3.20E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5130	Tank-Marketing T-130	Lube oil	T4377419	8.00E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5131	Tank-Marketing T-131	Lube oil	T4377419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5132	Tank-Marketing T-132	Lube oil	T4377419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5133	Tank-Marketing T-133	Lube oil	T4377419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5134	Tank-Marketing T-134	Lube oil	T4377419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5135	Tank-Marketing T-135	Lube oil	T4377419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5136	Tank-Marketing T-136	Lube oil	T4377419	1.36E+02	thou gal/yr	3/31/1997		0	0.7	0	0	0
5137	Tank-Marketing T-137	Lube oil	T4377419	1.20E+02	thou gal/yr	3/31/1997		0	0.6	0	0	0
5138	Tank-Marketing T-138	Lube oil	T4377419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5139	Tank-Marketing T-139	Lube oil	T4377419	2.60E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5140	Tank-Marketing T-140	Lube oil	T4377419	1.30E+01	thou gal/yr	3/31/1997		0	0	0	0	0
5201	Tank-Marketing T-201	Lube oil	T4477419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5202	Tank-Marketing T-202	Lube oil	T4477419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEC
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
5203	Tank-Marketing T-203	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5204	Tank-Marketing T-204	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997		0	6.6	0	0	0
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997		0	8.7	0	0	0
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997		0	5.1	0	0	0
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997		0	3.5	0	0	0
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997		0	2.3	0	0	0
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997		0	4.2	0	0	0
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997		0	2	0	0	0
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0	0
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0	0
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0	0
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997		0	2.2	0	0	0
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997		0	2.4	0	0	0
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997		0	1.4	0	0	0
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997		0	1.2	0	0	0
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997		0	1.3	0	0	0
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997		0	0.9	0	0	0
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997		0	3.6	0	0	0
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997		0	0.9	0	0	0
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997		0	1.8	0	0	0
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0	0
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0	0
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0	0
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0	0
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997		0	0.6	0	0	0
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.4	0	0	0
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.9	0	0	0
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0	0
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0	0
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0	0
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0	0
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0	0
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997		0	5.7	0	0	0
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011		0.4	34.6	2.7	0	5.2
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011		0.5	40	3.2	0	6
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011		0.3	26.8	2.1	0	4
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEC
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011		0.3	28.5	2.2	0	4.3
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011		0.2	17	1.3	0	2.5
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011		0.4	33.7	2.7	0	5.1
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998		0	0	0	0	0
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2011		0	0	0	0	0
6051	Alky Cooling Tower	Fresh water	G5005415	-1.26E+07	thou gallo/yr	12/31/2011		10.3	24.1	0	0	0
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??7502	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6125	Tank 6125	Organic liquid - other/not spe	T42??7201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0

Printed: AUG 1, 2013

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day				
								Org	NOx	SO2	CO	
6213	Portable Polyethylene Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6213	Portable Polyethylene Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6213	Portable Polyethylene Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6213	Portable Polyethylene Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6214	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6214	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6214	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6214	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6215	Portabel Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6216	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6216	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6216	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6216	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6218	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6218	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6218	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6218	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6219	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6219	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6219	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6219	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6220	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6220	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6220	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-5.59E+00	thou gal/yr	12/31/2011		0	0	0	0	
6220	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6220	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6221	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6221	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6221	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.68E+01	thou gal/yr	12/31/2011		0	0	0	0	
6221	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6221	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6222	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6222	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6222	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-5.59E+00	thou gal/yr	12/31/2011		0	0	0	0	
6222	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6222	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6223	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6223	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6223	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6223	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2011		0	0	0	0	
6223	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6224	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6224	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6224	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6224	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6224	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.41E+01	thou gal/yr	12/31/2011		0	0	0	0	
6224	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6225	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6225	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6225	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6225	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.18E+01	thou gal/yr	12/31/2011		0	0	0	0	
6225	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6226	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6226	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6226	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6226	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2011		0	0	0	0	
6226	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6227	Portable Steel Storage	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6227	Portable Steel Storage	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6227	Portable Steel Storage	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6227	Portable Steel Storage	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2011		0	0	0	0	
6227	Portable Steel Storage	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6228	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6228	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6228	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2011		0	0	0	0	
6228	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6229	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	
6229	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.47E+00	thou gal/yr	12/31/2011		0	0	0	0	
6229	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEE
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6230	Portable Steel Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6230	Portable Steel Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6230	Portable Steel Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6230	Portable Steel Container	Oil/water mixture	T4377503	-1.68E+01	thou gal/yr	12/31/2011	0	0	0	0	0	0
6230	Portable Steel Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6231	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6231	Portable Steel Storage Container	Oil/water mixture	T4377503	-1.68E+01	thou gal/yr	12/31/2011	0	0	0	0	0	0
6231	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6232	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6232	Portable Steel Storage Container	Oil/water mixture	T4377503	-1.68E+01	thou gal/yr	12/31/2011	0	0	0	0	0	0
6232	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6233	Portable Steel Storage Container	Paraffins - C3+	T4377052	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6233	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6233	Portable Steel Storage Container	Oil/water mixture	T4377503	-1.68E+01	thou gal/yr	12/31/2011	0	0	0	0	0	0
6233	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6234	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6234	Portable Steel Storage Container	Oil/water mixture	T4377503	-5.04E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6234	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6235	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6235	Portable Steel Storage Container	Oil/water mixture	T4377503	-2.39E+02	thou gal/yr	12/31/2011	0	0	0	0	0	0
6235	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6236	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6236	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6236	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6237	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6237	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6237	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6238	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6238	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6238	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T4377239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6239	Portable Steel Storage Container	Petroleum products - other/not	T4377321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6239	Portable Steel Storage Container	Oil/water mixture	T4377503	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6239	Portable Steel Storage Container	Waste oil	T4377549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2011	0	0	0	0	0	0
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997	0	0	0	0	0	0
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	0	0	0	0	0	0
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	0	0	0	0	0	0
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	0	0	0	0	0	0
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	0	0	0.1	0	0	0
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	0	0	0.2	0	0.3	0
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	0	0	0	0	0	0
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	0	0	0.1	0	0	0
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	0	0	0.1	0	0	0
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	0
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	0	0	0.4	0	0.1	0
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	0	0	2.9	0	0.2	0
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	0	0	0.4	0	0	0
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	0	0	0	0	0	0
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	0.3	0.3	3.6	0	0.8	0
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	0	0	0.3	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATEE
P/O APPROVED (2012)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011		0	0.1	2.6	0	0.2
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011		0	0	0.2	0	0
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011		0	0	0.2	0	0.1
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011		0	0	0.1	0	0
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011		0	0	0.1	0	0
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011		0	0	0.1	0	0
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011		0	0	0.4	0	0.1
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010		0	0	0	0	0
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	-4.00E+00	gal/yr	12/31/2010		0	0.1	0	0	0
9047	Tank 6047	Organic liquid - other/not spe	T42??7201	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??7090	-5.45E+01	thou gal/yr	12/31/1997		0	0	0	0	0
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??7419	-3.51E+00	thou gal/yr	12/31/1997		0	0.1	0	0	0
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998		0	0.3	0	0	0
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003		0	1.5	0	0	0
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??7052	-5.95E+05	thou gal/yr	12/31/2011		0	11.5	0	0	0
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??7158	-7.70E+04	thou gal/yr	12/31/2011		0	0.1	0	0	0
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??7242	-7.33E+04	thou gal/yr	12/31/2011		0	0	0	0	0
9321	Marine Loading Berth #1	Distillate oil	TB8??7315	-3.35E+04	thou gal/yr	12/31/2011		0	0	0	0	0
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9321	Marine Loading Berth #1	Crude oil	TF8??7089	-2.66E+05	thou gal/yr	12/31/2011		0	0	0	0	0
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??7052	-9.52E+04	thou gal/yr	12/31/2011		0	1.8	0	0	0
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-7.96E+03	thou gal/yr	12/31/2011		0	2.9	0	0	0
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??7158	-1.98E+05	thou gal/yr	12/31/2011		0	0.2	0	0	0
9322	Marine Loading Berth #2	Methyl alcohol	TB8??7179	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??7201	-8.05E+03	thou gal/yr	12/31/2011		0	0.1	0	0	0
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??7242	-8.37E+04	thou gal/yr	12/31/2011		0	0	0	0	0
9322	Marine Loading Berth #2	Toluene	TB8??7293	-1.25E+03	thou gal/yr	12/31/2011		0	0.1	0	0	0
9322	Marine Loading Berth #2	Distillate oil	TB8??7315	-1.16E+05	thou gal/yr	12/31/2011		0	0.1	0	0	0
9322	Marine Loading Berth #2	Lube oil	TB8??7419	-2.07E+05	thou gal/yr	12/31/2011		0	0.1	0	0	0
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-1.91E+05	thou gal/yr	12/31/2011		0	88.3	0	0	0
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??7628	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9322	Marine Loading Berth #2	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??7052	-9.16E+04	thou gal/yr	12/31/2011		0	1.8	0	0	0
9323	Marine Loading Berth #3	Crude oil	TB8??7089	-6.17E+03	thou gal/yr	12/31/2011		0	1	0	0	0
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??7128	-9.00E+03	thou gal/yr	12/31/2011		0	3.3	0	0	0
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB8??7158	-7.72E+04	thou gal/yr	12/31/2011		0	0.1	0	0	0
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB8??7201	-2.68E+03	thou gal/yr	12/31/2011		0	2.5	0	0	0
9323	Marine Loading Berth #3	Bunker C fuel oil	TB8??7242	-1.01E+05	thou gal/yr	12/31/2011		0	0	0	0	0
9323	Marine Loading Berth #3	Toluene	TB8??7293	-1.78E+03	thou gal/yr	12/31/2011		0	0.1	0	0	0
9323	Marine Loading Berth #3	Distillate oil	TB8??7315	-2.25E+05	thou gal/yr	12/31/2011		0	0.3	0	0	0
9323	Marine Loading Berth #3	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??7551	-4.82E+05	thou gal/yr	12/31/2011		0	222.4	0	0	0
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB4?2318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9324	Marine Loading Berth #4	Bunker C fuel oil	TB8??7242	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9324	Marine Loading Berth #4	Distillate oil	TB8??7315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9324	Marine Loading Berth #4	Crude oil	TF8??7089	-2.77E+06	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Paraffins - C3+	TB8??7052	-4.91E+03	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??7128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB8??7158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Bunker C fuel oil	TB8??7242	-1.25E+05	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Distillate oil	TB8??7315	-2.93E+03	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB8??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9326	Marine Loading Berth #11	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9326	Marine Loading Berth #11	Bunker C fuel oil	TB8??7242	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9326	Marine Loading Berth #11	Distillate oil	TB8??7315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00				0	0	0	0	0
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00				0	0.1	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00				0	49.8	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00				0	975.7	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00				0	1.4	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00				0	28.7	0	0	0

Chevron Products Company (P# 10)

Printed: AUG 1, 2015

Chevron Products Company (F# 10)												
S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day				CO
								Org	NOx	SO2		
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00				0	0	0	0	0
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00				0	78.6	0	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00				0	10.3	0	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00				1.1	0	24.5	33.2	133.1

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Unabated Criteria Pollutant Emissions
for Calendar Year 2011***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	-3.10E-02	thou gal/yr	12/31/2011		0	0	0	0	0
55	Tank 55	Distillate oil	T81??7315	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
55	Tank 55	Gasoline - unleaded	T81??7551	1.70E+00	thou gal/yr	12/31/2003		0	0.1	0	0	0
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996		0	0	0	0	0
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997		0	13.9	0	0	0
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997		0	6.1	0	0	0
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997		0	0.4	0	0	0
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	-2.98E+04	thou gal/yr	12/31/2011		0	49.2	0	0	0
399	TANK	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
399	TANK	Oil - non-fuel, other/not spec	T5472352	-2.30E+04	thou gal/yr	12/31/2011		0	11.9	0	0	0
399	TANK	Tetra-Ethyl Lead (TEL)	T5472422	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
401	TANK 401	Refinery feedstock - other/not	T447??239	4.70E+04	thou gal/yr	4/30/1997		0	10.9	0	0	0
634	TANK 634	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
634	TANK 634	Petroleum products - other/not	T5472321	-1.84E+04	thou gal/yr	12/31/2011		0	1.6	0	0	0
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	-1.32E+04	thou gal/yr	12/31/2011		0	0.1	0	0	0
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T42??7502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T42??7502	6.30E+00	thou gal/yr	3/10/1995		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Butane	T42??7416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T42??7419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
955	TANK 955	Paraffins - C3+	T5412052	-2.94E+04	thou gal/yr	12/31/2011		0	2.4	0	0	0
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
956	TANK 956	Paraffins - C3+	T5412052	-4.56E+03	thou gal/yr	12/31/2011		0	2.4	0	0	0
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
957	Tank 957	Diesel fuel	T447?7098	-2.62E+04	thou gal/yr	12/31/2011		0	7.4	0	0	0
957	Tank 957	Fuel - jet 'A'	T447??158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
979	TANK 979	Distillate oil	T447??315	-6.13E+04	thou gal/yr	4/30/1997		0	7.3	0	0	0
984	TANK 984	Distillate oil	T4417315	-9.67E+03	thou gal/yr	12/31/1997		0	1.4	0	0	0
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
990	TANK 990	Gasoline - unleaded	T5432551	-9.22E+04	thou gal/yr	12/31/2011		0	4.6	0	0	0
991	TANK 991	Gasoline - unleaded	T5432551	-1.08E+05	thou gal/yr	12/31/2011		0	4.6	0	0	0
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-9.79E+04	thou gal/yr	12/31/2011		0	4.5	0	0	0
1020	Tank 1020: Inorganic Chemical Storage Tank	Diethanolamine	T447??485	4.20E+02	thou gal/yr	3/10/1995		0	0.1	0	0	0
1052	Tank 1052: Organic Liquid Storage Tank	Kerosene	T43??7159	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1052	Tank 1052: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1287	TANK 1287	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1287	TANK 1287	Petroleum products - other/not	T5432321	-2.45E+04	thou gal/yr	12/31/2011		0	2.2	0	0	0
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1289	TANK 1289	Toluene	T6472293	-1.49E+03	thou gal/yr	12/31/2011		0	1	0	0	0
1289	TANK 1289	Hydrocarbon - mixtures, other/	T6472318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
1292 TANK 1292		Diesel fuel	T5412098	-5.56E+04	thou gal/yr	12/31/2011		0	0.4	0	0	0
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.91E+04	thou gal/yr	12/31/2011		0	5.8	0	0	0
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T6372502	5.90E+00	thou gal/yr	12/31/2003		0	0	0	0	0
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04	thou gal/yr	4/30/1997		0	7.1	0	0	0
1431 Asphalt Tank(T-907)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997		0	0.6	0	0	0
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.16E+04	thou gal/yr	12/31/2011		0	3.9	0	0	0
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1488 TANK 1488		Oil/water mixture	T5472503	-1.01E+04	thou gal/yr	12/31/2011		0	31.4	0	0	0
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1489 TANK 1489		Alkylate	T5432389	-3.34E+04	thou gal/yr	12/31/2011		0	4.9	0	0	0
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1491 TANK 1491		Gasoline - unleaded	T5432551	-4.98E+04	thou gal/yr	12/31/2011		0	3.9	0	0	0
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997		0	3.5	0	0	0
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997		0	4.3	0	0	0
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	-1.34E+04	thou gal/yr	12/31/2011		0	2.1	0	0	0
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997		0	0.8	0	0	0
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997		0	0	0	0	0
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1514 TANK 1514		Gasoline - unleaded	T5432551	-7.53E+04	thou gal/yr	12/31/2011		0	5	0	0	0
1518 TANK 1518		Fuel - jet 'A'	T5432158	-1.34E+04	thou gal/yr	12/31/2011		0	0.1	0	0	0
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998		0	0	0	0	0
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	-3.00E+03	thou gal/yr	12/31/2011		0	0.1	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997		0	1.3	0	0	0
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.67E+04	thou gal/yr	12/31/2011		0	1.4	0	0	0
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1653 TANK 1653		Fuel - jet 'A'	T4417158	-6.21E+03	thou gal/yr	12/31/2011		0	2.4	0	0	0
1653 TANK 1653		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1653 TANK 1653		Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.10E+05	thou gal/yr	12/31/2011		0	5.3	0	0	0
1688 TANK 1688		Gasoline - unleaded	T5432551	-1.49E+05	thou gal/yr	12/31/2011		0	5.5	0	0	0
1798 Tank 1798		Fuel - jet 'A'	T5422158	-2.12E+05	thou gal/yr	12/31/2011		0	7.5	0	0	0
1798 Tank 1798		Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1799 TANK 1799		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
1799 TANK 1799		Fuel - jet 'A'	T5472158	-2.04E+05	thou gal/yr	12/31/2011		0	1.5	0	0	0
1821 Tank 1821 Fresh Sulfuric Acid Tank		H2SO4 - other/not spec	G5999146	-1.25E+05	tons/yr	12/31/2011		0	0	0	0	0
1825 Tank 1825		Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997		0	0	0	0	0
1828 TANK 1828		Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
1828 TANK 1828		Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
	1828 TANK 1828	Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006		0	0	0	0	0
	1843 TANK 1843	Paraffins - C3+	T5412052	-1.56E+02	thou gal/yr	12/31/2011		0	0	0	0	0
	1894 Tank 1894: Phosphoric Acid Storage Tank	Phosphoric acid	G5999217	-8.70E+01	tons/yr	12/31/2011		0	0	0	0	0
	1899 TANK 1899	Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997		0	0.4	0	0	0
	1908 Asphalt Tank (T-908)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	1909 Tank 1909	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	1910 Tank 1910	Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994		0	0	0	0	0
	1911 Tank 1911	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	1911 Tank 1911	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	1966 TANK 1966	Fuel - jet 'A'	T5432158	-1.46E+04	thou gal/yr	12/31/2011		0	0.2	0	0	0
	2520 Wastewater/MEA Storage Tank	Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005		0	0	0	0	0
	2520 Wastewater/MEA Storage Tank	Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005		0	6.3	0	0	0
	2540 Tank 2540: Organic Liquid Storage Tank	Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997		0	0.1	0	0	0
	2903 Tank 903: Organic Liquid Storage Tank	Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
	2903 Tank 903: Organic Liquid Storage Tank	Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003		0	0	0	0	0
	2917 Asphalt Tank (T-917)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	2918 Asphalt Tank (T-918)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	2921 Asphalt Tank (T-921)	Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3038 TANK 3038 (Spherical Pressure Tank)	Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3038 TANK 3038 (Spherical Pressure Tank)	Pentane	T3477209	-4.32E+03	thou gal/yr	12/31/2011		0	0	0	0	0
	3050 TANK 3050 SPHERE	Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
	3066 TANK 3066	Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998		0	0	0	0	0
	3071 TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3071 TANK 3071	Gasoline - unleaded	T5472551	-1.56E+05	thou gal/yr	12/31/2011		0	121.9	0	0	0
	3072 TANK 3072	Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2011		0	5.3	0	0	0
	3073 TANK 3073,external floating roof storage tank w/primary and	Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3073 TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3073 TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	-9.70E+04	thou gal/yr	12/31/2011		0	4.6	0	0	0
	3074 TANK 3074	Distillate oil	T5472315	-6.37E+04	thou gal/yr	12/31/2011		0	0.4	0	0	0
	3075 External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	-1.90E+01	thou gal/yr	12/31/2011		0	2.9	0	0	0
	3075 External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3076 TANK T3076	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3076 TANK T3076	Hydrocarbon - mixtures, other/	T5472318	-5.42E+03	thou gal/yr	12/31/2011		0	3.3	0	0	0
	3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Crude oil	T5472089	-2.99E+05	thou gal/yr	12/31/2011		0	20.6	0	0	0
	3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Bunker C fuel oil	T5472242	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3101 TANK 3101	Crude oil	T5432089	-3.29E+05	thou gal/yr	12/31/2011		0	29.7	0	0	0
	3101 TANK 3101	Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3101 TANK 3101	Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3102 TANK 3102	Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3102 TANK 3102	Hydrocarbon - mixtures, other/	T5432318	-3.05E+05	thou gal/yr	12/31/2011		0	11	0	0	0
	3103 TANK 3103	Crude oil	T5432089	-3.47E+05	thou gal/yr	12/31/2011		0	35.5	0	0	0
	3104 TANK 3104	Crude oil	T5432089	-2.39E+05	thou gal/yr	12/31/2011		0	2.8	0	0	0
	3105 TANK 3105	Crude oil	T5432089	-7.21E+05	thou gal/yr	12/31/2011		0	65.2	0	0	0
	3106 TANK 3106	Crude oil	T5432089	-7.62E+05	thou gal/yr	12/31/2011		0	37.1	0	0	0
	3107 TANK 3107	Crude oil	T5472089	-4.59E+05	thou gal/yr	12/31/2011		0	4.2	0	0	0
	3110 Desalter Effluent Surge Tank A	Crude oil	T4377089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3111 Desalter Effluent Surge Tank B	Crude oil	T4377089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3126 TANK 3126	Napththa	T5432188	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3126 TANK 3126	Oil/water mixture	T5432503	-8.15E+04	thou gal/yr	12/31/2011		0	1.1	0	0	0
	3127 TANK 3127	Oil/water mixture	T5412503	-4.27E+03	thou gal/yr	12/31/2011		0	1.7	0	0	0
	3128 TANK 3128	Aromatic hydrocarbons - other/	T5472027	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
	3128 TANK 3128	Water/organics mixture	T5472502	-6.52E+03	thou gal/yr	12/31/2011		0	1.2	0	0	0
	3129 TANK 3129	Fuel - jet 'A'	T5412158	-1.78E+05	thou gal/yr	12/31/2011		0	1.6	0	0	0
	3132 Tank 3132	Distillate oil	T5472315	8.12E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
	3133 TANK 3133	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3133	TANK 3133	Gasoline - unleaded	T5412551	-4.16E+05	thou gal/yr	12/31/2011		0	103.7	0	0	0
3133	TANK 3133	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3134	TANK 3134	Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3134	TANK 3134	Gasoline - unleaded	T5412551	-2.19E+05	thou gal/yr	12/31/2011		0	83	0	0	0
3134	TANK 3134	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3138	TANK 3138	Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997		0	0.6	0	0	0
3139	TANK 3139	Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997		0	8.1	0	0	0
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	0.00E+00	tons/yr	12/31/2011		0	0	0	0	0
3142	TANK 3142	Refinery feedstock - other/not	T4417239	-3.33E+02	thou gal/yr	12/31/2011		0	0	0	0	0
3144	TANK 3144	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3145	TANK 3145, Sphere	Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998		0	0	0	0	0
3146	Tank 3146: 20% Aqueous Ammonia	Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994		0	14.6	0	0	0
3147	Tank 3147: Organic Liquid Storage Tank	Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3148	Tank 3148: Organic Liquid Storage Tank	Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3157	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	12.4	0	0	0
3158	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3159	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	16.4	0	0	0
3160	Tank 3160: Organic Liquid Storage Tank	Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994		0	13.4	0	0	0
3161	Tank Lube Oil	Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3162	Tank Lube Oil	Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3163	Tank Lube Oil	Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3164	Tank Lube Oil	Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997		0	0.1	0	0	0
3165	Tank Lube Oil	Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3166	Tank Lube Oil	Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3167	Tank Lube Oil	Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3168	Tank Lube Oil	Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997		0	0.1	0	0	0
3169	organic liquid storage tank, lube oil products	Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995		0	0.2	0	0	0
3170	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3171	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	15.4	0	0	0
3172	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997		0	9.6	0	0	0
3179	Tank 3179: Organic Liquid Storage Tank	Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997		0	0.2	0	0	0
3180	Tank	Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3180	Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3180	Tank	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3180	Tank	Alkylate	T5472389	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3180	Tank	Gasoline - unleaded	T5472551	-5.29E+04	thou gal/yr	12/31/2011		0	76.8	0	0	0
3182	Tank 3182: Organic Liquid Storage Tank	Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997		0	0.3	0	0	0
3185	Tank 3185 (previously T-982)	Fuel - jet 'A'	T5472158	-2.08E+05	thou gal/yr	12/31/2011		0	6.4	0	0	0
3186	Gas Oil Tank	Organic liquid - other/not spe	T4477201	0.00E+00		4/21/1997		0	8.7	0	0	0
3189	Gasoline component and Diesel Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	-3.02E+05	thou gal/yr	12/31/2011		0	6.4	0	0	0
3189	Gasoline component and Diesel Tank	Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3190	Storage Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3190	Storage Tank	Fuel - jet 'A'	T5472158	-2.16E+05	thou gal/yr	12/31/2011		0	1.8	0	0	0
3191	Storage Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3191	Storage Tank	Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3191	Storage Tank	Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3191	Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3191	Storage Tank	Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3191	Storage Tank	Avgas	T5472662	-1.12E+04	thou gal/yr	12/31/2011		0	2.5	0	0	0
3192	Desalter Effluent Skim Tank	Crude oil	T3H77089	-1.56E+04	thou gal/yr	12/31/2010		0	0	0	0	0
3193	Gasoline component Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3193	Gasoline component Tank	Isocotane	T5472154	-1.31E+04	thou gal/yr	12/31/2011		0	2.3	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
3193	Gasoline component Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3193	Gasoline component Tank	Alkylate	T5472389	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3193	Gasoline component Tank	Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3193	Gasoline component Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3194	Storage Tank T-3194	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2003		0	0	0	0	0
3194	Storage Tank T-3194	Gas oil	T5472394	1.44E+05	thou gal/yr	12/31/2003		0	1	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Diesel fuel	T5477098	1.29E+05	thou gal/yr	12/31/2006		0	2.4	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Distillate oil	T5477315	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3195	T-3195 Waxy Heavy Neutral Storage Tank	Lube oil	T5477419	0.00E+00	thou gal/yr	12/31/2006		0	0	0	0	0
3196	Gasoline Components Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3196	Gasoline Components Tank	Organic liquid - other/not spe	T5472201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3196	Gasoline Components Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3196	Gasoline Components Tank	Gas oil	T5472394	-1.18E+05	thou gal/yr	12/31/2011		0	0.7	0	0	0
3196	Gasoline Components Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3196	Gasoline Components Tank	Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3197	Gasoline component Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3197	Gasoline component Tank	Naphtha	T5572188	-2.67E+04	thou gal/yr	12/31/2011		0	6.2	0	0	0
3197	Gasoline component Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3197	Gasoline component Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Fuel - jet 'A'	T5437158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3198	3198 tank; organic liquid storage tank	Toluene	T5437293	-2.69E+03	thou gal/yr	12/31/2011		0	18.5	0	0	0
3198	3198 tank; organic liquid storage tank	Distillate oil	T5437315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	-1.94E+03	thou barre/yr	12/31/2011		0	42.5	0	0	0
3201	Tank 3201: Whole Alkylate	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3201	Tank 3201: Whole Alkylate	Alkylate	T5472389	-1.24E+05	thou gal/yr	12/31/2011		0	112.4	0	0	0
3202	Tank 3202: Methanol	Methyl alcohol	T5472179	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3202	Tank 3202: Methanol	Naphtha	T5472188	-1.48E+04	thou gal/yr	12/31/2011		0	73	0	0	0
3202	Tank 3202: Methanol	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3202	Tank 3202: Methanol	Petroleum products - other/not	T5472321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3204	Tank 3204: Organic Liquid Storage Tank	Lube oil	T4277419	2.54E+00	thou gal/yr	12/31/1997		0	0	0	0	0
3207	Butane Sphere: Organic Liquid Storage Tank	Butane	T3477416	-9.20E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3208	Propane Sphere: Organic Liquid Storage Tank	Propane	T3477417	-7.67E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3211	Sphere	Butane	T3477416	-3.83E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3212	Sphere	Propane	T3477417	-2.76E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T5472098	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T5472419	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	-2.69E+05	thou gal/yr	12/31/2011		0	267.5	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011		0	66.4	0	0	0
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T5472315	-1.29E+05	thou gal/yr	12/31/1997		0	1.2	0	0	0
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T4477315	8.40E+04	thou gal/yr	7/9/1997		0	22.7	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	-1.23E+04	thou gal/yr	12/31/2011		0	142.5	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	-2.12E+04	thou gal/yr	12/31/2011		0	182	0	0	0
3225	Organic Liquid Storage Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.28E+05	tons/yr	12/31/2011		5	0	0	140.3	0
3232	Tank 3232 - Propylene Tetramer Storage Tank	Propylene tetramer	T4477842	1.60E+06	thou gal/yr	Unknown		0	412.7	0	0	0
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T4377419	-3.37E+02	thou gal/yr	12/31/1997		0	0	0	0	0
3910	LPG Tank; # 3910	LPG	T3477160	-3.97E+04	thou gal/yr	6/10/1998		0	0	0	0	0
3911	LPG Tank, # 3911	LPG	T3477160	-2.30E+04	thou gal/yr	6/10/1998		0	0	0	0	0
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011		19.7	5.9	80.5	6.6	33.2
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011		7.2	2.2	29.5	2.4	12.2
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011		7.8	2.3	31.8	2.6	13.1
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011		7.7	2.3	31.6	2.6	13
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011		14.3	4.3	58.6	4.8	24.2
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011		5.6	1.7	23	1.9	9.5
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011		10	3	40.7	3.3	16.8
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011		4.5	1.4	18.5	1.5	7.6
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011		8.9	2.7	31	3	14.9

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011		9.3	2.8	32.3	3.1	15.6
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011		14.7	4.4	74.5	4.9	24.7
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011		14.8	4.4	75	4.9	24.9
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011		8.7	2.6	140.2	2.9	14.7
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011		3.5	1	68.1	1.2	5.9
4070	#4 CRUDE UNIT F 1100A	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011		60.3	18.1	168.9	161.6	101.7
4071	#4 CRUDE UNIT F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011		58	17.4	162.2	155.3	97.7
4072	#4 CRUDE UNIT F1160	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0	0	0	0
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011		21.4	6.4	59.8	57.2	36
4073	LSFO COOLING TOWER	Fresh water	G5005415	-1.35E+07	thou gallo/yr	12/31/2011		0	222	0	0	0
4076	3 CAT COOLING TOWER E460	Fresh water	G5005415	-1.53E+07	thou gallo/yr	12/31/2011		0	252	0	0	0
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011		0	0	0	0	0
4129	800# STM BLR #1 #IPP	Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011		15.2	4.6	53.2	5.1	25.7
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011		10.5	3.2	37	3.5	17.9
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011		10	3	34.9	3.3	16.8
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011		15.9	4.8	55.5	5.3	26.8
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011		27	8.1	94.4	9	45.5
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	-4.40E+04	thou barre/yr	12/31/2011		0	6	0	0	0
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011		1.3	0.4	5.5	0.5	2.3
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011		1.6	0.5	6.4	0.5	2.6
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011		20.7	6.2	95	6.9	85.5
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011		9.6	2.9	39.2	8	16.2
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011		6.7	2	18.8	2.2	11.3
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011		6.7	2	18.7	2.2	11.2
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011		8.1	2.4	121.8	4.2	13.7
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011		10.9	3.3	163	5.6	18.3
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr	12/31/2011		0.1	2.9	156.7	5.4	17.6
4164	F-630 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011		7.3	2.2	25.6	2.5	12.4
4165	F620 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011		5	1.5	17.4	1.7	8.4
4166	F-610 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011		7	2.1	24.3	2.3	11.7
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011		0.1	6	87.4	7.2	36.1
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011		44.5	13.3	124.5	14.9	75
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011		38.7	11.6	108.4	13	65.3
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011		164.9	49.4	363.3	55.2	277.8
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011		139	41.6	389	116.3	234.2
4172	ISOMAX COOLING TOWER E-261	Fresh water	G5005415	-3.37E+07	thou gallo/yr	12/31/2011		0	553.2	0	0	0
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	-2.81E+07	thou gallo/yr	12/31/2011		0	461.7	0	0	0
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	-8.64E+05	thou gallo/yr	12/31/2011		0	14.2	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011		4.7	1.4	136.2	2.4	8
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011		1.9	0.6	54.2	1	3.2
4191	Alkane Cooling Water Tower	Fresh water	G5005415	-2.28E+06	thou gallo/yr	12/31/2011		0	37.5	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011		0.5	0.9	22.7	4.4	5.7
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011		0.6	1.1	27.1	0.1	6.8
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011		0.5	1	25.3	4.9	6.3
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	-6.11E+03	thou barre/yr	12/31/2011		0	16.7	0	0	0
4227	SRU #1 TRAIN	Sulfur	G7055267	-3.45E+04	tons/yr	12/31/2011		0	0	0	10384.6	0
4228	SRU #2 TRAIN	Sulfur	G7055267	-4.23E+04	tons/yr	12/31/2011		0	0	0	13546.7	0
4229	SRU #3 TRAIN	Sulfur	G7055267	-4.29E+04	tons/yr	12/31/2011		0	0	0	12475.9	0
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997		0	0	0	0	0
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	-1.83E+04	thou barre/yr	12/31/2011		0	50.2	0	0	0
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	-1.40E+04	thou barre/yr	12/31/2011		0	38.4	0	0	0
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	-9.37E+03	thou barre/yr	12/31/2011		0	7.7	0	0	0
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	-7.27E+04	thou barre/yr	12/31/2011		0	199.1	0	0	0
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	-7.51E+03	thou barre/yr	12/31/2011		0	30.8	0	0	0
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	-1.58E+05	thou gal/yr	12/31/2011		0	3456.4	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.64E+04	million cu/yr	12/31/2011		0	786	0	0	84.9
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.05E+04	thou barre/yr	12/31/2011		0	0	0	0	0
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	-4.12E+03	thou gallo/yr	12/31/2011		0	1.1	0	0	0
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	-1.62E+04	thou barre/yr	12/31/2011		0	0	0	0	0
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	-1.23E+04	thou barre/yr	12/31/2011		0	0	0	0	0
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	-6.87E+03	thou barre/yr	12/31/2011		0	0	0	0	0
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	-6.63E+03	thou barre/yr	12/31/2011		0	0	0	0	0
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	175327	147.9	542.4	891.9	238.6	
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	36.2	0.2	0	0	0	
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.47E+04	thou barre/yr	12/31/2011		0	40.2	0	0	0
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	-7.96E+03	thou barre/yr	12/31/2011		0	10.9	0	0	0
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	-2.56E+03	thou barre/yr	12/31/2011		0	10.5	0	0	0
4315	POINT ORIENT WHARF	Benzene	T8872041	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4315	POINT ORIENT WHARF	Xylene	T8872307	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4315	POINT ORIENT WHARF	Distillate oil	T8872315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	T8872318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4329	RLOP Cooling Tower	Fresh water	G5005415	-1.05E+07	thou gallo/yr	12/31/2011		0	20.2	0	0	0
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011		2	0.6	5.8	0.7	3.4
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011		1.9	0.6	5.6	0.6	3.2
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011		7.7	2.3	22.3	2.6	13
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011		0	1.4	14.8	1.7	8.6
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011		3.2	1	9.3	1.1	5.4
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011		3.4	1	9.7	1.1	5.6
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011		1.8	0.5	5.2	0.6	3
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011		3.5	1	10.2	1.2	5.9
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011		5.2	1.5	14.9	1.7	8.7
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011		1.8	0.5	5.2	0.6	3
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.13E+05	tons/yr	12/31/2011		0	12.3	0	0	0
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.10E+03	thou barre/yr	12/31/2011		0	14	0	0	0
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.21E+06	tons/yr	12/31/2011		0	24.3	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.50E+05	tons/yr	12/31/2011		0	7	0	0	0
4345	Misc.PET REF,Refinery Sour Waste Water No 2NH3-H2S	Waste gases	G5037338	-1.17E+02	million cu/yr	12/31/2011		0	0	0	0	0
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-2.31E+05	tons/yr	12/31/2011		0	23.5	0	0	0
4348	H2 Recovery Plant	Hydrocarbon - mixtures, other/	G5998318	-5.33E+04	tons/yr	12/31/2011		0	5.4	0	0	0
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011		0.8	1.7	39.1	2.4	9.8
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011		0.1	0.2	11.5	0.4	0.9
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011		16.4	6.7	3179.1	4.9	255.4
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012		7.7	3.1	1481	2.3	119
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011		11.7	23.3	544.7	13.1	136
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011		0.1	0.2	11.5	0	0.9
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011		16.4	6.7	3179.1	4.9	255.4
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012		7.7	3.1	1481	2.3	119
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011		11.7	23.3	544.7	6.6	136
4354	Butamer Plant	Paraffins - C3+	G5031052	-8.17E+04	thou gallo/yr	12/31/2011		0	0	0	0	0
4355	Deisobutanizer Plant	Paraffins - C3+	G5031052	-2.83E+05	thou gallo/yr	12/31/2011		0	0	0	0	0
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2011		0	0	0	0	0
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2011		0	0	0	0	0
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T33??7210	-5.77E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T41??7210	0.00E+00				0	0	0	0	0
4361	Perc Surge Control Vessel V-591	Reformate	T41??7398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4362	Perc Surge Control Vessel V-3591	Reformate	T41??7398	1.55E+01	thou gal/yr	10/23/2007		0	0	0	0	0
4363	Perc Storage Tank V-3592	Perchloroethylene	T42??7210	-2.53E+01	thou gal/yr	12/31/2011		0	0.1	0	0	0
4364	Perc Storage Tank V-4091	Perchloroethylene	T42??7210	-2.18E+01	thou gal/yr	12/31/2011		0	0	0	0	0
4365	Tri-Act 1825 Chemical Tote	Hydrocarbon - mixtures, other/	T47??7318	-7.07E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4366	Tri-Act 1803 & 1825 Chemical Tote - Power Plant	Hydrocarbon - mixtures, other/	T82??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4367	Tri-Act 1803 & 1825 Chemical Tote - RLOP	Hydrocarbon - mixtures, other/	T82??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4368	Tri-Act 1803 & 1825 Chemical Tote - SRU	Hydrocarbon - mixtures, other/	T82??7318	-3.60E-01	thou gal/yr	12/31/2011		0	0	0	0	0
4369	Tri-Act 1803 & 1825 Chemical Tote - LSFO/D&R	Hydrocarbon - mixtures, other/	T82??7318	-2.12E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4370	Chemical Tote, Custamine CA-066P - FCC	Hydrocarbon - mixtures, other/	T82??7318	-1.43E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4372	NALCO EC9085A Tote	Amine - other/not spec	T42??7021	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4373	Custamine CA-0660P RO Plant	Water/organics mixture	T42??7502	-1.64E+01	thou gal/yr	12/31/2011		0	0.3	0	0	0
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-5.00E+02	thou barre/yr	12/31/2011		0	1	0	0	0
4391	NO. 1 OXIDATION POND	Fresh water	G5033415	0.00E+00	thou gallo/yr	12/31/2011		0	0	0	0	0
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2011		0	27.4	0	0	0
4392	Wetland Marsh	Waste water - other/not spec	G5033443	0.00E+00	thou gallo/yr	12/31/2011		0	0	0	0	0
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.20E+04	thou barre/yr	12/31/2011		0	129.7	0	0	0
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	-1.20E+05	tons/yr	12/31/2011		3.3	0	0	0	0
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE8?1052	3.47E+03	thou gal/yr	12/31/1996		0	2.8	0	0	0
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE8?1052	1.33E+04	thou gal/yr	12/31/1996		0	5.3	0	0	0
4405	Heavy Oil Transloading Operations	Waste oil	TE6?2549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	-4.13E+01	gal/yr	12/31/2010		0	0.1	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4413	#2a Separator	Waste water - refin, other/not	G5017300	-1.05E+04	thou barre/yr	12/31/2011		0	242.4	0	0	0
4414	#1a Separator	Waste water - refin, other/not	G5017300	-7.44E+03	thou barre/yr	12/31/2011		0	49.8	0	0	0
4415	Asphalt Tank Truck Loading Racks	Asphalt	T98?1030	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E+01	tons/yr	12/31/2000		0.5	0	0	0	0
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997		0	0	0	0	0
4424	Equipment Painting Area	Coating/Ink/etc.	SG52A048	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4424	Equipment Painting Area	Mineral spirits	SG700184	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998		0	0	0	0	0
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-5.00E+00	gal/yr	12/31/2010		0	0.1	0	0	0
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2010		0	0	0	0	0
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-2.50E+01	gal/yr	12/31/2010		0	0.4	0	0	0
4429	#8(NH3-H2S)Plant	Waste gases	G5037338	-2.88E+02	million cu/yr	12/31/2011		0	0	0	0	0
4433	#3H2S Plant	Waste gases	G5998338	-2.66E+02	million cu/yr	12/31/2011		0	0.1	0	0	0
4434	#4H2S Plant	Waste gases	G5998338	-1.25E+03	million cu/yr	12/31/2011		0	0.3	0	0	0
4435	#5H2S Plant	Waste gases	G5998338	-1.56E+03	million cu/yr	12/31/2011		0	0.4	0	0	0
4440	Jet Additive Project Fugitive Sources	Petroleum products - other/not	G9000321	0.00E+00	thou gallo/yr			0	0	0	0	0
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T4277201	-2.00E+00	thou gal/yr	12/31/2011		0	0.1	0	0	0
5101	Tank-Marketing T-101	Lube oil	T4477419	1.85E+04	thou gal/yr	3/31/1997		0	62.2	0	0	0
5103	Tank-Marketing T-103	Lube oil	T4477419	1.28E+04	thou gal/yr	3/31/1997		0	48.8	0	0	0
5105	Tank-Marketing T-105	Lube oil	T4477419	1.12E+04	thou gal/yr	3/31/1997		0	45	0	0	0
5107	Tank-Marketing T-107	Lube oil	T4477419	3.26E+02	thou gal/yr	3/31/1997		0	4	0	0	0
5108	Tank-Marketing T-108	Lube oil	T4477419	2.51E+02	thou gal/yr	3/31/1997		0	3.8	0	0	0
5109	Tank-Marketing T-109	Lube oil	T4477419	4.98E+02	thou gal/yr	3/31/1997		0	4.4	0	0	0
5110	Tank-Marketing T-110	Lube oil	T4477419	1.33E+03	thou gal/yr	3/31/1997		0	6.3	0	0	0
5112	Tank-Marketing T-112	Lube oil	T4377419	5.80E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5113	Tank-Marketing T-113	Lube oil	T4377419	5.00E+00	thou gal/yr	3/31/1997		0	0.8	0	0	0
5115	Tank-Marketing T-115	Lube oil	T4377419	5.70E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5117	Tank-Marketing T-117	Lube oil	T4477419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5118	Tank-Marketing T-118	Lube oil	T4477419	4.60E+01	thou gal/yr	3/31/1997		0	1.5	0	0	0
5119	Tank-Marketing T-119	Lube oil	T4477419	6.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5121	Tank-Marketing T-121	Lube oil	T4477419	5.70E+01	thou gal/yr	3/31/1997		0	2	0	0	0
5122	Tank-Marketing T-122	Lube oil	T4477419	6.70E+01	thou gal/yr	3/31/1997		0	1.7	0	0	0
5123	Tank-Marketing T-123	Lube oil	T4477419	9.20E+01	thou gal/yr	3/31/1997		0	1.6	0	0	0
5125	Tank-Marketing T-125	Lube oil	T4377419	2.60E+01	thou gal/yr	3/31/1997		0	0.8	0	0	0
5126	Tank-Marketing T-126	Lube oil	T4377419	1.04E+02	thou gal/yr	3/31/1997		0	1	0	0	0
5127	Tank-Marketing T-127	Lube oil	T4377419	1.92E+02	thou gal/yr	3/31/1997		0	1.2	0	0	0
5128	Tank-Marketing T-128	Lube oil	T4377419	6.40E+01	thou gal/yr	3/31/1997		0	0.9	0	0	0
5129	Tank-Marketing T-129	Lube oil	T4377419	3.20E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5130	Tank-Marketing T-130	Lube oil	T4377419	8.00E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5131	Tank-Marketing T-131	Lube oil	T4377419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5132	Tank-Marketing T-132	Lube oil	T4377419	8.00E+00	thou gal/yr	3/31/1997		0	0.4	0	0	0
5133	Tank-Marketing T-133	Lube oil	T4377419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5134	Tank-Marketing T-134	Lube oil	T4377419	2.40E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5135	Tank-Marketing T-135	Lube oil	T4377419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5136	Tank-Marketing T-136	Lube oil	T4377419	1.36E+02	thou gal/yr	3/31/1997		0	0.7	0	0	0
5137	Tank-Marketing T-137	Lube oil	T4377419	1.20E+02	thou gal/yr	3/31/1997		0	0.6	0	0	0
5138	Tank-Marketing T-138	Lube oil	T4377419	4.80E+01	thou gal/yr	3/31/1997		0	0.5	0	0	0
5139	Tank-Marketing T-139	Lube oil	T4377419	2.60E+01	thou gal/yr	3/31/1997		0	0.4	0	0	0
5140	Tank-Marketing T-140	Lube oil	T4377419	1.30E+01	thou gal/yr	3/31/1997		0	0	0	0	0
5201	Tank-Marketing T-201	Lube oil	T4477419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0
5202	Tank-Marketing T-202	Lube oil	T4477419	3.45E+03	thou gal/yr	3/31/1997		0	0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
5203	Tank-Marketing T-203	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0
5204	Tank-Marketing T-204	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997		0	0	0	0
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997		0	6.6	0	0
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997		0	8.7	0	0
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997		0	5.1	0	0
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997		0	3.5	0	0
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997		0	2.3	0	0
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997		0	4.2	0	0
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997		0	2	0	0
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997		0	4.3	0	0
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997		0	1.6	0	0
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997		0	1.4	0	0
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997		0	2.2	0	0
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997		0	2.4	0	0
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997		0	1.4	0	0
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997		0	1.2	0	0
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997		0	1.3	0	0
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997		0	0.9	0	0
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997		0	3.6	0	0
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997		0	0.9	0	0
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997		0	1.8	0	0
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997		0	2.7	0	0
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997		0	4.4	0	0
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997		0	0.3	0	0
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997		0	0.6	0	0
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.4	0	0
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.9	0	0
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0.8	0	0
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997		0	0	0	0
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997		0	5.7	0	0
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011		0.4	34.6	2.7	0
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011		0.5	40	3.2	0
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011		0.3	26.8	2.1	0
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2011		0	0	0	0	0
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011		0.3	28.5	2.2	0	4.3
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011		0.2	17	1.3	0	2.5
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011		0.4	33.7	2.7	0	5.1
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011		0	0	0	0	0
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998		0	0	0	0	0
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998		0	0	0	0	0
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2011		0	0	0	0	0
6051	Alky Cooling Tower	Fresh water	G5005415	-1.26E+07	thou gallo/yr	12/31/2011		10.3	24.1	0	0	0
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??7502	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6125	Tank 6125	Organic liquid - other/not spe	T42??7201	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6200	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6201	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6202	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6203	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6204	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6205	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6206	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6207	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6208	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6209	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6210	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6212	Portable Polyethylene Storge Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0

Printed: AUG 1, 2013

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Emissions in lbs/day				
								Org	Nox	SO2	CO	
6213	Portable Polyethylene Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6213	Portable Polyethylene Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6213	Portable Polyethylene Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6213	Portable Polyethylene Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6214	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6214	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6214	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6214	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6215	Portabel Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6215	Portabel Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6215	Portabel Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6215	Portabel Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6216	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6216	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6216	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6216	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6217	Portable Polyethylene Sotrage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6218	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6218	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6218	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6218	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6219	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6219	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6219	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6219	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6220	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6220	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6220	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	-5.59E+00	thou gal/yr	12/31/2011	0	1	0	0	0	
6220	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6220	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6221	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6221	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6221	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	-1.68E+01	thou gal/yr	12/31/2011	0	0.9	0	0	0	
6221	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6221	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6222	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6222	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6222	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	-5.59E+00	thou gal/yr	12/31/2011	0	0.8	0	0	0	
6222	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6222	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6223	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6223	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6223	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6223	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.68E+01	thou gal/yr	12/31/2011	0	0.2	0	0	0	
6223	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6224	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6224	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6224	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6224	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6224	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.41E+01	thou gal/yr	12/31/2011	0	0	0	0	0	
6224	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6225	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6225	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6225	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6225	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.18E+01	thou gal/yr	12/31/2011	0	0	0	0	0	
6225	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6226	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6226	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6226	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6226	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.68E+01	thou gal/yr	12/31/2011	0	0	0	0	0	
6226	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6227	Portable Steel Storage	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6227	Portable Steel Storage	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6227	Portable Steel Storage	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6227	Portable Steel Storage	Oil/water mixture	T437?503	-1.68E+01	thou gal/yr	12/31/2011	0	0	0	0	0	
6227	Portable Steel Storage	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6228	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6228	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6228	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.68E+01	thou gal/yr	12/31/2011	0	0	0	0	0	
6228	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6229	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6229	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.47E+00	thou gal/yr	12/31/2011	0	0	0	0	0	
6229	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	0	0	0	0	0	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2012

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
6230	Portable Steel Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6230	Portable Steel Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6230	Portable Steel Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6230	Portable Steel Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2011		0	0	0	0	0
6230	Portable Steel Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6231	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6231	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2011		0	0	0	0	0
6231	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6232	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6232	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2011		0	0	0	0	0
6232	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6233	Portable Steel Storage Container	Paraffins - C3+	T43??7052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6233	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6233	Portable Steel Storage Container	Oil/water mixture	T43??503	-1.68E+01	thou gal/yr	12/31/2011		0	0	0	0	0
6233	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6234	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6234	Portable Steel Storage Container	Oil/water mixture	T43??503	-5.04E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6234	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6235	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6235	Portable Steel Storage Container	Oil/water mixture	T43??503	-2.39E+02	thou gal/yr	12/31/2011		0	0.1	0	0	0
6235	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6236	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6236	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6236	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6237	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6237	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6237	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6238	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6238	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6238	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6239	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6239	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6239	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2011		0	0	0	0	0
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997		0	0	0	0	0
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998		0	0	0	0	0
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011		0	0	0.1	0	0
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011		0	0	0.2	0	0.3
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011		0	0	0	0	0
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011		0	0	0.1	0	0
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011		0	0	0.1	0	0
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011		0	0	0.4	0	0.1
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011		0.1	0	2.9	0	0.6
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011		0	0	0.4	0	0.1
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011		0	0	0	0	0
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011		0.3	0.3	3.6	0	0.8
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011		0	0	0.3	0	0.1

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2015

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011		0.2	0.2	2.6	0	0.6
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011		0	0	0.2	0	0.1
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011		0	0	0.2	0	0.1
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011		0	0	0.1	0	0
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011		0	0	0.1	0	0
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011		0	0	0.1	0	0
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011		0	0	0.4	0	0.1
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010		0	0	0	0	0
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	-4.00E+00	gal/yr	12/31/2010		0	0.1	0	0	0
9047	Tank 6047	Organic liquid - other/not spe	T42??7201	0.00E+00	thou gal/yr	12/31/1997		0	0	0	0	0
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??7090	-5.45E+01	thou gal/yr	12/31/1997		0	0	0	0	0
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??7419	-3.51E+00	thou gal/yr	12/31/1997		0	0.1	0	0	0
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998		0	0.3	0	0	0
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003		0	1.5	0	0	0
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??7052	-5.95E+05	thou gal/yr	12/31/2011		0	230.8	0	0	0
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??7158	-7.70E+04	thou gal/yr	12/31/2011		0	1.9	0	0	0
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??7242	-7.33E+04	thou gal/yr	12/31/2011		0	0	0	0	0
9321	Marine Loading Berth #1	Distillate oil	TB8??7315	-3.35E+04	thou gal/yr	12/31/2011		0	0.8	0	0	0
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9321	Marine Loading Berth #1	Crude oil	TF8??7089	-2.66E+05	thou gal/yr	12/31/2011		0	0	0	0	0
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??7052	-9.52E+04	thou gal/yr	12/31/2011		0	36.9	0	0	0
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-7.96E+03	thou gal/yr	12/31/2011		0	58.9	0	0	0
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??7158	-1.98E+05	thou gal/yr	12/31/2011		0	4.9	0	0	0
9322	Marine Loading Berth #2	Methyl alcohol	TB8??7179	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??7201	-8.05E+03	thou gal/yr	12/31/2011		0	2.5	0	0	0
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??7242	-8.37E+04	thou gal/yr	12/31/2011		0	0	0	0	0
9322	Marine Loading Berth #2	Toluene	TB8??7293	-1.25E+03	thou gal/yr	12/31/2011		0	1	0	0	0
9322	Marine Loading Berth #2	Distillate oil	TB8??7315	-1.16E+05	thou gal/yr	12/31/2011		0	2.9	0	0	0
9322	Marine Loading Berth #2	Lube oil	TB8??7419	-2.07E+05	thou gal/yr	12/31/2011		0	1.7	0	0	0
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-1.91E+05	thou gal/yr	12/31/2011		0	1766.3	0	0	0
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??7628	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9322	Marine Loading Berth #2	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??7052	-9.16E+04	thou gal/yr	12/31/2011		0	35.5	0	0	0
9323	Marine Loading Berth #3	Crude oil	TB8??7089	-6.17E+03	thou gal/yr	12/31/2011		0	20.3	0	0	0
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??7128	-9.00E+03	thou gal/yr	12/31/2011		0	66.6	0	0	0
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB8??7158	-7.72E+04	thou gal/yr	12/31/2011		0	1.9	0	0	0
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB8??7201	-2.68E+03	thou gal/yr	12/31/2011		0	50.7	0	0	0
9323	Marine Loading Berth #3	Bunker C fuel oil	TB8??7242	-1.01E+05	thou gal/yr	12/31/2011		0	0	0	0	0
9323	Marine Loading Berth #3	Toluene	TB8??7293	-1.78E+03	thou gal/yr	12/31/2011		0	1.5	0	0	0
9323	Marine Loading Berth #3	Distillate oil	TB8??7315	-2.25E+05	thou gal/yr	12/31/2011		0	5.6	0	0	0
9323	Marine Loading Berth #3	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??7551	-4.82E+05	thou gal/yr	12/31/2011		0	4447	0	0	0
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB4?2318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9324	Marine Loading Berth #4	Bunker C fuel oil	TB8??7242	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9324	Marine Loading Berth #4	Distillate oil	TB8??7315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9324	Marine Loading Berth #4	Crude oil	TF8??7089	-2.77E+06	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Paraffins - C3+	TB8??7052	-4.91E+03	thou gal/yr	12/31/2011		0	1	0	0	0
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??7128	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB8??7158	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Bunker C fuel oil	TB8??7242	-1.25E+05	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Distillate oil	TB8??7315	-2.93E+03	thou gal/yr	12/31/2011		0	0.1	0	0	0
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB8??7318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9325	Marine Loading Berth #9	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9326	Marine Loading Berth #11	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9326	Marine Loading Berth #11	Bunker C fuel oil	TB8??7242	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
9326	Marine Loading Berth #11	Distillate oil	TB8??7315	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0	0
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00				0	0	0	0	0
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00				0	0.1	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00				0	49.8	0	0	0
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00				0	975.7	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00				0	28.1	0	0	0
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00				0	574.7	0	0	0

Chevron Products Company (P# 10)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	Org	NOx	SO2	CO
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00				0	0	0	0
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00				0	78.6	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00				0	10.3	0	0
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00				1.1	0	24.5	133.1

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Abated Detailed Pollutant Emissions
for Calendar Year 2008***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	3.00E-01	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	3.88E-03
55	Tank 55	Distillate oil	T81??315	0.00E+00	thou gal/yr	12/31/2003	Distillate oil		315	0.00E+00
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Benzene		41	1.94E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Toluene		293	6.58E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Xylene		307	7.75E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Ethylbenzene		333	4.52E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Gasoline - unleaded		551	6.36E-02
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996	Organic liquid - other/not s		201	0.00E+00
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997	Distillate oil		315	0.00E+00
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
232	TANK 232	Hydrocarbon - mixtures, other/	T5422318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997	Distillate oil		315	1.39E+01
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997	Distillate oil		315	6.12E+00
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.28E+00
297	TANK 297	Hydrocarbon - mixtures, other/	T5432318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
297	TANK 297	Refinery sour waste water	T5432442	0.00E+00	thou gal/yr	12/31/2008	Refinery sour waste water		442	0.00E+00
297	TANK 297	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
297	TANK 297	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
297	TANK 297	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
297	TANK 297	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
297	TANK 297	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
298	TANK 298	Hydrocarbon - mixtures, other/	T5422318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
298	TANK 298	Refinery sour waste water	T5422442	0.00E+00	thou gal/yr	12/31/2008	Refinery sour waste water		442	0.00E+00
298	TANK 298	Gasoline - unleaded	T5422551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
298	TANK 298	Gasoline - unleaded	T5422551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
298	TANK 298	Gasoline - unleaded	T5422551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
298	TANK 298	Gasoline - unleaded	T5422551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
298	TANK 298	Gasoline - unleaded	T5422551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997	Distillate oil		315	4.12E-01
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	3.65E+04	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	5.54E+01
398	TANK 398	Hydrocarbon - mixtures, other/	T5427318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
399	TANK	Distillate oil	T5427315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
399	TANK	Oil - non-fuel, other/not spec	T5427352	2.41E+04	thou gal/yr	12/31/2008	Oil - non-fuel, other/not sp		352	1.19E+01
399	TANK	Tetra-Ethyl Lead (TEL)	T5427422	0.00E+00	thou gal/yr	12/31/2008	Tetra-Ethyl Lead (TEL)		422	0.00E+00
401	TANK 401	Refinery feedstock - other/not	T44??239	4.70E+04	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	1.09E+01
605	Tank 605: Process Water Tank <1000 ppm (wt) Hydrocarbon	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
605	Tank 605: Process Water Tank <1000 ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00	thou gal/yr	12/31/2008	Water/organics mixture		502	0.00E+00
610	Tank 610: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T81??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
610	Tank 610: Organic Liquid Storage Tank	Water/organics mixture	T81??502	0.00E+00	thou gal/yr	12/31/2008	Water/organics mixture		502	0.00E+00
634	TANK 634	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
634	TANK 634	Petroleum products - other/not	T5472321	2.66E+04	thou gal/yr	12/31/2008	Petroleum products - other/n		321	1.61E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
660	Tank 660: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T81??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
660	Tank 660: Organic Liquid Storage Tank	Water/organics mixture	T81??502	0.00E+00	thou gal/yr	12/31/2008	Water/organics mixture		502	0.00E+00
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	2.12E+04	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	1.41E-01
870	Tank 870	Organic liquid - other/not spe	T43??201	0.00E+00	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	0.00E+00
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	1.46E-03
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Butane	T42??7416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T42??7419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.33E-03
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
953 TANK 953		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
953 TANK 953		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
953 TANK 953		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
953 TANK 953		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
953 TANK 953		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
953 TANK 953		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
954 TANK 954		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
954 TANK 954		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
954 TANK 954		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
954 TANK 954		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
954 TANK 954		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
955 TANK 955		Paraffins - C3+	T5412052	2.87E+04	thou gal/yr	12/31/2008	Paraffins - C3+		52	2.40E+00
955 TANK 955		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
955 TANK 955		Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	0.00E+00
956 TANK 956		Paraffins - C3+	T5412052	2.61E+04	thou gal/yr	12/31/2008	Paraffins - C3+		52	2.48E+00
956 TANK 956		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
957 Tank 957		Diesel fuel	T4477098	2.43E+04	thou gal/yr	12/31/2008	Diesel oil		98	7.25E+00
957 Tank 957		Fuel - jet 'A'	T4477158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
979 TANK 979		Distillate oil	T4477315	-6.13E+04	thou gal/yr	4/30/1997	Distillate oil		315	7.33E+00
984 TANK 984		Distillate oil	T4417315	-9.67E+03	thou gal/yr	12/31/1997	Distillate oil		315	1.41E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
990 TANK 990		Gasoline - unleaded	T5432551	8.37E+04	thou gal/yr	12/31/2008	Benzene		41	1.37E-02
990 TANK 990		Gasoline - unleaded	T5432551	8.37E+04	thou gal/yr	12/31/2008	Toluene		293	4.66E-02
990 TANK 990		Gasoline - unleaded	T5432551	8.37E+04	thou gal/yr	12/31/2008	Xylene		307	5.49E-03
990 TANK 990		Gasoline - unleaded	T5432551	8.37E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	3.20E-03
990 TANK 990		Gasoline - unleaded	T5432551	8.37E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	4.50E+00
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Benzene		41	1.40E-02
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Toluene		293	4.75E-02
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Xylene		307	5.58E-03
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.26E-03
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	4.58E+00
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
992 Storage Tank T-992		Gasoline - unleaded	T5472551	1.02E+05	thou gal/yr	12/31/2008	Benzene		41	1.36E-02
992 Storage Tank T-992		Gasoline - unleaded	T5472551	1.02E+05	thou gal/yr	12/31/2008	Toluene		293	4.61E-02
992 Storage Tank T-992		Gasoline - unleaded	T5472551	1.02E+05	thou gal/yr	12/31/2008	Xylene		307	5.42E-03
992 Storage Tank T-992		Gasoline - unleaded	T5472551	1.02E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	3.16E-03
992 Storage Tank T-992		Gasoline - unleaded	T5472551	1.02E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	4.45E+00
1020 Tank 1020: Inorganic Chemical Storage Tank		Diethanolamine	T4477485	4.20E+02	thou gal/yr	3/10/1995	Diethanolamine		485	1.05E-01
1052 Tank 1052: Organic Liquid Storage Tank		Kerosene	T4377159	0.00E+00	thou gal/yr	12/31/2006	Kerosene		159	0.00E+00
1052 Tank 1052: Organic Liquid Storage Tank		Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2006	Hydrocarbon - mixtures, othe		318	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1287 TANK 1287		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1287 TANK 1287		Petroleum products - other/not	T5432321	3.39E+04	thou gal/yr	12/31/2008	Petroleum products - other/n		321	2.23E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1289 TANK 1289		Toluene	T6472293	1.65E+03	thou gal/yr	12/31/2008	Toluene		293	1.00E+00
1289 TANK 1289		Hydrocarbon - mixtures, other/	T6472318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
1292 TANK 1292		Diesel fuel	T5412098	2.18E+05	thou gal/yr	12/31/2008	Diesel oil		98	1.41E+00
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00	thou gal/yr	12/31/2008	Jet fuel JP8		684	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
1296 TANK 1296		Gasoline - unleaded	T5412551	8.64E+04	thou gal/yr	12/31/2008	Benzene		41	1.76E-02
1296 TANK 1296		Gasoline - unleaded	T5412551	8.64E+04	thou gal/yr	12/31/2008	Toluene		293	5.97E-02
1296 TANK 1296		Gasoline - unleaded	T5412551	8.64E+04	thou gal/yr	12/31/2008	Xylene		307	7.02E-03
1296 TANK 1296		Gasoline - unleaded	T5412551	8.64E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	4.10E-03
1296 TANK 1296		Gasoline - unleaded	T5412551	8.64E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	5.76E+00
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T6322502	5.90E+00	thou gal/yr	12/31/2003	Water/organics mixture		502	8.65E-04
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	7.11E+00
1431 Asphalt Tank(T-907)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008	Benzene		41	1.91E-02
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008	Ethylene dichloride		107	3.25E-04
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008	Gasoline - leaded		128	1.77E+00
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008	Toluene		293	9.55E-02
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008	Xylene		307	2.10E-02
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008	Ethylene dibromide		420	1.28E-05
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	5.30E-02
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03	thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe		318	5.97E-01
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe		318	5.90E-01
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1459 TANK 1459		Gasoline - unleaded	T5432551	3.16E+04	thou gal/yr	12/31/2008	Benzene		41	1.19E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	3.16E+04	thou gal/yr	12/31/2008	Toluene		293	4.05E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	3.16E+04	thou gal/yr	12/31/2008	Xylene		307	4.76E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	3.16E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	2.78E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	3.16E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	3.91E+00
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
1488 TANK 1488		Oil/water mixture	T5472503	3.73E+03	thou gal/yr	12/31/2008	Oil/water mixture		503	3.13E+01
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1489 TANK 1489		Alkylate	T5432389	1.01E+04	thou gal/yr	12/31/2008	Alkylate		389	4.67E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2008	Methyl alcohol		179	0.00E+00
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1491 TANK 1491		Gasoline - unleaded	T5432551	4.55E+04	thou gal/yr	12/31/2008	Benzene		41	1.17E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	4.55E+04	thou gal/yr	12/31/2008	Toluene		293	3.98E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	4.55E+04	thou gal/yr	12/31/2008	Xylene		307	4.68E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	4.55E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	2.73E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	4.55E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	3.84E+00
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997	Distillate oil		315	3.52E+00
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.30E+00
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	2.87E+04	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	2.29E+00
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997	Distillate oil		315	8.02E-01
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997	Fuel oil #2		392	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1514 TANK 1514		Gasoline - unleaded	T5432551	9.05E+04	thou gal/yr	12/31/2008	Benzene		41	1.52E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	9.05E+04	thou gal/yr	12/31/2008	Toluene		293	5.17E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	9.05E+04	thou gal/yr	12/31/2008	Xylene		307	6.09E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	9.05E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	3.55E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	9.05E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	5.00E+00
1518 TANK 1518		Fuel - jet 'A'	T5432158	1.30E+04	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	1.22E-01
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997	Paraffins - C3+		52	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	1.79E+03	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	5.44E-02
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Benzene		41	2.36E-06
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Ethylene dichloride		107	4.01E-08
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Gasoline - leaded		128	2.19E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Toluene		293	1.18E-05
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Xylene		307	2.59E-06
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Ethylene dibromide		420	1.58E-09
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Benzene		41	2.04E-03
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Toluene		293	6.94E-03
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Xylene		307	8.17E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Ethylbenzene		333	4.77E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Gasoline - unleaded		551	6.71E-01
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997	Distillate oil		315	1.27E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1637 TANK 1637		Gasoline - unleaded	T6H32551	1.14E+04	thou gal/yr	12/31/2008	Benzene		41	3.67E-03
1637 TANK 1637		Gasoline - unleaded	T6H32551	1.14E+04	thou gal/yr	12/31/2008	Toluene		293	1.25E-02
1637 TANK 1637		Gasoline - unleaded	T6H32551	1.14E+04	thou gal/yr	12/31/2008	Xylene		307	1.47E-03
1637 TANK 1637		Gasoline - unleaded	T6H32551	1.14E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	8.57E-04
1637 TANK 1637		Gasoline - unleaded	T6H32551	1.14E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	1.21E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
1653 TANK 1653		Fuel - jet 'A'	T4417158	3.19E+03	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	2.16E+00
1653 TANK 1653		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
1653 TANK 1653		Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2008	Jet fuel JP5		492	0.00E+00
1686 TANK 1686		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1686 TANK 1686		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1686 TANK 1686		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1686 TANK 1686		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
1686 TANK 1686		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1687 TANK 1687		Gasoline - unleaded	T5432551	1.43E+05	thou gal/yr	12/31/2008	Benzene		41	1.64E-02
1687 TANK 1687		Gasoline - unleaded	T5432551	1.43E+05	thou gal/yr	12/31/2008	Toluene		293	5.58E-02
1687 TANK 1687		Gasoline - unleaded	T5432551	1.43E+05	thou gal/yr	12/31/2008	Xylene		307	6.56E-03
1687 TANK 1687		Gasoline - unleaded	T5432551	1.43E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	3.83E-03
1687 TANK 1687		Gasoline - unleaded	T5432551	1.43E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	5.38E+00
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Benzene		41	1.64E-02
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Toluene		293	5.59E-02
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Xylene		307	6.57E-03
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.84E-03
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	5.40E+00
1798 Tank 1798		Fuel - jet 'A'	T5422158	2.29E+05	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	7.60E+00
1798 Tank 1798		Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
1799 TANK 1799		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
1799 TANK 1799		Fuel - jet 'A'	T5472158	2.09E+05	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	1.56E+00
1821 Tank 1821 Fresh Sulfuric Acid Tank		H2SO4 - other/not spec	G5999146	1.16E+05	tons/yr	12/31/2008	Particulates (portion of tot		1990	6.36E-03
1825 Tank 1825		Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	1.19E-02
1828 TANK 1828		Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006	Paraffins - C3+		52	0.00E+00
1828 TANK 1828		Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006	Pentane		209	0.00E+00
1828 TANK 1828		Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006	Butane		416	0.00E+00
1843 TANK 1843		Paraffins - C3+	T5412052	2.95E+02	thou gal/yr	12/31/2007	Paraffins - C3+		52	1.09E-02
1894 Tank 1894: Phosphoric Acid Storage Tank		Phosphoric acid	G5999217	3.76E+02	tons/yr	12/31/2008	Particulates (portion of tot		1990	2.06E-05
1899 TANK 1899		Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997	Distillate oil		315	3.92E-01
1908 Asphalt Tank (T-908)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
1909 Tank 1909		Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	0.00E+00
1910 Tank 1910		Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994	Organic liquid - other/not s		201	3.55E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
1911	Tank 1911	Organic liquid - other/not spe	T43??201	0.00E+00	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	0.00E+00
1911	Tank 1911	Asphalt	T44??030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
1966	TANK 1966	Fuel - jet 'A'	T5432158	2.02E+04	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	2.25E-01
2520	Wastewater/MEA Storage Tank	Ethyl amine	T44??106	0.00E+00	thou gal/yr	12/31/2005	Ethyl amine		106	0.00E+00
2520	Wastewater/MEA Storage Tank	Waste water - refin, other/not	T44??300	1.05E+05	thou gal/yr	12/31/2005	Waste water - refin, other/n		300	6.26E+00
2540	Tank 2540: Organic Liquid Storage Tank	Ethanolamine	T44??7664	-1.79E+03	thou gal/yr	12/31/1997	Ethanolamine		664	1.12E-01
2903	Tank 903: Organic Liquid Storage Tank	Butane	T42??7416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
2903	Tank 903: Organic Liquid Storage Tank	Lube oil	T42??7419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.17E-04
2917	Asphalt Tank (T-917)	Asphalt	T44??030	0.00E+00	thou gal/yr	12/31/2007	Asphalt		30	0.00E+00
2918	Asphalt Tank (T-918)	Asphalt	T44??030	0.00E+00	thou gal/yr	12/31/2007	Asphalt		30	0.00E+00
2921	Asphalt Tank (T-921)	Asphalt	T43??030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
3038	TANK 3038 (Spherical Pressure Tank)	Paraffins - C3+	T34??052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
3038	TANK 3038 (Spherical Pressure Tank)	Pentane	T34??209	1.19E+04	thou gal/yr	12/31/2008	Pentane		209	0.00E+00
3050	TANK 3050 SPHERE	Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3066	TANK 3066	Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
3071	TANK 3071	Gasoline - unleaded	T5472551	1.04E+05	thou gal/yr	12/31/2008	Benzene		41	3.65E-01
3071	TANK 3071	Gasoline - unleaded	T5472551	1.04E+05	thou gal/yr	12/31/2008	Toluene		293	1.24E+00
3071	TANK 3071	Gasoline - unleaded	T5472551	1.04E+05	thou gal/yr	12/31/2008	Xylene		307	1.46E-01
3071	TANK 3071	Gasoline - unleaded	T5472551	1.04E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	8.52E-02
3071	TANK 3071	Gasoline - unleaded	T5472551	1.04E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	1.20E+02
3072	TANK 3072	Gasoline - unleaded	T5472551	1.05E+05	thou gal/yr	12/31/2007	Benzene		41	1.55E-02
3072	TANK 3072	Gasoline - unleaded	T5472551	1.05E+05	thou gal/yr	12/31/2007	Toluene		293	5.27E-02
3072	TANK 3072	Gasoline - unleaded	T5472551	1.05E+05	thou gal/yr	12/31/2007	Xylene		307	6.20E-03
3072	TANK 3072	Gasoline - unleaded	T5472551	1.05E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.62E-03
3072	TANK 3072	Gasoline - unleaded	T5472551	1.05E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	5.09E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Paraffins - C3+	T5472052	1.16E+05	thou gal/yr	12/31/2008	Paraffins - C3+		52	3.38E-01
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
3074	TANK 3074	Distillate oil	T5472315	1.14E+05	thou gal/yr	12/31/2007	Distillate oil		315	6.71E-01
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	9.84E+03	thou gal/yr	12/31/2008	Benzene		41	2.98E-02
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	9.84E+03	thou gal/yr	12/31/2008	Ethylene dichloride		107	5.07E-04
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	9.84E+03	thou gal/yr	12/31/2008	Gasoline - leaded		128	2.77E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	9.84E+03	thou gal/yr	12/31/2008	Toluene		293	1.49E-01
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	9.84E+03	thou gal/yr	12/31/2008	Xylene		307	3.28E-02
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	9.84E+03	thou gal/yr	12/31/2008	Ethylene dibromide		420	2.00E-05
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
3076	TANK T3076	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
3076	TANK T3076	Hydrocarbon - mixtures, other/	T5472318	1.71E+04	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	3.35E+00
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Crude oil	T5472089	4.59E+05	thou gal/yr	12/31/2008	Crude oil		89	2.18E+01
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Bunker C fuel oil	T5472242	0.00E+00	thou gal/yr	12/31/2008	Bunker C fuel oil		242	0.00E+00
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3101	TANK 3101	Crude oil	T5432089	4.87E+05	thou gal/yr	12/31/2008	Crude oil		89	3.08E+01
3101	TANK 3101	Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2008	Fuel oil #2		392	0.00E+00
3101	TANK 3101	Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2008	Gas oil		394	0.00E+00
3102	TANK 3102	Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
3102	TANK 3102	Hydrocarbon - mixtures, other/	T5432318	3.26E+05	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.11E+01
3103	TANK 3103	Crude oil	T5432089	3.43E+05	thou gal/yr	12/31/2007	Crude oil		89	3.55E+01
3104	TANK 3104	Crude oil	T5432089	7.74E+05	thou gal/yr	12/31/2007	Crude oil		89	5.90E+00
3105	TANK 3105	Crude oil	T5432089	7.36E+05	thou gal/yr	12/31/2007	Crude oil		89	6.53E+01
3106	TANK 3106	Crude oil	T5432089	3.21E+05	thou gal/yr	12/31/2007	Crude oil		89	3.46E+01
3107	TANK 3107	Crude oil	T5472089	3.40E+05	thou gal/yr	12/31/2008	Crude oil		89	3.49E+00
3110	Desalter Effluent Surge Tank A	Crude oil	T43??089	8.08E+02	thou gal/yr	12/31/2007	Crude oil		89	7.11E+00
3111	Desalter Effluent Surge Tank B	Crude oil	T43??089	8.08E+02	thou gal/yr	12/31/2007	Crude oil		89	6.42E+00
3126	TANK 3126	Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2008	Naphtha		188	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
3126	TANK 3126	Oil/water mixture	T5432503	1.15E+05	thou gal/yr	12/31/2008	Oil/water mixture		503	1.41E+00
3127	TANK 3127	Oil/water mixture	T5412503	2.38E+03	thou gal/yr	12/31/2007	Oil/water mixture		503	1.70E+00
3128	TANK 3128	Aromatic hydrocarbons - other/	T5472027	0.00E+00	thou gal/yr	12/31/2008	Aromatic hydrocarbons - othe		27	0.00E+00
3128	TANK 3128	Water/organics mixture	T5472502	1.64E+03	thou gal/yr	12/31/2008	Water/organics mixture		502	1.21E+00
3129	TANK 3129	Fuel - jet 'A'	T5412158	1.16E+05	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	1.07E+00
3132	Tank 3132	Distillate oil	T5472315	8.12E+04	thou gal/yr	4/30/1997	Distillate oil		315	5.89E-01
3133	TANK 3133	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
3133	TANK 3133	Gasoline - unleaded	T5412551	4.50E+05	thou gal/yr	12/31/2008	Benzene		41	3.11E-01
3133	TANK 3133	Gasoline - unleaded	T5412551	4.50E+05	thou gal/yr	12/31/2008	Toluene		293	1.06E+00
3133	TANK 3133	Gasoline - unleaded	T5412551	4.50E+05	thou gal/yr	12/31/2008	Xylene		307	1.25E-01
3133	TANK 3133	Gasoline - unleaded	T5412551	4.50E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	7.26E-02
3133	TANK 3133	Gasoline - unleaded	T5412551	4.50E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	1.02E+02
3133	TANK 3133	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2008	Gasoline - oxygenated, MTBE		680	0.00E+00
3134	TANK 3134	Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3134	TANK 3134	Gasoline - unleaded	T5412551	3.09E+05	thou gal/yr	12/31/2008	Benzene		41	2.50E-01
3134	TANK 3134	Gasoline - unleaded	T5412551	3.09E+05	thou gal/yr	12/31/2008	Toluene		293	8.50E-01
3134	TANK 3134	Gasoline - unleaded	T5412551	3.09E+05	thou gal/yr	12/31/2008	Xylene		307	1.00E-01
3134	TANK 3134	Gasoline - unleaded	T5412551	3.09E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	5.83E-02
3134	TANK 3134	Gasoline - unleaded	T5412551	3.09E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	8.21E+01
3134	TANK 3134	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2008	Gasoline - oxygenated, MTBE		680	0.00E+00
3138	TANK 3138	Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997	Gas oil		394	5.55E-01
3139	TANK 3139	Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997	Gas oil		394	8.14E+00
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	1.57E+05	tons/yr	12/31/2008	Sulfur or Sulfur compound po		1830	9.22E-04
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	1.57E+05	tons/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	5.16E+00
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	1.57E+05	tons/yr	12/31/2008	Hydrogen Sulfide (H2S)		5020	2.15E+00
3142	TANK 3142	Refinery feedstock - other/not	T4417239	4.42E+02	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
3144	TANK 3144	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
3145	TANK 3145, Sphere	Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3146	Tank 3146: 20% Aqueous Ammonia	Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994	Organic liquid - other/not s		201	1.46E+01
3147	Tank 3147: Organic Liquid Storage Tank	Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3148	Tank 3148: Organic Liquid Storage Tank	Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3157	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.24E+01
3158	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3159	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3160	Tank 3160: Organic Liquid Storage Tank	Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994	Lube oil		419	1.34E+01
3161	Tank Lube Oil	Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997	Lube oil		419	1.19E-01
3162	Tank Lube Oil	Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997	Lube oil		419	1.22E-01
3163	Tank Lube Oil	Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997	Lube oil		419	7.74E-02
3164	Tank Lube Oil	Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997	Lube oil		419	7.23E-02
3165	Tank Lube Oil	Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997	Lube oil		419	1.41E-01
3166	Tank Lube Oil	Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997	Lube oil		419	1.40E-01
3167	Tank Lube Oil	Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997	Lube oil		419	5.27E-02
3168	Tank Lube Oil	Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997	Lube oil		419	5.36E-02
3169	organic liquid storage tank, lube oil products	Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995	Lube oil		419	1.78E-01
3170	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3171	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3172	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	9.57E+00
3179	Tank 3179: Organic Liquid Storage Tank	Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997	Distillate oil		315	1.59E-01
3180	Tank	Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
3180	Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
3180	Tank	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
3180	Tank	Alkylate	T5472389	2.86E+04	thou gal/yr	12/31/2008	Alkylate		389	1.13E+02
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
3182	Tank 3182: Organic Liquid Storage Tank	Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997	Lube oil		419	2.61E-01
3185	Tank 3185 (previously T-982)	Fuel - jet 'A'	T5472158	2.10E+05	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	6.40E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3186	Gas Oil Tank	Organic liquid - other/not spe	T44??201	0.00E+00		4/21/1997	Organic liquid - other/not s		201	8.69E+00
3189	Gasoline component and Diesel Tank	Ethers	T55?2103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3189	Gasoline component and Diesel Tank	Fuel - jet 'A'	T55?2158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
3189	Gasoline component and Diesel Tank	Distillate oil	T55?2315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3189	Gasoline component and Diesel Tank	Hydrocarbon - mixtures, other/	T55?2318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
3189	Gasoline component and Diesel Tank	Gas oil	T55?2394	0.00E+00	thou gal/yr	12/31/2008	Gas oil		394	0.00E+00
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T55?2551	3.34E+05	thou gal/yr	12/31/2008	Benzene		41	1.97E-02
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T55?2551	3.34E+05	thou gal/yr	12/31/2008	Toluene		293	6.69E-02
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T55?2551	3.34E+05	thou gal/yr	12/31/2008	Xylene		307	7.88E-03
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T55?2551	3.34E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	4.59E-03
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T55?2551	3.34E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	6.46E+00
3189	Gasoline component and Diesel Tank	Gasoline - oxygenated, MTBE ad	T55?2680	0.00E+00	thou gal/yr	12/31/2008	Gasoline - oxygenated, MTBE		680	0.00E+00
3190	Storage Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3190	Storage Tank	Fuel - jet 'A'	T54?2158	2.44E+05	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	1.95E+00
3191	Storage Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3191	Storage Tank	Gasoline - leaded	T54?2128	2.69E+04	thou gal/yr	12/31/2008	Benzene		41	4.28E-02
3191	Storage Tank	Gasoline - leaded	T54?2128	2.69E+04	thou gal/yr	12/31/2008	Ethylene dichloride		107	7.28E-04
3191	Storage Tank	Gasoline - leaded	T54?2128	2.69E+04	thou gal/yr	12/31/2008	Gasoline - leaded		128	3.98E+00
3191	Storage Tank	Gasoline - leaded	T54?2128	2.69E+04	thou gal/yr	12/31/2008	Toluene		293	2.14E-01
3191	Storage Tank	Gasoline - leaded	T54?2128	2.69E+04	thou gal/yr	12/31/2008	Xylene		307	4.71E-02
3191	Storage Tank	Gasoline - leaded	T54?2128	2.69E+04	thou gal/yr	12/31/2008	Ethylene dibromide		420	2.87E-05
3191	Storage Tank	Naphtha	T54?2188	0.00E+00	thou gal/yr	12/31/2008	Naphtha		188	0.00E+00
3191	Storage Tank	Jet fuel JP4	T54?2395	0.00E+00	thou gal/yr	12/31/2008	Jet fuel JP4		395	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
3191	Storage Tank	Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2008	Methyl tertiary-butyl ether		628	0.00E+00
3192	Desalter Effluent Skim Tank	Crude oil	T3H??089	3.15E+04	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
3193	Gasoline component Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3193	Gasoline component Tank	Isooctane	T54?2154	3.81E+04	thou gal/yr	12/31/2008	Isooctane		154	2.40E+00
3193	Gasoline component Tank	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3193	Gasoline component Tank	Alkylate	T54?2389	0.00E+00	thou gal/yr	12/31/2008	Alkylate		389	0.00E+00
3193	Gasoline component Tank	Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2008	Gas oil		394	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
3194	Storage Tank T-3194	Hydrocarbon - mixtures, other/	T54?2318	0.00E+00	thou gal/yr	12/31/2003	Hydrocarbon - mixtures, othe		318	0.00E+00
3194	Storage Tank T-3194	Gas oil	T54?2394	1.44E+05	thou gal/yr	12/31/2003	Gas oil		394	9.85E-01
3195	T-3195 Waxy Heavy Neutral Storage Tank	Diesel fuel	T54?7098	1.29E+05	thou gal/yr	12/31/2006	Diesel oil		98	2.35E+00
3195	T-3195 Waxy Heavy Neutral Storage Tank	Distillate oil	T54?7315	0.00E+00	thou gal/yr	12/31/2006	Distillate oil		315	0.00E+00
3195	T-3195 Waxy Heavy Neutral Storage Tank	Lube oil	T54?7419	0.00E+00	thou gal/yr	12/31/2006	Lube oil		419	0.00E+00
3196	Gasoline Components Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3196	Gasoline Components Tank	Organic liquid - other/not spe	T54?2201	1.15E+05	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	1.31E+00
3196	Gasoline Components Tank	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3196	Gasoline Components Tank	Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2008	Gas oil		394	0.00E+00
3196	Gasoline Components Tank	Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
3196	Gasoline Components Tank	Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2008	Methyl tertiary-butyl ether		628	0.00E+00
3197	Gasoline component Tank	Ethers	T55?2103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3197	Gasoline component Tank	Naphtha	T55?2188	1.87E+04	thou gal/yr	12/31/2008	Naphtha		188	6.15E+00
3197	Gasoline component Tank	Distillate oil	T55?2315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3197	Gasoline component Tank	Gas oil	T55?2394	0.00E+00	thou gal/yr	12/31/2008	Gas oil		394	0.00E+00
3198	3198 tank; organic liquid storage tank	Fuel - jet 'A'	T543?158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
3198	3198 tank; organic liquid storage tank	Toluene	T543?293	3.20E+03	thou gal/yr	12/31/2008	Toluene		293	1.85E+01
3198	3198 tank; organic liquid storage tank	Distillate oil	T543?315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	2.75E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	6.02E-04
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	2.75E+03	thou barre/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.67E-01
3201	Tank 3201: Whole Alkylate	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3201	Tank 3201: Whole Alkylate	Alkylate	T54?2389	1.15E+05	thou gal/yr	12/31/2008	Alkylate		389	1.12E+02
3202	Tank 3202: Methanol	Methyl alcohol	T54?2179	0.00E+00	thou gal/yr	12/31/2008	Methyl alcohol		179	0.00E+00
3202	Tank 3202: Methanol	Naphtha	T54?2188	8.29E+03	thou gal/yr	12/31/2008	Naphtha		188	7.30E+01
3202	Tank 3202: Methanol	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3202	Tank 3202: Methanol	Petroleum products - other/not	T54?2321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
3204	Tank 3204: Organic Liquid Storage Tank	Lube oil	T42?7419	2.54E+00	thou gal/yr	12/31/1997	Lube oil		419	4.07E-04
3207	Butane Sphere: Organic Liquid Storage Tank	Butane	T34?7416	-9.20E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3208	Propane Sphere: Organic Liquid Storage Tank	Propane	T34?7417	-7.67E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3211	Sphere	Butane	T34?7416	-3.83E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3212	Sphere	Propane	T34?7417	-2.76E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T54?2098	0.00E+00	thou gal/yr	12/31/2008	Diesel oil		98	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T54?2158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T54?2419	0.00E+00	thou gal/yr	12/31/2008	Lube oil		419	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	3.56E+05	thou gal/yr	12/31/2008	Benzene		41	8.03E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	3.56E+05	thou gal/yr	12/31/2008	Toluene		293	2.73E+00
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	3.56E+05	thou gal/yr	12/31/2008	Xylene		307	3.21E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	3.56E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	1.87E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	3.56E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	2.64E+02
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008	Benzene		41	6.64E-01
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008	Ethylene dichloride		107	1.13E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008	Gasoline - leaded	128	6.17E+01	
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008	Toluene	293	3.32E+00	
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008	Xylene	307	7.31E-01	
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008	Ethylene dibromide	420	4.45E-04	
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2008	Benzene	41	0.00E+00	
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2008	Toluene	293	0.00E+00	
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2008	Xylene	307	0.00E+00	
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene	333	0.00E+00	
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded	551	0.00E+00	
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T5472315	-1.29E+05	thou gal/yr	12/31/1997	Distillate oil	315	1.15E+00	
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T4477315	8.40E+04	thou gal/yr	7/9/1997	Distillate oil	315	2.27E+01	
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Benzene	41	0.00E+00	
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride	107	0.00E+00	
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded	128	0.00E+00	
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Toluene	293	0.00E+00	
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Xylene	307	0.00E+00	
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide	420	0.00E+00	
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	1.54E+04	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe	318	1.42E+02	
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Benzene	41	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride	107	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded	128	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Toluene	293	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Xylene	307	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide	420	0.00E+00	
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	1.49E+04	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe	318	1.82E+02	
3225	Organic Liquid Storage Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture	503	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Benzene	41	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Toluene	293	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Xylene	307	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene	333	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded	551	0.00E+00	
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T4377419	-3.37E+02	thou gal/yr	12/31/1997	Lube oil	419	3.31E-03	
3910	LPG Tank; # 3910	LPG	T3477160	-3.97E+04	thou gal/yr	6/10/1998	LPG	160	0.00E+00	
3911	LPG Tank, # 3911	LPG	T3477160	-2.30E+04	thou gal/yr	6/10/1998	LPG	160	0.00E+00	
4032	#3 RHENIFORMER, F101	Process gas - other/not spec	C1540237	0.00E+00	thou cu ft/yr	12/31/2008		0	0.00E+00	
4032	#3 RHENIFORMER, F101	Bunker C fuel oil	C1540242	0.00E+00	thou cu ft/yr	12/31/2008		0	0.00E+00	
4032	#3 RHENIFORMER, F101	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0.00E+00	
4033	#3 RHENIFORMER, F102	Process gas - other/not spec	C1540237	0.00E+00	thou cu ft/yr	12/31/2008		0	0.00E+00	
4033	#3 RHENIFORMER, F102	Bunker C fuel oil	C1540242	0.00E+00	thou cu ft/yr	12/31/2008		0	0.00E+00	
4033	#3 RHENIFORMER, F102	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0.00E+00	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Benzene	41	8.32E-03	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s	92	5.27E-02	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Formaldehyde	124	2.22E-03	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Phenol	214	4.77E-03	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Acetaldehyde	335	5.42E-03	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	7.54E+00	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	1.77E-04	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Cadmium	1070	5.04E-05	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	1.01E-04	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Manganese	1160	3.43E-03	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	4.04E-04	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	2.52E-04	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	7.87E-03	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	4.86E-02	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)	1860	2.08E-02	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	1.39E-01	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	2.52E+01	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	5.80E-01	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	1.03E+02	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	8.52E+00	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	4.29E+01	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	3.51E+05	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	7.31E+00	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Benzene	41	5.68E-03	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s	92	3.60E-02	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Formaldehyde	124	1.52E-03	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Phenol	214	3.25E-03	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Acetaldehyde	335	3.70E-03	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	5.15E+00	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	1.21E-04	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Cadmium	1070	3.44E-05	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	6.89E-05	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Manganese	1160	2.34E-03	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	2.75E-04	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	1.72E-04	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	5.37E-03	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	3.31E-02	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)	1860	1.42E-02	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	9.47E-02	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	1.72E+01	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	3.96E-01	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	7.06E+01	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	5.81E+00	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	2.93E+01	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	2.39E+05	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	4.99E+00	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Benzene	41	2.53E-03	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s	92	1.60E-02	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Formaldehyde	124	6.74E-04	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.45E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.65E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.29E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	5.36E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.53E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.06E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.04E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.22E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	7.65E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.39E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.47E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	6.31E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	4.21E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	7.65E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.76E-01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.14E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.59E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.30E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.06E+05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.22E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.71E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.08E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	4.55E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Phenol		214	9.77E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.11E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.55E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	3.62E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.03E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	2.07E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Manganese		1160	7.03E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	8.27E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	5.17E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.61E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	9.95E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	4.26E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	2.84E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	5.17E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.19E-01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.12E+01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.75E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	8.78E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	7.18E+04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.50E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Benzene		41	4.71E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.98E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.26E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Phenol		214	2.70E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.07E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	4.27E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	9.99E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	2.85E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	5.71E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.94E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	2.28E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.43E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	4.45E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.75E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.18E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	7.85E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.43E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.28E-01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	5.85E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.82E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.43E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.98E+05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	4.14E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Benzene		41	2.74E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.74E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	7.31E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.57E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.79E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.48E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	5.81E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.66E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.32E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.13E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.33E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	8.31

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	2.53E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Manganese		1160	8.59E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.01E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	6.31E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.97E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.22E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	5.21E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	3.47E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	6.31E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.45E-01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.59E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.13E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.07E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	8.78E+04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.83E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Benzene		41	9.47E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	6.00E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.53E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Phenol		214	5.42E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	6.17E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	8.58E-01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	2.01E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	5.74E-06
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	1.15E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Manganese		1160	3.90E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	4.59E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	2.87E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	8.95E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	5.52E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	2.37E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.58E-02
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	2.87E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	6.60E-02
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.18E+01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	9.69E-01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.88E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.99E+04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	8.32E-01
4046	ASPHALT PLANT F1 H.O. HEATER	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Benzene		41	3.17E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.01E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	8.47E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.82E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	2.07E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.88E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	6.73E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.92E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.85E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.31E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.54E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	9.62E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	3.00E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.85E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	7.94E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	5.29E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	9.62E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.21E-01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.37E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.25E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.64E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.34E+05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.79E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Benzene		41	3.31E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.10E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	8.83E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.90E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	2.16E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	3.00E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	7.03E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	2.01E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	4.01E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.36E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.61E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.00E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	3.13E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.93E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	8.28E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	5.52E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.00E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.31E-01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas								

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.13E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	3.51E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.17E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	9.28E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	6.19E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.13E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.59E-01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	5.74E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.80E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.91E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.56E+05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	3.26E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Benzene		41	5.26E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	3.33E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.40E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Phenol		214	3.01E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.43E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	4.76E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	1.12E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	3.19E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	6.37E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Manganese		1160	2.17E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	2.55E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.59E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	4.97E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	3.07E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.31E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	8.76E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.59E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.67E-01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	8.13E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	5.38E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.71E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.22E+05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	4.62E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Benzene		41	2.94E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.86E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	7.83E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.68E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.91E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.66E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	6.23E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.78E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.56E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.21E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.42E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	8.90E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.78E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.71E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	7.34E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	4.89E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	8.90E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.05E-01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.44E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.00E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.51E+01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.24E+05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.58E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Benzene		41	6.51E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	4.12E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.74E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Phenol		214	3.73E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Acetaldehyde		335	4.24E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	5.90E-01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	1.38E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Cadmium		1070	3.95E-06
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	7.89E-06
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Manganese		1160	2.68E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	3.16E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.97E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	6.16E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	3.80E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.63E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.09E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.97E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.54E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.89E+01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	6.66E-01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.35E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr					

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	3.34E-01
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	6.08E+01
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.40E+00
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.70E+02
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.64E+02
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.03E+02
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	8.45E+05
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.76E+01
4071 #4 CRUDE UNIT	F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2008			0	0.00E+00
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Benzene		41	1.85E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.17E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Formaldehyde		124	4.92E-03
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Phenol		214	1.06E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.20E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.67E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	3.91E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Cadmium		1070	1.12E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	2.24E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Manganese		1160	7.61E-03
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	8.95E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	5.59E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.74E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.08E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	4.61E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	3.08E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	5.59E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.29E+00
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.57E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.51E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	9.51E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	7.77E+05
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.62E+01
4072 #4 CRUDE UNIT	F1160	Naphtha	C1520188	0.00E+00	/yr	12/31/2008			0	0.00E+00
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Benzene		41	5.89E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	3.73E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.57E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Phenol		214	3.37E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.84E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	5.34E+00
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	1.25E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	3.57E-05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	7.14E-05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Manganese		1160	2.43E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	2.86E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.79E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	5.57E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	3.44E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.47E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	9.82E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.79E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.11E-01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	5.00E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.82E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.04E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.48E+05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	5.18E+00
4073 LSFO COOLING TOWER		Fresh water	G5005415	7.62E+04	thou gallo/yr	12/31/2008	Organics (part not spec else		990	1.25E+00
4076 3 CAT COOLING TOWER E460		Fresh water	G5005415	1.02E+05	thou gallo/yr	12/31/2008	Organics (part not spec else		990	1.68E+00
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Benzene		41	2.69E-06
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Organics (part not spec else		990	2.44E-03
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Particulates (portion of tot		1990	1.27E-03
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	9.75E-05
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	5.91E-02
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.40E-04
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.48E-02
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.17E+01
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Methane (CH4)		6970	8.02E-04
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Benzene		41	6.04E-03
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	3.82E-02
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.79E-02
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.10E-03
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Toluene		293	2.18E-01
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	5.27E-02
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	5.19E+00
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	7.32E-05
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	3.66E-04
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	5.49E-04
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	3.11E-03
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.92E-02
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.51E-02
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.01E-01
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.83E+01
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.21E-01
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	6.40E+01
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	6.18E+00
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.11E+01
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.54E+05
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	5.31E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Benzene		41	3.74E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.11E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Phenol		214	6.80E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Toluene		293	1.35E-01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.26E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	3.22E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	4.53E-05
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	2.27E-04
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	3.40E-04
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.93E-03
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.19E-02
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.13E+01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.61E-01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.97E+01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.83E+00
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.93E+01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.58E+05
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	3.29E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Benzene		41	6.49E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	4.11E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.93E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.18E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Toluene		293	2.34E-01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	5.66E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	5.58E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	7.87E-05
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	3.93E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	5.90E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	3.34E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.06E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.62E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.08E-01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.96E+01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.52E-01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	6.88E+01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	6.64E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.34E+01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.73E+05
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	5.70E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Benzene		41	4.23E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.68E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.26E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Phenol		214	7.69E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Toluene		293	1.53E-01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.69E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	3.64E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	5.13E-05
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	2.56E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	3.85E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.18E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.35E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.06E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	7.05E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.28E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.95E-01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.49E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.33E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.18E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.78E+05
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	3.72E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Benzene		41	7.76E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	4.91E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.30E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.41E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Toluene		293	2.80E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	6.77E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	6.67E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	9.40E-05
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	4.70E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	7.05E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	4.00E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.47E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.94E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.29E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	2.35E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	5.41E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	8.23E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	7.94E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.00E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.27E+05
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	6.82E+00
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	3.83E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	5.25E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Benzene		41	8.16E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	5.17E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas								

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	4.20E+00
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	3.44E+04
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	7.17E-01
4153	F-110 ASPHALT SOLUTION HEATER	SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0.00E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Benzene	41	8.37E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Cycloparraffins - other/not s	92	5.30E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Formaldehyde	124	2.23E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Phenol	214	4.79E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Acetaldehyde	335	5.45E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	7.58E-01
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	1.77E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Cadmium	1070	5.07E-06
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	1.01E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Manganese	1160	3.45E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	4.06E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	2.54E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	7.91E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	4.88E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)	1860	2.09E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	1.39E-02
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	2.54E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	5.83E-02
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	1.04E+01
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	8.56E-01
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	4.31E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	3.52E+04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	7.35E-01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Benzene	41	1.09E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Cycloparraffins - other/not s	92	6.88E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Formaldehyde	124	2.90E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Phenol	214	6.22E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Acetaldehyde	335	7.07E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	9.84E+00
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	2.30E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Cadmium	1070	6.58E-05
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	1.32E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Manganese	1160	4.48E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	5.26E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	3.29E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	1.03E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	6.33E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)	1860	2.71E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	1.81E-01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	3.29E+01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	7.57E-01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	1.51E+02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	1.11E+01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	1.37E+02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	4.57E+05
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	9.54E+00
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT	ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT		Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2008		0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT		Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008		0	0.00E+00
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Benzene	41	2.78E-03
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Cycloparraffins - other/not s	92	1.76E-02
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Formaldehyde	124	7.40E-04
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Phenol	214	1.59E-03
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Acetaldehyde	335	1.81E-03
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	2.51E+00
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	5.89E-05
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Cadmium	1070	1.68E-05
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	3.36E-05
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Manganese	1160	1.14E-03
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	1.35E-04
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	8.41E-05
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	2.62E-03
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	1.62E-02
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)	1860	6.94E-03
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	4.63E-02
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	8.41E+00
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	1.93E-01
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	3.45E+01
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	7.10E+00
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	1.43E+01
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	1.17E+05
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	2.44E+00
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Benzene	41	2.46E-03
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Cycloparraffins - other/not s	92	1.56E-02
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72					

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4159	F410 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.08E+01
4159	F410 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.51E+00
4159	F410 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.27E+01
4159	F410 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.03E+05
4159	F410 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.16E+00
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Benzene		41	2.63E-03
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.67E-02
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	7.01E-04
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.51E-03
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.71E-03
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.38E+00
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	5.58E-05
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.59E-05
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.19E-05
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.08E-03
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.28E-04
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	7.97E-05
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.49E-03
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.53E-02
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	6.58E-03
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	4.38E-02
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	7.97E+00
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.83E-01
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.23E+01
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.69E+00
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.35E+01
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.11E+05
4160	F420 TKN FEED FURNACE TKN ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.31E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Benzene		41	2.66E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.68E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	7.08E-04
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.52E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.73E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.41E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	5.63E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.61E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.22E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.09E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.29E-04
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	8.05E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.51E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.55E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	6.64E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	4.43E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	8.05E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.85E-01
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.22E+02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.19E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.37E+01
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.12E+05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.33E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Benzene		41	3.06E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.94E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	8.15E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.75E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.99E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.77E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	6.48E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.85E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.71E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.26E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.48E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	9.26E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.89E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.78E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	7.64E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	5.09E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	9.26E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.13E-01
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.40E+02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.83E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.57E+01
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.29E+05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.69E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.75E-02
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	7.35E-04
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.58E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Toluene		293	0.00E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.80E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.36E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	5.85E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.67E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.34E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.14E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.34E-04
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	8.36E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.61E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.61E-02
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	6.89E-03

Printed: AUG 1, 2013

Name	Material	Source Cod	ThruPut Units	Date	Pollutant	Code	lb/day	
4163 F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05 thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	1.16E+05	
4163 F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	3.05E+05 thou cu ft/yr	12/31/2008	Methane (CH4)	6970	2.42E+00	
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Benzene	41	1.83E-03
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Cyclop araffins - other/not s	92	1.16E-02
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Formaldehyde	124	4.88E-04
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Phenol	214	1.05E-03
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Acetaldehyde	335	1.19E-03
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Organics (part not spec else	990	1.66E+00
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Arsenic (all)	1030	3.89E-05
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Cadmium	1070	1.11E-05
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	2.22E-05
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Manganese	1160	7.55E-04
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Nickel pollutant	1180	8.88E-05
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	5.55E-05
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Zinc pollutant	1320	1.73E-03
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	1.07E-03
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)	1860	4.58E-03
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	3.05E-02
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	5.55E+00
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	1.28E-01
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	1.94E+01
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	1.87E+00
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	9.44E+00
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	7.72E+04
4164 F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	2.03E+05 thou cu ft/yr	12/31/2008	Methane (CH4)	6970	1.61E+00
4165 F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	1.33E+05 thou cu ft/yr	12/31/2008	Benzene	41	1.20E-03
4165 F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	1.33E+05 thou cu ft/yr	12/31/2008	Cyclop araffins - other/not s	92	7.61E-03
4165 F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	1.33E+05 thou cu ft/yr	12/31/2008	Formaldehyde	124	3.20E-04
4165 F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	1.33E+05 thou cu ft/yr	12/31/2008	Phenol	214	6.88E-04
4165 F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	1.33E+05 thou cu ft/yr	12/31/2008	Acetaldehyde	335	7.83E-04
4165 F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	1.33E+05 thou cu ft/yr	12/31/2008	Organics (part not spec else	990	1.09E+00
4165 F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	1.33E+0				

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions----->		Code	lb/day
							Pollutant			
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	2.32E-01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	4.22E+01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	9.71E-01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.18E+02
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.43E+01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	7.18E+01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.87E+05
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.22E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Benzene		41	1.10E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	6.98E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.94E-03
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Phenol		214	6.31E-03
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Acetaldehyde		335	7.18E-03
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	9.99E+00
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	2.34E-04
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Cadmium		1070	6.68E-05
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	1.34E-04
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Manganese		1160	4.54E-03
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	5.34E-04
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	3.34E-04
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.04E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	6.43E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	2.76E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.84E-01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	3.34E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	7.68E-01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	9.93E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.13E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	5.68E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.64E+05
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	9.69E+00
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Benzene		41	3.86E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.45E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.58E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Phenol		214	1.05E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Toluene		293	8.24E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Acetaldehyde		335	2.58E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	3.42E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	5.39E-03
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Manganese		1160	3.28E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.17E-03
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	2.34E-04
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	8.08E-03
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.55E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	9.66E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	6.44E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.17E+02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.15E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.06E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.95E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.99E+02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.63E+06
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	3.40E+01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Benzene		41	4.00E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.53E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.67E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Phenol		214	1.09E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Toluene		293	8.53E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Acetaldehyde		335	2.67E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	3.54E+01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	5.57E-03
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Manganese		1160	3.39E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.21E-03
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	2.42E-04
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	8.36E-03
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.64E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.00E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	6.67E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.21E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.79E+00
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.39E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.02E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.06E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.68E+06
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	3.51E+01
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	1.07E+00						

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.57E-02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	2.86E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	6.58E-02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	8.30E+01
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.49E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.87E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.98E+04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	8.30E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Benzene		41	5.23E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	3.31E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.39E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Phenol		214	2.99E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.41E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	4.74E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	1.11E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Cadmium		1070	3.17E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	6.34E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	9.98E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Manganese		1160	2.15E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.58E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	4.94E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	3.05E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.31E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	8.71E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.58E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.64E-02
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.59E+01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	8.25E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.69E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.20E+04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	4.59E-01
4191	Alkane Cooling Water Tower	Fresh water	G5005415	7.29E+04	thou gallo/yr	12/31/2008	Organics (part not spec else		990	1.20E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Benzene		41	1.09E-03
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Organics (part not spec else		990	9.90E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	5.13E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.95E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.39E+01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.62E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	5.98E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.09E+04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Methane (CH4)		6970	3.25E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Benzene		41	1.30E-03
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Organics (part not spec else		990	1.18E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	6.12E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.71E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.86E+01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.16E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	7.14E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.50E+04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Methane (CH4)		6970	3.88E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Benzene		41	1.42E-03
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Organics (part not spec else		990	1.29E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	6.69E-01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	5.15E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.12E+01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	6.02E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	7.80E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.73E+04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Methane (CH4)		6970	4.24E-01
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	3.37E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	9.23E+00
4227	SRU #1 TRAIN	Sulfur	G7055267	4.59E+04	tons/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	8.75E+01
4228	SRU #2 TRAIN	Sulfur	G7055267	4.68E+04	tons/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.25E+02
4229	SRU #3 TRAIN	Sulfur	G7055267	6.42E+04	tons/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.36E+02
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997	Particulates (portion of tot		1990	6.78E-03
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	2.25E+01	thou barre/yr	12/31/2008	Organics (part not spec else		990	6.18E-02
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	1.80E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	4.94E+01
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	9.55E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	7.85E+00
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	8.80E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	2.41E+02
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	8.36E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	3.43E+01
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	3.44E+04	thou gal/yr	12/31/2008	LPG		160	1.51E+01
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, other		318	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	5.99E+04	million cu/yr	12/31/2008	Ethyl alcohol		105	2.26E-01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	5.99E+04	million cu/yr	12/31/2008	Methyl alcohol		179	8.12E+00
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	5.99E+04	million cu/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	9.02E+01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	5.99E+04	million cu/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.76E+06
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	1.38E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	1.38E+04	thou barre/yr	12/31/2008	Particulates (portion of tot		1990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	1.38E+04	thou barre/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	1.38E+04	thou barre/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	1.38E+04	thou barre/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	0.00E+00	thou gallo/yr	12/31/2008			0	0.00E+00
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	1.74E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	4.77E-03
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	1.50E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	4.10E-03
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	2.30E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	6.31E-04
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	8.96E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	2.45E-03
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Organics (part not spec else		990	1.57E+02
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Particulates (portion of tot		1990	1.45E+01
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.20E+01
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	6.34E+02
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	9.65E+02
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.80E+02
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.48E+06
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Methane (CH4)		6970	1.60E+02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Benzene		41	2.06E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Arsenic (all)		1030	9.58E-04
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Chromium		1090	1.03E-03
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Manganese		1160	1.99E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Nickel pollutant		1180	1.11E-03
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Zinc pollutant		1320	1.77E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	PAH's (non-specified)		1840	2.98E-04
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Particulates (portion of tot		1990	5.01E+02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Ammonia (NH3) pollutant		6990	4.64E+00
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	1.64E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	4.49E-01
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	1.64E+04	thou barre/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.25E+02
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	8.51E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	1.17E+01
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	2.43E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	9.97E+00
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
4329	RLOP Cooling Tower	Fresh water	G5005415	1.30E+05	thou gallo/yr	12/31/2008	Organics (part not spec else		990	2.50E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Benzene		41	4.47E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.83E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.06E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Phenol		214	1.08E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Toluene		293	8.06E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.89E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	3.82E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	2.71E-06
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	1.35E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Manganese		1160	1.22E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.35E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	2.71E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.76E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	9.64E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.12E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	7.45E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.35E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	9.35E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.18E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.57E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.30E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.88E+04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	3.93E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Benzene		41	7.71E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	4.88E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.82E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Phenol		214	1.87E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Toluene		293	1.39E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Acetaldehyde		335	6.70E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	6.59E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	4.67E-06
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	2.34E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Manganese		1160	2.10E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	2.34E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	4.67E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	3.04E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.66E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.93E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions----->		Code	lb/day
							Pollutant			
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.28E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	2.34E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.61E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.03E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	7.89E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.97E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.25E+04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	6.77E-01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Benzene		41	2.29E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.45E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	5.40E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Phenol		214	5.54E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Toluene		293	4.12E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.99E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.95E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	1.39E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	6.93E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Manganese		1160	6.23E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	6.93E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.39E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	9.00E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	4.93E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	5.71E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	3.81E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	6.93E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.78E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	6.03E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.34E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.18E+01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	9.63E+04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.01E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.10E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.49E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	4.35E-03
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	2.90E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.64E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.59E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.78E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	8.97E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	7.33E+04
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.53E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.39E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	8.81E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	3.29E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Phenol		214	3.37E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Toluene		293	2.51E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.21E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.19E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	8.44E-06
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	4.22E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Manganese		1160	3.80E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	4.22E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	8.44E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	5.48E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	3.00E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	3.48E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	2.32E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	4.22E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.91E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.67E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.42E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	7.17E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.86E+04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.22E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.01E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	6.43E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.40E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Phenol		214	2.46E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Toluene		293	1.83E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	8.83E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	8.67E-01
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	6.15E-06
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	3.08E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Manganese		1160	2.77E-04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	3.08E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	6.15E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	4.00E-04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.19E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Manganese		1160	3.41E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	3.78E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	5.75E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	4.92E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	2.69E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	3.12E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	2.08E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	3.78E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.61E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.29E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.28E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	6.43E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.26E+04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.10E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.12E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Cycloparraffins - other/not s		92	7.09E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.64E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Phenol		214	2.71E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Toluene		293	2.02E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	9.74E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	9.57E-01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	6.79E-06
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	3.39E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Manganese		1160	3.05E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	3.39E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	6.79E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	4.41E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	2.42E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	2.80E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.87E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	3.39E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.34E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.95E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.15E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	5.77E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.72E+04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	9.84E-01
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.60E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Cycloparraffins - other/not s		92	1.01E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	3.78E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Phenol		214	3.88E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Toluene		293	2.88E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.39E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.37E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	9.70E-06
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	4.85E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Manganese		1160	4.36E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	4.85E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	9.70E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	6.30E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	3.45E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	4.00E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	2.67E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	4.85E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.35E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.22E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.64E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	8.24E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	6.74E+04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.41E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Benzene		41	6.66E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Cycloparraffins - other/not s		92	4.22E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.57E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Phenol		214	1.61E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Toluene		293	1.20E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Acetaldehyde		335	5.79E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	5.69E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	4.04E-06
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	2.02E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Manganese		1160	1.82E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	2.02E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	4.04E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.62E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	1.44E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.67E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.11E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	2.02E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.39E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.76E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	6.82E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.43E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.81E+04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	5.85E-01
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	7.30E+05	tons/yr	12/31/2008	Organics (part not spec else		990	7.32E-01
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	7.30E+05	tons/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.06E+01
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	4.82E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	6.60E-01
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	4.82E+03	thou barre/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.66E+01
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	1.19E+06	tons/yr	12/31/2008	Organics (part not spec else		990	1.19E+00
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	1.19E+06	tons/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	6.62E+01
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	2.99E+05	tons/yr	12/31/2008	Organics (part not spec else		990	2.99E-01
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	2.99E+05	tons/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.66E+01
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	4.95E+05	tons/yr	12/31/2008	Organics (part not spec else		990	2.51E+00
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	4.95E+05	tons/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.39E+02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.87E-03
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.70E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	8.51E-01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	6.52E-02
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.97E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.39E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	9.92E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.94E+04
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	8.22E-01
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Benzene		41	9.99E-04
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Formaldehyde		124	4.79E-02
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Organics (part not spec else		989	8.59E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.74E-03
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Particulates (portion of tot		1990	6.45E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.87E-02
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.02E+01
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.30E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.06E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.79E+04
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Methane (CH4)		6970	7.17E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Ammonia (NH3) pollutant		6990	9.59E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Benzene		41	1.73E-03
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Formaldehyde		124	8.58E-01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Organics (part not spec else		989	1.57E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	PAH's (non-specified)		1840	3.11E-02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Particulates (portion of tot		1990	1.19E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.45E-01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.52E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.57E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.72E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	7.69E+05
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Methane (CH4)		6970	7.66E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Ammonia (NH3) pollutant		6990	1.72E+02
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Benzene		41	1.05E-02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	9.49E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	9.51E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	7.29E-02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.95E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.07E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.22E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.41E+05
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	4.60E+00
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Benzene		41	1.00E-03
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Formaldehyde		124	4.79E-02
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Organics (part not spec else		989	8.59E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.74E-03
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Particulates (portion of tot		1990	6.46E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.87E-02
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.02E+01
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.30E-02
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.07E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.80E+04
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Methane (CH4)		6970	7.17E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Ammonia (NH3) pollutant		6990	9.60E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Benzene		41	1.67E-03
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Formaldehyde		124	8.32E-01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Organics (part not spec else		989	1.52E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	PAH's (non-specified)		1840	3.02E-02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Particulates (portion of tot		1990	1.16E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.41E-01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.52E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.46E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.60E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	7.46E+05
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Methane (CH4)		6970	7.43E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Ammonia (NH3) pollutant		6990	1.67E+02
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Benzene		41	9.85E-03
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	8.94E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	8.96E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	6.87E-02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.95E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	5.04E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.09E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.15E+05
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	4.33E+00
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2008			0	0.00E+00
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2008			0	0.00E+00
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T3377210	5.02E+00	thou gal/yr	12/31/2008	Perchloroethylene		210	0.00E+00
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T4177210	0.00E+00			Perchloroethylene		210	1.61E-03
4361	Perc Surge Control Vessel V-591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4362	Perc Surge Control Vessel V-3591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4363	Perc Storage Tank V-3592	Perchloroethylene	T4277210	5.38E+00	thou gal/yr	12/31/2008	Perchloroethylene		210	1.75E-03
4364	Perc Storage Tank V-4091	Perchloroethylene	T4277210	3.27E+01	thou gal/yr	12/31/2008	Perchloroethylene		210	2.08E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	0.00E+00	thou barre/yr	12/31/2008			0	0.00E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	1.31E+04	thou barre/yr	12/31/2008	Benzene		41	6.09E-01
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	1.31E+04	thou barre/yr	12/31/2008	Toluene		293	1.65E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	1.31E+04	thou barre/yr	12/31/2008	Xylene		307	3.62E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	1.31E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	2.15E+01
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	7.91E+04	thou barre/yr	12/31/2008	Benzene		41	3.69E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	7.91E+04	thou barre/yr	12/31/2008	Toluene		293	9.97E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	7.91E+04	thou barre/yr	12/31/2008	Xylene		307	2.19E+01
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	7.91E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	1.30E+02
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	1.57E+05	tons/yr	12/31/2008	Particulates (portion of tot		1990	6.45E-04
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE8?1052	3.47E+03	thou gal/yr	12/31/1996	Paraffins - C3+		52	2.76E+00
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE8?1052	1.33E+04	thou gal/yr	12/31/1996	Paraffins - C3+		52	5.34E+00
4405	Heavy Oil Transloading Operations	Waste oil	TE6?2549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	0.00E+00	gal/yr	12/31/2006	Glycols		131	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	6.00E+00	gal/yr	5/14/2007	Organic liquid - other/not s		201	1.49E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	6.00E+00	gal/yr	5/14/2007	Stoddard solvent		401	1.49E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007	Organic liquid - other/not s		201	2.51E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007	Ethylbenzene		333	2.44E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007	Propylene glycol monomethyl		579	2.44E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	5.00E+00	gal/yr	5/14/2007	Butyl acetate		48	5.98E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	5.00E+00	gal/yr	5/14/2007	2-heptanone		729	5.98E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2006	Glycols		131	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2006	Aromatic hydrocarbons - othe		27	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2006	Glycols		131	0.00E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	2.44E+04	thou barre/yr	12/31/2008	Benzene		41	1.26E+01
4413	#2a Separator	Waste water - refin, other/not	G5017300	2.44E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	5.49E+02
4414	#1a Separator	Waste water - refin, other/not	G5017300	1.62E+04	thou barre/yr	12/31/2008	Benzene		41	2.44E+00
4414	#1a Separator	Waste water - refin, other/not	G5017300	1.62E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	1.06E+02
4415	Asphalt Tank Truck Loading Racks	Asphalt	T98?1030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2006	Unknown Pollutant		76	0.00E+00
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2006	Hydrocarbon - mixtures, othe		318	0.00E+00
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E-01	tons/yr	12/31/2000	Particulates (portion of tot		1990	4.75E-03
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Organics (part not spec else		990	0.00E+00
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Particulates (portion of tot		1990	0.00E+00
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006	Butyl acetate		48	4.82E-03
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006	Naphtha		188	1.61E-03
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	2.57E-02
4424	Equipment Painting Area	Mineral spirits	SG700184	4.00E+00	gal/yr	12/31/2006	Mineral spirits		184	7.35E-02
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998	Sulfuric Acid mist pollutant		1530	0.00E+00
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2006	Amide		20	0.00E+00
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4433	#3H2S Plant	Waste gases	G5998338	3.00E+02	million cu/yr	12/31/2008	Organics (part not spec else		990	8.22E-02
4434	#4H2S Plant	Waste gases	G5998338	1.47E+03	million cu/yr	12/31/2008	Organics (part not spec else		990	4.02E-01
4435	#5H2S Plant	Waste gases	G5998338	1.94E+03	million cu/yr	12/31/2008	Organics (part not spec else		990	5.32E-01
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T42??201	3.28E+00	thou gal/yr	12/31/2007	Organic liquid - other/not s		201	1.07E-01
5101	Tank-Marketing T-101	Lube oil	T44??7419	1.85E+04	thou gal/yr	3/31/1997	Lube oil		419	6.22E+01
5103	Tank-Marketing T-103	Lube oil	T44??7419	1.28E+04	thou gal/yr	3/31/1997	Lube oil		419	4.88E+01
5105	Tank-Marketing T-105	Lube oil	T44??7419	1.12E+04	thou gal/yr	3/31/1997	Lube oil		419	4.50E+01
5107	Tank-Marketing T-107	Lube oil	T44??7419	3.26E+02	thou gal/yr	3/31/1997	Lube oil		419	3.99E+00
5108	Tank-Marketing T-108	Lube oil	T44??7419	2.51E+02	thou gal/yr	3/31/1997	Lube oil		419	3.81E+00
5109	Tank-Marketing T-109	Lube oil	T44??7419	4.98E+02	thou gal/yr	3/31/1997	Lube oil		419	4.39E+00
5110	Tank-Marketing T-110	Lube oil	T44??7419	1.33E+03	thou gal/yr	3/31/1997	Lube oil		419	6.34E+00
5112	Tank-Marketing T-112	Lube oil	T43??7419	5.80E+01	thou gal/yr	3/31/1997	Lube oil		419	9.01E-01
5113	Tank-Marketing T-113	Lube oil	T43??7419	5.00E+00	thou gal/yr	3/31/1997	Lube oil		419	7.77E-01
5115	Tank-Marketing T-115	Lube oil	T43??7419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	8.99E-01
5117	Tank-Marketing T-117	Lube oil	T44??7419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5118	Tank-Marketing T-118	Lube oil	T44??7419	4.60E+01	thou gal/yr	3/31/1997	Lube oil		419	1.51E+00
5119	Tank-Marketing T-119	Lube oil	T44??7419	6.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.55E+00
5121	Tank-Marketing T-121	Lube oil	T44??7419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	2.03E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5122	Tank-Marketing T-122	Lube oil	T44??419	6.70E+01	thou gal/yr	3/31/1997	Lube oil		419	1.73E+00
5123	Tank-Marketing T-123	Lube oil	T44??419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5125	Tank-Marketing T-125	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	8.26E-01
5126	Tank-Marketing T-126	Lube oil	T43??419	1.04E+02	thou gal/yr	3/31/1997	Lube oil		419	1.01E+00
5127	Tank-Marketing T-127	Lube oil	T43??419	1.92E+02	thou gal/yr	3/31/1997	Lube oil		419	1.22E+00
5128	Tank-Marketing T-128	Lube oil	T43??419	6.40E+01	thou gal/yr	3/31/1997	Lube oil		419	9.15E-01
5129	Tank-Marketing T-129	Lube oil	T43??419	3.20E+01	thou gal/yr	3/31/1997	Lube oil		419	4.33E-01
5130	Tank-Marketing T-130	Lube oil	T43??419	8.00E+01	thou gal/yr	3/31/1997	Lube oil		419	5.46E-01
5131	Tank-Marketing T-131	Lube oil	T43??419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5132	Tank-Marketing T-132	Lube oil	T43??419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5133	Tank-Marketing T-133	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5134	Tank-Marketing T-134	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5135	Tank-Marketing T-135	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5136	Tank-Marketing T-136	Lube oil	T43??419	1.36E+02	thou gal/yr	3/31/1997	Lube oil		419	6.77E-01
5137	Tank-Marketing T-137	Lube oil	T43??419	1.20E+02	thou gal/yr	3/31/1997	Lube oil		419	6.40E-01
5138	Tank-Marketing T-138	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5139	Tank-Marketing T-139	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	4.19E-01
5140	Tank-Marketing T-140	Lube oil	T43??419	1.30E+01	thou gal/yr	3/31/1997	Lube oil		419	6.16E-04
5201	Tank-Marketing T-201	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5202	Tank-Marketing T-202	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5203	Tank-Marketing T-203	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5204	Tank-Marketing T-204	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997	Lube oil		419	6.61E+00
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997	Lube oil		419	8.74E+00
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	5.05E+00
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997	Lube oil		419	3.54E+00
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.32E+00
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997	Lube oil		419	2.35E+00
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997	Lube oil		419	4.23E+00
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997	Lube oil		419	1.98E+00
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997	Lube oil		419	1.64E+00
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997	Lube oil		419	2.17E+00
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997	Lube oil		419	2.37E+00
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997	Lube oil		419	4.43E+00
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997	Lube oil		419	1.38E+00
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997	Lube oil		419	1.17E+00
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997	Lube oil		419	1.31E+00
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997	Lube oil		419	9.20E-01
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	3.58E+00
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997	Lube oil		419	8.90E-01
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997	Lube oil		419	1.80E+00
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997	Lube oil		419	5.50E-01
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	3.95E-01
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.94E-01
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	7.66E-01
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997	Lube oil		419	5.69E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Benzene		41	2.44E-04
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Organics (part not spec else		990	3.32E+01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	3.83E-01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	8.84E-03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.60E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.17E-02
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.97E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.69E+03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Methane (CH4)		6970	3.32E+01
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Benzene		41	2.60E-04
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Organics (part not spec else		990	3.53E+01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	4.07E-01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	9.41E-03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.77E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.32E-02
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	5.29E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.99E+03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Methane (CH4)		6970	3.53E+01
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Benzene		41	1.29E-04
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Organics (part not spec else		990	1.75E+01
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Particulates (portion of tot		1990	2.03E-01
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.68E-03
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.38E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.15E-02
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.63E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.48E+03
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Methane (CH4)		6970	1.75E+01
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Benzene		41	2.38E-04
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Organics (part not spec else		990	3.23E+01
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	3.73E-01
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	8.62E-03
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.54E+00
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.12E-02
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.85E+00
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.57E+03
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Methane (CH4)		6970	3.23E+01
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Benzene		41	1.23E-04
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Organics (part not spec else		990	1.68E+01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Particulates (portion of tot		1990	1.93E-01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.47E-03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.32E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.10E-02
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.51E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.37E+03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Methane (CH4)		6970	1.68E+01
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Benzene		41	2.53E-04
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Organics (part not spec else		990	3.43E+01
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	3.96E-01
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	9.15E-03
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.69E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.25E-02
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	5.15E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.85E+03
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Methane (CH4)		6970	3.43E+01
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-04
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998			0	0.00E+00
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-04
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-04

Printed: AUG 1, 2013

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day	
							Pollutant				
6050	MTBE Plant	Olefinic hydrocarbons	G5997	1935	0.00E+00	tons/yr	12/31/2008			0	0.00E+00
6051	Alky Cooling Tower	Fresh water	G5005	5415	2.26E+05	thou gallo/yr	12/31/2008	Organics (part not spec else		990	4.33E-01
6051	Alky Cooling Tower	Fresh water	G5005	5415	2.26E+05	thou gallo/yr	12/31/2008	Particulates (portion of tot		1990	1.86E-01
6061	Alkane Treatment Plant	Refinery feedstock - other/not	G5023	2329	0.00E+00	thou barre/yr	12/31/2008			0	0.00E+00
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T427	7502	0.00E+00	thou gal/yr	12/31/2008	Water/organics mixture		502	0.00E+00
6125	Tank 6125	Organic liquid - other/not spe	T427	7201	0.00E+00	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	0.00E+00
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6200	Portable Polyethylene Storage Container	Oil/water mixture	T437	7503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6200	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6201	Portable Polyethylene Storage Container	Oil/water mixture	T437	7503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6201	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6202	Portable Polyethylene Storage Container	Oil/water mixture	T437	7503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6202	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6203	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6204	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6205	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6206	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6207	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6208	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6209	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6209	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6209	Portable Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6209	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6210	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6210	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6210	Portable Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6210	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6212	Portable Polyethylene Storge Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6212	Portable Polyethylene Storge Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6212	Portable Polyethylene Storge Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6212	Portable Polyethylene Storge Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6213	Portable Polyethylene Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6213	Portable Polyethylene Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6213	Portable Polyethylene Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6213	Portable Polyethylene Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6214	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6214	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6214	Portable Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6214	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6215	Portabel Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6215	Portabel Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6215	Portabel Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6215	Portabel Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6216	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6216	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6216	Portable Polyethylene Storage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6216	Portable Polyethylene Storage Container	Waste oil	T437	7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6217	Portable Polyethylene Sotrage Container	Refinery feedstock - other/not	T437	7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6217	Portable Polyethylene Sotrage Container	Hydrocarbon - mixtures, other/	T437	7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6217	Portable Polyethylene Sotrage Container	Petroleum products - other/not	T437	7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00

Printed: AUG 1, 2013

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6217	Portable Polyethylene Sotrage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6218	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6218	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6218	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6218	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6219	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6219	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6219	Portable Polyethylene Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6219	Portable Polyethylene Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6220	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
6220	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6220	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	3.04E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.75E-02
6220	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6220	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6221	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
6221	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	2.66E+01	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	5.64E-03
6221	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	2.66E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.07E-02
6221	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6221	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6222	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
6222	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6222	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	2.39E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.25E-02
6222	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6222	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6223	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6223	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6223	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6223	Portable Steel Storage Container	Oil/water mixture	T437?503	6.30E-01	thou gal/yr	12/31/2008	Oil/water mixture		503	1.70E-03
6223	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6224	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
6224	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6224	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	1.03E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	2.50E-04
6224	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6224	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6224	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6225	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6225	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	9.45E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	5.26E-02
6225	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6225	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6225	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6226	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6226	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	8.44E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	5.16E-02
6226	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6226	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6226	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6227	Portable Steel Storage	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6227	Portable Steel Storage	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6227	Portable Steel Storage	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6227	Portable Steel Storage	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6227	Portable Steel Storage	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6228	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	1.49E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	6.73E-03
6228	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6228	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6228	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	2.39E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	5.00E-03
6229	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6229	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6229	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6230	Portable Steel Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6230	Portable Steel Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6230	Portable Steel Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6230	Portable Steel Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	1.20E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.33E-03
6231	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6231	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6231	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6232	Portable Steel Storage Container	Petroleum products - other/not	T437?321	8.44E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	2.46E-04
6232	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6232	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6233	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	1.76E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.44E-03
6233	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6233	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6233	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6234	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6234	Portable Steel Storage Container	Oil/water mixture	T437?503	8.40E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	2.75E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6234	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6235	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6235	Portable Steel Storage Container	Oil/water mixture	T43??7503	1.26E+01	thou gal/yr	12/31/2008	Oil/water mixture		503	2.89E-04
6235	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	2.52E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.16E-03
6236	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6236	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6236	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	1.02E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.30E-03
6237	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6237	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6237	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	1.85E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	8.62E-04
6238	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6238	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6238	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6239	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6239	Portable Steel Storage Container	Oil/water mixture	T43??7503	1.68E+01	thou gal/yr	12/31/2008	Oil/water mixture		503	3.02E-04
6239	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2008			0	0.00E+00
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997	Ammonia (NH3) pollutant		6990	2.48E-02
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Benzene		41	1.10E-02
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Formaldehyde		124	8.95E-04
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	5.97E-01
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	9.42E-06
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	5.52E-06
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Cadmium		1070	2.36E-05
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	4.87E-07
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	2.00E-05
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Manganese		1160	3.14E-05
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	3.81E-04
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	6.66E-06
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	5.44E-01
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	4.97E-05
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.90E-03
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.82E+00
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.53E-03
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.66E+00
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.62E+02
7010	Diesel Engine, mobilie crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.45E-02
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Benzene		41	3.50E-04
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Formaldehyde		124	2.90E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	5.14E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	3.05E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	1.79E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Cadmium		1070	7.63E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	1.58E-08
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	6.47E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Manganese		1160	1.02E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	1.23E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	2.16E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.75E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.61E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	9.39E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.05E-01
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.14E-04
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.05E-02
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.17E+01
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	4.69E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Benzene		41	6.25E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Formaldehyde		124	5.10E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	3.61E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	5.37E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	3.15E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Cadmium		1070	1.34E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	2.78E-08
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	1.14E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Manganese		1160	1.79E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	2.17E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	3.80E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.47E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	2.83E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.65E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.53E-01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.01E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.12E-01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.07E+01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	8.26E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions----->		Code	lb/day
							Pollutant			
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Benzene		41	6.10E-04
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Formaldehyde		124	4.98E-05
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	3.32E-02
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	5.24E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	3.07E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Cadmium		1070	1.31E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	2.71E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	1.11E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Manganese		1160	1.74E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	2.12E-05
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	3.71E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	3.03E-02
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	2.77E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.61E-04
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.24E-01
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.97E-04
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	9.22E-02
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.02E+01
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	8.07E-04
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Benzene		41	1.33E-04
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Formaldehyde		124	2.55E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	1.70E-02
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	2.69E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	1.57E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Cadmium		1070	6.71E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	1.39E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	5.70E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Manganese		1160	8.94E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	1.09E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	1.90E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.55E-02
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.42E-06
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	8.26E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.17E-01
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.01E-04
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.72E-02
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.03E+01
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	4.13E-04
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Benzene		41	2.46E-04
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Formaldehyde		124	2.01E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	1.34E-02
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	2.11E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	1.24E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Cadmium		1070	5.28E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	1.09E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	4.48E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Manganese		1160	7.03E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	8.55E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	1.49E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.22E-02
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.12E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	6.50E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.71E-01
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	7.93E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.72E-02
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	8.13E+00
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	3.25E-04
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Benzene		41	7.66E-04
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Formaldehyde		124	6.25E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	2.61E-03
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	6.58E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	3.86E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Cadmium		1070	1.64E-06
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	3.40E-08
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	1.40E-06
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Manganese		1160	2.19E-06
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	2.66E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	4.65E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.03E-02
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	3.47E-06
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.02E-04
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.27E-01
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.47E-04
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	9.18E-02
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.53E+01
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.01E-03
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Benzene		41	6.88E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Formaldehyde		124	5.61E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	3.75E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	5.91E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	3.47E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Cadmium		1070	1.48E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	3.06E-08
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	1.25E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Manganese		1160	1.97E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	2.39E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	4.18E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	3.41E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	3.12E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.82E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.78E-01
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.22E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.04E-01
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.27E+01
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	9.09E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Benzene	41	8.14E-04	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Formaldehyde	124	6.64E-05	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Organics (part not spec else	990	1.06E-03	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Arsenic (all)	1030	2.10E-07	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant	1040	1.23E-07	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Cadmium	1070	5.24E-07	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)	1095	1.08E-08	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Lead (all) pollutant	1140	4.45E-07	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Manganese	1160	6.98E-07	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Nickel pollutant	1180	8.48E-06	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant	1190	1.48E-07	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic	1350	1.91E-03	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	PAH's (non-speciated)	1840	1.11E-06	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)	2030	4.30E-04	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	4.35E-01	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	5.24E-04	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	3.57E-02	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	5.38E+01	
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Methane (CH4)	6970	1.08E-03	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Benzene	41	2.08E-03	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Formaldehyde	124	1.70E-04	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Organics (part not spec else	990	2.72E-03	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Arsenic (all)	1030	5.36E-07	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant	1040	3.14E-07	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Cadmium	1070	1.34E-06	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)	1095	2.77E-08	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Lead (all) pollutant	1140	1.14E-06	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Manganese	1160	1.78E-06	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Nickel pollutant	1180	2.17E-05	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant	1190	3.79E-07	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic	1350	4.89E-03	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	PAH's (non-speciated)	1840	2.83E-06	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)	2030	1.10E-03	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	1.11E+00	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	1.34E-03	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	9.13E-02	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	1.38E+02	
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Methane (CH4)	6970	2.75E-03	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Benzene	41	8.67E-03	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Formaldehyde	124	7.07E-04	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Organics (part not spec else	990	4.72E-01	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Arsenic (all)	1030	7.45E-06	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant	1040	4.37E-06	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Cadmium	1070	1.86E-05	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)	1095	3.85E-07	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Lead (all) pollutant	1140	1.58E-05	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Manganese	1160	2.48E-05	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Nickel pollutant	1180	3.01E-04	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant	1190	5.26E-06	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic	1350	4.30E-01	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	PAH's (non-speciated)	1840	3.93E-05	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)	2030	2.29E-03	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	6.02E+00	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	2.79E-03	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	1.31E+00	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	2.86E+02	
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	4.69E+00	thou gal/yr	12/31/2008	Methane (CH4)	6970	1.15E-02	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Benzene	41	2.22E-02	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Formaldehyde	124	1.81E-03	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Organics (part not spec else	990	1.21E+00	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Arsenic (all)	1030	1.91E-05	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Beryllium (all) pollutant	1040	1.12E-05	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Cadmium	1070	4.78E-05	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Chromium (hexavalent)	1095	9.88E-07	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Lead (all) pollutant	1140	4.05E-05	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Manganese	1160	6.36E-05	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Nickel pollutant	1180	7.73E-04	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Mercury (all) pollutant	1190	1.35E-05	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic	1350	1.10E+00	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	PAH's (non-speciated)	1840	1.01E-04	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)	2030	5.88E-03	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	1.55E+01	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	7.16E-03	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	3.36E+00	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	7.35E+02	
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	1.20E+01	thou gal/yr	12/31/2008	Methane (CH4)	6970	2.94E-02	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Benzene	41	6.37E-03	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Formaldehyde	124	5.19E-04	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Organics (part not spec else	990	3.47E-01	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Arsenic (all)	1030	5.47E-06	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant	1040	3.21E-06	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Cadmium	1070	1.37E-05	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)	1095	2.83E-07	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Lead (all) pollutant	1140	1.16E-05	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Manganese	1160	1.82E-05	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Nickel pollutant	1180	2.21E-04	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant	1190	3.87E-06	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic	1350	3.16E-01	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	PAH's (non-speciated)	1840	2.89E-05	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)	2030	1.68E-03	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	4.42E+00	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	2.05E-03	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	9.62E-01	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	2.10E+02	
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Methane (CH4)	6970	8.41E-03	
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Benzene	41	1.68E-02	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Formaldehyde		124	1.37E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	9.18E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	1.45E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	8.49E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Cadmium		1070	3.62E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	7.49E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	3.07E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Manganese		1160	4.82E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	5.86E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	1.02E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	8.36E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	PAH's (non-speciated)		1840	7.64E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.45E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.17E+01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	5.43E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.55E+00
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.57E+02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	2.23E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Benzene		41	7.90E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Formaldehyde		124	6.44E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	4.30E-01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	6.79E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	3.98E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Cadmium		1070	1.70E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	3.51E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	1.44E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Manganese		1160	2.26E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	2.74E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	4.80E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	3.92E-01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	PAH's (non-speciated)		1840	3.58E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.09E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	5.49E+00
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.54E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.19E+00
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.61E+02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.04E-02
7522	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Benzene		41	1.50E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Formaldehyde		124	1.22E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	5.83E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	3.86E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	2.26E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Cadmium		1070	9.66E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	2.00E-08
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	8.19E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Manganese		1160	1.29E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	1.56E-05
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	2.73E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	9.32E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	PAH's (non-speciated)		1840	2.04E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	7.92E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.17E+00
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	9.66E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.83E-01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	9.91E+01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.98E-03
7525	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Benzene		41	9.27E-04
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Formaldehyde		124	7.56E-05
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	3.60E-03
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	2.39E-07
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	1.40E-07
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Cadmium		1070	5.97E-07
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	1.24E-08
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	5.06E-07
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Manganese		1160	7.95E-07
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	9.66E-06
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	1.69E-07
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	5.76E-03
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	PAH's (non-speciated)		1840	1.26E-06
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.90E-04
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	7.25E-01
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	5.97E-04
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.34E-02
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	6.13E+01
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.22E-03
7527	Diesel Engine, Deutz model F4L912HO	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Benzene		41	1.48E-04
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Formaldehyde		124	1.22E-05
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Organics (part not spec else		990	7.14E-03
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Arsenic (all)		1030	1.29E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	7.55E-08
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Cadmium		1070	3.22E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	6.66E-09
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	2.73E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Manganese		1160	4.28E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Nickel pollutant		1180	5.21E-06
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	9.10E-08
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	7.43E-03
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	PAH's (non-speciated)		1840	6.79E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.96E-05

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.04E-01
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.83E-05
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.26E-02
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.95E+00
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.98E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Benzene		41	4.01E-03
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Formaldehyde		124	3.32E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Organics (part not spec else		990	1.85E-02
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Arsenic (all)		1030	3.50E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Beryllium (all) pollutant		1040	2.05E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Cadmium		1070	8.74E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Chromium (hexavalent)		1095	1.81E-07
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Lead (all) pollutant		1140	7.41E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Manganese		1160	1.16E-05
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Nickel pollutant		1180	1.41E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Mercury (all) pollutant		1190	2.47E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Diesel Engine Exhaust Partic		1350	1.36E-02
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	PAH's (non-specified)		1840	1.84E-05
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Nitrogen Oxides (part not sp		2990	3.40E-01
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Sulfur Dioxide (SO2)		3990	1.31E-03
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Carbon Monoxide (CO) polluta		4990	3.03E-01
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Carbon Dioxide, non-biogenic		6960	1.34E+02
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Methane (CH4)		6970	5.38E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Benzene		41	2.16E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Formaldehyde		124	1.77E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Organics (part not spec else		990	2.73E-02
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Arsenic (all)		1030	1.86E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Beryllium (all) pollutant		1040	1.09E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Cadmium		1070	4.65E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Chromium (hexavalent)		1095	9.62E-08
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Lead (all) pollutant		1140	3.94E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Manganese		1160	6.19E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Nickel pollutant		1180	7.52E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Mercury (all) pollutant		1190	1.31E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Diesel Engine Exhaust Partic		1350	1.40E-02
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	PAH's (non-specified)		1840	9.81E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Nitrous Oxide (N2O)		2030	5.72E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Nitrogen Oxides (part not sp		2990	5.64E-01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Sulfur Dioxide (SO2)		3990	6.97E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Carbon Monoxide (CO) polluta		4990	6.47E-02
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Carbon Dioxide, non-biogenic		6960	7.15E+01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Methane (CH4)		6970	2.86E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Benzene		41	2.16E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Formaldehyde		124	1.77E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Organics (part not spec else		990	2.73E-02
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Arsenic (all)		1030	1.86E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Beryllium (all) pollutant		1040	1.09E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Cadmium		1070	4.65E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Chromium (hexavalent)		1095	9.62E-08
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Lead (all) pollutant		1140	3.94E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Manganese		1160	6.19E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Nickel pollutant		1180	7.52E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Mercury (all) pollutant		1190	1.31E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Diesel Engine Exhaust Partic		1350	1.40E-02
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	PAH's (non-specified)		1840	9.81E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Nitrous Oxide (N2O)		2030	5.72E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Nitrogen Oxides (part not sp		2990	5.64E-01
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Sulfur Dioxide (SO2)		3990	6.97E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Carbon Monoxide (CO) polluta		4990	6.47E-02
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Carbon Dioxide, non-biogenic		6960	7.15E+01
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Methane (CH4)		6970	2.86E-03
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Benzene		41	6.48E-02
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Formaldehyde		124	5.29E-03
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Organics (part not spec else		990	8.96E-01
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Arsenic (all)		1030	1.67E-05
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	9.79E-06
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Cadmium		1070	4.18E-05
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	8.64E-07
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	3.54E-05
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Manganese		1160	5.56E-05
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Nickel pollutant		1180	6.76E-04
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	1.18E-05
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.96E-01
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	8.81E-05
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.43E-02
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.67E+01
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.18E-02
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.99E+00
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.29E+03
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Methane (CH4)		6970	8.56E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006	Ethyl alcohol		105	3.43E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006	Methyl ethyl ketone (MEK)		169	6.86E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006	Organic liquid - other/not s		201	1.14E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	1.80E+01	gal/yr	12/31/2006	Methyl ethyl ketone (MEK)		169	3.31E-01
9047	Tank 6047	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	0.00E+00
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??7090	-5.45E+01	thou gal/yr	12/31/1997	Ketone - other/not spec		90	3.46E-02
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??7419	-3.51E+00	thou gal/yr	12/31/1997	Lube oil		419	5.24E-02
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998	Hydrocarbon - mixtures, othe		318	2.77E-01
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Benzene		41	4.48E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Toluene		293	1.52E-02
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Xylene		307	1.79E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Ethylbenzene		333	1.05E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Gasoline - unleaded		551	1.47E+00
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??052	5.29E+05	thou gal/yr	12/31/2008	Paraffins - C3+		52	1.03E+01
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??242	1.15E+05	thou gal/yr	12/31/2008	Bunker C fuel oil		242	9.44E-04
9321	Marine Loading Berth #1	Distillate oil	TB8??315	6.53E+04	thou gal/yr	12/31/2008	Distillate oil		315	8.05E-02
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
9321	Marine Loading Berth #1	Crude oil	TF8??089	5.13E+04	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??052	1.50E+05	thou gal/yr	12/31/2008	Paraffins - C3+		52	2.91E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008	Benzene		41	4.18E-02
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008	Ethylene dichloride		107	7.11E-04
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008	Gasoline - leaded		128	3.89E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008	Toluene		293	2.09E-01
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008	Xylene		307	4.60E-02
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008	Ethylene dibromide		420	2.80E-05
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??158	2.02E+05	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	2.50E-01
9322	Marine Loading Berth #2	Methyl alcohol	TB8??179	0.00E+00	thou gal/yr	12/31/2008	Methyl alcohol		179	0.00E+00
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??201	6.70E+02	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	1.05E-02
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??242	1.11E+05	thou gal/yr	12/31/2008	Bunker C fuel oil		242	9.11E-04
9322	Marine Loading Berth #2	Toluene	TB8??293	3.50E+03	thou gal/yr	12/31/2008	Toluene		293	1.45E-01
9322	Marine Loading Berth #2	Distillate oil	TB8??315	1.96E+05	thou gal/yr	12/31/2008	Distillate oil		315	2.41E-01
9322	Marine Loading Berth #2	Lube oil	TB8??419	2.01E+05	thou gal/yr	12/31/2008	Lube oil		419	8.17E-02
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	1.38E+05	thou gal/yr	12/31/2008	Benzene		41	1.91E-01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	1.38E+05	thou gal/yr	12/31/2008	Toluene		293	6.49E-01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	1.38E+05	thou gal/yr	12/31/2008	Xylene		307	7.64E-02
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	1.38E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	4.46E-02
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	1.38E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	6.27E+01
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??628	0.00E+00	thou gal/yr	12/31/2008	Methyl tertiary-butyl ether		628	0.00E+00
9322	Marine Loading Berth #2	Crude oil	TF8??089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??052	6.02E+04	thou gal/yr	12/31/2008	Paraffins - C3+		52	1.17E+00
9323	Marine Loading Berth #3	Crude oil	TB8??089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008	Benzene		41	5.36E-02
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008	Ethylene dichloride		107	9.12E-04
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008	Gasoline - leaded		128	4.98E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008	Toluene		293	2.68E-01
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008	Xylene		307	5.90E-02
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008	Ethylene dibromide		420	3.59E-05
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB8??158	8.29E+04	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	1.02E-01
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB8??201	7.43E+03	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	7.04E+00
9323	Marine Loading Berth #3	Bunker C fuel oil	TB8??242	2.00E+04	thou gal/yr	12/31/2008	Bunker C fuel oil		242	1.64E-04
9323	Marine Loading Berth #3	Toluene	TB8??293	1.55E+03	thou gal/yr	12/31/2008	Toluene		293	6.41E-02
9323	Marine Loading Berth #3	Distillate oil	TB8??315	1.95E+05	thou gal/yr	12/31/2008	Distillate oil		315	2.40E-01
9323	Marine Loading Berth #3	Lube oil	TB8??419	0.00E+00	thou gal/yr	12/31/2008	Lube oil		419	0.00E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	6.14E+05	thou gal/yr	12/31/2008	Benzene		41	8.50E-01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	6.14E+05	thou gal/yr	12/31/2008	Toluene		293	2.89E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	6.14E+05	thou gal/yr	12/31/2008	Xylene		307	3.40E-01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	6.14E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	1.98E-01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	6.14E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	2.79E+02
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB4?2318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
9324	Marine Loading Berth #4	Bunker C fuel oil	TB8??242	0.00E+00	thou gal/yr	12/31/2008	Bunker C fuel oil		242	0.00E+00
9324	Marine Loading Berth #4	Distillate oil	TB8??315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
9324	Marine Loading Berth #4	Crude oil	TF8??089	3.61E+06	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
9325	Marine Loading Berth #9	Paraffins - C3+	TB8??052	2.04E+03	thou gal/yr	12/31/2008	Paraffins - C3+		52	1.98E-02
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB8??158	1.01E+03	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	1.24E-03
9325	Marine Loading Berth #9	Bunker C fuel oil	TB8??242	1.67E+05	thou gal/yr	12/31/2008	Bunker C fuel oil		242	1.37E-03
9325	Marine Loading Berth #9	Toluene	TB8??293	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Distillate oil	TB8??315	3.51E+03	thou gal/yr	12/31/2008	Distillate oil		315	4.33E-03
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB8??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
9325	Marine Loading Berth #9	Lube oil	TB8??419	0.00E+00	thou gal/yr	12/31/2008	Lube oil		419	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
9325	Marine Loading Berth #9	Crude oil	TF8??089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
9326	Marine Loading Berth #11	Paraffins - C3+	TB8??052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
9326	Marine Loading Berth #11	Bunker C fuel oil	TB8??242	0.00E+00	thou gal/yr	12/31/2008	Bunker C fuel oil		242	0.00E+00
9326	Marine Loading Berth #11	Distillate oil	TB8??315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00			Organics (part not spec else		990	0.00E+00
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00			Organics (part not spec else		990	1.50E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Benzene		41	2.63E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cyclohexane		91	2.10E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylene dichloride		107	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Hexane		148	3.53E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Isocotane		154	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl alcohol		179	2.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Perchloroethylene		210	7.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Toluene		293	9.62E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Xylene		307	1.06E+01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cumene		326	2.00E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylbenzene		333	2.09E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,2,4-trimethylbenzene		385	2.79E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene dibromide		420	3.00E-03
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,3-butadiene		521	2.80E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene		536	1.17E+01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Propylene		564	6.43E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Organics (part not spec else		990	6.15E+02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ammonia (NH3) pollutant		6990	5.39E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Benzene		41	2.75E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cyclohexane		91	1.60E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Hexane		148	2.40E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Isooctane		154	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl alcohol		179	5.00E-04
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Toluene		293	9.30E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Xylene		307	1.08E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Ethylbenzene		333	2.20E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,2,4-trimethylbenzene		385	3.20E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,3-butadiene		521	5.00E-04
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cresol		525	1.00E-03
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ethylene		536	1.45E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Propylene		564	1.45E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Organics (part not spec else		990	6.30E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Carbon Dioxide, non-biogenic		6960	3.18E+02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ammonia (NH3) pollutant		6990	1.76E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Benzene		41	1.20E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Hexane		148	4.30E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Toluene		293	5.50E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Xylene		307	6.40E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			1,3-butadiene		521	1.00E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Cresol		525	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ethylene		536	1.50E-02
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Propylene		564	4.20E-01
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Organics (part not spec else		990	9.40E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ammonia (NH3) pollutant		6990	1.30E-04
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Benzene		41	1.00E-03
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Hexane		148	8.90E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Toluene		293	1.60E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Xylene		307	1.60E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cumene		326	9.00E-02
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Ethylbenzene		333	3.60E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,2,4-trimethylbenzene		385	3.00E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,3-butadiene		521	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cresol		525	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Organics (part not spec else		990	7.16E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Benzene		41	1.31E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Formaldehyde		124	4.67E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Phenol		214	2.54E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Acetaldehyde		335	7.62E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			1,3-butadiene		521	1.43E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Organics (part not spec else		990	6.45E-02
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Arsenic (all)		1030	1.25E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cadmium		1070	6.85E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Chromium		1090	8.72E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Magnesium pollutant		1150	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Manganese		1160	2.37E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nickel pollutant		1180	1.31E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Mercury (all) pollutant		1190	1.62E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Zinc pollutant		1320	1.80E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			PAH's (non-speciated)		1840	4.35E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Particulates (portion of tot		1990	4.73E-02
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nitrogen Oxides (part not sp		2990	8.00E-01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Sulfur Dioxide (SO2)		3990	1.41E+02
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Carbon Monoxide (CO) polluta		4990	1.77E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Unabated Detailed Pollutant Emissions
for Calendar Year 2008***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, other		318	0.00E+00
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T421?318	3.00E-01	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, other		318	3.88E-03
55	Tank 55	Distillate oil	T81??315	0.00E+00	thou gal/yr	12/31/2003	Distillate oil		315	0.00E+00
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Benzene		41	1.94E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Toluene		293	6.58E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Xylene		307	7.75E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Ethylbenzene		333	4.52E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Gasoline - unleaded		551	6.36E-02
200	TANK 200A	Organic liquid - other/not spe	T441?201	4.40E+03	thou gal/yr	12/31/1996	Organic liquid - other/not s		201	0.00E+00
204	TANK 204	Distillate oil	T441?315	0.00E+00	thou gal/yr	12/31/1997	Distillate oil		315	0.00E+00
223	TANK 223	Water/organics mixture	T441?502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
225	TANK 225	Water/organics mixture	T441?502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
232	TANK 232	Hydrocarbon - mixtures, other/	T5422318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, other		318	0.00E+00
234	TANK 234	Distillate oil	T441?315	1.01E+05	thou gal/yr	4/30/1997	Distillate oil		315	1.39E+01
290	TANK 290	Distillate oil	T441?315	3.81E+04	thou gal/yr	4/30/1997	Distillate oil		315	6.12E+00
291	TANK 291	Distillate oil	T441?315	1.08E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.28E+00
297	TANK 297	Hydrocarbon - mixtures, other/	T5432318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, other		318	0.00E+00
297	TANK 297	Refinery sour waste water	T5432442	0.00E+00	thou gal/yr	12/31/2008	Refinery sour waste water		442	0.00E+00
297	TANK 297	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
297	TANK 297	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
297	TANK 297	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
297	TANK 297	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
297	TANK 297	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
298	TANK 298	Hydrocarbon - mixtures, other/	T5422318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, other		318	0.00E+00
298	TANK 298	Refinery sour waste water	T5422442	0.00E+00	thou gal/yr	12/31/2008	Refinery sour waste water		442	0.00E+00
298	TANK 298	Gasoline - unleaded	T5422551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
298	TANK 298	Gasoline - unleaded	T5422551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
298	TANK 298	Gasoline - unleaded	T5422551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
298	TANK 298	Gasoline - unleaded	T5422551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
298	TANK 298	Gasoline - unleaded	T5422551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
319	TANK 319	Distillate oil	T441?315	1.21E+03	thou gal/yr	4/30/1997	Distillate oil		315	4.12E-01
397	TANK 397	Hydrocarbon - mixtures, other/	T441?318	3.65E+04	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, other		318	5.54E+01
398	TANK 398	Hydrocarbon - mixtures, other/	T54?2318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, other		318	0.00E+00
399	TANK	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
399	TANK	Oil - non-fuel, other/not spec	T54?2352	2.41E+04	thou gal/yr	12/31/2008	Oil - non-fuel, other/not sp		352	1.19E+01
399	TANK	Tetra-Ethyl Lead (TEL)	T54?2422	0.00E+00	thou gal/yr	12/31/2008	Tetra-Ethyl Lead (TEL)		422	0.00E+00
401	TANK 401	Refinery feedstock - other/not	T44??239	4.70E+04	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	1.09E+01
605	Tank 605: Process Water Tank <1000 ppm (wt) Hydrocarbon	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, other		318	0.00E+00
605	Tank 605: Process Water Tank <1000 ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00	thou gal/yr	12/31/2008	Water/organics mixture		502	0.00E+00
610	Tank 610: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T81??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, other		318	0.00E+00
610	Tank 610: Organic Liquid Storage Tank	Water/organics mixture	T81??502	0.00E+00	thou gal/yr	12/31/2008	Water/organics mixture		502	0.00E+00
634	TANK 634	Fuel - jet 'A'	T54?2158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
634	TANK 634	Petroleum products - other/not	T54?2321	2.66E+04	thou gal/yr	12/31/2008	Petroleum products - other/n		321	1.61E+00
634	TANK 634	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
634	TANK 634	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
634	TANK 634	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
634	TANK 634	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
634	TANK 634	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
660	Tank 660: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T81??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, other		318	0.00E+00
660	Tank 660: Organic Liquid Storage Tank	Water/organics mixture	T81??502	0.00E+00	thou gal/yr	12/31/2008	Water/organics mixture		502	0.00E+00
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	2.12E+04	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, other		318	1.41E-01
870	Tank 870	Organic liquid - other/not spe	T43??201	0.00E+00	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	0.00E+00
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	1.46E-03
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Butane	T42??416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T42??419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.33E-03
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
953 TANK 953		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
953 TANK 953		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
953 TANK 953		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
953 TANK 953		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
953 TANK 953		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
953 TANK 953		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
953 TANK 953		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
953 TANK 953		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
954 TANK 954		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
954 TANK 954		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
954 TANK 954		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
954 TANK 954		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
954 TANK 954		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
954 TANK 954		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
955 TANK 955		Paraffins - C3+	T5412052	2.87E+04	thou gal/yr	12/31/2008	Paraffins - C3+		52	2.40E+00
955 TANK 955		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
955 TANK 955		Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	0.00E+00
956 TANK 956		Paraffins - C3+	T5412052	2.61E+04	thou gal/yr	12/31/2008	Paraffins - C3+		52	2.48E+00
956 TANK 956		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
957 Tank 957		Diesel fuel	T4477098	2.43E+04	thou gal/yr	12/31/2008	Diesel oil		98	7.25E+00
957 Tank 957		Fuel - jet 'A'	T4477158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
979 TANK 979		Distillate oil	T4477315	-6.13E+04	thou gal/yr	4/30/1997	Distillate oil		315	7.33E+00
984 TANK 984		Distillate oil	T4417315	-9.67E+03	thou gal/yr	12/31/1997	Distillate oil		315	1.41E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
990 TANK 990		Gasoline - unleaded	T5432551	8.37E+04	thou gal/yr	12/31/2008	Benzene		41	1.37E-02
990 TANK 990		Gasoline - unleaded	T5432551	8.37E+04	thou gal/yr	12/31/2008	Toluene		293	4.66E-02
990 TANK 990		Gasoline - unleaded	T5432551	8.37E+04	thou gal/yr	12/31/2008	Xylene		307	5.49E-03
990 TANK 990		Gasoline - unleaded	T5432551	8.37E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	3.20E-03
990 TANK 990		Gasoline - unleaded	T5432551	8.37E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	4.50E+00
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Benzene		41	1.40E-02
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Toluene		293	4.75E-02
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Xylene		307	5.58E-03
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.26E-03
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	4.58E+00
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
992 Storage Tank T-992		Gasoline - unleaded	T5472551	1.02E+05	thou gal/yr	12/31/2008	Benzene		41	1.36E-02
992 Storage Tank T-992		Gasoline - unleaded	T5472551	1.02E+05	thou gal/yr	12/31/2008	Toluene		293	4.61E-02
992 Storage Tank T-992		Gasoline - unleaded	T5472551	1.02E+05	thou gal/yr	12/31/2008	Xylene		307	5.42E-03
992 Storage Tank T-992		Gasoline - unleaded	T5472551	1.02E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	3.16E-03
992 Storage Tank T-992		Gasoline - unleaded	T5472551	1.02E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	4.45E+00
1020 Tank 1020: Inorganic Chemical Storage Tank		Diethanolamine	T4477485	4.20E+02	thou gal/yr	3/10/1995	Diethanolamine		485	1.05E-01
1052 Tank 1052: Organic Liquid Storage Tank		Kerosene	T4377159	0.00E+00	thou gal/yr	12/31/2006	Kerosene		159	0.00E+00
1052 Tank 1052: Organic Liquid Storage Tank		Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2006	Hydrocarbon - mixtures, othe		318	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1287 TANK 1287		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1287 TANK 1287		Petroleum products - other/not	T5432321	3.39E+04	thou gal/yr	12/31/2008	Petroleum products - other/n		321	2.23E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1289 TANK 1289		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1289 TANK 1289		Toluene	T6472293	1.65E+03	thou gal/yr	12/31/2008	Toluene		293	1.00E+00
1289 TANK 1289		Hydrocarbon - mixtures, other/	T6472318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
1292 TANK 1292		Diesel fuel	T5412098	2.18E+05	thou gal/yr	12/31/2008	Diesel oil		98	1.41E+00
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00	thou gal/yr	12/31/2008	Jet fuel JP8		684	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1296 TANK 1296		Gasoline - unleaded	T5412551	8.64E+04	thou gal/yr	12/31/2008	Benzene		41	1.76E-02
1296 TANK 1296		Gasoline - unleaded	T5412551	8.64E+04	thou gal/yr	12/31/2008	Toluene		293	5.97E-02
1296 TANK 1296		Gasoline - unleaded	T5412551	8.64E+04	thou gal/yr	12/31/2008	Xylene		307	7.02E-03
1296 TANK 1296		Gasoline - unleaded	T5412551	8.64E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	4.10E-03
1296 TANK 1296		Gasoline - unleaded	T5412551	8.64E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	5.76E+00
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T6372502	5.90E+00	thou gal/yr	12/31/2003	Water/organics mixture		502	8.65E-04
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	7.11E+00
1431 Asphalt Tank(T-907)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008	Benzene		41	1.91E-02
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008	Ethylene dichloride		107	3.25E-04
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008	Gasoline - leaded		128	1.77E+00
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008	Toluene		293	9.55E-02
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008	Xylene		307	2.10E-02
1444 TANK 1444		Gasoline - leaded	T5432128	1.65E+03	thou gal/yr	12/31/2008	Ethylene dibromide		420	1.28E-05
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	5.30E-02
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03	thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe		318	5.97E-01
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe		318	5.90E-01
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1459 TANK 1459		Gasoline - unleaded	T5432551	3.16E+04	thou gal/yr	12/31/2008	Benzene		41	1.19E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	3.16E+04	thou gal/yr	12/31/2008	Toluene		293	4.05E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	3.16E+04	thou gal/yr	12/31/2008	Xylene		307	4.76E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	3.16E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	2.78E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	3.16E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	3.91E+00
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
1488 TANK 1488		Oil/water mixture	T5472503	3.73E+03	thou gal/yr	12/31/2008	Oil/water mixture		503	3.13E+01
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1489 TANK 1489		Alkylate	T5432389	1.01E+04	thou gal/yr	12/31/2008	Alkylate		389	4.67E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2008	Methyl alcohol		179	0.00E+00
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1491 TANK 1491		Gasoline - unleaded	T5432551	4.55E+04	thou gal/yr	12/31/2008	Benzene		41	1.17E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	4.55E+04	thou gal/yr	12/31/2008	Toluene		293	3.98E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	4.55E+04	thou gal/yr	12/31/2008	Xylene		307	4.68E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	4.55E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	2.73E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	4.55E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	3.84E+00
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997	Distillate oil		315	3.52E+00
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.30E+00
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	2.87E+04	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	2.29E+00
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997	Distillate oil		315	8.02E-01
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997	Fuel oil #2		392	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1514 TANK 1514		Gasoline - unleaded	T5432551	9.05E+04	thou gal/yr	12/31/2008	Benzene		41	1.52E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	9.05E+04	thou gal/yr	12/31/2008	Toluene		293	5.17E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	9.05E+04	thou gal/yr	12/31/2008	Xylene		307	6.09E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	9.05E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	3.55E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	9.05E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	5.00E+00
1518 TANK 1518		Fuel - jet 'A'	T5432158	1.30E+04	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	1.22E-01
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
1623	TANK 1623 (Spherical Pressure Tank)	Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997	Paraffins - C3+		52	0.00E+00
1633	TANK 1633	Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1633	TANK 1633	Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1633	TANK 1633	Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1633	TANK 1633	Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1633	TANK 1633	Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1633	TANK 1633	Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1633	TANK 1633	Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1633	TANK 1633	Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1633	TANK 1633	Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1633	TANK 1633	Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
1633	TANK 1633	Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
1634	TANK 1634 (JET A)	Fuel - jet 'A'	T6412158	1.79E+03	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	5.44E-02
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Benzene		41	2.36E-06
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Ethylene dichloride		107	4.01E-08
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Gasoline - leaded		128	2.19E-04
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Toluene		293	1.18E-05
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Xylene		307	2.59E-06
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Ethylene dibromide		420	1.58E-09
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Benzene		41	2.04E-03
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Toluene		293	6.94E-03
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Xylene		307	8.17E-04
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Ethylbenzene		333	4.77E-04
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Gasoline - unleaded		551	6.71E-01
1636	TANK 1636	Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997	Distillate oil		315	1.27E+00
1637	TANK 1637	Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1637	TANK 1637	Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1637	TANK 1637	Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1637	TANK 1637	Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1637	TANK 1637	Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1637	TANK 1637	Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1637	TANK 1637	Gasoline - unleaded	T6H32551	1.14E+04	thou gal/yr	12/31/2008	Benzene		41	3.67E-03
1637	TANK 1637	Gasoline - unleaded	T6H32551	1.14E+04	thou gal/yr	12/31/2008	Toluene		293	1.25E-02
1637	TANK 1637	Gasoline - unleaded	T6H32551	1.14E+04	thou gal/yr	12/31/2008	Xylene		307	1.47E-03
1637	TANK 1637	Gasoline - unleaded	T6H32551	1.14E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	8.57E-04
1637	TANK 1637	Gasoline - unleaded	T6H32551	1.14E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	1.21E+00
1645	TANK 1645	Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1645	TANK 1645	Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1645	TANK 1645	Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1645	TANK 1645	Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1645	TANK 1645	Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1645	TANK 1645	Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1645	TANK 1645	Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1645	TANK 1645	Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1645	TANK 1645	Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1645	TANK 1645	Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
1645	TANK 1645	Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
1653	TANK 1653	Fuel - jet 'A'	T4417158	3.19E+03	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	2.16E+00
1653	TANK 1653	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
1653	TANK 1653	Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2008	Jet fuel JP5		492	0.00E+00
1686	TANK 1686	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1686	TANK 1686	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1686	TANK 1686	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1686	TANK 1686	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
1686	TANK 1686	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
1687	TANK 1687	Gasoline - unleaded	T5432551	1.43E+05	thou gal/yr	12/31/2008	Benzene		41	1.64E-02
1687	TANK 1687	Gasoline - unleaded	T5432551	1.43E+05	thou gal/yr	12/31/2008	Toluene		293	5.58E-02
1687	TANK 1687	Gasoline - unleaded	T5432551	1.43E+05	thou gal/yr	12/31/2008	Xylene		307	6.56E-03
1687	TANK 1687	Gasoline - unleaded	T5432551	1.43E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	3.83E-03
1687	TANK 1687	Gasoline - unleaded	T5432551	1.43E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	5.38E+00
1688	TANK 1688	Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Benzene		41	1.64E-02
1688	TANK 1688	Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Toluene		293	5.59E-02
1688	TANK 1688	Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Xylene		307	6.57E-03
1688	TANK 1688	Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.84E-03
1688	TANK 1688	Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	5.40E+00
1798	Tank 1798	Fuel - jet 'A'	T5422158	2.29E+05	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	7.60E+00
1798	Tank 1798	Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
1799	TANK 1799	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
1799	TANK 1799	Fuel - jet 'A'	T5472158	2.09E+05	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	1.56E+00
1821	Tank 1821 Fresh Sulfuric Acid Tank	H2SO4 - other/not spec	G5999146	1.16E+05	tons/yr	12/31/2008	Particulates (portion of tot		1990	6.36E-03
1825	Tank 1825	Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	1.19E-02
1828	TANK 1828	Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006	Paraffins - C3+		52	0.00E+00
1828	TANK 1828	Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006	Pentane		209	0.00E+00
1828	TANK 1828	Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006	Butane		416	0.00E+00
1843	TANK 1843	Paraffins - C3+	T5412052	2.95E+02	thou gal/yr	12/31/2007	Paraffins - C3+		52	1.09E-02
1894	Tank 1894: Phosphoric Acid Storage Tank	Phosphoric acid	G5999217	3.76E+02	tons/yr	12/31/2008	Particulates (portion of tot		1990	2.06E-05

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
1899	TANK 1899	Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997	Distillate oil		315	3.92E-01
1908	Asphalt Tank (T-908)	Asphalt	T44??030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
1909	Tank 1909	Organic liquid - other/not spe	T43??201	0.00E+00	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	0.00E+00
1910	Tank 1910	Organic liquid - other/not spe	T43??201	7.90E+00	thou gal/yr	12/31/1994	Organic liquid - other/not s		201	3.55E-02
1911	Tank 1911	Organic liquid - other/not spe	T43??201	0.00E+00	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	0.00E+00
1911	Tank 1911	Asphalt	T44??030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
1966	TANK 1966	Fuel - jet 'A'	T5432158	2.02E+04	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	2.25E-01
2520	Wastewater/MEA Storage Tank	Ethyl amine	T44??106	0.00E+00	thou gal/yr	12/31/2005	Ethyl amine		106	0.00E+00
2520	Wastewater/MEA Storage Tank	Waste water - refin, other/not	T44??300	1.05E+05	thou gal/yr	12/31/2005	Waste water - refin, other/n		300	6.26E+00
2540	Tank 2540: Organic Liquid Storage Tank	Ethanolamine	T44??664	-1.79E+03	thou gal/yr	12/31/1997	Ethanolamine		664	1.12E-01
2903	Tank 903: Organic Liquid Storage Tank	Butane	T42??416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
2903	Tank 903: Organic Liquid Storage Tank	Lube oil	T42??419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.17E-04
2917	Asphalt Tank (T-917)	Asphalt	T44??030	0.00E+00	thou gal/yr	12/31/2007	Asphalt		30	0.00E+00
2918	Asphalt Tank (T-918)	Asphalt	T44??030	0.00E+00	thou gal/yr	12/31/2007	Asphalt		30	0.00E+00
2921	Asphalt Tank (T-921)	Asphalt	T43??030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
3038	TANK 3038 (Spherical Pressure Tank)	Paraffins - C3+	T34??052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
3038	TANK 3038 (Spherical Pressure Tank)	Pentane	T34??209	1.19E+04	thou gal/yr	12/31/2008	Pentane		209	0.00E+00
3050	TANK 3050 SPHERE	Propane	T344?417	-2.30E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3066	TANK 3066	Paraffins - C3+	T344?052	-7.50E+02	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3071	TANK 3071	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3071	TANK 3071	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
3071	TANK 3071	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
3071	TANK 3071	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3071	TANK 3071	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3071	TANK 3071	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
3071	TANK 3071	Gasoline - unleaded	T54?2551	1.04E+05	thou gal/yr	12/31/2008	Benzene		41	3.65E-01
3071	TANK 3071	Gasoline - unleaded	T54?2551	1.04E+05	thou gal/yr	12/31/2008	Toluene		293	1.24E+00
3071	TANK 3071	Gasoline - unleaded	T54?2551	1.04E+05	thou gal/yr	12/31/2008	Xylene		307	1.46E-01
3071	TANK 3071	Gasoline - unleaded	T54?2551	1.04E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	8.52E-02
3071	TANK 3071	Gasoline - unleaded	T54?2551	1.04E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	1.20E+02
3072	TANK 3072	Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Benzene		41	1.55E-02
3072	TANK 3072	Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Toluene		293	5.27E-02
3072	TANK 3072	Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Xylene		307	6.20E-03
3072	TANK 3072	Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.62E-03
3072	TANK 3072	Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	5.09E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Paraffins - C3+	T54?2052	1.16E+05	thou gal/yr	12/31/2008	Paraffins - C3+		52	6.75E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
3074	TANK 3074	Distillate oil	T54?2315	1.14E+05	thou gal/yr	12/31/2007	Distillate oil		315	6.71E-01
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T54??128	9.84E+03	thou gal/yr	12/31/2008	Benzene		41	2.98E-02
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T54??128	9.84E+03	thou gal/yr	12/31/2008	Ethylene dichloride		107	5.07E-04
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T54??128	9.84E+03	thou gal/yr	12/31/2008	Gasoline - leaded		128	2.77E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T54??128	9.84E+03	thou gal/yr	12/31/2008	Toluene		293	1.49E-01
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T54??128	9.84E+03	thou gal/yr	12/31/2008	Xylene		307	3.28E-02
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T54??128	9.84E+03	thou gal/yr	12/31/2008	Ethylene dibromide		420	2.00E-05
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T54??551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T54??551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T54??551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T54??551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T54??551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
3076	TANK T3076	Crude oil	T54?2089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
3076	TANK T3076	Hydrocarbon - mixtures, other/	T54?2318	1.71E+04	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	3.35E+00
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Crude oil	T54?2089	4.59E+05	thou gal/yr	12/31/2008	Crude oil		89	2.18E+01
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Bunker C fuel oil	T54?2242	0.00E+00	thou gal/yr	12/31/2008	Bunker C fuel oil		242	0.00E+00
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3101	TANK 3101	Crude oil	T5432089	4.87E+05	thou gal/yr	12/31/2008	Crude oil		89	3.08E+01
3101	TANK 3101	Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2008	Fuel oil #2		392	0.00E+00
3101	TANK 3101	Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2008	Gas oil		394	0.00E+00
3102	TANK 3102	Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
3102	TANK 3102	Hydrocarbon - mixtures, other/	T5432318	3.26E+05	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.11E+01
3103	TANK 3103	Crude oil	T5432089	3.43E+05	thou gal/yr	12/31/2007	Crude oil		89	3.55E+01
3104	TANK 3104	Crude oil	T5432089	7.74E+05	thou gal/yr	12/31/2007	Crude oil		89	5.90E+00
3105	TANK 3105	Crude oil	T5432089	7.36E+05	thou gal/yr	12/31/2007	Crude oil		89	6.53E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
3106	TANK 3106	Crude oil	T5432089	3.21E+05	thou gal/yr	12/31/2007	Crude oil		89	3.46E+01
3107	TANK 3107	Crude oil	T5472089	3.40E+05	thou gal/yr	12/31/2008	Crude oil		89	3.49E+00
3110	Desalter Effluent Surge Tank A	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007	Crude oil		89	7.11E+00
3111	Desalter Effluent Surge Tank B	Crude oil	T4377089	8.08E+02	thou gal/yr	12/31/2007	Crude oil		89	6.42E+00
3126	TANK 3126	Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2008	Naphtha		188	0.00E+00
3126	TANK 3126	Oil/water mixture	T5432503	1.15E+05	thou gal/yr	12/31/2008	Oil/water mixture		503	1.41E+00
3127	TANK 3127	Oil/water mixture	T5412503	2.38E+03	thou gal/yr	12/31/2007	Oil/water mixture		503	1.70E+00
3128	TANK 3128	Aromatic hydrocarbons - other/	T5472027	0.00E+00	thou gal/yr	12/31/2008	Aromatic hydrocarbons - othe		27	0.00E+00
3128	TANK 3128	Water/organics mixture	T5472502	1.64E+03	thou gal/yr	12/31/2008	Water/organics mixture		502	1.21E+00
3129	TANK 3129	Fuel - jet 'A'	T5412158	1.16E+05	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	1.07E+00
3132	Tank 3132	Distillate oil	T5472315	8.12E+04	thou gal/yr	4/30/1997	Distillate oil		315	5.89E-01
3133	TANK 3133	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
3133	TANK 3133	Gasoline - unleaded	T5412551	4.50E+05	thou gal/yr	12/31/2008	Benzene		41	3.11E-01
3133	TANK 3133	Gasoline - unleaded	T5412551	4.50E+05	thou gal/yr	12/31/2008	Toluene		293	1.06E+00
3133	TANK 3133	Gasoline - unleaded	T5412551	4.50E+05	thou gal/yr	12/31/2008	Xylene		307	1.25E-01
3133	TANK 3133	Gasoline - unleaded	T5412551	4.50E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	7.26E-02
3133	TANK 3133	Gasoline - unleaded	T5412551	4.50E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	1.02E+02
3133	TANK 3133	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2008	Gasoline - oxygenated, MTBE		680	0.00E+00
3134	TANK 3134	Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3134	TANK 3134	Gasoline - unleaded	T5412551	3.09E+05	thou gal/yr	12/31/2008	Benzene		41	2.50E-01
3134	TANK 3134	Gasoline - unleaded	T5412551	3.09E+05	thou gal/yr	12/31/2008	Toluene		293	8.50E-01
3134	TANK 3134	Gasoline - unleaded	T5412551	3.09E+05	thou gal/yr	12/31/2008	Xylene		307	1.00E-01
3134	TANK 3134	Gasoline - unleaded	T5412551	3.09E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	5.83E-02
3134	TANK 3134	Gasoline - unleaded	T5412551	3.09E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	8.21E+01
3134	TANK 3134	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2008	Gasoline - oxygenated, MTBE		680	0.00E+00
3138	TANK 3138	Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997	Gas oil		394	5.55E-01
3139	TANK 3139	Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997	Gas oil		394	8.14E+00
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	1.57E+05	tons/yr	12/31/2008	Sulfur or Sulfur compound po		1830	6.15E+00
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	1.57E+05	tons/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.72E+02
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	1.57E+05	tons/yr	12/31/2008	Hydrogen Sulfide (H2S)		5020	1.07E+02
3142	TANK 3142	Refinery feedstock - other/not	T4417239	4.42E+02	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
3144	TANK 3144	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
3145	TANK 3145, Sphere	Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3146	Tank 3146: 20% Aqueous Ammonia	Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994	Organic liquid - other/not s		201	1.46E+01
3147	Tank 3147: Organic Liquid Storage Tank	Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3148	Tank 3148: Organic Liquid Storage Tank	Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3157	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.24E+01
3158	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3159	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3160	Tank 3160: Organic Liquid Storage Tank	Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994	Lube oil		419	1.34E+01
3161	Tank Lube Oil	Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997	Lube oil		419	1.19E-01
3162	Tank Lube Oil	Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997	Lube oil		419	1.22E-01
3163	Tank Lube Oil	Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997	Lube oil		419	7.74E-02
3164	Tank Lube Oil	Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997	Lube oil		419	7.23E-02
3165	Tank Lube Oil	Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997	Lube oil		419	1.41E-01
3166	Tank Lube Oil	Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997	Lube oil		419	1.40E-01
3167	Tank Lube Oil	Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997	Lube oil		419	5.27E-02
3168	Tank Lube Oil	Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997	Lube oil		419	5.36E-02
3169	organic liquid storage tank, lube oil products	Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995	Lube oil		419	1.78E-01
3170	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3171	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3172	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	9.57E+00
3179	Tank 3179: Organic Liquid Storage Tank	Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997	Distillate oil		315	1.59E-01
3180	Tank	Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
3180	Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3180 Tank		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
3180 Tank		Alkylate	T5472389	2.86E+04	thou gal/yr	12/31/2008	Alkylate		389	1.13E+02
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
3182 Tank 3182: Organic Liquid Storage Tank		Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997	Lube oil		419	2.61E-01
3185 Tank 3185 (previously T-982)		Fuel - jet 'A'	T5472158	2.10E+05	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	6.40E+00
3186 Gas Oil Tank		Organic liquid - other/not spe	T4477201	0.00E+00		4/21/1997	Organic liquid - other/not s		201	8.69E+00
3189 Gasoline component and Diesel Tank		Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3189 Gasoline component and Diesel Tank		Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
3189 Gasoline component and Diesel Tank		Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3189 Gasoline component and Diesel Tank		Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
3189 Gasoline component and Diesel Tank		Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2008	Gas oil		394	0.00E+00
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	3.34E+05	thou gal/yr	12/31/2008	Benzene		41	1.97E-02
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	3.34E+05	thou gal/yr	12/31/2008	Toluene		293	6.69E-02
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	3.34E+05	thou gal/yr	12/31/2008	Xylene		307	7.88E-03
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	3.34E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	4.59E-03
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	3.34E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	6.46E+00
3189 Gasoline component and Diesel Tank		Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2008	Gasoline - oxygenated, MTBE		680	0.00E+00
3190 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3190 Storage Tank		Fuel - jet 'A'	T5472158	2.44E+05	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	1.95E+00
3191 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	2.69E+04	thou gal/yr	12/31/2008	Benzene		41	4.28E-02
3191 Storage Tank		Gasoline - leaded	T5472128	2.69E+04	thou gal/yr	12/31/2008	Ethylene dichloride		107	7.28E-04
3191 Storage Tank		Gasoline - leaded	T5472128	2.69E+04	thou gal/yr	12/31/2008	Gasoline - leaded		128	3.98E+00
3191 Storage Tank		Gasoline - leaded	T5472128	2.69E+04	thou gal/yr	12/31/2008	Toluene		293	2.14E-01
3191 Storage Tank		Gasoline - leaded	T5472128	2.69E+04	thou gal/yr	12/31/2008	Xylene		307	4.71E-02
3191 Storage Tank		Gasoline - leaded	T5472128	2.69E+04	thou gal/yr	12/31/2008	Ethylene dibromide		420	2.87E-05
3191 Storage Tank		Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2008	Naphtha		188	0.00E+00
3191 Storage Tank		Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2008	Jet fuel JP4		395	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
3191 Storage Tank		Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2008	Methyl tertiary-butyl ether		628	0.00E+00
3192 Desalter Effluent Skim Tank		Crude oil	T3H77089	3.15E+04	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
3193 Gasoline component Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3193 Gasoline component Tank		Isooctane	T5472154	3.81E+04	thou gal/yr	12/31/2008	Isooctane		154	2.40E+00
3193 Gasoline component Tank		Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3193 Gasoline component Tank		Alkylate	T5472389	0.00E+00	thou gal/yr	12/31/2008	Alkylate		389	0.00E+00
3193 Gasoline component Tank		Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2008	Gas oil		394	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
3194 Storage Tank T-3194		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2003	Hydrocarbon - mixtures, othe		318	0.00E+00
3194 Storage Tank T-3194		Gas oil	T5472394	1.44E+05	thou gal/yr	12/31/2003	Gas oil		394	9.85E-01
3195 T-3195 Waxy Heavy Neutral Storage Tank		Diesel fuel	T5477098	1.29E+05	thou gal/yr	12/31/2006	Diesel oil		98	2.35E+00
3195 T-3195 Waxy Heavy Neutral Storage Tank		Distillate oil	T5477315	0.00E+00	thou gal/yr	12/31/2006	Distillate oil		315	0.00E+00
3195 T-3195 Waxy Heavy Neutral Storage Tank		Lube oil	T5477419	0.00E+00	thou gal/yr	12/31/2006	Lube oil		419	0.00E+00
3196 Gasoline Components Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3196 Gasoline Components Tank		Organic liquid - other/not spe	T5472201	1.15E+05	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	1.31E+00
3196 Gasoline Components Tank		Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3196 Gasoline Components Tank		Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2008	Gas oil		394	0.00E+00
3196 Gasoline Components Tank		Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
3196 Gasoline Components Tank		Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2008	Methyl tertiary-butyl ether		628	0.00E+00
3197 Gasoline component Tank		Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3197 Gasoline component Tank		Naphtha	T5572188	1.87E+04	thou gal/yr	12/31/2008	Naphtha		188	6.15E+00
3197 Gasoline component Tank		Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3197 Gasoline component Tank		Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2008	Gas oil		394	0.00E+00
3198 3198 tank; organic liquid storage tank		Fuel - jet 'A'	T5437158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
3198 3198 tank; organic liquid storage tank		Toluene	T5437293	3.20E+03	thou gal/yr	12/31/2008	Toluene		293	1.85E+01
3198 3198 tank; organic liquid storage tank		Distillate oil	T5437315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3200 4 Crude Unit Desalter Water Treatment Unit		Waste water - refin, other/not	G5012300	2.75E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	6.02E+01
3201 Tank 3201: Whole Alkylate		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2008	Ethers		103	0.00E+00
3201 Tank 3201: Whole Alkylate		Alkylate	T5472389	1.15E+05	thou gal/yr	12/31/2008	Alkylate		389	1.12E+02
3202 Tank 3202: Methanol		Methyl alcohol	T5472179	0.00E+00	thou gal/yr	12/31/2008	Methyl alcohol		179	0.00E+00
3202 Tank 3202: Methanol		Naphtha	T5472188	8.29E+03	thou gal/yr	12/31/2008	Naphtha		188	7.30E+01
3202 Tank 3202: Methanol		Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
3202 Tank 3202: Methanol		Petroleum products - other/not	T5472321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
3204 Tank 3204: Organic Liquid Storage Tank		Lube oil	T4277419	2.54E+00	thou gal/yr	12/31/1997	Lube oil		419	4.07E-04
3207 Butane Sphere: Organic Liquid Storage Tank		Butane	T3477416	-9.20E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3208 Propane Sphere: Organic Liquid Storage Tank		Propane	T3477417	-7.67E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3211 Sphere		Butane	T3477416	-3.83E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3212	Sphere	Propane	T34??417	-2.76E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T5472098	0.00E+00	thou gal/yr	12/31/2008	Diesel oil		98	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T5472419	0.00E+00	thou gal/yr	12/31/2008	Lube oil		419	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	3.56E+05	thou gal/yr	12/31/2008	Benzene		41	8.03E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	3.56E+05	thou gal/yr	12/31/2008	Toluene		293	2.73E+00
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	3.56E+05	thou gal/yr	12/31/2008	Xylene		307	3.21E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	3.56E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	1.87E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	3.56E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	2.64E+02
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008	Benzene		41	6.64E-01
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008	Ethylene dichloride		107	1.13E-02
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008	Gasoline - leaded		128	6.17E+01
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008	Toluene		293	3.32E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008	Xylene		307	7.31E-01
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	2.68E+04	thou gal/yr	12/31/2008	Ethylene dibromide		420	4.45E-04
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T5472315	-1.29E+05	thou gal/yr	12/31/1997	Distillate oil		315	1.15E+00
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T44??315	8.40E+04	thou gal/yr	7/9/1997	Distillate oil		315	2.27E+01
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	1.54E+04	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.42E+02
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	1.49E+04	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.82E+02
3225	Organic Liquid Storage Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T43??419	-3.37E+02	thou gal/yr	12/31/1997	Lube oil		419	3.31E-03
3910	LPG Tank; # 3910	LPG	T34??160	-3.97E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
3911	LPG Tank, # 3911	LPG	T34??160	-2.30E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
4032	#3 RHENIFORMER, F101	Process gas - other/not spec	C1540237	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4032	#3 RHENIFORMER, F101	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
4032	#3 RHENIFORMER, F101	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4033	#3 RHENIFORMER, F102	Process gas - other/not spec	C1540237	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4033	#3 RHENIFORMER, F102	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
4033	#3 RHENIFORMER, F102	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Benzene		41	8.32E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	5.27E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.22E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Phenol		214	4.77E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	5.42E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	7.54E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	1.77E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	5.04E-05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	1.01E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Manganese		1160	3.43E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	4.04E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	2.52E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	7.87E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	4.86E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	2.08E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.39E-01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	2.52E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	5.80E-01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.03E+02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	8.52E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.29E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.51E+05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	9.21E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	7.31E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Benzene		41	5.68E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	3.60E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.52E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Phenol		214	3.25E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.70E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	5.15E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	1.21E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	3.44E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	6.89E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Manganese		1160	2.34E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	2.75E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.72E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	5.37E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	3.31E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.42E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	9.47E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.72E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.96E-01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	7.06E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	5.81E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.93E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.39E+05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	6.28E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	4.99E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Benzene		41	2.53E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.60E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	6.74E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.45E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.65E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.29E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	5.36E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.53E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.06E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.04E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.22E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	7.65E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.39E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.47E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	6.31E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	4.21E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	7.65E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.76E-01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.14E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.59E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.30E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.06E+05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	2.79E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.22E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.71E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.08E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	4.55E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Phenol		214	9.77E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.11E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.55E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	3.62E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.03E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	2.07E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Manganese		1160	7.03E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	8.27E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	5.17E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.61E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	9.95E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	4.26E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	2.84E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	5.17E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.19E-01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.12E+01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.75E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	8.78E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	7.18E+04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	1.89E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.50E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Benzene		41	4.71E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.98E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.26E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Phenol		214	2.70E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.07E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	4.27E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	9.99E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	2.85E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	5.71E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.94E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	2.28E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.43E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	4.45E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.75E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.18E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	7.85E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.43E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.28E-01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	5.85E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.82E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.43E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.98E+05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	5.21E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	4.14E+0

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	4.57E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	8.31E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.91E-01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.41E+01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.81E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.41E+01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.15E+05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	3.03E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.41E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Benzene		41	2.08E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.32E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	5.56E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.19E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.36E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.89E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	4.42E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.26E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	2.53E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Manganese		1160	8.59E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.01E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	6.31E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.97E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	1.22E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	5.21E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	3.47E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	6.31E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.45E-01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.59E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.13E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.07E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	8.78E+04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	2.30E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.38E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Benzene		41	9.47E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	6.00E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.53E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Phenol		214	5.42E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	6.17E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	8.58E-01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	2.01E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	5.74E-06
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	1.15E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Manganese		1160	3.90E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	4.59E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	2.87E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	8.95E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	5.52E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	2.37E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.58E-02
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	2.87E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	6.60E-02
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.18E+01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	9.69E-01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.88E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.99E+04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	1.05E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	8.32E-01
4046	ASPHALT PLANT F1 H.O. HEATER	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Benzene		41	3.17E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.01E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	8.47E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.82E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	2.07E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.88E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	6.73E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.92E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.85E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.31E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.54E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	9.62E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	3.00E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	1.85E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	7.94E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	5.29E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	9.62E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.21E-01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.37E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.25E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.64E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.34E+05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	3.51E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.79E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Benzene		41	3.31E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.10E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	8.83E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.90E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	2.16E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	3.00E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	7.03E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	2.01E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	4.01E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.36E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.61E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.00E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	3.13E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	1.93E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	8.28E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	5.52E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

						<----- Emissions ----->			
S#	Name	Material	Source Code	ThruPut	Units	Date	Pollutant	Code	lb/day
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	1.00E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	2.31E-01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	3.51E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	3.39E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	1.71E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	1.40E+05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	3.66E+05	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	2.91E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Benzene	41	3.71E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s	92	2.35E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Formaldehyde	124	9.90E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Phenol	214	2.13E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Acetaldehyde	335	2.42E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	3.37E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	7.88E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Cadmium	1070	2.25E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	4.50E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Manganese	1160	1.53E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	1.80E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	1.13E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	3.51E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	2.17E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv	1860	9.28E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	6.19E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	1.13E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	2.59E-01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	5.74E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	3.80E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	1.91E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	1.56E+05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	4.11E+05	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	3.26E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Benzene	41	5.26E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s	92	3.33E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Formaldehyde	124	1.40E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Phenol	214	3.01E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Acetaldehyde	335	3.43E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	4.76E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	1.12E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Cadmium	1070	3.19E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	6.37E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Manganese	1160	2.17E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	2.55E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	1.59E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	4.97E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	3.07E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv	1860	1.31E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	8.76E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	1.59E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	3.67E-01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	8.13E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	5.38E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	2.71E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	2.22E+05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	5.82E+05	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	4.62E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Benzene	41	2.94E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s	92	1.86E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Formaldehyde	124	7.83E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Phenol	214	1.68E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Acetaldehyde	335	1.91E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	2.66E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	6.23E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Cadmium	1070	1.78E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	3.56E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Manganese	1160	1.21E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	1.42E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	8.90E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	2.78E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	1.71E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv	1860	7.34E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	4.89E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	8.90E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	2.05E-01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	1.44E+02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	3.00E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	1.51E+01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	1.24E+05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	3.25E+05	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	2.58E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Benzene	41	6.51E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s	92	4.12E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Formaldehyde	124	1.74E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Phenol	214	3.73E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Acetaldehyde	335	4.24E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	5.90E-01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	1.38E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Cadmium	1070	3.95E-06
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	7.89E-06
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Manganese	1160	2.68E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	3.16E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	1.97E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	6.16E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	3.80E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv	1860	1.63E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	1.09E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	1.97E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	4.54E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	3.89E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	6.66E-01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.35E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.74E+04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	7.20E+04	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	5.72E-01
4070	#4 CRUDE UNIT F 1100A	Naphtha	C1520188	0.00E+00	/yr	12/31/2008			0	0.00E+00
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Benzene		41	2.01E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.27E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Formaldehyde		124	5.35E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Phenol		214	1.15E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.31E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.82E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	4.26E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Cadmium		1070	1.22E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	2.43E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Manganese		1160	8.27E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	9.73E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	6.08E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.90E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	1.17E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	PAH's (benzo[al]pyrene equiv)		1860	5.02E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	3.34E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	6.08E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.40E+00
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.70E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.64E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.03E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	8.45E+05
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	2.22E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.76E+01
4071	#4 CRUDE UNIT F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2008			0	0.00E+00
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Benzene		41	1.85E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.17E-01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Formaldehyde		124	4.92E-03
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Phenol		214	1.06E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.20E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.67E+01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	3.91E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Cadmium		1070	1.12E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	2.24E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Manganese		1160	7.61E-03
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	8.95E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	5.59E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.74E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	1.08E-01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	PAH's (benzo[al]pyrene equiv)		1860	4.61E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	3.08E-01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	5.59E+01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.29E+00
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.57E+02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.51E+02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	9.51E+01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	7.77E+05
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	2.04E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.62E+01
4072	#4 CRUDE UNIT F1160	Naphtha	C1520188	0.00E+00	/yr	12/31/2008			0	0.00E+00
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Benzene		41	5.89E-03
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	3.73E-02
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.57E-03
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Phenol		214	3.37E-03
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.84E-03
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	5.34E+00
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	1.25E-04
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	3.57E-05
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	7.14E-05
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Manganese		1160	2.43E-03
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	2.86E-04
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.79E-04
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	5.57E-03
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	3.44E-02
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[al]pyrene equiv)		1860	1.47E-02
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	9.82E-02
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.79E+01
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.11E-01
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	5.00E+01
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.82E+01
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.04E+01
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.48E+05
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	6.52E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	5.18E+00
4073	LSFO COOLING TOWER	Fresh water	G5005415	7.62E+04	thou gallo/yr	12/31/2008	Organics (part not spec else		990	1.25E+00
4076	3 CAT COOLING TOWER E460	Fresh water	G5005415	1.02E+05	thou gallo/yr	12/31/2008	Organics (part not spec else		990	1.68E+00
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Benzene		41	2.69E-06
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Organics (part not spec else		990	2.44E-03
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Particulates (portion of tot		1990	1.27E-03
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	9.75E-05
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	5.91E-02
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.40E-04
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.48E-02
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.17E+01
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	1.62E+03	therms/yr	12/31/2008	Methane (CH4)		6970	8.02E-04
4129	800# STM BLR #1 #IPP	Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Benzene		41	6.04E-03
4129	800# STM BLR #1 #IPP	Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	3.82E-02
4129	800# STM BLR #1 #IPP	Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.79E-02
4129	800# STM BLR #1 #IPP	Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.10E-03
4129	800# STM BLR #1 #IPP	Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Toluene		293	2.18E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	5.27E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	5.19E+00
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	7.32E-05
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	3.66E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	5.49E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	3.11E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.92E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.51E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.01E-01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.83E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.21E-01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	6.40E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	6.18E+00
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.11E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.54E+05
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	6.68E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	5.31E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Benzene		41	3.74E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.11E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Phenol		214	6.80E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Toluene		293	1.35E-01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.26E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	3.22E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	4.53E-05
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	2.27E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	3.40E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.93E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.19E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.13E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.61E-01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.97E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.83E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.93E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.58E+05
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	4.14E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	3.29E+00
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Benzene		41	6.49E-03
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	4.11E-02
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.93E-02
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.18E-03
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Toluene		293	2.34E-01
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	5.66E-02
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	5.58E+00
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	7.87E-05
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	3.93E-04
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	5.90E-04
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	3.34E-03
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.06E-02
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.62E-02
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.08E-01
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.96E+01
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.52E-01
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	6.88E+01
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	6.64E+00
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.34E+01
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.73E+05
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	7.18E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	5.70E+00
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Benzene		41	4.23E-03
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.68E-02
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.26E-02
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Phenol		214	7.69E-04
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Toluene		293	1.53E-01
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.69E-02
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	3.64E+00
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	5.13E-05
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	2.56E-04
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	3.85E-04
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.18E-03
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.35E-02
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.06E-02
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	7.05E-02
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.28E+01
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.95E-01
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.49E+01
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.33E+00
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.18E+01
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.78E+05
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	4.68E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	3.72E+00
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Benzene		41	7.76E-03
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	4.91E-02
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	8.58E+05						

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.27E+05
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	8.58E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	6.82E+00
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	3.83E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	5.25E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Benzene		41	8.16E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	5.17E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.18E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Phenol		214	4.67E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Acetaldehyde		335	5.32E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	7.39E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	1.73E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Cadmium		1070	4.94E-06
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	9.89E-06
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Manganese		1160	3.36E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	3.96E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	2.47E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	7.71E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	4.76E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	2.04E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.36E-02
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	2.47E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	5.69E-02
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.01E+01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	8.35E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.20E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.44E+04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.02E+04	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	7.17E-01
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Benzene		41	8.37E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	5.30E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.23E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Phenol		214	4.79E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Acetaldehyde		335	5.45E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	7.58E-01
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	1.77E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Cadmium		1070	5.07E-06
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	1.01E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Manganese		1160	3.45E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	4.06E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	2.54E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	7.91E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	4.88E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	2.09E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.39E-02
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	2.54E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	5.83E-02
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.04E+01
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	8.56E-01
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.31E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.52E+04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	9.25E+04	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	7.35E-01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Benzene		41	1.09E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	6.88E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.90E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Phenol		214	6.22E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Acetaldehyde		335	7.07E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	9.84E+00
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	2.30E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Cadmium		1070	6.58E-05
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	1.32E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Manganese		1160	4.48E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	5.26E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	3.29E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.03E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	6.33E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	2.71E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.81E-01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	3.29E+01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	7.57E-01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.51E+02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.11E+01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.37E+02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.57E+05
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	1.20E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	9.54E+00
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Benzene		41	2.78E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.76E-02
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	7.40E-04
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.59E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.81E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.51E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	5.89E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.68E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.36E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.14E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.35E-04
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	8.41E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.62E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.62E-02
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	6.94E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	4.63E-02
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	8.41E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.93E-01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.45E+01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	7.10E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.43E+01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.17E+05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	3.07E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.44E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Benzene		41	2.46E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.56E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	6.55E-04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.41E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.60E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.23E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	5.21E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.49E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	2.98E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.01E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.19E-04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	7.44E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.32E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.43E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	6.14E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	4.09E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	7.44E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.71E-01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.08E+01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.51E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.27E+01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.03E+05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.72E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.16E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Benzene		41	2.63E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.67E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	7.01E-04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.51E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.71E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.38E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	5.58E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.59E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.19E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.08E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.28E-04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	7.97E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.49E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.53E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	6.58E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	4.38E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	7.97E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.83E-01
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.23E+01
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.69E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.35E+01
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.11E+05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	2.91E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.31E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Benzene		41	2.66E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.68E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	7.08E-04
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Phenol		214	1.52E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.73E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	2.41E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	5.63E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	1.61E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	3.22E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Manganese		1160	1.09E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.29E-04
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	8.05E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.51E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.55E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	6.64E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	4.43E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	8.05E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.85E-01
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.22E+02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.19E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.37E+01
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	2.94E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.12E+05

Printed: AUG 1, 2013

[illegible]

Material	Source Code	ThruPut	Units	Date	Pollutant	Code	lb/day
Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	9.26E+00
Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	2.13E-01
Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	1.40E+02
Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	4.83E+00
Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	1.57E+01
Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	1.29E+05
Chevron refinery fuel gas	C1540708	3.38E+05	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	2.69E+00
Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008		0	0.00E+00
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Cyclop-araffins - other/not s	92	1.75E-02
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Formaldehyde	124	7.35E-04
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Phenol	214	1.58E-03
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Toluene	293	0.00E+00
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Acetaldehyde	335	1.80E-03
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	2.36E+00
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	5.85E-02
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Cadmium	1070	1.67E-05
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	3.34E-05
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Manganese	1160	1.14E-03
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	1.34E-04
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	3.86E-05
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	2.61E-03
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	1.61E-02
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)	1860	6.89E-03
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	4.60E-02
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	1.92E-01
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	1.26E+02
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	4.35E+00
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	1.42E+01
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	1.16E+05
Chevron refinery fuel gas	C1540708	3.05E+05	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	2.42E+00
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Benzene	41	1.83E-03
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Cyclop-araffins - other/not s	92	1.16E-02
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Formaldehyde	124	4.88E-04
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Phenol	214	1.05E-03
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Acetaldehyde	335	1.19E-03
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	1.66E+00
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	3.89E-05
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Cadmium	1070	1.11E-05
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	2.22E-05
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Manganese	1160	7.55E-04
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	8.88E-05
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	5.55E-05
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	1.73E-03
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	1.07E-02
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)	1860	4.58E-03
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	3.05E-02
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	5.55E+00
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	1.28E-01
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	1.94E+01
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	1.87E+00
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	9.44E+00
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	7.72E+04
Chevron refinery fuel gas	C1540708	2.03E+05	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	1.61E+00
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Benzene	41	1.20E-03
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Cyclop-araffins - other/not s	92	7.61E-03
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Formaldehyde	124	3.20E-04
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Phenol	214	6.88E-04
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Acetaldehyde	335	7.83E-04
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	1.09E+00
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	2.55E-05
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Cadmium	1070	7.28E-06
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	1.46E-05
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Manganese	1160	4.95E-04
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	5.82E-05
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	3.64E-05
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	1.14E-03
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	7.01E-03
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)	1860	3.00E-03
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	2.00E-02
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	3.64E+00
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	8.37E-02
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	1.27E+01
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)	3990	1.23E+00
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta	4990	6.19E+00
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic	6960	5.06E+04
Chevron refinery fuel gas	C1540708	1.33E+05	thou cu ft/yr	12/31/2008	Methane (CH4)	6970	1.06E+00
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Benzene	41	1.52E-03
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Cyclop-araffins - other/not s	92	9.61E-03
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Formaldehyde	124	4.04E-04
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Phenol	214	8.69E-04
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Acetaldehyde	335	9.88E-04
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else	990	1.37E+00
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Arsenic (all)	1030	3.22E-05
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Cadmium	1070	9.19E-06
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)	1095	1.84E-05
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Manganese	1160	6.25E-04
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Nickel pollutant	1180	7.35E-05
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant	1190	4.60E-05
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Zinc pollutant	1320	1.43E-03
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)	1840	8.85E-03
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)	1860	3.79E-03
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)	1870	2.53E-02
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot	1990	4.60E+00
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)	2030	1.06E+01
Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp	2990	1.61E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4166 F-610	ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.55E+00
4166 F-610	ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	7.81E+00
4166 F-610	ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	6.39E+04
4166 F-610	ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	1.68E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.33E+00
4167 F-710	TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	6.40E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	3.67E-02
4167 F-710	TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	6.40E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	4.95E+00
4167 F-710	TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	6.40E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.45E-02
4167 F-710	TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	6.40E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	9.65E-02
4167 F-710	TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	6.40E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.03E-01
4167 F-710	TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	6.40E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	7.19E+01
4167 F-710	TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	6.40E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	5.92E+00
4167 F-710	TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	6.40E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.98E+01
4167 F-710	TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	6.40E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.44E+05
4167 F-710	TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	6.40E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	5.09E+00
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Benzene		41	1.39E-02
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	8.82E-02
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Formaldehyde		124	3.71E-03
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Phenol		214	7.98E-03
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Acetaldehyde		335	9.07E-03
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.26E+01
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	2.95E-04
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Cadmium		1070	8.44E-05
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	1.69E-04
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Manganese		1160	5.74E-03
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	6.75E-04
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	4.22E-04
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.32E-02
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	8.13E-02
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	3.48E-02
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	2.32E-01
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	4.22E+01
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	9.71E-01
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.18E+02
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.43E+01
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	7.18E+01
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.87E+05
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.54E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.22E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Benzene		41	1.10E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	6.98E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.94E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Phenol		214	6.31E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Acetaldehyde		335	7.18E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	9.99E+00
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	2.34E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Cadmium		1070	6.68E-05
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	1.34E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Manganese		1160	4.54E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	5.34E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	3.34E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.04E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	6.43E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	2.76E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.84E-01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	3.34E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	7.68E-01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	9.35E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.13E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	5.68E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.64E+05
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	1.22E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	9.69E+00
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Benzene		41	3.86E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.45E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.58E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Phenol		214	1.05E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Toluene		293	8.24E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Acetaldehyde		335	2.58E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	3.42E+01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	5.39E-03
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Manganese		1160	3.28E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.17E-03
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	2.34E-04
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	8.08E-03
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.55E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.27E+06	thou cu ft/yr	1				

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	2.64E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.00E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	6.67E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.21E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.79E+00
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.39E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.02E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.06E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.68E+06
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	4.42E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	3.51E+01
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	1.07E+00	thou gallo/yr	12/31/2008	Organics (part not spec else		990	1.76E-05
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	6.57E+05	thou gallo/yr	12/31/2008	Organics (part not spec else		990	1.08E+01
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	4.07E+04	thou gallo/yr	12/31/2008	Organics (part not spec else		990	6.69E-01
4188	F-651 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Benzene		41	9.45E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	5.98E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.52E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Phenol		214	5.41E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	6.15E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	8.56E-01
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	2.00E-05
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Cadmium		1070	5.73E-06
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	1.15E-05
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Manganese		1160	3.89E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	4.58E-05
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	2.86E-05
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	8.93E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	5.51E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	2.36E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.57E-02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	2.86E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	6.58E-02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	8.30E+01
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.49E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.87E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.98E+04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	1.04E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	8.30E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Benzene		41	5.23E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	3.31E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.39E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Phenol		214	2.99E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.41E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	4.74E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Arsenic (all)		1030	1.11E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Cadmium		1070	3.17E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	6.34E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	9.98E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Manganese		1160	2.15E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.58E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	4.94E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	PAH's (non-speciated)		1840	3.05E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.31E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	8.71E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.58E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.64E-02
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.59E+01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	8.25E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.69E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.20E+04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	5.78E+04	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	4.59E-01
4191	Alkane Cooling Water Tower	Fresh water	G5005415	7.29E+04	thou gallo/yr	12/31/2008	Organics (part not spec else		990	1.20E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Benzene		41	1.09E-03
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Organics (part not spec else		990	9.90E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	5.13E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.95E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.39E+01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.62E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	5.98E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.09E+04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	6.55E+05	therms/yr	12/31/2008	Methane (CH4)		6970	3.25E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Benzene		41	1.30E-03
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Organics (part not spec else		990	1.18E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	6.12E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.71E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.86E+01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.16E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	7.14E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.50E+04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	7.82E+05	therms/yr	12/31/2008	Methane (CH4)		6970	3.88E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Benzene		41	1.42E-03
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Organics (part not spec else		990	1.29E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	6.69E-01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	5.15E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.12E+01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	6.02E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	7.80E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.73E+04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	8.55E+05	therms/yr	12/31/2008	Methane (CH4)		6970	4.24E-01
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	3.37E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	9.23E+00
4227	SRU #1 TRAIN	Sulfur	G7055267	4.59E+04	tons/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	8.75E+03
4228	SRU #2 TRAIN	Sulfur	G7055267	4.68E+04	tons/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.25E+04
4229	SRU #3 TRAIN	Sulfur	G7055267	6.42E+04	tons/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.36E+04
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997	Particulates (portion of tot		1990	6.78E-03
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	2.25E+01	thou barre/yr	12/31/2008	Organics (part not spec else		990	6.18E-02
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	1.80E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	4.94E+01
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	9.55E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	7.85E+00
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	8.80E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	2.41E+02
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	8.36E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	3.43E+01
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	3.44E+04	thou gal/yr	12/31/2008	LPG		160	7.53E+02
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	5.99E+04	million cu/yr	12/31/2008	Ethyl alcohol		105	2.26E+01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	5.99E+04	million cu/yr	12/31/2008	Methyl alcohol		179	8.12E+02
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	5.99E+04	million cu/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	9.02E+01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	5.99E+04	million cu/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.76E+06
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	1.38E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	1.38E+04	thou barre/yr	12/31/2008	Particulates (portion of tot		1990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	1.38E+04	thou barre/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	1.38E+04	thou barre/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	1.38E+04	thou barre/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	0.00E+00	thou gallo/yr	12/31/2008			0	0.00E+00
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	1.74E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	4.77E-03
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	1.50E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	4.10E-03
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	2.30E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	6.31E-04
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	8.96E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	2.45E-03
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Organics (part not spec else		990	1.57E+02
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Particulates (portion of tot		1990	1.45E+03
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.20E+01
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	6.34E+02
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	9.65E+02
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.80E+02
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.48E+06
4285	FCC Plant	Coke	C5737080	2.95E+05	tons/yr	12/31/2008	Methane (CH4)		6970	1.60E+02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Benzene		41	2.06E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Arsenic (all)		1030	9.58E-02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Chromium		1090	1.03E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Manganese		1160	1.99E+01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Nickel pollutant		1180	1.11E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Zinc pollutant		1320	1.77E+01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	PAH's (non-specified)		1840	2.98E-02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Particulates (portion of tot		1990	5.01E+04
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	2.69E+04	thou barre/yr	12/31/2008	Ammonia (NH3) pollutant		6990	4.64E+00
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	1.64E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	4.49E+01
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	8.51E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	1.17E+01
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	2.43E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	9.97E+00
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
4329	RLOP Cooling Tower	Fresh water	G5005415	1.30E+05	thou gallo/yr	12/31/2008	Organics (part not spec else		990	2.50E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Benzene		41	4.47E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	2.83E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.06E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Phenol		214	1.08E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Toluene		293	8.06E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Acetaldehyde		335	3.89E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	3.82E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	2.71E-06
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	1.35E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Manganese		1160	1.22E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	1.35E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	2.71E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	1.76E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	9.64E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.12E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	7.45E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	1.35E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.12E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.93E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.57E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.30E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.88E+04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	4.94E+04	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	3.93E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Benzene		41	7.71E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	4.88E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.82E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Phenol		214	1.87E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Toluene		293	1.39E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Acetaldehyde		335	6.70E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	6.59E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	4.67E-06
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	2.34E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Manganese		1160	2.10E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	2.34E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	4.67E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	3.04E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.66E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.93E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.28E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	2.34E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	5.37E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	6.77E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	7.89E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.97E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.25E+04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	8.52E+04	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	6.77E-01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Benzene		41	2.29E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.45E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	5.40E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Phenol		214	5.54E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Toluene		293	4.12E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.99E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.95E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	1.39E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	6.93E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Manganese		1160	6.23E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	6.93E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	1.39E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	9.00E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	4.93E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	5.71E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	3.81E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	6.93E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.59E-01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.01E+01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.34E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.18E+01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	9.63E+04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	2.53E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	2.01E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.10E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.49E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	4.35E-03
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	2.90E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.21E-01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.53E+01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.78E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	8.97E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	7.33E+04
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	1.93E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.53E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.39E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	8.81E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05						

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (#10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.42E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	7.17E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.86E+04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	1.54E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.22E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.01E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	6.43E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.40E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Phenol		214	2.46E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Toluene		293	1.83E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	8.83E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	8.67E-01
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	6.15E-06
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	3.08E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Manganese		1160	2.77E-04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	3.08E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	6.15E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	4.00E-04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.19E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	2.54E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.69E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	3.08E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	7.07E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	8.92E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.04E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	5.23E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.27E+04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	1.12E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	8.92E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.25E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	7.91E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.95E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Phenol		214	3.03E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Toluene		293	2.25E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.09E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.07E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	7.57E-06
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	3.78E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Manganese		1160	3.41E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	3.78E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	7.57E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	4.92E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.69E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	3.12E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	2.08E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	3.78E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	8.70E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.10E+01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.28E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	6.43E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.26E+04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	1.38E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.10E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.12E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	7.09E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	2.64E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Phenol		214	2.71E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Toluene		293	2.02E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	9.74E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	9.57E-01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	6.79E-06
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	3.39E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Manganese		1160	3.05E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	3.39E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	6.79E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	4.41E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	2.42E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	2.80E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.87E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	3.39E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	7.80E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	9.84E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.15E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	5.77E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.72E+04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	1.24E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	9.84E-01
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.60E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	1.01E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Formaldehyde		124	3.78E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Phenol		214	3.88E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Toluene		293	2.88E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Acetaldehyde		335	1.39E-02
4338	HNC Vacuum Furnace, F-1550									

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	1.77E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.41E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Benzene		41	6.66E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Cycloparaffins - other/not s		92	4.22E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Formaldehyde		124	1.57E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Phenol		214	1.61E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Toluene		293	1.20E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Acetaldehyde		335	5.79E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	5.69E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Chromium (hexavalent)		1095	4.04E-06
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Copper (all) pollutant		1110	2.02E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Manganese		1160	1.82E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Nickel pollutant		1180	2.02E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Mercury (all) pollutant		1190	4.04E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Zinc pollutant		1320	2.62E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	PAH's (non-specified)		1840	1.44E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	PAH's (benzo[a]pyrene equiv)		1860	1.67E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	PAH's (non-carcinogenic)		1870	1.11E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	2.02E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.64E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	5.85E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	6.82E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.43E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.81E+04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	7.37E+04	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	5.85E-01
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	7.30E+05	tons/yr	12/31/2008	Organics (part not spec else		990	1.46E+01
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	4.82E+03	thou barre/yr	12/31/2008	Organics (part not spec else		990	1.32E+01
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	1.19E+06	tons/yr	12/31/2008	Organics (part not spec else		990	2.39E+01
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	2.99E+05	tons/yr	12/31/2008	Organics (part not spec else		990	5.99E+00
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	4.95E+05	tons/yr	12/31/2008	Organics (part not spec else		990	5.02E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Benzene		41	1.87E-03
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.70E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	8.51E-01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	6.52E-02
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.97E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.39E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	9.92E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.94E+04
4349	Furnace F-1650	Process gas - other/not spec	C4840237	1.03E+05	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	8.22E-01
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Benzene		41	2.00E-03
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Formaldehyde		124	9.58E-02
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Organics (part not spec else		989	1.72E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.74E-03
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Particulates (portion of tot		1990	6.45E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.87E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.00E+02
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.30E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.03E+01
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.79E+04
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.43E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Ammonia (NH3) pollutant		6990	9.59E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Benzene		41	3.45E-03
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Formaldehyde		124	1.72E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Organics (part not spec else		989	3.14E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	PAH's (non-specified)		1840	3.11E-02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Particulates (portion of tot		1990	1.19E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.45E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.52E+03
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.57E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.86E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	7.69E+05
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Methane (CH4)		6970	1.53E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	2.41E+07	therms/yr	12/31/2008	Ammonia (NH3) pollutant		6990	1.72E+02
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Benzene		41	2.09E-02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.90E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	9.51E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	7.29E-01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.95E+02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.07E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.11E+02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.41E+05
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.16E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	1.19E+00
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Benzene		41	2.00E-03
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Formaldehyde		124	9.59E-02
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Organics (part not spec else		989	1.72E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.74E-03
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Particulates (portion of tot		1990	6.46E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.87E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.02E+02
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.30E-02
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.03E+01
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.80E+04
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.43E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	1.08E+03	thou gal/yr	12/31/2008	Ammonia (NH3) pollutant		6990	9.60E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Benzene		41	3.35E-03
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Formaldehyde		124	1.66E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Organics (part not spec else		989	3.04E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	PAH's (non-speciated)		1840	3.02E-02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Particulates (portion of tot		1990	1.16E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.41E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.52E+03
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.46E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.80E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	7.46E+05
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Methane (CH4)		6970	1.49E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	2.33E+07	therms/yr	12/31/2008	Ammonia (NH3) pollutant		6990	1.67E+02
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc., other	C7020198	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Benzene		41	1.97E-02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Organics (part not spec else		990	1.79E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Particulates (portion of tot		1990	8.96E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Nitrous Oxide (N2O)		2030	6.87E-01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.95E+02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	5.04E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.04E+02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.15E+05
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	1.09E+06	thou cu ft/yr	12/31/2008	Methane (CH4)		6970	8.66E+00
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2008			0	0.00E+00
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2008			0	0.00E+00
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T33??210	5.02E+00	thou gal/yr	12/31/2008	Perchloroethylene		210	0.00E+00
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T41??210	0.00E+00			Perchloroethylene		210	1.61E-03
4361	Perc Surge Control Vessel V-591	Reformate	T41??398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4362	Perc Surge Control Vessel V-3591	Reformate	T41??398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4363	Perc Storage Tank V-3592	Perchloroethylene	T42??210	5.38E+00	thou gal/yr	12/31/2008	Perchloroethylene		210	4.32E-02
4364	Perc Storage Tank V-4091	Perchloroethylene	T42??210	3.27E+01	thou gal/yr	12/31/2008	Perchloroethylene		210	5.12E-02
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	0.00E+00	thou barre/yr	12/31/2008			0	0.00E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	1.31E+04	thou barre/yr	12/31/2008	Benzene		41	6.09E-01
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	1.31E+04	thou barre/yr	12/31/2008	Toluene		293	1.65E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	1.31E+04	thou barre/yr	12/31/2008	Xylene		307	3.62E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	1.31E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	2.15E+01
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	7.91E+04	thou barre/yr	12/31/2008	Benzene		41	3.69E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	7.91E+04	thou barre/yr	12/31/2008	Toluene		293	9.97E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	7.91E+04	thou barre/yr	12/31/2008	Xylene		307	2.19E+01
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	7.91E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	1.30E+02
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	1.57E+05	tons/yr	12/31/2008	Particulates (portion of tot		1990	4.30E+00
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE8?1052	3.47E+03	thou gal/yr	12/31/1996	Paraffins - C3+		52	2.76E+00
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE8?1052	1.33E+04	thou gal/yr	12/31/1996	Paraffins - C3+		52	5.34E+00
4405	Heavy Oil Transloading Operations	Waste oil	TE6?2549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A131	0.00E+00	gal/yr	12/31/2006	Glycols		131	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A131	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A401	6.00E+00	gal/yr	5/14/2007	Organic liquid - other/not s		201	1.49E-02
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A401	6.00E+00	gal/yr	5/14/2007	Stoddard solvent		401	1.49E-02
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007	Organic liquid - other/not s		201	2.51E-03
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007	Ethylbenzene		333	2.44E-03
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007	Propylene glycol monomethyl		579	2.44E-03
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A729	5.00E+00	gal/yr	5/14/2007	Butyl acetate		48	5.98E-03
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A729	5.00E+00	gal/yr	5/14/2007	2-heptanone		729	5.98E-03
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52B131	0.00E+00	gal/yr	12/31/2006	Glycols		131	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52B131	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52C027	0.00E+00	gal/yr	12/31/2006	Aromatic hydrocarbons - othe		27	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52C027	0.00E+00	gal/yr	12/31/2006	Glycols		131	0.00E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	2.44E+04	thou barre/yr	12/31/2008	Benzene		41	1.26E+01
4413	#2a Separator	Waste water - refin, other/not	G5017300	2.44E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	5.49E+02
4414	#1a Separator	Waste water - refin, other/not	G5017300	1.62E+04	thou barre/yr	12/31/2008	Benzene		41	2.44E+00
4414	#1a Separator	Waste water - refin, other/not	G5017300	1.62E+04	thou barre/yr	12/31/2008	Organics (part not spec else		990	1.06E+02
4415	Asphalt Tank Truck Loading Racks	Asphalt	T98?1030	0.00E+00	thou gal/yr	12/31/2008	Asphalt		30	0.00E+00
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2006	Unknown Pollutant		76	0.00E+00
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2006	Hydrocarbon - mixtures, othe		318	0.00E+00
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E-01	tons/yr	12/31/2000	Particulates (portion of tot		1990	4.75E-01
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Organics (part not spec else		990	0.00E+00
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Particulates (portion of tot		1990	0.00E+00
4424	Equipment Painting Area	Coating/ink/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006	Butyl acetate		48	4.82E-03
4424	Equipment Painting Area	Coating/ink/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006	Naphtha		188	1.61E-03
4424	Equipment Painting Area	Coating/ink/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	2.57E-02
4424	Equipment Painting Area	Mineral spirits	SG700184	4.00E+00	gal/yr	12/31/2006	Mineral spirits		184	7.35E-02
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998	Sulfuric Acid mist pollutant		1530	0.00E+00
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2006	Amide		20	0.00E+00
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4433	#3H2S Plant	Waste gases	G5998338	3.00E+02	million cu/yr	12/31/2008	Organics (part not spec else		990	8.22E-02
4434	#4H2S Plant	Waste gases	G5998338	1.47E+03	million cu/yr	12/31/2008	Organics (part not spec else		990	4.02E-01
4435	#5H2S Plant	Waste gases	G5998338	1.94E+03	million cu/yr	12/31/2008	Organics (part not spec else		990	5.32E-01
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T42??201	3.28E+00	thou gal/yr	12/31/2007	Organic liquid - other/not s		201	1.07E-01
5101	Tank-Marketing T-101	Lube oil	T44??419	1.85E+04	thou gal/yr	3/31/1997	Lube oil		419	6.22E+01
5103	Tank-Marketing T-103	Lube oil	T44??419	1.28E+04	thou gal/yr	3/31/1997	Lube oil		419	4.88E+01
5105	Tank-Marketing T-105	Lube oil	T44??419	1.12E+04	thou gal/yr	3/31/1997	Lube oil		419	4.50E+01
5107	Tank-Marketing T-107	Lube oil	T44??419	3.26E+02	thou gal/yr	3/31/1997	Lube oil		419	3.99E+00
5108	Tank-Marketing T-108	Lube oil	T44??419	2.51E+02	thou gal/yr	3/31/1997	Lube oil		419	3.81E+00
5109	Tank-Marketing T-109	Lube oil	T44??419	4.98E+02	thou gal/yr	3/31/1997	Lube oil		419	4.39E+00
5110	Tank-Marketing T-110	Lube oil	T44??419	1.33E+03	thou gal/yr	3/31/1997	Lube oil		419	6.34E+00
5112	Tank-Marketing T-112	Lube oil	T43??419	5.80E+01	thou gal/yr	3/31/1997	Lube oil		419	9.01E-01
5113	Tank-Marketing T-113	Lube oil	T43??419	5.00E+00	thou gal/yr	3/31/1997	Lube oil		419	7.77E-01
5115	Tank-Marketing T-115	Lube oil	T43??419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	8.99E-01
5117	Tank-Marketing T-117	Lube oil	T44??419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5118	Tank-Marketing T-118	Lube oil	T44??419	4.60E+01	thou gal/yr	3/31/1997	Lube oil		419	1.51E+00
5119	Tank-Marketing T-119	Lube oil	T44??419	6.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.55E+00
5121	Tank-Marketing T-121	Lube oil	T44??419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	2.03E+00
5122	Tank-Marketing T-122	Lube oil	T44??419	6.70E+01	thou gal/yr	3/31/1997	Lube oil		419	1.73E+00
5123	Tank-Marketing T-123	Lube oil	T44??419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5125	Tank-Marketing T-125	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	8.26E-01
5126	Tank-Marketing T-126	Lube oil	T43??419	1.04E+02	thou gal/yr	3/31/1997	Lube oil		419	1.01E+00
5127	Tank-Marketing T-127	Lube oil	T43??419	1.92E+02	thou gal/yr	3/31/1997	Lube oil		419	1.22E+00
5128	Tank-Marketing T-128	Lube oil	T43??419	6.40E+01	thou gal/yr	3/31/1997	Lube oil		419	9.15E-01
5129	Tank-Marketing T-129	Lube oil	T43??419	3.20E+01	thou gal/yr	3/31/1997	Lube oil		419	4.33E-01
5130	Tank-Marketing T-130	Lube oil	T43??419	8.00E+01	thou gal/yr	3/31/1997	Lube oil		419	5.46E-01
5131	Tank-Marketing T-131	Lube oil	T43??419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5132	Tank-Marketing T-132	Lube oil	T43??419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5133	Tank-Marketing T-133	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5134	Tank-Marketing T-134	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5135	Tank-Marketing T-135	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5136	Tank-Marketing T-136	Lube oil	T43??419	1.36E+02	thou gal/yr	3/31/1997	Lube oil		419	6.77E-01
5137	Tank-Marketing T-137	Lube oil	T43??419	1.20E+02	thou gal/yr	3/31/1997	Lube oil		419	6.40E-01
5138	Tank-Marketing T-138	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5139	Tank-Marketing T-139	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	4.19E-01
5140	Tank-Marketing T-140	Lube oil	T43??419	1.30E+01	thou gal/yr	3/31/1997	Lube oil		419	6.16E-04
5201	Tank-Marketing T-201	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5202	Tank-Marketing T-202	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5203	Tank-Marketing T-203	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5204	Tank-Marketing T-204	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997	Lube oil		419	6.61E+00
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997	Lube oil		419	8.74E+00
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	5.05E+00
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997	Lube oil		419	3.54E+00
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.32E+00
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997	Lube oil		419	2.35E+00
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997	Lube oil		419	4.23E+00
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997	Lube oil		419	1.98E+00
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997	Lube oil		419	1.64E+00
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997	Lube oil		419	2.17E+00
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997	Lube oil		419	2.37E+00
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997	Lube oil		419	4.43E+00
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997	Lube oil		419	1.38E+00
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997	Lube oil		419	1.17E+00
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997	Lube oil		419	1.31E+00
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997	Lube oil		419	9.20E-01
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	3.58E+00
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997	Lube oil		419	8.90E-01
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997	Lube oil		419	1.80E+00
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997	Lube oil		419	5.50E-01
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	3.95E-01
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.94E-01
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	7.66E-01
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997	Lube oil		419	5.69E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Benzene		41	2.44E-04
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Organics (part not spec else		990	3.32E+01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	3.83E-01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Nitrogen Oxides (N2O)		2030	8.84E-03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.60E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.17E-02
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.97E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.69E+03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	1.47E+05	therms/yr	12/31/2008	Methane (CH4)		6970	3.32E+01
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Benzene		41	2.60E-04
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Organics (part not spec else		990	3.53E+01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	4.07E-01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Nitrogen Oxides (N2O)		2030	9.41E-03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.77E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.32E-02
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	5.29E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.99E+03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	1.56E+05	therms/yr	12/31/2008	Methane (CH4)		6970	3.53E+01
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Benzene		41	1.29E-04
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Organics (part not spec else		990	1.75E+01
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Particulates (portion of tot		1990	2.03E-01
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Nitrogen Oxides (N2O)		2030	4.68E-03
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.38E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.15E-02
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.63E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.48E+03
6013	North Isomax Flare V-281	Natural gas	C8700189	7.77E+04	therms/yr	12/31/2008	Methane (CH4)		6970	1.75E+01
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2008			0	0.00E+00
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Benzene		41	2.38E-04
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Organics (part not spec else		990	3.23E+01
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	3.73E-01
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	8.62E-03
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.54E+00
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.12E-02
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.85E+00
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.57E+03
6016	FCC Flare V-731	Natural gas	C8700189	1.43E+05	therms/yr	12/31/2008	Methane (CH4)		6970	3.23E+01
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Benzene		41	1.23E-04
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Organics (part not spec else		990	1.68E+01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Particulates (portion of tot		1990	1.93E-01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.47E-03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.32E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.10E-02
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.51E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.57E+03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	7.41E+04	therms/yr	12/31/2008	Methane (CH4)		6970	1.68E+01
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Benzene		41	2.53E-04
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Organics (part not spec else		990	3.43E+01
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Particulates (portion of tot		1990	3.96E-01
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Nitrous Oxide (N2O)		2030	9.15E-03
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.69E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.25E-02
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	5.15E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.85E+03
6039	Lube Flare, V-3501	Natural gas	C8700189	1.52E+05	therms/yr	12/31/2008	Methane (CH4)		6970	3.43E+01
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2008			0	0.00E+00
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-02
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998			0	0.00E+00
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-02
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-02
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2008			0	0.00E+00
6051	Alky Cooling Tower	Fresh water	G5005415	2.26E+05	thou gallo/yr	12/31/2008	Organics (part not spec else		990	4.33E-01
6051	Alky Cooling Tower	Fresh water	G5005415	2.26E+05	thou gallo/yr	12/31/2008	Particulates (portion of tot		1990	1.86E-01
6061	Alkane Treatment Plant	Refinery feedstock - other/not	G5023239	0.00E+00	thou barre/yr	12/31/2008			0	0.00E+00
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00	thou gal/yr	12/31/2008	Water/organics mixture		502	0.00E+00
6125	Tank 6125	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	0.00E+00
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6200	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6200	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6201	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6201	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6202	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6202	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6203	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6204	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6205	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6206	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6207	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

[illegible]

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6227	Portable Steel Storage	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6227	Portable Steel Storage	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6227	Portable Steel Storage	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6227	Portable Steel Storage	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6227	Portable Steel Storage	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6228	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	1.49E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	6.73E-01
6228	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6228	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6228	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	2.39E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	5.00E-01
6229	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6229	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6229	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6230	Portable Steel Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6230	Portable Steel Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6230	Portable Steel Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6230	Portable Steel Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	1.20E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.33E-01
6231	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6231	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6231	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6232	Portable Steel Storage Container	Petroleum products - other/not	T43??321	8.44E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	2.46E-02
6232	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6232	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6233	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	1.76E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.44E-01
6233	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6233	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6233	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6234	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6234	Portable Steel Storage Container	Oil/water mixture	T43??503	8.40E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	2.75E-02
6234	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6235	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6235	Portable Steel Storage Container	Oil/water mixture	T43??503	1.26E+01	thou gal/yr	12/31/2008	Oil/water mixture		503	2.89E-02
6235	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	2.52E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.16E-01
6236	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6236	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6236	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	1.02E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	1.30E-01
6237	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6237	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6237	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	1.85E+01	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	8.62E-02
6238	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6238	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2008	Oil/water mixture		503	0.00E+00
6238	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
6239	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2008	Petroleum products - other/n		321	0.00E+00
6239	Portable Steel Storage Container	Oil/water mixture	T43??503	1.68E+01	thou gal/yr	12/31/2008	Oil/water mixture		503	3.02E-02
6239	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2008	Waste oil		549	0.00E+00
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2008			0	0.00E+00
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997	Ammonia (NH3) pollutant		6990	2.48E-02
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Benzene		41	1.10E-02
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Formaldehyde		124	8.95E-04
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	5.97E-01
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	9.42E-06
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	5.52E-06
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Cadmium		1070	2.36E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	4.87E-07
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	2.00E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Manganese		1160	3.14E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	3.81E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	6.66E-06
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	5.44E-01
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	4.97E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.90E-03
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.82E+00
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	3.53E-03
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.66E+00
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	3.62E+02
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	5.93E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.45E-02
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Benzene		41	3.50E-04
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Formaldehyde		124	2.90E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	5.14E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	3.05E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	1.79E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Cadmium		1070	7.63E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	1.58E-08
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	6.47E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Manganese		1160	1.02E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	1.23E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	2.16E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.75E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.61E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	9.39E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.05E-01
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.14E-04
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.05E-02
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.17E+01
7013	SRU Standby Generator	Diesel fuel	C22BH098	1.92E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	4.69E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Benzene		41	6.25E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Formaldehyde		124	5.10E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	3.61E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	5.37E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	3.15E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Cadmium		1070	1.34E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	2.78E-08
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	1.14E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Manganese		1160	1.79E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	2.17E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	3.80E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.47E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	2.83E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.65E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.53E-01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.01E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.12E-01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.07E+01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	3.38E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	8.26E-04
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Benzene		41	6.10E-04
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Formaldehyde		124	4.98E-05
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	3.32E-02
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	5.24E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	3.07E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Cadmium		1070	1.31E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	2.71E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	1.11E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Manganese		1160	1.74E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	2.12E-05
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	3.71E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	3.03E-02
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	2.77E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.61E-04
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.24E-01
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.97E-04
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	9.22E-02
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.02E+01
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	3.30E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	8.07E-04
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Benzene		41	3.13E-04
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Formaldehyde		124	2.55E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	1.70E-02
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	2.69E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	1.57E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Cadmium		1070	6.71E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	1.39E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	5.70E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Manganese		1160	8.94E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	1.09E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	1.90E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.55E-02
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.42E-06
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	8.26E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.17E-01
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.01E-04
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	4.72E-02
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.03E+01
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.69E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	4.13E-04
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Benzene		41	2.46E-04
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Formaldehyde		124	2.01E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	1.34E-02
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	2.11E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	1.24E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Cadmium		1070	5.28E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	1.09E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	4.48E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Manganese		1160	7.03E-07

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	8.55E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	1.49E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.22E-02
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.12E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	6.50E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.71E-01
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	7.93E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.72E-02
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	8.13E+00
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	1.33E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	3.25E-04
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Benzene		41	7.66E-04
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Formaldehyde		124	6.25E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	2.61E-03
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	6.58E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	3.86E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Cadmium		1070	1.64E-06
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	3.40E-08
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	1.40E-06
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Manganese		1160	2.19E-06
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	2.66E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	4.65E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.03E-02
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	3.47E-06
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.02E-04
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	2.27E-01
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.47E-04
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	9.18E-02
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.53E+01
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	4.14E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.01E-03
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Benzene		41	6.88E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Formaldehyde		124	5.61E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	3.75E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	5.91E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	3.47E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Cadmium		1070	1.48E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	3.06E-08
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	1.25E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Manganese		1160	1.97E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	2.39E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	4.18E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	3.41E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	3.12E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.82E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.78E-01
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.22E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.04E-01
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.27E+01
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	3.72E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	9.09E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Benzene		41	1.63E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Formaldehyde		124	1.33E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Organics (part not spec else		990	2.13E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Arsenic (all)		1030	1.40E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	8.20E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Cadmium		1070	3.50E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	7.23E-08
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	2.97E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Manganese		1160	4.65E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Nickel pollutant		1180	5.66E-05
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	9.88E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.28E-02
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	7.38E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.30E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.35E-01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	5.24E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	8.93E-02
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.38E+01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	8.80E-01	thou gal/yr	12/31/2008	Methane (CH4)		6970	2.15E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Benzene		41	4.16E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Formaldehyde		124	3.40E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	5.44E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	3.58E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	2.10E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Cadmium		1070	8.94E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	1.85E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	7.58E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Manganese		1160	1.19E-05
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	1.45E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	2.53E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	3.26E-02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.89E-05
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.10E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.11E+00
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	1.34E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.28E-01
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	1.38E+02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	2.25E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	5.50E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Benzene		41	8.87E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Formaldehyde		124	7.07E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	4.72E-01
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	7.45E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	4.37E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Cadmium		1070	1.86E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	3.85E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	1.58E-05

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Manganese		1160	2.48E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	3.01E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	5.26E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	4.30E-01
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	3.93E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.29E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	6.02E+00
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.79E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.31E+00
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.86E+02
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	4.69E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.15E-02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Benzene		41	2.22E-02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Formaldehyde		124	1.81E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Organics (part not spec else		990	1.21E+00
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Arsenic (all)		1030	1.91E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	1.12E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Cadmium		1070	4.78E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	9.88E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	4.05E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Manganese		1160	6.36E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Nickel pollutant		1180	7.73E-04
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	1.35E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.10E+00
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.01E-04
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	5.88E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.55E+01
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	7.16E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	3.36E+00
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	7.35E+02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	1.20E+01	thou gal/yr	12/31/2008	Methane (CH4)		6970	2.94E-02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Benzene		41	6.37E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Formaldehyde		124	5.19E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	3.47E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	5.47E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	3.21E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Cadmium		1070	1.37E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	2.83E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	1.16E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Manganese		1160	1.82E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	2.21E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	3.87E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	3.16E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	2.89E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	1.68E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	4.42E+00
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.05E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	9.62E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.10E+02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	3.44E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	8.41E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Benzene		41	1.68E-02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Formaldehyde		124	1.37E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	9.18E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	1.45E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	8.49E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Cadmium		1070	3.62E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	7.49E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	3.07E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Manganese		1160	4.82E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	5.86E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	1.02E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	8.36E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	7.64E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.45E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.17E+01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	5.43E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.55E+00
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	5.57E+02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	9.11E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	2.23E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Benzene		41	7.90E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Formaldehyde		124	6.44E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	4.30E-01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	6.79E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	3.98E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Cadmium		1070	1.70E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	3.51E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	1.44E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Manganese		1160	2.26E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	2.74E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	4.80E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	3.92E-01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	3.58E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	2.09E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	5.49E+00
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	2.54E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	1.19E+00
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	2.61E+02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	4.27E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.04E-02
7522	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Benzene		41	3.00E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Formaldehyde		124	2.45E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	1.17E-02
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	2.58E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	1.51E-06

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Cadmium		1070	6.44E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	1.33E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	5.46E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Manganese		1160	8.57E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	1.04E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	1.82E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	6.21E-02
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	1.36E-05
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	7.92E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.17E+00
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	9.66E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	7.07E-01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	9.91E+01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	1.62E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	3.96E-03
7525	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Benzene		41	1.85E-03
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Formaldehyde		124	1.51E-04
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Organics (part not spec else		990	7.20E-03
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Arsenic (all)		1030	1.59E-06
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	9.33E-07
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Cadmium		1070	3.98E-06
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	8.24E-08
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	3.38E-06
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Manganese		1160	5.30E-06
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Nickel pollutant		1180	6.44E-05
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	1.13E-06
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	3.84E-02
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	8.40E-06
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	4.90E-04
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	7.25E-01
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	5.97E-04
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	8.34E-02
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	6.12E+01
7526	Air Compressor Engine, P-1606	Diesel fuel	C24AG098	1.00E+00	thou gal/yr	12/31/2008	Methane (CH4)		6970	2.45E-03
7527	Diesel Engine, Deutz model F4L912HO	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Benzene		41	1.48E-04
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Formaldehyde		124	1.22E-05
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Organics (part not spec else		990	7.14E-03
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Arsenic (all)		1030	1.29E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	7.55E-08
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Cadmium		1070	3.22E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	6.66E-09
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	2.73E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Manganese		1160	4.28E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Nickel pollutant		1180	5.21E-06
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	9.10E-08
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	7.43E-03
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	PAH's (non-specified)		1840	6.79E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.96E-05
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	1.04E-01
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.83E-05
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	2.26E-02
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.95E+00
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	8.10E-02	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.98E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Benzene		41	4.01E-03
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Formaldehyde		124	3.32E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Organics (part not spec else		990	1.85E-02
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Arsenic (all)		1030	3.50E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Beryllium (all) pollutant		1040	2.05E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Cadmium		1070	8.74E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Chromium (hexavalent)		1095	1.81E-07
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Lead (all) pollutant		1140	7.41E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Manganese		1160	1.16E-05
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Nickel pollutant		1180	1.41E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Mercury (all) pollutant		1190	2.47E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Diesel Engine Exhaust Partic		1350	1.36E-02
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	PAH's (non-specified)		1840	1.84E-05
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Nitrogen Oxides (part not sp		2990	3.40E-01
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Sulfur Dioxide (SO2)		3990	1.31E-03
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Carbon Monoxide (CO) polluta		4990	3.03E-01
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Carbon Dioxide, non-biogenic		6960	1.34E+02
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	2.20E+00	thou gal/yr	8/17/2007	Methane (CH4)		6970	5.38E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Benzene		41	2.16E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Formaldehyde		124	1.77E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Organics (part not spec else		990	2.73E-02
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Arsenic (all)		1030	1.86E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Beryllium (all) pollutant		1040	1.09E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Cadmium		1070	4.65E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Chromium (hexavalent)		1095	9.62E-08
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Lead (all) pollutant		1140	3.94E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Manganese		1160	6.19E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Nickel pollutant		1180	7.52E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Mercury (all) pollutant		1190	1.31E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Diesel Engine Exhaust Partic		1350	1.40E-02
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	PAH's (non-specified)		1840	9.81E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Nitrous Oxide (N2O)		2030	5.72E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Nitrogen Oxides (part not sp		2990	5.64E-01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Sulfur Dioxide (SO2)		3990	6.97E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Carbon Monoxide (CO) polluta		4990	6.47E-02
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Carbon Dioxide, non-biogenic		6960	7.15E+01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Methane (CH4)		6970	2.86E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Benzene		41	2.16E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Formaldehyde		124	1.77E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Organics (part not spec else		990	2.73E-02
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Arsenic (all)		1030	1.86E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Beryllium (all) pollutant		1040	1.09E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Cadmium		1070	4.65E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Chromium (hexavalent)		1095	9.62E-08
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Lead (all) pollutant		1140	3.94E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Manganese		1160	6.19E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Nickel pollutant		1180	7.52E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Mercury (all) pollutant		1190	1.31E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Diesel Engine Exhaust Partic		1350	1.40E-02
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	PAH's (non-speciated)		1840	9.81E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Nitrous Oxide (N2O)		2030	5.72E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Nitrogen Oxides (part not sp		2990	5.64E-01
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Sulfur Dioxide (SO2)		3990	6.97E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Carbon Monoxide (CO) polluta		4990	6.47E-02
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Carbon Dioxide, non-biogenic		6960	7.15E+01
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	1.17E+00	thou gal/yr	12/19/2007	Methane (CH4)		6970	2.86E-03
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Benzene		41	1.30E-01
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Formaldehyde		124	1.06E-02
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Organics (part not spec else		990	1.79E+00
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Arsenic (all)		1030	1.11E-04
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Beryllium (all) pollutant		1040	6.53E-05
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Cadmium		1070	2.78E-04
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Chromium (hexavalent)		1095	5.76E-06
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Lead (all) pollutant		1140	2.36E-04
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Manganese		1160	3.71E-04
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Nickel pollutant		1180	4.50E-03
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Mercury (all) pollutant		1190	7.87E-05
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Diesel Engine Exhaust Partic		1350	1.31E+00
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	PAH's (non-speciated)		1840	5.88E-04
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Nitrous Oxide (N2O)		2030	3.43E-02
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Nitrogen Oxides (part not sp		2990	3.67E+01
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Sulfur Dioxide (SO2)		3990	4.18E-02
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Carbon Monoxide (CO) polluta		4990	7.48E+00
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Carbon Dioxide, non-biogenic		6960	4.28E+03
7537	Primary FCCU Pump Diesel Engine	Diesel fuel	C24AG098	7.01E+01	thou gal/yr	12/31/2008	Methane (CH4)		6970	1.71E-01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	0.00E+00	thou gal/yr	12/31/2008			0	0.00E+00
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006	Ethyl alcohol		105	3.43E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006	Methyl ethyl ketone (MEK)		169	6.86E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006	Organic liquid - other/not s		201	1.14E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	1.80E+01	gal/yr	12/31/2006	Methyl ethyl ketone (MEK)		169	3.31E-01
9047	Tank 6047	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	0.00E+00
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??090	-5.45E+01	thou gal/yr	12/31/1997	Ketone - other/not spec		90	3.46E-02
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??419	-3.51E+00	thou gal/yr	12/31/1997	Lube oil		419	5.24E-02
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998	Hydrocarbon - mixtures, othe		318	2.77E-01
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Benzene		41	4.48E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Toluene		293	1.52E-02
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Xylene		307	1.79E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Ethylbenzene		333	1.05E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Gasoline - unleaded		551	1.47E+00
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??052	5.29E+05	thou gal/yr	12/31/2008	Paraffins - C3+		52	2.05E+02
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??158	0.00E+00	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	0.00E+00
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??242	1.15E+05	thou gal/yr	12/31/2008	Bunker C fuel oil		242	1.89E-02
9321	Marine Loading Berth #1	Distillate oil	TB8??315	6.53E+04	thou gal/yr	12/31/2008	Distillate oil		315	1.61E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
9321	Marine Loading Berth #1	Crude oil	TF8??089	5.13E+04	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??052	1.50E+05	thou gal/yr	12/31/2008	Paraffins - C3+		52	5.82E+01
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008	Benzene		41	8.37E-01
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008	Ethylene dichloride		107	1.42E-02
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008	Gasoline - leaded		128	7.77E+01
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008	Toluene		293	4.18E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008	Xylene		307	9.21E-01
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	1.13E+04	thou gal/yr	12/31/2008	Ethylene dibromide		420	5.61E-04
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??158	2.02E+05	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	4.99E+00
9322	Marine Loading Berth #2	Methyl alcohol	TB8??179	0.00E+00	thou gal/yr	12/31/2008	Methyl alcohol		179	0.00E+00
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??201	6.70E+02	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	2.09E-01
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??242	1.11E+05	thou gal/yr	12/31/2008	Bunker C fuel oil		242	1.82E-02
9322	Marine Loading Berth #2	Toluene	TB8??293	3.50E+03	thou gal/yr	12/31/2008	Toluene		293	2.91E+00
9322	Marine Loading Berth #2	Distillate oil	TB8??315	1.96E+05	thou gal/yr	12/31/2008	Distillate oil		315	4.82E+00
9322	Marine Loading Berth #2	Lube oil	TB8??419	2.01E+05	thou gal/yr	12/31/2008	Lube oil		419	1.63E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	1.38E+05	thou gal/yr	12/31/2008	Benzene		41	3.82E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	1.38E+05	thou gal/yr	12/31/2008	Toluene		293	1.30E+01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	1.38E+05	thou gal/yr	12/31/2008	Xylene		307	1.53E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	1.38E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	8.91E-01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	1.38E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	1.25E+03
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??628	0.00E+00	thou gal/yr	12/31/2008	Methyl tertiary-butyl ether		628	0.00E+00
9322	Marine Loading Berth #2	Crude oil	TF8??089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??052	6.02E+04	thou gal/yr	12/31/2008	Paraffins - C3+		52	2.34E+01
9323	Marine Loading Berth #3	Crude oil	TB8??089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008	Benzene		41	1.07E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008	Ethylene dichloride		107	1.82E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008	Gasoline - leaded		128	9.96E+01
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008	Toluene		293	5.36E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008	Xylene		307	1.18E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	1.45E+04	thou gal/yr	12/31/2008	Ethylene dibromide		420	7.19E-04
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB8??158	8.29E+04	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	2.05E+00
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB8??201	7.43E+03	thou gal/yr	12/31/2008	Organic liquid - other/not s		201	1.41E+02
9323	Marine Loading Berth #3	Bunker C fuel oil	TB8??242	2.00E+04	thou gal/yr	12/31/2008	Bunker C fuel oil		242	3.29E-03
9323	Marine Loading Berth #3	Toluene	TB8??293	1.55E+03	thou gal/yr	12/31/2008	Toluene		293	1.28E+00
9323	Marine Loading Berth #3	Distillate oil	TB8??315	1.95E+05	thou gal/yr	12/31/2008	Distillate oil		315	4.80E+00
9323	Marine Loading Berth #3	Lube oil	TB8??419	0.00E+00	thou gal/yr	12/31/2008	Lube oil		419	0.00E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	6.14E+05	thou gal/yr	12/31/2008	Benzene		41	1.70E+01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	6.14E+05	thou gal/yr	12/31/2008	Toluene		293	5.78E+01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	6.14E+05	thou gal/yr	12/31/2008	Xylene		307	6.80E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	6.14E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	3.96E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	6.14E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	5.58E+03
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB4?2318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, other		318	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
9324	Marine Loading Berth #4	Bunker C fuel oil	TB8??242	0.00E+00	thou gal/yr	12/31/2008	Bunker C fuel oil		242	0.00E+00
9324	Marine Loading Berth #4	Distillate oil	TB8??315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
9324	Marine Loading Berth #4	Crude oil	TF8??089	3.61E+06	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
9325	Marine Loading Berth #9	Paraffins - C3+	TB8??052	2.04E+03	thou gal/yr	12/31/2008	Paraffins - C3+		52	3.95E-01
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dichloride		107	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008	Gasoline - leaded		128	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2008	Ethylene dibromide		420	0.00E+00
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB8??158	1.01E+03	thou gal/yr	12/31/2008	Fuel - jet 'A'		158	2.48E-02
9325	Marine Loading Berth #9	Bunker C fuel oil	TB8??242	1.67E+05	thou gal/yr	12/31/2008	Bunker C fuel oil		242	2.74E-02
9325	Marine Loading Berth #9	Toluene	TB8??293	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Distillate oil	TB8??315	3.51E+03	thou gal/yr	12/31/2008	Distillate oil		315	8.66E-02
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB8??318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, other		318	0.00E+00
9325	Marine Loading Berth #9	Lube oil	TB8??419	0.00E+00	thou gal/yr	12/31/2008	Lube oil		419	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2008	Gasoline - unleaded		551	0.00E+00
9325	Marine Loading Berth #9	Crude oil	TF8??089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
9326	Marine Loading Berth #11	Paraffins - C3+	TB8??052	0.00E+00	thou gal/yr	12/31/2008	Paraffins - C3+		52	0.00E+00
9326	Marine Loading Berth #11	Bunker C fuel oil	TB8??242	0.00E+00	thou gal/yr	12/31/2008	Bunker C fuel oil		242	0.00E+00
9326	Marine Loading Berth #11	Distillate oil	TB8??315	0.00E+00	thou gal/yr	12/31/2008	Distillate oil		315	0.00E+00
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00			Organics (part not spec else		990	0.00E+00
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00			Organics (part not spec else		990	1.50E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Benzene		41	2.63E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cyclohexane		91	2.10E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylene dichloride		107	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Hexane		148	3.53E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Isooctane		154	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl alcohol		179	2.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Perchloroethylene		210	7.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Toluene		293	9.62E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Xylene		307	1.06E+01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cumene		326	2.00E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylbenzene		333	2.09E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,2,4-trimethylbenzene		385	2.79E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene dibromide		420	3.00E-03
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,3-butadiene		521	2.80E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene		536	1.17E+01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Propylene		564	6.43E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Organics (part not spec else		990	6.15E+02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ammonia (NH3) pollutant		6990	5.39E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Benzene		41	5.50E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cyclohexane		91	3.20E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Hexane		148	4.80E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Isooctane		154	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl alcohol		179	1.00E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Toluene		293	1.86E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Xylene		307	2.16E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Ethylbenzene		333	4.40E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,2,4-trimethylbenzene		385	6.40E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,3-butadiene		521	1.00E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cresol		525	2.00E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ethylene		536	2.90E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Propylene		564	2.90E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Organics (part not spec else		990	1.26E+02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ammonia (NH3) pollutant		6990	1.76E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Benzene		41	1.20E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Hexane		148	4.30E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Toluene		293	5.50E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Xylene		307	6.40E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			1,3-butadiene		521	1.00E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Cresol		525	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ethylene		536	1.50E-02
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Propylene		564	4.20E-01
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Organics (part not spec else		990	9.40E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ammonia (NH3) pollutant		6990	1.30E-04
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Benzene		41	1.00E-03
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Hexane		148	8.90E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Toluene		293	1.60E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Xylene		307	1.60E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cumene		326	9.00E-02
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Ethylbenzene		333	3.60E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,2,4-trimethylbenzene		385	3.00E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,3-butadiene		521	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cresol		525	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Organics (part not spec else		990	7.16E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Benzene		41	1.31E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Formaldehyde		124	4.67E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Phenol		214	2.54E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Acetaldehyde		335	7.62E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			1,3-butadiene		521	1.43E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Organics (part not spec else		990	6.45E-02
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Arsenic (all)		1030	1.25E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cadmium		1070	6.85E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Chromium		1090	8.72E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Magnesium pollutant		1150	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Manganese		1160	2.37E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nickel pollutant		1180	1.31E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Mercury (all) pollutant		1190	1.62E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Zinc pollutant		1320	1.80E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			PAH's (non-speciated)		1840	4.35E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Particulates (portion of tot		1990	4.73E-02
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nitrogen Oxides (part not sp		2990	8.00E-01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Sulfur Dioxide (SO2)		3990	1.41E+02
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Carbon Monoxide (CO) polluta		4990	1.77E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Abated Detailed Pollutant Emissions
for Calendar Year 2009***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T421?318	3.00E-01	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	3.88E-03
55	Tank 55	Distillate oil	T81??315	0.00E+00	thou gal/yr	12/31/2003	Distillate oil		315	0.00E+00
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Benzene		41	1.94E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Toluene		293	6.58E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Xylene		307	7.75E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Ethylbenzene		333	4.52E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Gasoline - unleaded		551	6.36E-02
200	TANK 200A	Organic liquid - other/not spe	T441?201	4.40E+03	thou gal/yr	12/31/1996	Organic liquid - other/not s		201	0.00E+00
204	TANK 204	Distillate oil	T441?315	0.00E+00	thou gal/yr	12/31/1997	Distillate oil		315	0.00E+00
223	TANK 223	Water/organics mixture	T441?502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
225	TANK 225	Water/organics mixture	T441?502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
234	TANK 234	Distillate oil	T441?315	1.01E+05	thou gal/yr	4/30/1997	Distillate oil		315	1.39E+01
290	TANK 290	Distillate oil	T441?315	3.81E+04	thou gal/yr	4/30/1997	Distillate oil		315	6.12E+00
291	TANK 291	Distillate oil	T441?315	1.08E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.28E+00
319	TANK 319	Distillate oil	T441?315	1.21E+03	thou gal/yr	4/30/1997	Distillate oil		315	4.12E-01
397	TANK 397	Hydrocarbon - mixtures, other/	T441?318	3.65E+04	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	5.54E+01
399	TANK	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
399	TANK	Oil - non-fuel, other/not spec	T5472352	-1.70E+04	thou gal/yr	12/31/2009	Oil - non-fuel, other/not sp		352	1.19E+01
399	TANK	Tetra-Ethyl Lead (TEL)	T5472422	0.00E+00	thou gal/yr	12/31/2009	Tetra-Ethyl Lead (TEL)		422	0.00E+00
401	TANK 401	Refinery feedstock - other/not	T44??239	4.70E+04	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	1.09E+01
634	TANK 634	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
634	TANK 634	Petroleum products - other/not	T5472321	-2.55E+04	thou gal/yr	12/31/2008	Petroleum products - other/n		321	1.61E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	2.12E+04	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	1.41E-01
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	1.46E-03
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Butane	T42??416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T42??419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.33E-03
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
955	TANK 955	Paraffins - C3+	T5412052	-8.70E+03	thou gal/yr	12/31/2009	Paraffins - C3+		52	2.29E+00
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
956	TANK 956	Paraffins - C3+	T5412052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
957	TANK 957	Diesel fuel	T44??098	-1.32E+04	thou gal/yr	12/31/2009	Diesel oil		98	6.31E+00
957	TANK 957	Fuel - jet 'A'	T44??158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
979	TANK 979	Distillate oil	T44??315	-6.13E+04	thou gal/yr	4/30/1997	Distillate oil		315	7.33E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
984	TANK 984	Distillate oil	T4417315	-9.67E+03	thou gal/yr	12/31/1997	Distillate oil		315	1.41E+00
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
990	TANK 990	Gasoline - unleaded	T5432551	-9.31E+04	thou gal/yr	12/31/2009	Benzene		41	1.39E-02
990	TANK 990	Gasoline - unleaded	T5432551	-9.31E+04	thou gal/yr	12/31/2009	Toluene		293	4.71E-02
990	TANK 990	Gasoline - unleaded	T5432551	-9.31E+04	thou gal/yr	12/31/2009	Xylene		307	5.55E-03
990	TANK 990	Gasoline - unleaded	T5432551	-9.31E+04	thou gal/yr	12/31/2009	Ethylbenzene		333	3.23E-03
990	TANK 990	Gasoline - unleaded	T5432551	-9.31E+04	thou gal/yr	12/31/2009	Gasoline - unleaded		551	4.55E+00
991	TANK 991	Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Benzene		41	1.40E-02
991	TANK 991	Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Toluene		293	4.75E-02
991	TANK 991	Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Xylene		307	5.58E-03
991	TANK 991	Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.26E-03
991	TANK 991	Gasoline - unleaded	T5432551	1.27E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	4.58E+00
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-1.02E+05	thou gal/yr	12/31/2009	Benzene		41	1.36E-02
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-1.02E+05	thou gal/yr	12/31/2009	Toluene		293	4.61E-02
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-1.02E+05	thou gal/yr	12/31/2009	Xylene		307	5.43E-03
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-1.02E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	3.16E-03
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-1.02E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	4.45E+00
1020	Tank 1020: Inorganic Chemical Storage Tank	Diethanolamine	T4477485	4.20E+02	thou gal/yr	3/10/1995	Diethanolamine		485	1.05E-01
1052	Tank 1052: Organic Liquid Storage Tank	Kerosene	T4377159	0.00E+00	thou gal/yr	12/31/2006	Kerosene		159	0.00E+00
1052	Tank 1052: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2006	Hydrocarbon - mixtures, othe		318	0.00E+00
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1287	TANK 1287	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1287	TANK 1287	Petroleum products - other/not	T5432321	-3.06E+04	thou gal/yr	12/31/2009	Petroleum products - other/n		321	2.21E+00
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1289	TANK 1289	Toluene	T6472293	-9.88E+02	thou gal/yr	12/31/2009	Toluene		293	9.96E-01
1289	TANK 1289	Hydrocarbon - mixtures, other/	T6472318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
1292	TANK 1292	Diesel fuel	T5412098	-2.63E+04	thou gal/yr	12/31/2009	Diesel oil		98	2.63E-01
1292	TANK 1292	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
1292	TANK 1292	Jet fuel JP8	T5412684	0.00E+00	thou gal/yr	12/31/2009	Jet fuel JP8		684	0.00E+00
1296	TANK 1296	Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1296	TANK 1296	Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1296	TANK 1296	Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1296	TANK 1296	Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1296	TANK 1296	Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1296	TANK 1296	Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1296	TANK 1296	Gasoline - unleaded	T5412551	-7.40E+04	thou gal/yr	12/31/2009	Benzene		41	1.74E-02
1296	TANK 1296	Gasoline - unleaded	T5412551	-7.40E+04	thou gal/yr	12/31/2009	Toluene		293	5.92E-02
1296	TANK 1296	Gasoline - unleaded	T5412551	-7.40E+04	thou gal/yr	12/31/2009	Xylene		307	6.96E-03
1296	TANK 1296	Gasoline - unleaded	T5412551	-7.40E+04	thou gal/yr	12/31/2009	Ethylbenzene		333	4.06E-03
1296	TANK 1296	Gasoline - unleaded	T5412551	-7.40E+04	thou gal/yr	12/31/2009	Gasoline - unleaded		551	5.71E+00
1297	Tank 1297: Organic Storage Tank	Water/organics mixture	T6372502	5.90E+00	thou gal/yr	12/31/2003	Water/organics mixture		502	8.65E-04
1428	TANK 1428	Refinery feedstock - other/not	T5412239	4.26E+04	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	7.11E+00
1431	Asphalt Tank(T-907)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
1444	TANK 1444	Gasoline - leaded	T5432128	-7.89E+02	thou gal/yr	12/31/2009	Benzene		41	1.90E-02
1444	TANK 1444	Gasoline - leaded	T5432128	-7.89E+02	thou gal/yr	12/31/2009	Ethylene dichloride		107	3.23E-04
1444	TANK 1444	Gasoline - leaded	T5432128	-7.89E+02	thou gal/yr	12/31/2009	Gasoline - leaded		128	1.77E+00
1444	TANK 1444	Gasoline - leaded	T5432128	-7.89E+02	thou gal/yr	12/31/2009	Toluene		293	9.51E-02
1444	TANK 1444	Gasoline - leaded	T5432128	-7.89E+02	thou gal/yr	12/31/2009	Xylene		307	2.09E-02
1444	TANK 1444	Gasoline - leaded	T5432128	-7.89E+02	thou gal/yr	12/31/2009	Ethylene dibromide		420	1.27E-05
1444	TANK 1444	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1444	TANK 1444	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1444	TANK 1444	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1444	TANK 1444	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
1444	TANK 1444	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
1451	TANK 1451	Refinery feedstock - other/not	T5412239	3.30E+03	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	5.30E-02
1455	TANK 1455	Hydrocarbon - mixtures, other/	T4417318	3.30E+03	thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe		318	5.97E-01
1456	TANK 1456	Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe		318	5.90E-01
1459	TANK 1459	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.98E+04	thou gal/yr	12/31/2009	Benzene		41	1.17E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.98E+04	thou gal/yr	12/31/2009	Toluene		293	3.98E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.98E+04	thou gal/yr	12/31/2009	Xylene		307	4.68E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.98E+04	thou gal/yr	12/31/2009	Ethylbenzene		333	2.73E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.98E+04	thou gal/yr	12/31/2009	Gasoline - unleaded		551	3.84E+00
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
1488 TANK 1488		Oil/water mixture	T5472503	-3.27E+03	thou gal/yr	12/31/2009	Oil/water mixture		503	3.13E+01
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1489 TANK 1489		Alkylate	T5432389	-3.60E+04	thou gal/yr	12/31/2009	Alkylate		389	4.88E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2009	Methyl alcohol		179	0.00E+00
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1491 TANK 1491		Gasoline - unleaded	T5432551	-3.40E+04	thou gal/yr	12/31/2008	Benzene		41	1.14E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	-3.40E+04	thou gal/yr	12/31/2008	Toluene		293	3.89E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	-3.40E+04	thou gal/yr	12/31/2008	Xylene		307	4.58E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	-3.40E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	2.67E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	-3.40E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	3.76E+00
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997	Distillate oil		315	3.52E+00
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.30E+00
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	-3.64E+03	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, other		318	2.04E+00
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997	Distillate oil		315	8.02E-01
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997	Fuel oil #2		392	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1514 TANK 1514		Gasoline - unleaded	T5432551	-1.07E+05	thou gal/yr	12/31/2009	Benzene		41	1.54E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	-1.07E+05	thou gal/yr	12/31/2009	Toluene		293	5.25E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	-1.07E+05	thou gal/yr	12/31/2009	Xylene		307	6.18E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	-1.07E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	3.60E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	-1.07E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	5.07E+00
1518 TANK 1518		Fuel - jet 'A'	T5432158	1.30E+04	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	1.22E-01
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997	Paraffins - C3+		52	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	1.79E+03	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	5.44E-02
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Benzene		41	2.36E-06
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Ethylene dichloride		107	4.01E-08
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Gasoline - leaded		128	2.19E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Toluene		293	1.18E-05
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Xylene		307	2.59E-06
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Ethylene dibromide		420	1.58E-09
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Benzene		41	2.04E-03
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Toluene		293	6.94E-03
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Xylene		307	8.17E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Ethylbenzene		333	4.77E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Gasoline - unleaded		551	6.71E-01
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997	Distillate oil		315	1.27E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.10E+04	thou gal/yr	12/31/2009	Benzene		41	3.64E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.10E+04	thou gal/yr	12/31/2009	Toluene		293	1.24E-02
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.10E+04	thou gal/yr	12/31/2009	Xylene		307	1.46E-03
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.10E+04	thou gal/yr	12/31/2009	Ethylbenzene		333	8.50E-04
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.10E+04	thou gal/yr	12/31/2009	Gasoline - unleaded		551	1.20E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
1653 TANK 1653		Fuel - jet 'A'	T4417158	-2.74E+03	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	2.12E+00
1653 TANK 1653		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
1653 TANK 1653		Jet fuel JPS	T4417492	0.00E+00	thou gal/yr	12/31/2009	Jet fuel JPS		492	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.20E+05	thou gal/yr	12/31/2009	Benzene		41	1.61E-02
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.20E+05	thou gal/yr	12/31/2009	Toluene		293	5.47E-02
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.20E+05	thou gal/yr	12/31/2009	Xylene		307	6.43E-03
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.20E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	3.75E-03
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.20E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	5.28E+00
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Benzene		41	1.64E-02
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Toluene		293	5.59E-02
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Xylene		307	6.57E-03
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.84E-03
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	5.40E+00
1798 Tank 1798		Fuel - jet 'A'	T5422158	-2.06E+05	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	7.47E+00
1798 Tank 1798		Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
1799 TANK 1799		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
1799 TANK 1799		Fuel - jet 'A'	T5472158	-1.89E+05	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	1.45E+00
1821 Tank 1821 Fresh Sulfuric Acid Tank		H2SO4 - other/not spec	G5999146	-1.25E+05	tons/yr	12/31/2009	Particulates (portion of tot		1990	6.86E-03
1825 Tank 1825		Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	1.19E-02
1828 TANK 1828		Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006	Paraffins - C3+		52	0.00E+00
1828 TANK 1828		Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006	Pentane		209	0.00E+00
1828 TANK 1828		Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006	Butane		416	0.00E+00
1843 TANK 1843		Paraffins - C3+	T5412052	2.95E+02	thou gal/yr	12/31/2007	Paraffins - C3+		52	1.09E-02
1894 Tank 1894: Phosphoric Acid Storage Tank		Phosphoric acid	G5999217	-8.10E+01	tons/yr	12/31/2009	Particulates (portion of tot		1990	4.44E-06
1899 TANK 1899		Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997	Distillate oil		315	3.92E-01
1908 Asphalt Tank (T-908)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
1909 Tank 1909		Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
1910 Tank 1910		Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994	Organic liquid - other/not s		201	3.55E-02
1911 Tank 1911		Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
1911 Tank 1911		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
1966 TANK 1966		Fuel - jet 'A'	T5432158	2.02E+04	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	2.25E-01
2520 Wastewater/MEA Storage Tank		Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005	Ethyl amine		106	0.00E+00
2520 Wastewater/MEA Storage Tank		Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005	Waste water - refin, other/n		300	6.26E+00
2540 Tank 2540: Organic Liquid Storage Tank		Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997	Ethanolamine		664	1.12E-01
2903 Tank 903: Organic Liquid Storage Tank		Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
2903 Tank 903: Organic Liquid Storage Tank		Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.17E-04
2917 Asphalt Tank (T-917)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
2918 Asphalt Tank (T-918)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
2921 Asphalt Tank (T-921)		Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
3038 TANK 3038 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
3038 TANK 3038 (Spherical Pressure Tank)		Pentane	T3477209	-1.23E+03	thou gal/yr	12/31/2009	Pentane		209	0.00E+00
3050 TANK 3050 SPHERE		Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3066 TANK 3066		Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
3071 TANK 3071		Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2009	Benzene		41	3.66E-01
3071 TANK 3071		Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2009	Toluene		293	1.24E+00
3071 TANK 3071		Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2009	Xylene		307	1.46E-01
3071 TANK 3071		Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	8.53E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3071	TANK 3071	Gasoline - unleaded	T54?2551	-1.38E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	1.20E+02
3072	TANK 3072	Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Benzene		41	1.55E-02
3072	TANK 3072	Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Toluene		293	5.27E-02
3072	TANK 3072	Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Xylene		307	6.20E-03
3072	TANK 3072	Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.62E-03
3072	TANK 3072	Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	5.09E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Paraffins - C3+	T54?2052	-1.27E+05	thou gal/yr	12/31/2009	Paraffins - C3+		52	3.41E-01
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
3074	TANK 3074	Distillate oil	T54?2315	1.14E+05	thou gal/yr	12/31/2007	Distillate oil		315	6.71E-01
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T54??128	-1.60E+03	thou gal/yr	12/31/2009	Benzene		41	2.94E-02
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T54??128	-1.60E+03	thou gal/yr	12/31/2009	Ethylene dichloride		107	4.99E-04
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T54??128	-1.60E+03	thou gal/yr	12/31/2009	Gasoline - leaded		128	2.73E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T54??128	-1.60E+03	thou gal/yr	12/31/2009	Toluene		293	1.47E-01
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T54??128	-1.60E+03	thou gal/yr	12/31/2009	Xylene		307	3.23E-02
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T54??128	-1.60E+03	thou gal/yr	12/31/2009	Ethylene dibromide		420	1.97E-05
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T54??551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T54??551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T54??551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T54??551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T54??551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
3076	TANK T3076	Crude oil	T54?2089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
3076	TANK T3076	Hydrocarbon - mixtures, other/	T54?2318	-1.04E+04	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	3.32E+00
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Crude oil	T54?2089	-5.11E+05	thou gal/yr	12/31/2009	Crude oil		89	2.22E+01
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Bunker C fuel oil	T54?2242	0.00E+00	thou gal/yr	12/31/2009	Bunker C fuel oil		242	0.00E+00
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3101	TANK 3101	Crude oil	T5432089	-3.98E+05	thou gal/yr	12/31/2009	Crude oil		89	3.02E+01
3101	TANK 3101	Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2009	Fuel oil #2		392	0.00E+00
3101	TANK 3101	Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2009	Gas oil		394	0.00E+00
3102	TANK 3102	Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
3102	TANK 3102	Hydrocarbon - mixtures, other/	T5432318	-3.66E+05	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	1.12E+01
3103	TANK 3103	Crude oil	T5432089	3.43E+05	thou gal/yr	12/31/2007	Crude oil		89	3.55E+01
3104	TANK 3104	Crude oil	T5432089	7.74E+05	thou gal/yr	12/31/2007	Crude oil		89	5.90E+00
3105	TANK 3105	Crude oil	T5432089	7.36E+05	thou gal/yr	12/31/2007	Crude oil		89	6.53E+01
3106	TANK 3106	Crude oil	T5432089	3.21E+05	thou gal/yr	12/31/2007	Crude oil		89	3.46E+01
3107	TANK 3107	Crude oil	T54?2089	3.40E+05	thou gal/yr	12/31/2008	Crude oil		89	3.49E+00
3110	Desalter Effluent Surge Tank A	Crude oil	T43??089	8.08E+02	thou gal/yr	12/31/2007	Crude oil		89	7.11E+00
3111	Desalter Effluent Surge Tank B	Crude oil	T43??089	8.08E+02	thou gal/yr	12/31/2007	Crude oil		89	6.42E+00
3126	TANK 3126	Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2009	Naphtha		188	0.00E+00
3126	TANK 3126	Oil/water mixture	T5432503	-2.64E+03	thou gal/yr	12/31/2009	Oil/water mixture		503	3.20E-01
3127	TANK 3127	Oil/water mixture	T5412503	2.38E+03	thou gal/yr	12/31/2007	Oil/water mixture		503	1.70E+00
3128	TANK 3128	Aromatic hydrocarbons - other/	T54?2027	0.00E+00	thou gal/yr	12/31/2009	Aromatic hydrocarbons - othe		27	0.00E+00
3128	TANK 3128	Water/organics mixture	T54?2502	-2.22E+03	thou gal/yr	12/31/2009	Water/organics mixture		502	1.21E+00
3129	TANK 3129	Fuel - jet 'A'	T5412158	1.16E+05	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	1.07E+00
3132	Tank 3132	Distillate oil	T54?2315	8.12E+04	thou gal/yr	4/30/1997	Distillate oil		315	5.89E-01
3133	TANK 3133	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
3133	TANK 3133	Gasoline - unleaded	T5412551	-4.71E+05	thou gal/yr	12/31/2009	Benzene		41	3.12E-01
3133	TANK 3133	Gasoline - unleaded	T5412551	-4.71E+05	thou gal/yr	12/31/2009	Toluene		293	1.06E+00
3133	TANK 3133	Gasoline - unleaded	T5412551	-4.71E+05	thou gal/yr	12/31/2009	Xylene		307	1.25E-01
3133	TANK 3133	Gasoline - unleaded	T5412551	-4.71E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	7.27E-02
3133	TANK 3133	Gasoline - unleaded	T5412551	-4.71E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	1.02E+02
3133	TANK 3133	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2009	Gasoline - oxygenated, MTBE		680	0.00E+00
3134	TANK 3134	Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3134	TANK 3134	Gasoline - unleaded	T5412551	-3.17E+05	thou gal/yr	12/31/2009	Benzene		41	2.50E-01
3134	TANK 3134	Gasoline - unleaded	T5412551	-3.17E+05	thou gal/yr	12/31/2009	Toluene		293	8.50E-01
3134	TANK 3134	Gasoline - unleaded	T5412551	-3.17E+05	thou gal/yr	12/31/2009	Xylene		307	1.00E-01
3134	TANK 3134	Gasoline - unleaded	T5412551	-3.17E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	5.84E-02
3134	TANK 3134	Gasoline - unleaded	T5412551	-3.17E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	8.21E+01
3134	TANK 3134	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2009	Gasoline - oxygenated, MTBE		680	0.00E+00
3138	TANK 3138	Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997	Gas oil		394	5.55E-01
3139	TANK 3139	Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997	Gas oil		394	8.14E+00
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	-1.58E+05	tons/yr	12/31/2009	Sulfur or Sulfur compound po		1830	9.30E-04
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	-1.58E+05	tons/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	5.21E+00
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	-1.58E+05	tons/yr	12/31/2009	Hydrogen Sulfide (H2S)		5020	2.17E+00
3142	TANK 3142	Refinery feedstock - other/not	T441?239	4.42E+02	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3144	TANK 3144	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
3145	TANK 3145, Sphere	Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3146	Tank 3146: 20% Aqueous Ammonia	Organic liquid - other/not spe	T44??201	9.66E+01	thou gal/yr	12/13/1994	Organic liquid - other/not s		201	1.46E+01
3147	Tank 3147: Organic Liquid Storage Tank	Diethanolamine	T64??2485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3148	Tank 3148: Organic Liquid Storage Tank	Diethanolamine	T43??7485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3157	Lube Oil Tank	Lube oil	T44??7419	0.00E+00		4/21/1997	Lube oil		419	1.24E+01
3158	Lube Oil Tank	Lube oil	T44??7419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3159	Lube Oil Tank	Lube oil	T44??7419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3160	Tank 3160: Organic Liquid Storage Tank	Lube oil	T44??7419	2.73E+02	thou gal/yr	10/19/1994	Lube oil		419	1.34E+01
3161	Tank Lube Oil	Lube oil	T44??7419	3.89E+04	thou gal/yr	4/30/1997	Lube oil		419	1.19E-01
3162	Tank Lube Oil	Lube oil	T44??7419	5.23E+04	thou gal/yr	4/30/1997	Lube oil		419	1.22E-01
3163	Tank Lube Oil	Lube oil	T44??7419	3.02E+04	thou gal/yr	4/30/1997	Lube oil		419	7.74E-02
3164	Tank Lube Oil	Lube oil	T44??7419	5.21E+03	thou gal/yr	4/30/1997	Lube oil		419	7.23E-02
3165	Tank Lube Oil	Lube oil	T44??7419	3.83E+04	thou gal/yr	4/30/1997	Lube oil		419	1.41E-01
3166	Tank Lube Oil	Lube oil	T44??7419	3.62E+04	thou gal/yr	4/30/1997	Lube oil		419	1.40E-01
3167	Tank Lube Oil	Lube oil	T44??7419	1.88E+04	thou gal/yr	4/30/1997	Lube oil		419	5.27E-02
3168	Tank Lube Oil	Lube oil	T44??7419	2.31E+04	thou gal/yr	4/30/1997	Lube oil		419	5.36E-02
3169	organic liquid storage tank, lube oil products	Lube oil	T44??7419	2.88E+04	thou gal/yr	5/1/1995	Lube oil		419	1.78E-01
3170	Lube Oil Tank	Lube oil	T44??7419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3171	Lube Oil Tank	Lube oil	T44??7419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3172	Lube Oil Tank	Lube oil	T44??7419	0.00E+00		4/21/1997	Lube oil		419	9.57E+00
3179	Tank 3179: Organic Liquid Storage Tank	Distillate oil	T44??7315	-2.61E-01	thou gal/yr	12/31/1997	Distillate oil		315	1.59E-01
3180	Tank	Paraffins - C3+	T54?2052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
3180	Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3180	Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3180	Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
3180	Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
3180	Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3180	Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3180	Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
3180	Tank	Hydrocarbon - mixtures, other/	T54?2318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
3180	Tank	Alkylate	T54?2389	-2.76E+04	thou gal/yr	12/31/2009	Alkylate		389	1.13E+02
3180	Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3180	Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3180	Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3180	Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
3180	Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
3182	Tank 3182: Organic Liquid Storage Tank	Lube oil	T64?2419	-4.30E+04	thou gal/yr	12/31/1997	Lube oil		419	2.61E-01
3185	Tank 3185 (previously T-982)	Fuel - jet 'A'	T54?2158	2.10E+05	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	6.40E+00
3186	Gas Oil Tank	Organic liquid - other/not spe	T44??201	0.00E+00		4/21/1997	Organic liquid - other/not s		201	8.69E+00
3189	Gasoline component and Diesel Tank	Ethers	T55?2103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3189	Gasoline component and Diesel Tank	Fuel - jet 'A'	T55?2158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
3189	Gasoline component and Diesel Tank	Distillate oil	T55?2315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3189	Gasoline component and Diesel Tank	Hydrocarbon - mixtures, other/	T55?2318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
3189	Gasoline component and Diesel Tank	Gas oil	T55?2394	0.00E+00	thou gal/yr	12/31/2009	Gas oil		394	0.00E+00
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T55?2551	-3.52E+05	thou gal/yr	12/31/2009	Benzene		41	1.99E-02
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T55?2551	-3.52E+05	thou gal/yr	12/31/2009	Toluene		293	6.77E-02
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T55?2551	-3.52E+05	thou gal/yr	12/31/2009	Xylene		307	7.97E-03
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T55?2551	-3.52E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	4.65E-03
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T55?2551	-3.52E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	6.54E+00
3189	Gasoline component and Diesel Tank	Gasoline - oxygenated, MTBE ad	T55?2680	0.00E+00	thou gal/yr	12/31/2009	Gasoline - oxygenated, MTBE		680	0.00E+00
3190	Storage Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3190	Storage Tank	Fuel - jet 'A'	T54?2158	-2.28E+05	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	1.84E+00
3191	Storage Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3191	Storage Tank	Gasoline - leaded	T54?2128	-1.08E+04	thou gal/yr	12/31/2008	Benzene		41	4.22E-02
3191	Storage Tank	Gasoline - leaded	T54?2128	-1.08E+04	thou gal/yr	12/31/2008	Ethylene dichloride		107	7.18E-04
3191	Storage Tank	Gasoline - leaded	T54?2128	-1.08E+04	thou gal/yr	12/31/2008	Gasoline - leaded		128	3.92E+00
3191	Storage Tank	Gasoline - leaded	T54?2128	-1.08E+04	thou gal/yr	12/31/2008	Toluene		293	2.11E-01
3191	Storage Tank	Gasoline - leaded	T54?2128	-1.08E+04	thou gal/yr	12/31/2008	Xylene		307	4.64E-02
3191	Storage Tank	Gasoline - leaded	T54?2128	-1.08E+04	thou gal/yr	12/31/2008	Ethylene dibromide		420	2.83E-05
3191	Storage Tank	Naphtha	T54?2188	0.00E+00	thou gal/yr	12/31/2009	Naphtha		188	0.00E+00
3191	Storage Tank	Jet fuel JP4	T54?2395	0.00E+00	thou gal/yr	12/31/2009	Jet fuel JP4		395	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
3191	Storage Tank	Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2009	Methyl tertiary-butyl ether		628	0.00E+00
3192	Desalter Effluent Skim Tank	Crude oil	T3H?7089	3.15E+04	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
3193	Gasoline component Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3193	Gasoline component Tank	Isooctane	T54?2154	-3.43E+04	thou gal/yr	12/31/2009	Isooctane		154	2.38E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
3193	Gasoline component Tank	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3193	Gasoline component Tank	Alkylate	T54?2389	0.00E+00	thou gal/yr	12/31/2009	Alkylate		389	0.00E+00
3193	Gasoline component Tank	Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2009	Gas oil		394	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
3194	Storage Tank T-3194	Hydrocarbon - mixtures, other/	T54?2318	0.00E+00	thou gal/yr	12/31/2003	Hydrocarbon - mixtures, othe		318	0.00E+00
3194	Storage Tank T-3194	Gas oil	T54?2394	1.44E+05	thou gal/yr	12/31/2003	Gas oil		394	9.85E-01
3195	T-3195 Waxy Heavy Neutral Storage Tank	Diesel fuel	T54?7098	1.29E+05	thou gal/yr	12/31/2006	Diesel oil		98	2.35E+00
3195	T-3195 Waxy Heavy Neutral Storage Tank	Distillate oil	T54?7315	0.00E+00	thou gal/yr	12/31/2006	Distillate oil		315	0.00E+00
3195	T-3195 Waxy Heavy Neutral Storage Tank	Lube oil	T54?7419	0.00E+00	thou gal/yr	12/31/2006	Lube oil		419	0.00E+00
3196	Gasoline Components Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3196	Gasoline Components Tank	Organic liquid - other/not spe	T54?2201	-2.17E+05	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	1.87E+00
3196	Gasoline Components Tank	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3196	Gasoline Components Tank	Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2009	Gas oil		394	0.00E+00
3196	Gasoline Components Tank	Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
3196	Gasoline Components Tank	Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2009	Methyl tertiary-butyl ether		628	0.00E+00
3197	Gasoline component Tank	Ethers	T55?2103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3197	Gasoline component Tank	Naphtha	T55?2188	-2.65E+04	thou gal/yr	12/31/2009	Naphtha		188	6.20E+00
3197	Gasoline component Tank	Distillate oil	T55?2315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3197	Gasoline component Tank	Gas oil	T55?2394	0.00E+00	thou gal/yr	12/31/2009	Gas oil		394	0.00E+00
3198	3198 tank; organic liquid storage tank	Fuel - jet 'A'	T543?158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
3198	3198 tank; organic liquid storage tank	Toluene	T543?293	-4.30E+03	thou gal/yr	12/31/2009	Toluene		293	1.85E+01
3198	3198 tank; organic liquid storage tank	Distillate oil	T543?315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	-2.41E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	5.28E-04
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	-2.41E+03	thou barre/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.46E-01
3201	Tank 3201: Whole Alkylate	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3201	Tank 3201: Whole Alkylate	Alkylate	T54?2389	-1.28E+05	thou gal/yr	12/31/2009	Alkylate		389	1.12E+02
3202	Tank 3202: Methanol	Methyl alcohol	T54?2179	0.00E+00	thou gal/yr	12/31/2009	Methyl alcohol		179	0.00E+00
3202	Tank 3202: Methanol	Naphtha	T54?2188	-7.38E+03	thou gal/yr	12/31/2009	Naphtha		188	7.30E+01
3202	Tank 3202: Methanol	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3202	Tank 3202: Methanol	Petroleum products - other/not	T54?2321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
3204	Tank 3204: Organic Liquid Storage Tank	Lube oil	T42?7419	2.54E+00	thou gal/yr	12/31/1997	Lube oil		419	4.07E-04
3207	Butane Sphere: Organic Liquid Storage Tank	Butane	T34?7416	-9.20E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3208	Propane Sphere: Organic Liquid Storage Tank	Propane	T34?7417	-7.67E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3211	Sphere	Butane	T34?7416	-3.83E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3212	Sphere	Propane	T34?7417	-2.76E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T54?2098	0.00E+00	thou gal/yr	12/31/2009	Diesel oil		98	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T54?2158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T54?2419	0.00E+00	thou gal/yr	12/31/2009	Lube oil		419	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	-3.11E+05	thou gal/yr	12/31/2009	Benzene		41	8.03E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	-3.11E+05	thou gal/yr	12/31/2009	Toluene		293	2.73E+00
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	-3.11E+05	thou gal/yr	12/31/2009	Xylene		307	3.21E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	-3.11E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	1.87E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	-3.11E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	2.64E+02
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009	Benzene		41	6.65E-01
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009	Ethylene dichloride		107	1.13E-02
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009	Gasoline - leaded		128	6.17E+01
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009	Toluene		293	3.32E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009	Xylene		307	7.31E-01
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009	Ethylene dibromide		420	4.45E-04
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T54?2315	-1.29E+05	thou gal/yr	12/31/1997	Distillate oil		315	1.15E+00
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T44?7315	8.40E+04	thou gal/yr	7/9/1997	Distillate oil		315	2.27E+01
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-7.18E+03	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	1.42E+02
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-1.31E+04	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	1.82E+02
3225	Organic Liquid Storage Tank	Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.52E+05	tons/yr	12/31/2009	Particulates (portion of tot		1990	8.94E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.52E+05	tons/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	5.00E+00
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.52E+05	tons/yr	12/31/2009	Hydrogen Sulfide (H2S)		5020	2.08E+00
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T43??7419	-3.37E+02	thou gal/yr	12/31/1997	Lube oil		419	3.31E-03
3910	LPG Tank; # 3910	LPG	T34??7160	-3.97E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
3911	LPG Tank, # 3911	LPG	T34??7160	-2.30E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Benzene		41	8.08E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	5.12E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.15E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Phenol		214	4.63E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	5.26E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	7.32E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	1.71E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	4.90E-05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	9.79E-05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Manganese		1160	3.33E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	3.92E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	2.45E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	7.64E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	4.71E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv		1860	2.02E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.35E-01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	2.45E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	5.63E-01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.00E+02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	8.27E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.16E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.40E+05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	7.10E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Benzene		41	5.77E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	3.65E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.54E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Phenol		214	3.30E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	3.76E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	5.22E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	1.22E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	3.49E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	6.99E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Manganese		1160	2.38E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.80E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.75E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	5.45E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	3.36E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv		1860	1.44E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	9.61E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.75E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	4.02E-01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	7.16E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	5.90E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.97E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.43E+05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	5.07E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Benzene		41	3.00E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.90E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	8.00E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.72E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.95E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.72E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	6.36E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.82E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	3.63E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.24E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.45E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	9.09E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.83E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.75E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv		1860	7.50E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	5.00E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	9.09E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.09E-01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.73E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.07E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.54E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.26E+05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.64E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.63E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.03E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	4.35E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Phenol		214	9.35E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.06E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.48E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	3.46E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	9.89E-06
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	1.98E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Manganese		1160	6.73E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	7.91E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	4.95E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.54E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	9.52E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv		1860	4.08E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	2.72E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	4.95E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.14E-01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.03E+01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.67E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.41E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	6.87E+04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.43E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Benzene		41	4.49E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	2.85E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.20E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Phenol		214	2.57E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	2.93E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	4.07E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	9.53E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	2.72E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	5.45E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.85E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.18E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.36E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	4.25E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	2.62E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	1.12E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	7.49E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.36E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.13E-01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.58E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.60E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.31E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.89E+05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	3.95E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Benzene		41	2.12E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.34E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	5.66E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.22E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.38E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.92E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	4.50E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.29E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.57E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Manganese		1160	8.75E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.03E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	6.43E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.01E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.24E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	5.31E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.54E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	6.43E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.48E-01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.64E+01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.17E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.09E+01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	8.94E+04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.86E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Benzene		41	1.14E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	7.19E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Formaldehyde		124	3.03E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Phenol		214	6.50E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Acetaldehyde		335	7.40E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.03E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	2.41E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Cadmium		1070	6.88E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	1.38E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Manganese		1160	4.68E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	5.50E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	3.44E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.07E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	6.62E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.84E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.89E-01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	3.44E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.91E-01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.41E+02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.16E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.85E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.78E+05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	9.98E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Benzene		41	9.77E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	6.19E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.60E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Phenol		214	5.59E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	6.36E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	8.85E-01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	2.07E-05

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.73E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	7.28E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.56E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.78E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.47E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	5.79E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.65E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	3.31E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.13E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.32E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	8.27E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.58E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.59E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	6.83E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	4.55E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	8.27E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.90E-01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.90E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.79E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.41E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.15E+05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.40E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Benzene		41	3.08E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.95E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	8.21E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.76E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	2.01E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.79E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	6.53E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.87E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	3.73E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.27E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.49E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	9.33E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.91E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.80E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	7.69E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	5.13E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	9.33E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.15E-01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.26E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.15E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.59E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.30E+05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.70E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Benzene		41	3.92E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	2.48E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.04E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Phenol		214	2.24E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	2.55E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	3.55E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	8.31E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	2.37E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	4.75E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.61E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.90E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.19E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	3.70E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	2.28E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	9.79E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	6.53E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.19E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.73E-01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	6.05E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.01E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.02E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.65E+05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	3.44E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Benzene		41	4.94E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	3.13E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.32E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Phenol		214	2.83E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	3.22E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	4.48E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	1.05E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	2.99E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	5.99E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Manganese		1160	2.04E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.40E-04
4062	#5 NAPH HYDROTREATER F44									

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	5.59E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.60E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	3.20E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.09E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.28E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	7.99E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.49E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.54E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	6.59E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	4.40E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	7.99E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.84E-01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.29E+02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.70E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.36E+01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.11E+05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.32E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.01E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	6.41E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.70E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Phenol		214	5.80E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	6.59E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	9.17E-01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	2.15E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	6.13E-06
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	1.23E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Manganese		1160	4.17E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	4.91E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	3.07E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	9.57E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	5.90E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.53E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.69E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	3.07E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.05E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	6.04E+01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.04E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.21E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.26E+04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	8.89E-01
4070	#4 CRUDE UNIT F 1100A	Naphtha	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Benzene		41	1.88E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.19E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Formaldehyde		124	5.02E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Phenol		214	1.08E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.23E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.71E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	3.99E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Cadmium		1070	1.14E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.28E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Manganese		1160	7.76E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	9.13E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	5.71E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.78E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.10E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	4.71E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.14E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	5.71E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.31E+00
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.60E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.54E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	9.70E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	7.93E+05
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.65E+01
4071	#4 CRUDE UNIT F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Benzene		41	1.72E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.09E-01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Formaldehyde		124	4.59E-03
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Phenol		214	9.86E-03
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.12E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.56E+01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	3.65E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Cadmium		1070	1.04E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.09E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Manganese		1160	7.09E-03
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	8.34E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	5.21E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.63E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.00E-01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	4.30E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	2.87E-01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	5.21E+01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.20E+00
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.46E+02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.41E+02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.86E+01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	7.25E+05
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.51E+01
4072	#4 CRUDE UNIT F1160	Naphtha	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Benzene		41	5.46E-03
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	3.46E-02
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.46E-03
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Phenol		214	3.13E-03
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	3.56E-03
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	4.94E+00
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	1.16E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions	Pollutant	Code	lb/day
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	6.61E-05
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Manganese		1160	2.25E-03
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.65E-04
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.65E-04
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	5.16E-03
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	3.18E-02
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	1.36E-02
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	9.09E-02
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.65E+01
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.80E-01
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.63E+01
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.47E+01
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.81E+01
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.30E+05
4072	#4 CRUDE UNIT F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	4.80E+00
4073	LSFO COOLING TOWER	Fresh water	G5005415	-1.03E+05	thou gallo/yr	12/31/2009	Organics (part not spec else		990	1.69E+00
4076	3 CAT COOLING TOWER E460	Fresh water	G5005415	-1.12E+05	thou gallo/yr	12/31/2009	Organics (part not spec else		990	1.85E+00
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Benzene		41	7.14E-07
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Formaldehyde		124	8.40E-06
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Toluene		293	3.81E-07
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Organics (part not spec else		990	6.40E-04
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Particulates (portion of tot		1990	3.36E-04
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.59E-05
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.57E-02
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	6.36E-05
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	3.92E-03
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.37E+01
4107	HEAT TREATING FURNACE NO. 1 BOILER SHOP	Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Methane (CH4)		6970	2.13E-04
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Benzene		41	4.79E-03
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	3.03E-02
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.42E-02
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Phenol		214	8.70E-04
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Toluene		293	1.73E-01
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	4.18E-02
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	4.12E+00
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	5.80E-05
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	2.90E-04
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	4.35E-04
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.47E-03
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.52E-02
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	1.20E-02
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	7.98E-02
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.45E+01
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.34E-01
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.08E+01
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.90E+00
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.47E+01
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.02E+05
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	4.21E+00
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Benzene		41	3.14E-03
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	9.34E-03
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Phenol		214	5.72E-04
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Toluene		293	1.13E-01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	2.74E-02
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.70E+00
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	3.81E-05
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	1.91E-04
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	2.86E-04
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.62E-03
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.00E-02
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	9.52E+00
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.19E-01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.33E+01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.22E+00
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.62E+01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.32E+05
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.76E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Benzene		41	3.58E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	2.27E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.06E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Phenol		214	6.51E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Toluene		293	1.29E-01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	3.13E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	3.08E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	4.34E-05
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	2.17E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	3.26E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.84E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.14E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1							

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	<----- Emissions ----->		Code	lb/day
						Date	Pollutant		
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	3.56E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	5.01E-05
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant	1110	2.51E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	3.76E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	2.13E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)	1840	1.32E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	1.03E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	6.89E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	1.25E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	2.88E-01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	4.39E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	4.23E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	2.13E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	1.74E+05
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	3.63E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Benzene	41	7.27E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	4.61E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124	2.16E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Phenol	214	1.32E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Toluene	293	2.62E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335	6.35E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	6.26E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	8.82E-05
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant	1110	4.41E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	6.61E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	3.75E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)	1840	2.31E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	1.82E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	1.21E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	2.20E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	5.07E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	7.72E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	7.45E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	3.75E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	3.06E+05
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	6.39E+00
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	-3.88E+04	thou barre/yr	12/31/2009	Organics (part not spec else	990	5.32E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Benzene	41	6.69E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	4.24E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Formaldehyde	124	1.79E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Phenol	214	3.83E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Acetaldehyde	335	4.36E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	6.07E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	1.42E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Cadmium	1070	4.06E-06
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	8.11E-06
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Manganese	1160	2.76E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	3.25E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	2.03E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	6.33E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	PAH's (non-specified)	1840	3.91E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	1.67E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	1.12E-02
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	2.03E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	4.67E-02
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	8.32E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	6.85E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	3.45E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	2.82E+04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	5.88E-01
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009		0	0.00E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Benzene	41	5.82E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	3.69E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Formaldehyde	124	1.55E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Phenol	214	3.33E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Acetaldehyde	335	3.79E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	5.27E-01
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	1.23E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Cadmium	1070	3.53E-06
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	7.06E-06
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Manganese	1160	2.40E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	2.82E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	1.76E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	5.50E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	PAH's (non-specified)	1840	3.40E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	1.46E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	9.70E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	1.76E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	4.06E-02
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	7.23E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	5.96E-01
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	3.00E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	2.45E+04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	5.12E-01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Benzene	41	9.14E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	5.79E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Formaldehyde	124	2.44E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Phenol	214	5.23E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Acetaldehyde	335	5.95E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	8.28E+00
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	1.94E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Cadmium	1070	5.54E-05
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	1.11E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Manganese	1160	3.76E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	4.43E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	2.77E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	8.64E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	5.33E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.28E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.52E-01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	2.77E+01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	6.37E-01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.27E+02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.35E+00
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.15E+02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.85E+05
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	8.03E+00
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Benzene		41	2.84E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.80E-02
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	7.57E-04
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.63E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.85E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.57E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	6.02E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.72E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	3.44E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.17E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.38E-04
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	8.60E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.68E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.66E-02
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	7.10E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	4.73E-02
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	8.60E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.98E-01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.53E+01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	7.26E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.46E+01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.20E+05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.49E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Benzene		41	2.06E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.30E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	5.49E-04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.18E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.34E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.86E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	4.36E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.25E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.49E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Manganese		1160	8.48E-04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	9.97E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	6.23E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.94E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.20E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	5.14E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.43E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	6.23E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.43E-01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.75E+01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.11E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.06E+01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	8.66E+04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.81E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.96E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.24E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	5.24E-04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.13E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.28E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.78E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	4.17E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.19E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.38E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Manganese		1160	8.10E-04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	9.53E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	5.95E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.86E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.15E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	4.91E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.27E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	5.95E+00
4160	F420 TK									

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.28E-04
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	8.00E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.49E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.54E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	6.60E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	4.40E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	8.00E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.84E-01
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.21E+02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.17E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.36E+01
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.11E+05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.32E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Benzene		41	2.16E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.37E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	5.76E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.24E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.41E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.96E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	4.58E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.31E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.62E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Manganese		1160	8.89E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.05E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	6.54E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.04E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.26E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	5.40E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.60E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	6.54E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.50E-01
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	9.88E+01
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.41E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.11E+01
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	9.09E+04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.90E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.51E-02
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	6.35E-04
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.36E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Toluene		293	0.00E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.55E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.03E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	5.05E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.44E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.88E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Manganese		1160	9.81E-04
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.15E-04
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	7.21E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.25E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.39E-02
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	5.95E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.97E-02
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.66E-01
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.09E+02
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.76E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.23E+01
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.00E+05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.09E+00
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Benzene		41	2.01E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.28E-02
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	5.37E-04
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.15E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.31E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.82E+00
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	4.27E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.22E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.44E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Manganese		1160	8.30E-04
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	9.76E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	6.10E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.90E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.17E-02
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	5.03E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.36E-02
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	-2.23E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	6.10E+

Printed: AUG 1, 2013

S#			Name	Material	Source Code	ThruPut	Units	Date	Emissions	Code	lb/day
									Pollutant		
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.33E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	3.01E-03
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.33E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	2.01E-02
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.33E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	3.65E+00
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.33E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	8.40E-02
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.33E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	1.28E+01
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.33E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.23E+00
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.33E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	6.21E+00
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.33E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	5.08E+04
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.33E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	1.06E+00
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Benzene	41	1.70E-03
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	1.08E-02
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124	4.53E-04
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Phenol	214	9.73E-04
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335	1.11E-03
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	1.54E+01
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	3.61E-05
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Cadmium	1070	1.03E-05
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	2.06E-05
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Manganese	1160	7.00E-04
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	8.24E-05
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	5.15E-05
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	1.61E-03
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)	1840	9.91E-03
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	4.25E-03
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	2.83E-02
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	5.15E+00
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	1.18E-01
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	1.80E+01
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.74E+00
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	8.76E+00
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	7.16E+04
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	1.49E+00
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	3.31E-02
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	4.47E+00
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	1.31E-02
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	8.71E-02
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	3.64E-01
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	6.49E+01
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	5.35E+00
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	2.69E+01
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	2.20E+05
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	4.59E+00
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Benzene	41	1.23E-02
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	7.82E-02
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Formaldehyde	124	3.29E-03
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Phenol	214	7.07E-03
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Acetaldehyde	335	8.04E-03
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	1.12E+01
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	2.62E-04
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Cadmium	1070	7.48E-05
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	1.50E-04
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Manganese	1160	5.09E-03
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	5.99E-04
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	3.74E-04
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	1.17E-02
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	PAH's (non-specified)	1840	7.20E-02
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	3.09E-02
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	2.06E-01
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	3.74E+01
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	8.60E-01
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	1.05E+02
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.26E+01
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	6.36E+01
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	5.20E+05
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	1.08E+01
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Benzene	41	1.01E-02
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	6.39E-02
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Formaldehyde	124	2.69E-03
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Phenol	214	5.78E-03
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Acetaldehyde	335	6.57E-03
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	9.14E+00
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	2.14E-04
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Cadmium	1070	6.11E-05
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	1.22E-04
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Manganese	1160	4.16E-03
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	4.89E-04
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	3.06E-04
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	9.54E-03
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	PAH's (non-specified)	1840	5.88E-02
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	2.52E-02
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	1.68E-01
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	3.06E+01
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	7.03E-01
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	8.56E+01
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.03E+01
4169	F-731	ISOCRACKER REBOILER	ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas</							

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Manganese		1160	1.60E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	5.73E-04
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.15E-04
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	3.95E-03
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.25E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	4.72E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.15E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	5.73E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.05E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.01E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.93E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	9.74E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	7.96E+05
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.66E+01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Benzene		41	4.02E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	2.55E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.68E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Phenol		214	1.10E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Toluene		293	8.58E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Acetaldehyde		335	2.68E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	3.56E+01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	5.61E-03
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Manganese		1160	3.41E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.22E-03
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	2.44E-04
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	8.41E-03
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	2.66E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	1.01E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	6.71E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.22E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.80E+00
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.41E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.03E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.07E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.69E+06
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	3.54E+01
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	-9.89E+05	thou gallo/yr	12/31/2009	Organics (part not spec else		990	1.63E+01
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	-5.40E+05	thou gallo/yr	12/31/2009	Organics (part not spec else		990	8.87E+00
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	-4.86E+04	thou gallo/yr	12/31/2009	Organics (part not spec else		990	7.98E-01
4188	F-651 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.25E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	7.91E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	3.33E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Phenol		214	7.15E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	8.14E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.13E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	2.65E-05
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	7.57E-06
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	1.51E-05
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Manganese		1160	5.15E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	6.05E-05
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	3.78E-05
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.18E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	7.28E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	3.12E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	2.08E-02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	3.78E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	8.70E-02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.10E+02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.97E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	6.43E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	5.26E+04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.10E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Benzene		41	5.90E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	3.74E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.57E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Phenol		214	3.38E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Acetaldehyde		335	3.85E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	5.35E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	1.25E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Cadmium		1070	3.58E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	7.15E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	1.13E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Manganese		1160	2.43E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.79E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	5.58E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	3.44E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	1.48E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	9.84E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.79E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	4.11E-02
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.19E+01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.32E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	3.04E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.49E+04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	5.19E-01
4191	Alkane Cooling Water Tower	Fresh water	G5005415	-6.00E+04	thou gallo/yr	12/31/2009	Organics (part not spec else		990	9.86E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Benzene		41	1.06E-04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Formaldehyde		124	1.25E-03
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Toluene		293	5.65E-05
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Organics (part not spec else		990	9.50E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Particulates (portion of tot		1990	4.98E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.84E-03
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.33E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.49E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.81E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.03E+03
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Methane (CH4)		6970	3.16E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Benzene		41	1.07E-03
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Formaldehyde		124	1.26E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Toluene		293	5.69E-04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Organics (part not spec else		990	9.58E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Particulates (portion of tot		1990	5.02E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.87E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.34E+01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.52E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.86E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.05E+04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Methane (CH4)		6970	3.18E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Benzene		41	1.43E-03
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Formaldehyde		124	1.68E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Toluene		293	7.61E-04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Organics (part not spec else		990	1.28E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Particulates (portion of tot		1990	6.72E-01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	5.17E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.14E+01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	6.05E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	7.84E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.74E+04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Methane (CH4)		6970	4.26E-01
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	-5.95E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	1.63E+01
4227	SRU #1 TRAIN	Sulfur	G7055267	-4.28E+04	tons/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.48E+02
4228	SRU #2 TRAIN	Sulfur	G7055267	-4.04E+04	tons/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.33E+02
4229	SRU #3 TRAIN	Sulfur	G7055267	-6.89E+04	tons/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.98E+02
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997	Particulates (portion of tot		1990	6.78E-03
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	-2.17E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	5.94E+01
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	-1.80E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	4.94E+01
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	-1.01E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	8.28E+00
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	-8.05E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	2.21E+02
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	-7.74E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	3.18E+01
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	-1.08E+05	thou gal/yr	12/31/2009	LPG		160	4.73E+01
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.79E+04	million cu/yr	12/31/2009	Ethyl alcohol		105	2.19E-01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.79E+04	million cu/yr	12/31/2009	Methyl alcohol		179	7.85E+00
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.79E+04	million cu/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.72E+01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.79E+04	million cu/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.60E+06
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.10E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.10E+04	thou barre/yr	12/31/2009	Particulates (portion of tot		1990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.10E+04	thou barre/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.10E+04	thou barre/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.10E+04	thou barre/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	-2.14E+05	thou gallo/yr	12/31/2009	Organics (part not spec else		990	5.87E+01
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	-1.73E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	4.75E-03
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	-1.22E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	3.35E-03
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	-8.67E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	2.38E-03
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	-9.30E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	2.55E-03
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Organics (part not spec else		990	1.59E+02
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Particulates (portion of tot		1990	1.88E+03
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.24E+01
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.50E+02
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.57E+02
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.56E+02
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	5.55E+06

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Methane (CH4)		6970	1.62E+02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Benzene		41	2.12E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Arsenic (all)		1030	9.82E-04
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Chromium		1090	1.06E-03
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Manganese		1160	2.04E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Nickel pollutant		1180	1.13E-03
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Zinc pollutant		1320	1.81E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	PAH's (non-specified)		1840	3.05E-04
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Particulates (portion of tot		1990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Ammonia (NH3) pollutant		6990	4.76E+00
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.78E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	4.87E-01
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.78E+04	thou barre/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.35E+02
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	-9.40E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	1.29E+01
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	-2.23E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	9.16E+00
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
4329	RLOP Cooling Tower	Fresh water	G5005415	-1.39E+05	thou gallo/yr	12/31/2009	Organics (part not spec else		990	2.66E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Benzene		41	4.65E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	2.95E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.10E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Phenol		214	1.13E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Toluene		293	8.38E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Acetaldehyde		335	4.04E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	3.97E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.82E-06
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	1.41E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Manganese		1160	1.27E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.41E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	2.82E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.83E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.00E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv		1860	1.16E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	7.75E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.41E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	9.72E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.23E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.76E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.40E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.96E+04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	4.09E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Benzene		41	7.35E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	4.66E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.74E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Phenol		214	1.78E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Toluene		293	1.33E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Acetaldehyde		335	6.40E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	6.28E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	4.46E-06
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	2.23E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Manganese		1160	2.01E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.23E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	4.46E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.90E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.59E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv		1860	1.84E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.23E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	2.23E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.54E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.94E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	7.53E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	3.79E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.10E+04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	6.46E-01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.82E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.15E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	4.29E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Phenol		214	4.40E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Toluene		293	3.28E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.58E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.55E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	1.10E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	5.50E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Manganese		1160	4.95E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	5.50E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.10E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	7.16E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	3.92E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv		1860	4.54E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.03E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	5.50E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.80E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.79E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.86E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	9.36E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	7.65E+04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.60E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	5.97E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	8.06E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.36E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.57E-01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.97E-01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.49E+01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.65E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.86E+01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.97E+05
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	8.29E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.17E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	7.40E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.76E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Phenol		214	2.83E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Toluene		293	2.11E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.02E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	9.98E-01
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	7.08E-06
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	3.54E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Manganese		1160	3.19E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	3.54E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	7.08E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	4.60E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	2.52E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.92E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.95E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	3.54E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.44E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.08E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.20E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	6.02E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.92E+04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.03E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Benzene		41	9.32E-04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	5.90E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.20E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Phenol		214	2.26E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Toluene		293	1.68E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	8.10E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	7.96E-01
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	5.65E-06
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	2.82E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Manganese		1160	2.54E-04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.82E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	5.65E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	3.67E-04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	2.01E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.33E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.55E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	2.82E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.95E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.46E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.54E-01
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.80E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.92E+04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	8.19E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.05E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	6.67E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.48E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Phenol		214	2.55E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Toluene		293	1.90E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	9.15E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	8.99E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	6.38E-06
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	3.19E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Manganese		1160	2.87E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	3.19E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	6.38E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	4.15E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	2.27E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.63E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.75E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	3.19E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.20E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.77E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.08E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.42E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.43E+04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	9.25E-01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.07E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	6.78

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.52E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.51E+04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	9.41E-01
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.43E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	9.05E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	3.37E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Phenol		214	3.46E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Toluene		293	2.58E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.24E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.22E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	8.66E-06
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	4.33E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Manganese		1160	3.90E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	4.33E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	8.66E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	5.63E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	3.08E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	3.57E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	2.38E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	4.33E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.99E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.77E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.46E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	7.36E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	6.02E+04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.26E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Benzene		41	9.43E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	5.97E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.23E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Phenol		214	2.29E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Toluene		293	1.70E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Acetaldehyde		335	8.20E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	8.06E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	5.72E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	2.86E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Manganese		1160	2.57E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.86E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	5.72E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	3.72E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	2.03E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.36E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.57E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	2.86E+01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.97E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.49E+01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.65E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.86E+01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.97E+05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	8.29E+00
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.74E+05	tons/yr	12/31/2009	Organics (part not spec else		990	6.76E-01
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.74E+05	tons/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.75E+01
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.44E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	7.45E-01
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.44E+03	thou barre/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.13E+01
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.19E+06	tons/yr	12/31/2009	Organics (part not spec else		990	1.19E+00
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.19E+06	tons/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	6.61E+01
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.17E+05	tons/yr	12/31/2009	Organics (part not spec else		990	3.18E-01
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.17E+05	tons/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.76E+01
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-4.63E+05	tons/yr	12/31/2009	Organics (part not spec else		990	2.35E+00
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-4.63E+05	tons/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.30E+02
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Benzene		41	1.57E-03
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.43E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	7.14E-01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	5.47E-02
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.33E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.01E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.33E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.31E+04
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	6.90E-01
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Benzene		41	4.43E-03
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Formaldehyde		124	2.13E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Organics (part not spec else		989	3.81E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	PAH's (non-specified)		1840	7.71E-03
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Particulates (portion of tot		1990	2.86E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.27E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.73E+01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.91E+01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	9.16E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.68E+05
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Methane (CH4)		6970	3.18E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Ammonia (NH3) pollutant		6990	4.26E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Benzene		41	3.58E-03
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Formaldehyde		124	1.78E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Organics (part not spec else		989	3.25E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	PAH's (non-specified)		1840	6.46E-02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Particulates (portion of tot		1990	2.47E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.01E-01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.79E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	7.40E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	7.71E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.59E+06
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Methane (CH4)		6970	1.59E+02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant	Ammonia (NH3) pollutant		
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009			6990	3.56E+02
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Benzene		41	1.04E-02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	9.41E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	9.43E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.23E-02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.40E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.06E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.20E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.37E+05
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	4.56E+00
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Benzene		41	4.34E-03
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Formaldehyde		124	2.08E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Organics (part not spec else		989	3.73E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	7.55E-03
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Particulates (portion of tot		1990	2.80E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.25E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.61E+01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.87E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.97E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.65E+05
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Methane (CH4)		6970	3.11E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Ammonia (NH3) pollutant		6990	4.17E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Benzene		41	3.52E-03
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Formaldehyde		124	1.75E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Organics (part not spec else		989	3.20E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	PAH's (non-speciated)		1840	6.35E-02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Particulates (portion of tot		1990	2.43E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.96E-01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.72E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	7.28E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	7.58E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.57E+06
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Methane (CH4)		6970	1.56E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Ammonia (NH3) pollutant		6990	3.50E+02
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Benzene		41	1.10E-02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	9.99E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.00E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.67E-02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.67E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	5.63E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.34E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.64E+05
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	4.84E+00
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2009			0	0.00E+00
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2009			0	0.00E+00
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T33??7210	7.23E+00	thou gal/yr	12/31/2009	Perchloroethylene		210	0.00E+00
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T41??7210	0.00E+00			Perchloroethylene		210	1.61E-03
4361	Perc Surge Control Vessel V-591	Reformate	T41??7398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4362	Perc Surge Control Vessel V-3591	Reformate	T41??7398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4363	Perc Storage Tank V-3592	Perchloroethylene	T42??7210	-3.27E+01	thou gal/yr	12/31/2009	Perchloroethylene		210	4.90E-03
4364	Perc Storage Tank V-4091	Perchloroethylene	T42??7210	2.56E+01	thou gal/yr	12/31/2009	Perchloroethylene		210	1.94E-03
4365	Tri-Act 1825 Chemical Tote	Hydrocarbon - mixtures, other/	T47??3318	3.00E+00	thou gal/yr	Unknown	Hydrocarbon - mixtures, othe		318	1.08E-02
4366	Tri-Act 1803 & 1825 Chemical Tote - Power Plant	Hydrocarbon - mixtures, other/	T82??3318	2.00E+00	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	8.85E-03
4367	Tri-Act 1803 & 1825 Chemical Tote - RLOP	Hydrocarbon - mixtures, other/	T82??3318	1.20E+00	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	7.75E-03
4368	Tri-Act 1803 & 1825 Chemical Tote - SRU	Hydrocarbon - mixtures, other/	T82??3318	4.00E-01	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	6.64E-03
4369	Tri-Act 1803 & 1825 Chemical Tote - LSFO/D&R	Hydrocarbon - mixtures, other/	T82??3318	4.00E-01	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	6.64E-03
4370	Chemical Tote, Custumine CA-066P - FCC	Hydrocarbon - mixtures, other/	T82??3318	4.00E-01	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	6.64E-03
4372	NALCO EC9085A Tote	Amine - other/not spec	T42??7021	5.00E+00	thou gal/yr	5/5/2010	Amine - other/not spec		21	1.73E-02
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	0.00E+00	thou barre/yr	12/31/2009			0	0.00E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2009	Benzene		41	6.09E-01
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2009	Toluene		293	1.65E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2009	Xylene		307	3.62E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	2.15E+01
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-5.51E+04	thou barre/yr	12/31/2009	Benzene		41	2.57E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-5.51E+04	thou barre/yr	12/31/2009	Toluene		293	6.95E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-5.51E+04	thou barre/yr	12/31/2009	Xylene		307	1.53E+01
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-5.51E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	9.06E+01
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	-1.52E+05	tons/yr	12/31/2009	Particulates (portion of tot		1990	6.25E-04
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE871052	3.47E+03	thou gal/yr	12/31/1996	Paraffins - C3+		52	2.76E+00
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE871052	1.33E+04	thou gal/yr	12/31/1996	Paraffins - C3+		52	5.34E+00
4405	Heavy Oil Transloading Operations	Waste oil	TE672549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	0.00E+00	gal/yr	12/31/2006	Glycols		131	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	6.00E+00	gal/yr	5/14/2007	Organic liquid - other/not s		201	2.78E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	6.00E+00	gal/yr	5/14/2007	Stoddard solvent		401	2.78E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007	Organic liquid - other/not s		201	8.33E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007	Ethylbenzene		333	8.08E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007	Propylene glycol monomethyl		579	8.08E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	5.00E+00	gal/yr	5/14/2007	Butyl acetate		48	1.54E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	5.00E+00	gal/yr	5/14/2007	2-heptanone		729	1.54E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2006	Glycols		131	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2006	Aromatic hydrocarbons - othe		27	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2006	Glycols		131	0.00E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	-9.52E+03	thou barre/yr	12/31/2009	Benzene		41	4.93E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	-9.52E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	2.14E+02
4414	#1a Separator	Waste water - refin, other/not	G5017300	-6.33E+03	thou barre/yr	12/31/2009	Benzene		41	9.54E-01
4414	#1a Separator	Waste water - refin, other/not	G5017300	-6.33E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	4.15E+01
4415	Asphalt Tank Truck Loading Racks	Asphalt	T9871030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2006	Unknown Pollutant		76	0.00E+00
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2006	Hydrocarbon - mixtures, othe		318	0.00E+00
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E-01	tons/yr	12/31/2000	Particulates (portion of tot		1990	4.75E-03
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Organics (part not spec else		990	0.00E+00
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Particulates (portion of tot		1990	0.00E+00
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006	Butyl acetate		48	4.82E-03
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006	Naphtha		188	1.61E-03
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	2.57E-02
4424	Equipment Painting Area	Mineral spirits	SG700184	4.00E+00	gal/yr	12/31/2006	Mineral spirits		184	7.35E-02
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998	Sulfuric Acid mist pollutant		1530	0.00E+00
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2006	Amide		20	0.00E+00
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4433	#3H2S Plant	Waste gases	G5998338	-2.97E+02	million cu/yr	12/31/2009	Organics (part not spec else		990	8.14E-02
4434	#4H2S Plant	Waste gases	G5998338	-1.16E+03	million cu/yr	12/31/2009	Organics (part not spec else		990	3.17E-01
4435	#5H2S Plant	Waste gases	G5998338	-1.77E+03	million cu/yr	12/31/2009	Organics (part not spec else		990	4.85E-01
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T4277201	3.28E+00	thou gal/yr	12/31/2007	Organic liquid - other/not s		201	1.07E-01
5101	Tank-Marketing T-101	Lube oil	T4477419	1.85E+04	thou gal/yr	3/31/1997	Lube oil		419	6.22E+01
5103	Tank-Marketing T-103	Lube oil	T4477419	1.28E+04	thou gal/yr	3/31/1997	Lube oil		419	4.88E+01
5105	Tank-Marketing T-105	Lube oil	T4477419	1.12E+04	thou gal/yr	3/31/1997	Lube oil		419	4.50E+01
5107	Tank-Marketing T-107	Lube oil	T4477419	3.26E+02	thou gal/yr	3/31/1997	Lube oil		419	3.99E+00
5108	Tank-Marketing T-108	Lube oil	T4477419	2.51E+02	thou gal/yr	3/31/1997	Lube oil		419	3.81E+00
5109	Tank-Marketing T-109	Lube oil	T4477419	4.98E+02	thou gal/yr	3/31/1997	Lube oil		419	4.39E+00
5110	Tank-Marketing T-110	Lube oil	T4477419	1.33E+03	thou gal/yr	3/31/1997	Lube oil		419	6.34E+00
5112	Tank-Marketing T-112	Lube oil	T4377419	5.80E+01	thou gal/yr	3/31/1997	Lube oil		419	9.01E-01
5113	Tank-Marketing T-113	Lube oil	T4377419	5.00E+00	thou gal/yr	3/31/1997	Lube oil		419	7.77E-01
5115	Tank-Marketing T-115	Lube oil	T4377419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	8.99E-01
5117	Tank-Marketing T-117	Lube oil	T4477419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5118	Tank-Marketing T-118	Lube oil	T4477419	4.60E+01	thou gal/yr	3/31/1997	Lube oil		419	1.51E+00
5119	Tank-Marketing T-119	Lube oil	T4477419	6.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.55E+00
5121	Tank-Marketing T-121	Lube oil	T4477419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	2.03E+00
5122	Tank-Marketing T-122	Lube oil	T4477419	6.70E+01	thou gal/yr	3/31/1997	Lube oil		419	1.73E+00
5123	Tank-Marketing T-123	Lube oil	T4477419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5125	Tank-Marketing T-125	Lube oil	T4377419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	8.26E-01
5126	Tank-Marketing T-126	Lube oil	T4377419	1.04E+02	thou gal/yr	3/31/1997	Lube oil		419	1.01E+00
5127	Tank-Marketing T-127	Lube oil	T4377419	1.92E+02	thou gal/yr	3/31/1997	Lube oil		419	1.22E+00
5128	Tank-Marketing T-128	Lube oil	T4377419	6.40E+01	thou gal/yr	3/31/1997	Lube oil		419	9.15E-01
5129	Tank-Marketing T-129	Lube oil	T4377419	3.20E+01	thou gal/yr	3/31/1997	Lube oil		419	4.33E-01
5130	Tank-Marketing T-130	Lube oil	T4377419	8.00E+01	thou gal/yr	3/31/1997	Lube oil		419	5.46E-01
5131	Tank-Marketing T-131	Lube oil	T4377419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5132	Tank-Marketing T-132	Lube oil	T4377419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5133	Tank-Marketing T-133	Lube oil	T4377419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5134	Tank-Marketing T-134	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5135	Tank-Marketing T-135	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5136	Tank-Marketing T-136	Lube oil	T43??419	1.36E+02	thou gal/yr	3/31/1997	Lube oil		419	6.77E-01
5137	Tank-Marketing T-137	Lube oil	T43??419	1.20E+02	thou gal/yr	3/31/1997	Lube oil		419	6.40E-01
5138	Tank-Marketing T-138	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5139	Tank-Marketing T-139	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	4.19E-01
5140	Tank-Marketing T-140	Lube oil	T43??419	1.30E+01	thou gal/yr	3/31/1997	Lube oil		419	6.16E-04
5201	Tank-Marketing T-201	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5202	Tank-Marketing T-202	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5203	Tank-Marketing T-203	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5204	Tank-Marketing T-204	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997	Lube oil		419	6.61E+00
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997	Lube oil		419	8.74E+00
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	5.05E+00
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997	Lube oil		419	3.54E+00
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.32E+00
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997	Lube oil		419	2.35E+00
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997	Lube oil		419	4.23E+00
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997	Lube oil		419	1.98E+00
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997	Lube oil		419	1.64E+00
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997	Lube oil		419	2.17E+00
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997	Lube oil		419	2.37E+00
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997	Lube oil		419	4.43E+00
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997	Lube oil		419	1.38E+00
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997	Lube oil		419	1.17E+00
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997	Lube oil		419	1.31E+00
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997	Lube oil		419	9.20E-01
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	3.58E+00
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997	Lube oil		419	8.90E-01
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997	Lube oil		419	1.80E+00
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997	Lube oil		419	5.50E-01
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	3.95E-01
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.94E-01
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	7.66E-01
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997	Lube oil		419	5.69E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Benzene		41	2.40E-04
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Organics (part not spec else		990	3.25E+01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Particulates (portion of tot		1990	3.75E-01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	8.67E-03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.55E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.13E-02
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.88E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.60E+03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Methane (CH4)		6970	3.25E+01
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Benzene		41	1.46E-04
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Organics (part not spec else		990	1.98E+01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Particulates (portion of tot		1990	2.28E-01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	5.27E-03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.55E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.30E-02
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.97E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.80E+03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Methane (CH4)		6970	1.98E+01
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Benzene		41	2.67E-04
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Organics (part not spec else		990	3.62E+01
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Particulates (portion of tot		1990	4.18E-01
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	9.65E-03
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.84E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.37E-02
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.43E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	5.12E+03
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Methane (CH4)		6970	3.62E+01
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Benzene		41	2.28E-04
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Organics (part not spec else		990	3.09E+01
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Particulates (portion of tot		1990	3.57E-01
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	8.25E-03
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.43E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.03E-02
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.64E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.37E+03
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Methane (CH4)		6970	3.09E+01
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Benzene		41	1.21E-04
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Organics (part not spec else		990	1.65E+01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Particulates (portion of tot		1990	1.90E-01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	4.40E-03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.29E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.08E-02
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.47E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.33E+03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Methane (CH4)		6970	1.65E+01
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Benzene		41	2.47E-04
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Organics (part not spec else		990	3.35E+01
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Particulates (portion of tot		1990	3.87E-01
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	8.94E-03
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.63E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.20E-02
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.03E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.74E+03
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Methane (CH4)		6970	3.35E+01
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-04
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998			0	0.00E+00
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-04
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-04
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2009			0	0.00E+00
6051	Alky Cooling Tower	Fresh water	G5005415	-7.97E+04	thou gallo/yr	12/31/2009	Organics (part not spec else		990	1.53E-01
6051	Alky Cooling Tower	Fresh water	G5005415	-7.97E+04	thou gallo/yr	12/31/2009	Particulates (portion of tot		1990	6.55E-02
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00	thou gal/yr	12/31/2009	Water/organics mixture		502	0.00E+00
6125	Tank 6125	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6200	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6200	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6201	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6201	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00

Printed: AUG 1, 2013

[illegible]

Printed: AUG 1, 2013

Printed: AUG 1, 2013

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6238	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6238	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.78E+01	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	7.53E-03
6239	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6239	Portable Steel Storage Container	Oil/water mixture	T43??503	1.68E+01	thou gal/yr	12/31/2008	Oil/water mixture		503	3.02E-04
6239	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2009			0	0.00E+00
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997	Ammonia (NH3) pollutant		6990	2.48E-02
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Benzene		41	1.34E-02
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Formaldehyde		124	1.09E-03
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Organics (part not spec else		990	7.29E-01
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Arsenic (all)		1030	1.15E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	6.74E-06
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Cadmium		1070	2.88E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	5.95E-07
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	2.44E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Manganese		1160	3.83E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Nickel pollutant		1180	4.65E-04
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	8.13E-06
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	6.64E-01
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	6.07E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.54E-03
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.88E+00
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.31E-03
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.02E+00
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.42E+02
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Methane (CH4)		6970	1.77E-02
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Benzene		41	3.54E-04
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Formaldehyde		124	2.93E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	5.20E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	3.08E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.81E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Cadmium		1070	7.71E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.59E-08
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	6.54E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Manganese		1160	1.03E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.25E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	2.18E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.77E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.63E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	9.48E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.06E-01
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.16E-04
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.06E-02
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.19E+01
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	4.74E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Benzene		41	1.61E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Formaldehyde		124	1.31E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Organics (part not spec else		990	9.28E-03
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Arsenic (all)		1030	1.38E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	8.10E-08
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Cadmium		1070	3.46E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	7.15E-09
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	2.93E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Manganese		1160	4.60E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Nickel pollutant		1180	5.59E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	9.77E-08
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	3.78E-03
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	7.29E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	4.25E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	6.52E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	5.18E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.04E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	5.32E+00
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Methane (CH4)		6970	2.13E-04
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Benzene		41	2.77E-05
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Formaldehyde		124	2.26E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Organics (part not spec else		990	1.51E-03
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Arsenic (all)		1030	2.38E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.40E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Cadmium		1070	5.96E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.23E-09
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	5.05E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Manganese		1160	7.93E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Nickel pollutant		1180	9.64E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.68E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.38E-03
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.26E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.33E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.93E-02
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	8.94E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.19E-03
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	9.17E-01
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Methane (CH4)		6970	3.67E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Benzene		41	2.42E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Formaldehyde		124	1.98E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	1.32E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	2.08E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.22E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Cadmium		1070	5.20E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.08E-08
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	4.41E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Manganese		1160	6.93E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	8.42E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.47E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.20E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.10E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	6.40E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.68E-01
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	7.81E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	3.66E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	8.01E+00
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	3.20E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Benzene		41	6.03E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Formaldehyde		124	4.92E-05
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	7.88E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	1.55E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	9.11E-08
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Cadmium		1070	3.89E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	8.04E-09
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	3.30E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Manganese		1160	5.17E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	6.29E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.10E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.42E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	8.20E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.19E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.22E-01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.89E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.65E-02
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.99E+01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	7.97E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Benzene		41	1.72E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Formaldehyde		124	1.40E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Organics (part not spec else		990	2.24E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Arsenic (all)		1030	4.42E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	2.59E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Cadmium		1070	1.11E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	2.29E-08
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	9.38E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Manganese		1160	1.47E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.79E-05
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	3.13E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	4.03E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	2.33E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	9.07E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	9.14E-01
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.11E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	7.53E-02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.13E+02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Methane (CH4)		6970	2.27E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Benzene		41	9.52E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Formaldehyde		124	7.77E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	5.19E-02
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	8.18E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	4.80E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Cadmium		1070	2.05E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	4.23E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	1.74E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Manganese		1160	2.72E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	3.31E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	5.78E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	4.73E-02
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	4.32E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.52E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	6.62E-01
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.07E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.44E-01
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.15E+01
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24B098	-5.15E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	1.26E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Benzene		41	2.00E-04
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Formaldehyde		124	1.63E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	1.09E-02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	1.72E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.01E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Cadmium		1070	4.29E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	8.88E-09
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	3.64E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Manganese		1160	5.71E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	6.94E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.21E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	9.91E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	9.05E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	5.28E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.39E-01
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	6.44E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24B098	-1.08E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	3.02E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	6.60E+00
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	2.64E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Benzene		41	1.06E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Formaldehyde		124	8.65E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	5.77E-02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	9.11E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	5.34E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Cadmium		1070	2.28E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	4.71E-08
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	1.93E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Manganese		1160	3.03E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	3.68E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	6.44E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	5.26E-02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	4.80E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.80E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	7.36E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.41E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.60E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.50E+01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	1.40E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Benzene		41	2.74E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Formaldehyde		124	2.23E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	1.49E-02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	2.35E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.38E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Cadmium		1070	5.88E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.22E-08
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	4.99E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Manganese		1160	7.83E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	9.51E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.66E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.36E-02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.24E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.23E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.90E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	8.82E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.14E-02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	9.05E+00
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	3.62E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Benzene		41	3.59E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Formaldehyde		124	2.93E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	1.95E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	3.08E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.81E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Cadmium		1070	7.71E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.59E-08
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	6.54E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Manganese		1160	1.03E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.25E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	2.18E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.78E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.63E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	9.48E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.49E-01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.16E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.42E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.19E+01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	4.74E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Benzene		41	2.62E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Formaldehyde		124	2.14E-05
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	1.02E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	6.75E-08
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	3.95E-08
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Cadmium		1070	1.69E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	3.49E-09
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	1.43E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Manganese		1160	2.24E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	2.73E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	4.77E-08
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.63E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	3.56E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.38E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.05E-01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.69E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.94E-02
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.73E+01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	3.46E-04
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Benzene		41	5.82E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Formaldehyde		124	4.82E-05
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	2.68E-03
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	5.07E-07
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	2.97E-07
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Cadmium		1070	1.27E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01						

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.93E-02
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.90E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.40E-02
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.95E+01
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	7.80E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Benzene		41	4.40E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Formaldehyde		124	3.59E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	5.56E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	3.78E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	2.22E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Cadmium		1070	9.45E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.96E-08
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	8.02E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Manganese		1160	1.26E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.53E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	2.67E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	2.85E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	PAH's (non-specified)		1840	2.00E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.16E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.15E-01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.42E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.32E-02
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.45E+01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	5.82E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Benzene		41	3.00E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Formaldehyde		124	2.44E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	3.78E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	2.57E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.51E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Cadmium		1070	6.44E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.33E-08
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	5.46E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Manganese		1160	8.57E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.04E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.82E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.94E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	PAH's (non-specified)		1840	1.36E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.92E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	7.80E-02
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.65E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.95E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	9.90E+00
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	3.96E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Benzene		41	3.10E-03
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Formaldehyde		124	2.56E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Organics (part not spec else		990	4.40E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Arsenic (all)		1030	2.70E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.58E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Cadmium		1070	6.75E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.40E-07
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	5.73E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Manganese		1160	8.98E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.09E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.91E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	2.57E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	PAH's (non-specified)		1840	1.42E-05
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	8.30E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	9.00E-01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.01E-03
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.77E-01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.04E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Methane (CH4)		6970	4.15E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006	Ethyl alcohol		105	3.43E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006	Methyl ethyl ketone (MEK)		169	6.86E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006	Organic liquid - other/not s		201	1.14E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	1.80E+01	gal/yr	12/31/2006	Methyl ethyl ketone (MEK)		169	3.31E-01
9047	Tank 6047	Organic liquid - other/not spe	T42??7201	0.00E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	0.00E+00
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??7090	-5.45E+01	thou gal/yr	12/31/1997	Ketone - other/not spec		90	3.46E-02
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??7419	-3.51E+00	thou gal/yr	12/31/1997	Lube oil		419	5.24E-02
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998	Hydrocarbon - mixtures, othe		318	2.77E-01
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Benzene		41	4.48E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Toluene		293	1.52E-02
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Xylene		307	1.79E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Ethylbenzene		333	1.05E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Gasoline - unleaded		551	1.47E+00
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??7052	-1.50E+01	thou gal/yr	12/31/2009	Paraffins - C3+		52	2.91E-04
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??7158	-3.95E+04	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	4.86E-02
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??7242	-1.03E+05	thou gal/yr	12/31/2009	Bunker C fuel oil		242	8.43E-04
9321	Marine Loading Berth #1	Distillate oil	TB8??7315	1.10E+03	thou gal/yr	12/31/2009	Distillate oil		315	1.36E-03
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
9321	Marine Loading Berth #1	Crude oil	TB8??7089	-1.02E+05	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-1.55E+04	thou gal/yr	12/31/2009	Benzene		41	5.75E-02
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-1.55E+04	thou gal/yr	12/31/2009	Ethylene dichloride		107	9.77E-04
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-1.55E+04	thou gal/yr	12/31/2009	Gasoline - leaded		128	5.34E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-1.55E+04	thou gal/yr	12/31/2009	Toluene		293	2.87E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	-1.55E+04	thou gal/yr	12/31/2009	Xylene		307	6.32E-02
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	-1.55E+04	thou gal/yr	12/31/2009	Ethylene dibromide		420	3.85E-05
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??158	-9.81E+04	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	1.21E-01
9322	Marine Loading Berth #2	Methyl alcohol	TB8??179	0.00E+00	thou gal/yr	12/31/2009	Methyl alcohol		179	0.00E+00
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??242	-1.09E+05	thou gal/yr	12/31/2009	Bunker C fuel oil		242	8.93E-04
9322	Marine Loading Berth #2	Toluene	TB8??293	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9322	Marine Loading Berth #2	Distillate oil	TB8??315	-8.39E+04	thou gal/yr	12/31/2009	Distillate oil		315	1.03E-01
9322	Marine Loading Berth #2	Lube oil	TB8??419	-1.98E+05	thou gal/yr	12/31/2009	Lube oil		419	8.02E-02
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	-2.54E+05	thou gal/yr	12/31/2009	Benzene		41	3.51E-01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	-2.54E+05	thou gal/yr	12/31/2009	Toluene		293	1.19E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	-2.54E+05	thou gal/yr	12/31/2009	Xylene		307	1.40E-01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	-2.54E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	8.19E-02
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	-2.54E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	1.15E+02
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??628	0.00E+00	thou gal/yr	12/31/2009	Methyl tertiary-butyl ether		628	0.00E+00
9322	Marine Loading Berth #2	Crude oil	TF8??089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
9323	Marine Loading Berth #3	Crude oil	TB8??089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-6.28E+03	thou gal/yr	12/31/2009	Benzene		41	2.32E-02
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-6.28E+03	thou gal/yr	12/31/2009	Ethylene dichloride		107	3.95E-04
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-6.28E+03	thou gal/yr	12/31/2009	Gasoline - leaded		128	2.16E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-6.28E+03	thou gal/yr	12/31/2009	Toluene		293	1.16E-01
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-6.28E+03	thou gal/yr	12/31/2009	Xylene		307	2.56E-02
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-6.28E+03	thou gal/yr	12/31/2009	Ethylene dibromide		420	1.56E-05
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB8??158	-1.23E+05	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	1.52E-01
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB8??201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
9323	Marine Loading Berth #3	Bunker C fuel oil	TB8??242	-1.11E+05	thou gal/yr	12/31/2009	Bunker C fuel oil		242	9.14E-04
9323	Marine Loading Berth #3	Toluene	TB8??293	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9323	Marine Loading Berth #3	Distillate oil	TB8??315	-1.29E+05	thou gal/yr	12/31/2009	Distillate oil		315	1.59E-01
9323	Marine Loading Berth #3	Lube oil	TB8??419	0.00E+00	thou gal/yr	12/31/2009	Lube oil		419	0.00E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	-4.94E+05	thou gal/yr	12/31/2009	Benzene		41	6.83E-01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	-4.94E+05	thou gal/yr	12/31/2009	Toluene		293	2.32E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	-4.94E+05	thou gal/yr	12/31/2009	Xylene		307	2.73E-01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	-4.94E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	1.59E-01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	-4.94E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	2.24E+02
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB4?2318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4?2551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
9324	Marine Loading Berth #4	Bunker C fuel oil	TB8??242	0.00E+00	thou gal/yr	12/31/2008	Bunker C fuel oil		242	0.00E+00
9324	Marine Loading Berth #4	Distillate oil	TB8??315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
9324	Marine Loading Berth #4	Crude oil	TF8??089	-3.27E+06	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
9325	Marine Loading Berth #9	Paraffins - C3+	TB8??052	-3.32E+03	thou gal/yr	12/31/2009	Paraffins - C3+		52	3.22E-02
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB8??158	-1.85E+03	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	2.29E-03
9325	Marine Loading Berth #9	Bunker C fuel oil	TB8??242	-1.18E+05	thou gal/yr	12/31/2009	Bunker C fuel oil		242	9.67E-04
9325	Marine Loading Berth #9	Toluene	TB8??293	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Distillate oil	TB8??315	-2.62E+02	thou gal/yr	12/31/2009	Distillate oil		315	3.23E-04
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB8??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
9325	Marine Loading Berth #9	Lube oil	TB8??419	0.00E+00	thou gal/yr	12/31/2009	Lube oil		419	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
9325	Marine Loading Berth #9	Crude oil	TF8??089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
9326	Marine Loading Berth #11	Paraffins - C3+	TB8??052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
9326	Marine Loading Berth #11	Bunker C fuel oil	TB8??242	-2.88E+04	thou gal/yr	12/31/2009	Bunker C fuel oil		242	4.74E-03
9326	Marine Loading Berth #11	Distillate oil	TB8??315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00			Organics (part not spec else		990	0.00E+00
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00			Organics (part not spec else		990	1.80E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Benzene		41	1.74E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cyclohexane		91	1.07E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylene dichloride		107	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Hexane		148	1.95E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Isooctane		154	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl alcohol		179	1.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Perchloroethylene		210	7.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Toluene		293	6.52E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Xylene		307	7.13E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cumene		326	1.30E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylbenzene		333	1.39E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,2,4-trimethylbenzene		385	1.93E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene dibromide		420	3.00E-03
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,3-butadiene		521	1.40E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene		536	4.38E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Propylene		564	2.68E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Organics (part not spec else		990	5.00E+02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ammonia (NH3) pollutant		6990	3.08E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Benzene		41	2.80E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cyclohexane		91	1.75E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Hexane		148	2.55E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Isooctane		154	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (Pg 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl alcohol		179	5.00E-04
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Toluene		293	9.70E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Xylene		307	1.12E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Ethylbenzene		333	2.30E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,2,4-trimethylbenzene		385	3.35E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,3-butadiene		521	5.00E-04
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cresol		525	1.00E-03
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ethylene		536	1.95E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Propylene		564	1.80E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Organics (part not spec else		990	6.35E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Carbon Dioxide, non-biogenic		6960	3.20E+02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ammonia (NH3) pollutant		6990	1.78E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Benzene		41	1.20E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Hexane		148	2.70E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Toluene		293	5.50E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Xylene		307	6.40E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			1,3-butadiene		521	1.60E-06
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Cresol		525	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ethylene		536	1.70E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Propylene		564	2.10E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Organics (part not spec else		990	2.20E-02
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ammonia (NH3) pollutant		6990	1.30E-04
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Benzene		41	2.00E-03
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Hexane		148	8.70E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Toluene		293	1.58E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Xylene		307	1.58E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cumene		326	9.00E-02
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Ethylbenzene		333	3.60E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,2,4-trimethylbenzene		385	3.00E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,3-butadiene		521	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cresol		525	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Organics (part not spec else		990	7.05E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Benzene		41	2.21E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Formaldehyde		124	7.91E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Phenol		214	4.30E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Acetaldehyde		335	1.29E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			1,3-butadiene		521	8.49E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Organics (part not spec else		990	1.79E-01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Arsenic (all)		1030	2.11E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cadmium		1070	1.16E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Chromium		1090	1.48E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Magnesium pollutant		1150	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Manganese		1160	4.01E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nickel pollutant		1180	2.21E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Mercury (all) pollutant		1190	2.74E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Zinc pollutant		1320	3.06E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			PAH's (non-speciated)		1840	7.36E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Particulates (portion of tot		1990	8.02E-02
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nitrogen Oxides (part not sp		2990	9.31E-01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Sulfur Dioxide (SO2)		3990	3.22E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Carbon Monoxide (CO) polluta		4990	5.06E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Unabated Detailed Pollutant Emissions
for Calendar Year 2009***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	3.00E-01	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	3.88E-03
55	Tank 55	Distillate oil	T81??315	0.00E+00	thou gal/yr	12/31/2003	Distillate oil		315	0.00E+00
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Benzene		41	1.94E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Toluene		293	6.58E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Xylene		307	7.75E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Ethylbenzene		333	4.52E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Gasoline - unleaded		551	6.36E-02
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996	Organic liquid - other/not s		201	0.00E+00
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997	Distillate oil		315	0.00E+00
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997	Distillate oil		315	1.39E+01
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997	Distillate oil		315	6.12E+00
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.28E+00
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997	Distillate oil		315	4.12E-01
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	3.65E+04	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	5.54E+01
399	TANK	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
399	TANK	Oil - non-fuel, other/not spec	T5472352	-1.70E+04	thou gal/yr	12/31/2009	Oil - non-fuel, other/not sp		352	1.19E+01
399	TANK	Tetra-Ethyl Lead (TEL)	T5472422	0.00E+00	thou gal/yr	12/31/2009	Tetra-Ethyl Lead (TEL)		422	0.00E+00
401	TANK 401	Refinery feedstock - other/not	T4472239	4.70E+04	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	1.09E+01
634	TANK 634	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
634	TANK 634	Petroleum products - other/not	T5472321	-2.55E+04	thou gal/yr	12/31/2008	Petroleum products - other/n		321	1.61E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	2.12E+04	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	1.41E-01
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	1.46E-03
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T42??502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Butane	T42??416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T42??419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.33E-03
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
955	TANK 955	Paraffins - C3+	T5412052	-8.70E+03	thou gal/yr	12/31/2009	Paraffins - C3+		52	2.29E+00
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
956	TANK 956	Paraffins - C3+	T5412052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
957	Tank 957	Diesel fuel	T447?098	-1.32E+04	thou gal/yr	12/31/2009	Diesel oil		98	6.31E+00
957	Tank 957	Fuel - jet 'A'	T447?158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut Units	Emissions		Code	lb/day
					Date	Pollutant		
979 TANK 979		Distillate oil	T44??315	-6.13E+04 thou gal/yr	4/30/1997	Distillate oil	315	7.33E+00
984 TANK 984		Distillate oil	T4417315	-9.67E+03 thou gal/yr	12/31/1997	Distillate oil	315	1.41E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2009	Benzene	41	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2009	Ethylene dichloride	107	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2009	Gasoline - leaded	128	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2009	Toluene	293	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2009	Xylene	307	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2009	Ethylene dibromide	420	0.00E+00
990 TANK 990		Gasoline - unleaded	T5432551	-9.31E+04 thou gal/yr	12/31/2009	Benzene	41	1.39E-02
990 TANK 990		Gasoline - unleaded	T5432551	-9.31E+04 thou gal/yr	12/31/2009	Toluene	293	4.71E-02
990 TANK 990		Gasoline - unleaded	T5432551	-9.31E+04 thou gal/yr	12/31/2009	Xylene	307	5.55E-03
990 TANK 990		Gasoline - unleaded	T5432551	-9.31E+04 thou gal/yr	12/31/2009	Ethylbenzene	333	3.23E-03
990 TANK 990		Gasoline - unleaded	T5432551	-9.31E+04 thou gal/yr	12/31/2009	Gasoline - unleaded	551	4.55E+00
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Benzene	41	1.40E-02
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Toluene	293	4.75E-02
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Xylene	307	5.58E-03
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Ethylbenzene	333	3.26E-03
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Gasoline - unleaded	551	4.58E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2009	Benzene	41	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2009	Ethylene dichloride	107	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2009	Gasoline - leaded	128	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2009	Toluene	293	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2009	Xylene	307	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2009	Ethylene dibromide	420	0.00E+00
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.02E+05 thou gal/yr	12/31/2009	Benzene	41	1.36E-02
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.02E+05 thou gal/yr	12/31/2009	Toluene	293	4.61E-02
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.02E+05 thou gal/yr	12/31/2009	Xylene	307	5.43E-03
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.02E+05 thou gal/yr	12/31/2009	Ethylbenzene	333	3.16E-03
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.02E+05 thou gal/yr	12/31/2009	Gasoline - unleaded	551	4.45E+00
1020 Tank 1020: Inorganic Chemical Storage Tank		Diethanolamine	T44?7485	4.20E+02 thou gal/yr	3/10/1995	Diethanolamine	485	1.05E-01
1052 Tank 1052: Organic Liquid Storage Tank		Kerosene	T43??159	0.00E+00 thou gal/yr	12/31/2006	Kerosene	159	0.00E+00
1052 Tank 1052: Organic Liquid Storage Tank		Hydrocarbon - mixtures, other/	T43??318	0.00E+00 thou gal/yr	12/31/2006	Hydrocarbon - mixtures, othe	318	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2009	Benzene	41	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2009	Ethylene dichloride	107	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2009	Gasoline - leaded	128	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2009	Toluene	293	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2009	Xylene	307	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2009	Ethylene dibromide	420	0.00E+00
1287 TANK 1287		Toluene	T5432293	0.00E+00 thou gal/yr	12/31/2009	Toluene	293	0.00E+00
1287 TANK 1287		Petroleum products - other/not	T5432321	-3.06E+04 thou gal/yr	12/31/2009	Petroleum products - other/n	321	2.21E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2009	Benzene	41	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2009	Toluene	293	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2009	Xylene	307	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2009	Ethylbenzene	333	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2009	Gasoline - unleaded	551	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2009	Benzene	41	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2009	Ethylene dichloride	107	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2009	Gasoline - leaded	128	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2009	Toluene	293	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2009	Xylene	307	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2009	Ethylene dibromide	420	0.00E+00
1289 TANK 1289		Toluene	T64?2293	-9.88E+02 thou gal/yr	12/31/2009	Toluene	293	9.96E-01
1289 TANK 1289		Hydrocarbon - mixtures, other/	T64?2318	0.00E+00 thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe	318	0.00E+00
1292 TANK 1292		Diesel fuel	T5412098	-2.63E+04 thou gal/yr	12/31/2009	Diesel oil	98	2.63E-01
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00 thou gal/yr	12/31/2009	Fuel - jet 'A'	158	0.00E+00
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00 thou gal/yr	12/31/2009	Jet fuel JP8	684	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2009	Benzene	41	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2009	Ethylene dichloride	107	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2009	Gasoline - leaded	128	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2009	Toluene	293	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2009	Xylene	307	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2009	Ethylene dibromide	420	0.00E+00
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.40E+04 thou gal/yr	12/31/2009	Benzene	41	1.74E-02
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.40E+04 thou gal/yr	12/31/2009	Toluene	293	5.92E-02
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.40E+04 thou gal/yr	12/31/2009	Xylene	307	6.96E-03
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.40E+04 thou gal/yr	12/31/2009	Ethylbenzene	333	4.06E-03
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.40E+04 thou gal/yr	12/31/2009	Gasoline - unleaded	551	5.71E+00
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T63?2502	5.90E+00 thou gal/yr	12/31/2003	Water/organics mixture	502	8.65E-04
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04 thou gal/yr	4/30/1997	Refinery feedstock - other/n	239	7.11E+00
1431 Asphalt Tank(T-907)		Asphalt	T44?7030	0.00E+00 thou gal/yr	12/31/2009	Asphalt	30	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	-7.89E+02 thou gal/yr	12/31/2009	Benzene	41	1.90E-02
1444 TANK 1444		Gasoline - leaded	T5432128	-7.89E+02 thou gal/yr	12/31/2009	Ethylene dichloride	107	3.23E-04
1444 TANK 1444		Gasoline - leaded	T5432128	-7.89E+02 thou gal/yr	12/31/2009	Gasoline - leaded	128	1.77E+00
1444 TANK 1444		Gasoline - leaded	T5432128	-7.89E+02 thou gal/yr	12/31/2009	Toluene	293	9.51E-02
1444 TANK 1444		Gasoline - leaded	T5432128	-7.89E+02 thou gal/yr	12/31/2009	Xylene	307	2.09E-02
1444 TANK 1444		Gasoline - leaded	T5432128	-7.89E+02 thou gal/yr	12/31/2009	Ethylene dibromide	420	1.27E-05
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2009	Benzene	41	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2009	Toluene	293	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2009	Xylene	307	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2009	Ethylbenzene	333	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2009	Gasoline - unleaded	551	0.00E+00
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03 thou gal/yr	4/30/1997	Refinery feedstock - other/n	239	5.30E-02
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03 thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe	318	5.97E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe		318	5.90E-01
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.98E+04	thou gal/yr	12/31/2009	Benzene		41	1.17E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.98E+04	thou gal/yr	12/31/2009	Toluene		293	3.98E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.98E+04	thou gal/yr	12/31/2009	Xylene		307	4.68E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.98E+04	thou gal/yr	12/31/2009	Ethylbenzene		333	2.73E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.98E+04	thou gal/yr	12/31/2009	Gasoline - unleaded		551	3.84E+00
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
1488 TANK 1488		Oil/water mixture	T5472503	-3.27E+03	thou gal/yr	12/31/2009	Oil/water mixture		503	3.13E+01
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1489 TANK 1489		Alkylate	T5432389	-3.60E+04	thou gal/yr	12/31/2009	Alkylate		389	4.88E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2009	Methyl alcohol		179	0.00E+00
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1491 TANK 1491		Gasoline - unleaded	T5432551	-3.40E+04	thou gal/yr	12/31/2008	Benzene		41	1.14E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	-3.40E+04	thou gal/yr	12/31/2008	Toluene		293	3.89E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	-3.40E+04	thou gal/yr	12/31/2008	Xylene		307	4.58E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	-3.40E+04	thou gal/yr	12/31/2008	Ethylbenzene		333	2.67E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	-3.40E+04	thou gal/yr	12/31/2008	Gasoline - unleaded		551	3.76E+00
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997	Distillate oil		315	3.52E+00
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.30E+00
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	-3.64E+03	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	2.04E+00
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997	Distillate oil		315	8.02E-01
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997	Fuel oil #2		392	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1514 TANK 1514		Gasoline - unleaded	T5432551	-1.07E+05	thou gal/yr	12/31/2009	Benzene		41	1.54E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	-1.07E+05	thou gal/yr	12/31/2009	Toluene		293	5.25E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	-1.07E+05	thou gal/yr	12/31/2009	Xylene		307	6.18E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	-1.07E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	3.60E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	-1.07E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	5.07E+00
1518 TANK 1518		Fuel - jet 'A'	T5432158	1.30E+04	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	1.22E-01
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997	Paraffins - C3+		52	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	1.79E+03	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	5.44E-02
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Benzene		41	2.36E-06
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Ethylene dichloride		107	4.01E-08
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Gasoline - leaded		128	2.19E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Toluene		293	1.18E-05
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Xylene		307	2.59E-06
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Ethylene dibromide		420	1.58E-09
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Benzene		41	2.04E-03
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Toluene		293	6.94E-03
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Xylene		307	8.17E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Ethylbenzene		333	4.77E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Gasoline - unleaded		551	6.71E-01
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997	Distillate oil		315	1.27E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.10E+04	thou gal/yr	12/31/2009	Benzene		41	3.64E-03
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.10E+04	thou gal/yr	12/31/2009	Toluene		293	1.24E-02
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.10E+04	thou gal/yr	12/31/2009	Xylene		307	1.46E-03
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.10E+04	thou gal/yr	12/31/2009	Ethylbenzene		333	8.50E-04
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.10E+04	thou gal/yr	12/31/2009	Gasoline - unleaded		551	1.20E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
1653 TANK 1653		Fuel - jet 'A'	T4417158	-2.74E+03	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	2.12E+00
1653 TANK 1653		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
1653 TANK 1653		Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2009	Jet fuel JP5		492	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.20E+05	thou gal/yr	12/31/2009	Benzene		41	1.61E-02
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.20E+05	thou gal/yr	12/31/2009	Toluene		293	5.47E-02
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.20E+05	thou gal/yr	12/31/2009	Xylene		307	6.43E-03
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.20E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	3.75E-03
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.20E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	5.28E+00
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Benzene		41	1.64E-02
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Toluene		293	5.59E-02
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Xylene		307	6.57E-03
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.84E-03
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	5.40E+00
1798 Tank 1798		Fuel - jet 'A'	T5422158	-2.06E+05	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	7.47E+00
1798 Tank 1798		Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
1799 TANK 1799		Crude oil	T5422089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
1799 TANK 1799		Fuel - jet 'A'	T5422158	-1.89E+05	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	1.45E+00
1821 Tank 1821 Fresh Sulfuric Acid Tank		H2SO4 - other/not spec	G5999146	-1.25E+05	tons/yr	12/31/2009	Particulates (portion of tot		1990	6.86E-03
1825 Tank 1825		Organic liquid - other/not spe	T4227201	-2.77E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	1.19E-02
1828 TANK 1828		Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006	Paraffins - C3+		52	0.00E+00
1828 TANK 1828		Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006	Pentane		209	0.00E+00
1828 TANK 1828		Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006	Butane		416	0.00E+00
1843 TANK 1843		Paraffins - C3+	T5412052	2.95E+02	thou gal/yr	12/31/2007	Paraffins - C3+		52	1.09E-02
1894 Tank 1894: Phosphoric Acid Storage Tank		Phosphoric acid	G5999217	-8.10E+01	tons/yr	12/31/2009	Particulates (portion of tot		1990	4.44E-06
1899 TANK 1899		Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997	Distillate oil		315	3.92E-01
1908 Asphalt Tank (T-908)		Asphalt	T4427030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
1909 Tank 1909		Organic liquid - other/not spe	T4327201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
1910 Tank 1910		Organic liquid - other/not spe	T4327201	7.90E+00	thou gal/yr	12/31/1994	Organic liquid - other/not s		201	3.55E-02
1911 Tank 1911		Organic liquid - other/not spe	T4327201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
1911 Tank 1911		Asphalt	T4427030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
1966 TANK 1966		Fuel - jet 'A'	T5432158	2.02E+04	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	2.25E-01
2520 Wastewater/MEA Storage Tank		Ethyl amine	T4427106	0.00E+00	thou gal/yr	12/31/2005	Ethyl amine		106	0.00E+00
2520 Wastewater/MEA Storage Tank		Waste water - refin, other/not	T4427300	1.05E+05	thou gal/yr	12/31/2005	Waste water - refin, other/n		300	6.26E+00
2540 Tank 2540: Organic Liquid Storage Tank		Ethanolamine	T4427664	-1.79E+03	thou gal/yr	12/31/1997	Ethanolamine		664	1.12E-01
2903 Tank 903: Organic Liquid Storage Tank		Butane	T4227416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
2903 Tank 903: Organic Liquid Storage Tank		Lube oil	T4227419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.17E-04
2917 Asphalt Tank (T-917)		Asphalt	T4427030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
2918 Asphalt Tank (T-918)		Asphalt	T4427030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
2921 Asphalt Tank (T-921)		Asphalt	T4327030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
3038 TANK 3038 (Spherical Pressure Tank)		Paraffins - C3+	T3427052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
3038 TANK 3038 (Spherical Pressure Tank)		Pentane	T3427209	-1.23E+03	thou gal/yr	12/31/2009	Pentane		209	0.00E+00
3050 TANK 3050 SPHERE		Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3066 TANK 3066		Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5422128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5422128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	<----- Emissions ----->		Code	lb/day
						Date	Pollutant		
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded	128	0.00E+00
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Toluene	293	0.00E+00
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Xylene	307	0.00E+00
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide	420	0.00E+00
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.38E+05	thou gal/yr	12/31/2009	Benzene	41	3.66E-01
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.38E+05	thou gal/yr	12/31/2009	Toluene	293	1.24E+00
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.38E+05	thou gal/yr	12/31/2009	Xylene	307	1.46E-01
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.38E+05	thou gal/yr	12/31/2009	Ethylbenzene	333	8.53E-02
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.38E+05	thou gal/yr	12/31/2009	Gasoline - unleaded	551	1.20E+02
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Benzene	41	1.55E-02
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Toluene	293	5.27E-02
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Xylene	307	6.20E-03
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Ethylbenzene	333	3.62E-03
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Gasoline - unleaded	551	5.09E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Paraffins - C3+	T54?2052	-1.27E+05	thou gal/yr	12/31/2009	Paraffins - C3+	52	6.81E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Benzene	41	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride	107	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded	128	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Toluene	293	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Xylene	307	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide	420	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Benzene	41	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Toluene	293	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Xylene	307	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene	333	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded	551	0.00E+00
3074 TANK 3074		Distillate oil	T54?2315	1.14E+05	thou gal/yr	12/31/2007	Distillate oil	315	6.71E-01
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-1.60E+03	thou gal/yr	12/31/2009	Benzene	41	2.94E-02
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-1.60E+03	thou gal/yr	12/31/2009	Ethylene dichloride	107	4.99E-04
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-1.60E+03	thou gal/yr	12/31/2009	Gasoline - leaded	128	2.73E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-1.60E+03	thou gal/yr	12/31/2009	Toluene	293	1.47E-01
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-1.60E+03	thou gal/yr	12/31/2009	Xylene	307	3.23E-02
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-1.60E+03	thou gal/yr	12/31/2009	Ethylene dibromide	420	1.97E-05
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2009	Benzene	41	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2009	Toluene	293	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2009	Xylene	307	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene	333	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded	551	0.00E+00
3076 TANK T3076		Crude oil	T54?2089	0.00E+00	thou gal/yr	12/31/2009	Crude oil	89	0.00E+00
3076 TANK T3076		Hydrocarbon - mixtures, other/	T54?2318	-1.04E+04	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe	318	3.32E+00
3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar		Crude oil	T54?2089	-5.11E+05	thou gal/yr	12/31/2009	Crude oil	89	2.22E+01
3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar		Bunker C fuel oil	T54?2242	0.00E+00	thou gal/yr	12/31/2009	Bunker C fuel oil	242	0.00E+00
3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil	315	0.00E+00
3101 TANK 3101		Crude oil	T5432089	-3.98E+05	thou gal/yr	12/31/2009	Crude oil	89	3.02E+01
3101 TANK 3101		Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2009	Fuel oil #2	392	0.00E+00
3101 TANK 3101		Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2009	Gas oil	394	0.00E+00
3102 TANK 3102		Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2009	Crude oil	89	0.00E+00
3102 TANK 3102		Hydrocarbon - mixtures, other/	T5432318	-3.66E+05	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe	318	1.12E+01
3103 TANK 3103		Crude oil	T5432089	3.43E+05	thou gal/yr	12/31/2007	Crude oil	89	3.55E+01
3104 TANK 3104		Crude oil	T5432089	7.74E+05	thou gal/yr	12/31/2007	Crude oil	89	5.90E+00
3105 TANK 3105		Crude oil	T5432089	7.36E+05	thou gal/yr	12/31/2007	Crude oil	89	6.53E+01
3106 TANK 3106		Crude oil	T5432089	3.21E+05	thou gal/yr	12/31/2007	Crude oil	89	3.46E+01
3107 TANK 3107		Crude oil	T54?2089	3.40E+05	thou gal/yr	12/31/2008	Crude oil	89	3.49E+00
3110 Desalter Effluent Surge Tank A		Crude oil	T43?7089	8.08E+02	thou gal/yr	12/31/2007	Crude oil	89	7.11E+00
3111 Desalter Effluent Surge Tank B		Crude oil	T43?7089	8.08E+02	thou gal/yr	12/31/2007	Crude oil	89	6.42E+00
3126 TANK 3126		Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2009	Naphtha	188	0.00E+00
3126 TANK 3126		Oil/water mixture	T5432503	-2.64E+03	thou gal/yr	12/31/2009	Oil/water mixture	503	3.20E-01
3127 TANK 3127		Oil/water mixture	T5412503	2.38E+03	thou gal/yr	12/31/2007	Oil/water mixture	503	1.70E+00
3128 TANK 3128		Aromatic hydrocarbons - other/	T54?2027	0.00E+00	thou gal/yr	12/31/2009	Aromatic hydrocarbons - othe	27	0.00E+00
3128 TANK 3128		Water/organics mixture	T54?2502	-2.22E+03	thou gal/yr	12/31/2009	Water/organics mixture	502	1.21E+00
3129 TANK 3129		Fuel - jet 'A'	T5412158	1.16E+05	thou gal/yr	12/31/2007	Fuel - jet 'A'	158	1.07E+00
3132 Tank 3132		Distillate oil	T54?2315	8.12E+04	thou gal/yr	4/30/1997	Distillate oil	315	5.89E-01
3133 TANK 3133		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'	158	0.00E+00
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.71E+05	thou gal/yr	12/31/2009	Benzene	41	3.12E-01
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.71E+05	thou gal/yr	12/31/2009	Toluene	293	1.06E+00
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.71E+05	thou gal/yr	12/31/2009	Xylene	307	1.25E-01
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.71E+05	thou gal/yr	12/31/2009	Ethylbenzene	333	7.27E-02
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.71E+05	thou gal/yr	12/31/2009	Gasoline - unleaded	551	1.02E+02
3133 TANK 3133		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2009	Gasoline - oxygenated, MTBE	680	0.00E+00
3134 TANK 3134		Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil	315	0.00E+00
3134 TANK 3134		Gasoline - unleaded	T5412551	-3.17E+05	thou gal/yr	12/31/2009	Benzene	41	2.50E-01
3134 TANK 3134		Gasoline - unleaded	T5412551	-3.17E+05	thou gal/yr	12/31/2009	Toluene	293	8.50E-01
3134 TANK 3134		Gasoline - unleaded	T5412551	-3.17E+05	thou gal/yr	12/31/2009	Xylene	307	1.00E-01
3134 TANK 3134		Gasoline - unleaded	T5412551	-3.17E+05	thou gal/yr	12/31/2009	Ethylbenzene	333	5.84E-02
3134 TANK 3134		Gasoline - unleaded	T5412551	-3.17E+05	thou gal/yr	12/31/2009	Gasoline - unleaded	551	8.21E+01
3134 TANK 3134		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2009	Gasoline - oxygenated, MTBE	680	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3138 TANK 3138		Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997	Gas oil		394	5.55E-01
3139 TANK 3139		Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997	Gas oil		394	8.14E+00
3141 SULFUR STORAGE TANK 3141		Sulfur	G7014267	-1.58E+05	tons/yr	12/31/2009	Sulfur or Sulfur compound po		1830	6.20E+00
3141 SULFUR STORAGE TANK 3141		Sulfur	G7014267	-1.58E+05	tons/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.74E+02
3141 SULFUR STORAGE TANK 3141		Sulfur	G7014267	-1.58E+05	tons/yr	12/31/2009	Hydrogen Sulfide (H2S)		5020	1.08E+02
3142 TANK 3142		Refinery feedstock - other/not	T4417239	4.42E+02	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
3144 TANK 3144		Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
3145 TANK 3145, Sphere		Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3146 Tank 3146: 20% Aqueous Ammonia		Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994	Organic liquid - other/not s		201	1.46E+01
3147 Tank 3147: Organic Liquid Storage Tank		Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3148 Tank 3148: Organic Liquid Storage Tank		Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3157 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.24E+01
3158 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3159 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3160 Tank 3160: Organic Liquid Storage Tank		Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994	Lube oil		419	1.34E+01
3161 Tank Lube Oil		Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997	Lube oil		419	1.19E-01
3162 Tank Lube Oil		Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997	Lube oil		419	1.22E-01
3163 Tank Lube Oil		Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997	Lube oil		419	7.74E-02
3164 Tank Lube Oil		Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997	Lube oil		419	7.23E-02
3165 Tank Lube Oil		Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997	Lube oil		419	1.41E-01
3166 Tank Lube Oil		Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997	Lube oil		419	1.40E-01
3167 Tank Lube Oil		Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997	Lube oil		419	5.27E-02
3168 Tank Lube Oil		Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997	Lube oil		419	5.36E-02
3169 organic liquid storage tank, lube oil products		Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995	Lube oil		419	1.78E-01
3170 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3171 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3172 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	9.57E+00
3179 Tank 3179: Organic Liquid Storage Tank		Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997	Distillate oil		315	1.59E-01
3180 Tank		Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
3180 Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
3180 Tank		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
3180 Tank		Alkylate	T5472389	-2.76E+04	thou gal/yr	12/31/2009	Alkylate		389	1.13E+02
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
3182 Tank 3182: Organic Liquid Storage Tank		Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997	Lube oil		419	2.61E-01
3185 Tank 3185 (previously T-982)		Fuel - jet 'A'	T5472158	2.10E+05	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	6.40E+00
3186 Gas Oil Tank		Organic liquid - other/not spe	T4477201	0.00E+00		4/21/1997	Organic liquid - other/not s		201	8.69E+00
3189 Gasoline component and Diesel Tank		Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3189 Gasoline component and Diesel Tank		Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
3189 Gasoline component and Diesel Tank		Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3189 Gasoline component and Diesel Tank		Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
3189 Gasoline component and Diesel Tank		Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2009	Gas oil		394	0.00E+00
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-3.52E+05	thou gal/yr	12/31/2009	Benzene		41	1.99E-02
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-3.52E+05	thou gal/yr	12/31/2009	Toluene		293	6.77E-02
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-3.52E+05	thou gal/yr	12/31/2009	Xylene		307	7.97E-03
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-3.52E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	4.65E-03
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-3.52E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	6.54E+00
3189 Gasoline component and Diesel Tank		Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2009	Gasoline - oxygenated, MTBE		680	0.00E+00
3190 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3190 Storage Tank		Fuel - jet 'A'	T5472158	-2.28E+05	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	1.84E+00
3191 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	-1.08E+04	thou gal/yr	12/31/2008	Benzene		41	4.22E-02
3191 Storage Tank		Gasoline - leaded	T5472128	-1.08E+04	thou gal/yr	12/31/2008	Ethylene dichloride		107	7.18E-04
3191 Storage Tank		Gasoline - leaded	T5472128	-1.08E+04	thou gal/yr	12/31/2008	Gasoline - leaded		128	3.92E+00
3191 Storage Tank		Gasoline - leaded	T5472128	-1.08E+04	thou gal/yr	12/31/2008	Toluene		293	2.11E-01
3191 Storage Tank		Gasoline - leaded	T5472128	-1.08E+04	thou gal/yr	12/31/2008	Xylene		307	4.64E-02
3191 Storage Tank		Gasoline - leaded	T5472128	-1.08E+04	thou gal/yr	12/31/2008	Ethylene dibromide		420	2.83E-05
3191 Storage Tank		Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2009	Naphtha		188	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3191	Storage Tank	Jet fuel JP4	T54?2395	0.00E+00	thou gal/yr	12/31/2009	Jet fuel JP4		395	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
3191	Storage Tank	Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2009	Methyl tertiary-butyl ether		628	0.00E+00
3192	Desalter Effluent Skim Tank	Crude oil	T3H?7089	3.15E+04	thou gal/yr	12/31/2008	Crude oil		89	0.00E+00
3193	Gasoline component Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3193	Gasoline component Tank	Isooctane	T54?2154	-3.43E+04	thou gal/yr	12/31/2009	Isooctane		154	2.38E+00
3193	Gasoline component Tank	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3193	Gasoline component Tank	Alkylate	T54?2389	0.00E+00	thou gal/yr	12/31/2009	Alkylate		389	0.00E+00
3193	Gasoline component Tank	Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2009	Gas oil		394	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
3194	Storage Tank T-3194	Hydrocarbon - mixtures, other/	T54?2318	0.00E+00	thou gal/yr	12/31/2003	Hydrocarbon - mixtures, othe		318	0.00E+00
3194	Storage Tank T-3194	Gas oil	T54?2394	1.44E+05	thou gal/yr	12/31/2003	Gas oil		394	9.85E-01
3195	T-3195 Waxy Heavy Neutral Storage Tank	Diesel fuel	T54?7098	1.29E+05	thou gal/yr	12/31/2006	Diesel oil		98	2.35E+00
3195	T-3195 Waxy Heavy Neutral Storage Tank	Distillate oil	T54?7315	0.00E+00	thou gal/yr	12/31/2006	Distillate oil		315	0.00E+00
3195	T-3195 Waxy Heavy Neutral Storage Tank	Lube oil	T54?7419	0.00E+00	thou gal/yr	12/31/2006	Lube oil		419	0.00E+00
3196	Gasoline Components Tank	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3196	Gasoline Components Tank	Organic liquid - other/not spe	T54?2201	-2.17E+05	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	1.87E+00
3196	Gasoline Components Tank	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3196	Gasoline Components Tank	Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2009	Gas oil		394	0.00E+00
3196	Gasoline Components Tank	Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
3196	Gasoline Components Tank	Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2009	Methyl tertiary-butyl ether		628	0.00E+00
3197	Gasoline component Tank	Ethers	T55?2103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3197	Gasoline component Tank	Naphtha	T55?2188	-2.65E+04	thou gal/yr	12/31/2009	Naphtha		188	6.20E+00
3197	Gasoline component Tank	Distillate oil	T55?2315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3197	Gasoline component Tank	Gas oil	T55?2394	0.00E+00	thou gal/yr	12/31/2009	Gas oil		394	0.00E+00
3198	3198 tank; organic liquid storage tank	Fuel - jet 'A'	T543?158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
3198	3198 tank; organic liquid storage tank	Toluene	T543?293	-4.30E+03	thou gal/yr	12/31/2009	Toluene		293	1.85E+01
3198	3198 tank; organic liquid storage tank	Distillate oil	T543?315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	-2.41E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	5.28E+01
3201	Tank 3201: Whole Alkylate	Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2009	Ethers		103	0.00E+00
3201	Tank 3201: Whole Alkylate	Alkylate	T54?2389	-1.28E+05	thou gal/yr	12/31/2009	Alkylate		389	1.12E+02
3202	Tank 3202: Methanol	Methyl alcohol	T54?2179	0.00E+00	thou gal/yr	12/31/2009	Methyl alcohol		179	0.00E+00
3202	Tank 3202: Methanol	Naphtha	T54?2188	-7.38E+03	thou gal/yr	12/31/2009	Naphtha		188	7.30E+01
3202	Tank 3202: Methanol	Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
3202	Tank 3202: Methanol	Petroleum products - other/not	T54?2321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
3204	Tank 3204: Organic Liquid Storage Tank	Lube oil	T42?7419	2.54E+00	thou gal/yr	12/31/1997	Lube oil		419	4.07E-04
3207	Butane Sphere: Organic Liquid Storage Tank	Butane	T34?7416	-9.20E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3208	Propane Sphere: Organic Liquid Storage Tank	Propane	T34?7417	-7.67E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3211	Sphere	Butane	T34?7416	-3.83E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3212	Sphere	Propane	T34?7417	-2.76E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T54?2098	0.00E+00	thou gal/yr	12/31/2009	Diesel oil		98	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T54?2158	0.00E+00	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T54?2419	0.00E+00	thou gal/yr	12/31/2009	Lube oil		419	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	-3.11E+05	thou gal/yr	12/31/2009	Benzene		41	8.03E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	-3.11E+05	thou gal/yr	12/31/2009	Toluene		293	2.73E+00
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	-3.11E+05	thou gal/yr	12/31/2009	Xylene		307	3.21E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	-3.11E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	1.87E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	-3.11E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	2.64E+02
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009	Benzene		41	6.65E-01
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009	Ethylene dichloride		107	1.13E-02
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009	Gasoline - leaded		128	6.17E+01
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009	Toluene		293	3.32E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009	Xylene		307	7.31E-01
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-3.13E+04	thou gal/yr	12/31/2009	Ethylene dibromide		420	4.45E-04
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T54?2315	-1.29E+05	thou gal/yr	12/31/1997	Distillate oil		315	1.15E+00
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T44?7315	8.40E+04	thou gal/yr	7/9/1997	Distillate oil		315	2.27E+01
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-7.18E+03	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	1.42E+02
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-1.31E+04	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	1.82E+02
3225	Organic Liquid Storage Tank	Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.52E+05	tons/yr	12/31/2009	Particulates (portion of tot		1990	5.96E+00
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.52E+05	tons/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.67E+02
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.52E+05	tons/yr	12/31/2009	Hydrogen Sulfide (H2S)		5020	1.04E+02
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T43?7419	-3.37E+02	thou gal/yr	12/31/1997	Lube oil		419	3.31E-03
3910	LPG Tank; # 3910	LPG	T34?7160	-3.97E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
3911	LPG Tank, # 3911	LPG	T34?7160	-2.30E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Benzene		41	8.08E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	5.12E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.15E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Phenol		214	4.63E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	5.26E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	7.32E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	1.71E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	4.90E-05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	9.79E-05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Manganese		1160	3.33E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	3.92E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	2.45E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	7.64E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	4.71E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.02E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.35E-01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	2.45E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	5.63E-01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.00E+02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	8.27E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.16E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.40E+05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.93E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.70E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Benzene		41	5.77E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	3.65E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.54E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Phenol		214	3.30E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	3.76E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	5.22E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	1.22E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	3.49E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	6.99E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Manganese		1160	2.38E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.80E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.75E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	5.45E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	3.36E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	1.44E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	9.61E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.75E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	4.02E-01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	7.16E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	5.90E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.97E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.43E+05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-6.38E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	5.07E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Benzene		41	3.00E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.90E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	8.00E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.72E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.95E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.72E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	6.36E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.82E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	6.36E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.24E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.45E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	9.09E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.83E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.75E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	7.50E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	5.00E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	9.09E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.09E-01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.73E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.07E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.54E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.26E+05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.32E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.64E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.63E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.03E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	4.35E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Phenol		214	9.35E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.06E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.48E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	3.46E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	9.89E-06
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	1.98E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Manganese		1160	6.73E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	7.91E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	4.95E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.54E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	9.52E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	4.08E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	2.72E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	4.95E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.14E-01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.03E+01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.67E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.41E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	6.87E+04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.43E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Benzene		41	4.49E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	2.85E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.20E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Phenol		214	2.57E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	2.93E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	4.07E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	9.53E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	2.72E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	5.45E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.85E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.18E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.36E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	4.25E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	2.62E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	1.12E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	7.49E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.36E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.13E-01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.58E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.60E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.31E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.89E+05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-4.97E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	3.95E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Benzene		41	2.12E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.34E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	5.66E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.22E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.38E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.92E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	4.50E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.29E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.57E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Manganese		1160	8.75E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.03E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	6.43E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.01E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.24E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	5.31E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.54E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	6.43E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.48E-01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.64E+01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.17E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.09E+01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	8.94E+04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.35E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.86E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Benzene		41	1.14E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	7.19E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Formaldehyde		124	3.03E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Phenol		214	6.50E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Acetaldehyde		335	7.40E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.03E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	2.41E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Cadmium		1070	6.88E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	1.38E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Manganese		1160	4.68E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	5.50E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	3.44E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.07E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	6.62E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.84E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.89E-01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	3.44E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.91E-01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.41E+02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.16E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.85E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.78E+05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	1.26E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	9.98E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Benzene		41	9.77E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	6.19E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.60E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Phenol		214	5.59E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	6.36E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	8.85E-01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	2.07E-05

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	1.18E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Manganese		1160	4.03E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	4.74E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	2.96E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	9.24E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	5.70E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.44E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.63E-02
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	2.96E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	6.81E-02
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.21E+01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.00E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.03E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.11E+04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.08E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	8.58E-01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Benzene		41	2.73E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.73E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	7.28E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.56E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.78E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.47E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	5.79E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.65E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	3.31E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.13E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.32E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	8.27E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.58E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.59E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	6.83E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	4.55E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	8.27E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.90E-01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.90E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.79E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.41E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.15E+05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.02E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.40E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Benzene		41	3.08E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.95E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	8.21E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.76E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	2.01E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.79E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	6.53E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.87E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	3.73E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.27E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.49E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	9.33E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.91E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.80E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	7.69E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	5.13E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	9.33E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.15E-01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.26E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.15E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.59E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.30E+05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.40E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.70E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Benzene		41	3.92E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	2.48E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.04E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Phenol		214	2.24E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	2.55E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	3.55E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	8.31E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	2.37E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	4.75E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.61E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.90E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.19E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	3.70E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	2.28E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	9.79E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	6.53E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.19E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.73E-01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-4.33E+05						

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	<----- Emissions ----->		Code	lb/day
						Date	Pollutant		
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	1.50E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	4.67E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840	2.88E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	1.24E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	8.24E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	1.50E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	3.44E-01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	7.64E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	5.06E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	2.55E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	2.08E+05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	4.34E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Benzene	41	2.64E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	1.67E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124	7.03E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Phenol	214	1.51E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335	1.72E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	2.39E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	5.59E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Cadmium	1070	1.60E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	3.20E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Manganese	1160	1.09E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	1.28E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	7.99E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	2.49E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840	1.54E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	6.59E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	4.40E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	7.99E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	1.84E-01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	1.29E+02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	2.70E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	1.36E+01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	1.11E+05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-2.92E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	2.32E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Benzene	41	1.01E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	6.41E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124	2.70E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Phenol	214	5.80E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335	6.59E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	9.17E-01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	2.15E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Cadmium	1070	6.13E-06
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	1.23E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Manganese	1160	4.17E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	4.91E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	3.07E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	9.57E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840	5.90E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	2.53E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	1.69E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	3.07E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	7.05E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	6.04E+01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.04E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	5.21E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	4.26E+04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.12E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	8.89E-01
4070	#4 CRUDE UNIT F 1100A	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0.00E+00
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Benzene	41	1.88E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	1.19E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Formaldehyde	124	5.02E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Phenol	214	1.08E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Acetaldehyde	335	1.23E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	1.71E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	3.99E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Cadmium	1070	1.14E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	2.28E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Manganese	1160	7.76E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	9.13E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	5.71E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	1.78E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840	1.10E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	4.71E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	3.14E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	5.71E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	1.31E+00
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	1.60E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.54E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	9.70E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	7.93E+05
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.08E+06	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	1.65E+01
4071	#4 CRUDE UNIT F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0.00E+00
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Benzene	41	1.72E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	1.09E-01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Formaldehyde	124	4.59E-03
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Phenol	214	9.86E-03
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Acetaldehyde	335	1.12E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	1.56E+01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	3.65E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Cadmium	1070	1.04E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	2.09E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Manganese	1160	7.09E-03
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	8.34E-04
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	5.21E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.63E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.00E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	4.30E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	2.87E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	5.21E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.20E+00
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.46E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.41E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.86E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	7.25E+05
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-1.90E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.51E+01
4072 #4 CRUDE UNIT	F1160	Napththa	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Benzene		41	5.46E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	3.46E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.46E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Phenol		214	3.13E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	3.56E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	4.94E+00
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	1.16E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	3.31E-05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	6.61E-05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Manganese		1160	2.25E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.65E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.65E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	5.16E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	3.18E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	1.36E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	9.09E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.65E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.80E-01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.63E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.47E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.81E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.30E+05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-6.04E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	4.80E+00
4073 LSFO COOLING TOWER		Fresh water	G5005415	-1.03E+05	thou gallo/yr	12/31/2009	Organics (part not spec else		990	1.69E+00
4076 3 CAT COOLING TOWER E460		Fresh water	G5005415	-1.12E+05	thou gallo/yr	12/31/2009	Organics (part not spec else		990	1.85E+00
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Benzene		41	7.14E-07
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Formaldehyde		124	8.40E-06
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Toluene		293	3.81E-07
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Organics (part not spec else		990	6.40E-04
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Particulates (portion of tot		1990	3.36E-04
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.59E-05
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.57E-02
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	6.36E-05
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	3.92E-03
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.37E+01
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-4.29E+02	therms/yr	12/31/2009	Methane (CH4)		6970	2.13E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Benzene		41	4.79E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	3.03E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.42E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Phenol		214	8.70E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Toluene		293	1.73E-01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	4.18E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	4.12E+00
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	5.80E-05
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	2.90E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	4.35E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.47E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.52E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	1.20E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	7.98E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.45E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.34E-01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.08E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.90E+00
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.47E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.02E+05
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.29E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	4.21E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Benzene		41	3.14E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	9.34E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Phenol		214	5.72E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Toluene		293	1.13E-01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	2.74E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.70E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	3.81E-05
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	1.91E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	2.86E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.62E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.00E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	9.52E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.19E-01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.33E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.22E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.62E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.32E+05
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.48E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.76E+00
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Benzene		41	3.58E-03
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	2.27E-02
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.06E-02
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Phenol		214	6.51E-04
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Toluene		293	1.29E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->	
							Pollutant	lb/day
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335 3.13E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990 3.08E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095 4.34E-05
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant	1110 2.17E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190 3.26E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320 1.84E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840 1.14E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860 8.95E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870 5.97E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990 1.08E+01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030 2.50E-01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990 3.80E+01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990 3.67E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990 1.84E+01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960 1.51E+05
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.96E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970 3.15E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Benzene	41 4.13E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92 2.62E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124 1.23E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Phenol	214 7.52E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Toluene	293 1.49E-01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335 3.61E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990 3.56E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095 5.01E-05
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant	1110 2.51E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190 3.76E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320 2.13E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840 1.32E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860 1.03E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870 6.89E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990 1.25E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030 2.88E-01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990 4.39E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990 4.23E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990 2.13E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960 1.74E+05
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-4.57E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970 3.63E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Benzene	41 7.27E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92 4.61E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124 2.16E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Phenol	214 1.32E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Toluene	293 2.62E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335 6.35E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990 6.26E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095 8.82E-05
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant	1110 4.41E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190 6.61E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320 3.75E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840 2.31E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860 1.82E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870 1.21E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990 2.20E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030 5.07E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990 7.72E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990 7.45E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990 3.75E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960 3.06E+05
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.05E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970 6.39E+00
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	-3.88E+04	thou barre/yr	12/31/2009	Organics (part not spec else	990 5.32E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Benzene	41 6.69E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92 4.24E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Formaldehyde	124 1.79E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Phenol	214 3.83E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Acetaldehyde	335 4.36E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Organics (part not spec else	990 6.07E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Arsenic (all)	1030 1.42E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Cadmium	1070 4.06E-06
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095 8.11E-06
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Manganese	1160 2.76E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Nickel pollutant	1180 3.25E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190 2.03E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Zinc pollutant	1320 6.33E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840 3.91E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860 1.67E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870 1.12E-02
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990 2.03E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030 4.67E-02
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990 8.32E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990 6.85E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990 3.45E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960 2.82E+04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-7.40E+04	thou cu ft/yr	12/31/2009	Methane (CH4)	6970 5.88E-01
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009		0 0.00E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Benzene	41 5.82E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92 3.69E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Formaldehyde	124 1.55E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Phenol	214 3.33E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Acetaldehyde	335 3.79E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Organics (part not spec else	990 5.27E-01
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Arsenic (all)	1030 1.23E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Cadmium	1070 3.53E-06
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095 7.06E-06
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Manganese	1160 2.40E-04

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.82E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.76E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	5.50E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	3.40E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	1.46E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	9.70E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.76E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	4.06E-02
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	7.23E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	5.96E-01
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	3.00E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.45E+04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.44E+04	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	5.12E-01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Benzene		41	9.14E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	5.79E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.44E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Phenol		214	5.23E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Acetaldehyde		335	5.95E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	8.28E+00
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	1.94E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Cadmium		1070	5.54E-05
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	1.11E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Manganese		1160	3.76E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	4.43E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	2.77E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	8.64E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	5.33E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.28E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.52E-01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	2.77E+01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	6.37E-01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.27E+02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.35E+00
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.15E+02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.85E+05
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-1.01E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	8.03E+00
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Benzene		41	2.84E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.80E-02
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	7.57E-04
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.63E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.85E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.57E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	6.02E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.72E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	3.44E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.17E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.38E-04
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	8.60E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.68E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.66E-02
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	7.10E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	4.73E-02
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	8.60E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.98E-01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.53E+01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	7.26E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.46E+01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.20E+05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.14E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.49E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Benzene		41	2.06E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.30E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	5.49E-04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.18E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.34E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.86E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	4.36E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.25E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.49E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Manganese		1160	8.48E-04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	9.97E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	6.23E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.94E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.20E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	5.14E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.43E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	6.23E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.43E-01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.75E+01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.11E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.06E+01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	8.66E+04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.28E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.81E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.96E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.24E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	5.24E-04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Phenol		214	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.38E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Manganese		1160	8.10E-04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	9.53E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	5.95E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.86E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.15E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	4.91E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.27E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	5.95E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.37E-01
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.67E+01
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.01E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.01E+01
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	8.28E+04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.17E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.73E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Benzene		41	2.64E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.67E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	7.04E-04
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.51E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.72E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.39E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	5.60E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.60E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	3.20E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Manganese		1160	1.09E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.28E-04
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	8.00E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.49E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.54E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	6.60E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	4.40E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	8.00E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.84E-01
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.21E+02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.17E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.36E+01
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.11E+05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.92E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	2.32E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Benzene		41	2.16E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.37E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	5.76E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.24E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.41E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.96E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	4.58E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.31E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.62E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Manganese		1160	8.89E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.05E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	6.54E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.04E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	1.26E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	5.40E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	3.60E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	6.54E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.50E-01
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	9.88E+01
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.41E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.11E+01
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	9.09E+04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-2.39E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.90E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	1.51E-02
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	6.35E-04
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Phenol		214	1.36E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Toluene		293	0.00E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.55E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.03E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	5.05E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Cadmium		1070	1.44E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.88E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Manganese		1160	9.81E-04
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.15E-04
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	7.21E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.63E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.25E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel								

Printed: AUG 1, 2013

S#				Emissions					Code	lb/day	
	Name	Material	Source Code	ThruPut	Units	Date	Pollutant				
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	Manganese	1160	8.30E-04
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	9.76E-05
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	6.10E-05
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	1.90E-03
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)	1840	1.17E-02
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	5.03E-03
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	3.36E-02
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	6.10E+00
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	1.40E-01
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	2.14E+01
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	2.06E+00
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	1.04E+01
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	8.48E+04
4164	F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.23E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	1.77E+00
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Benzene	41	1.21E-01
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	7.64E-03
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124	3.21E-04
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Phenol	214	6.90E-04
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335	7.85E-04
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	1.09E+00
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	2.56E-05
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Cadmium	1070	7.31E-06
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	1.46E-05
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Manganese	1160	4.97E-04
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	5.85E-05
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	3.65E-05
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	1.14E-03
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)	1840	7.03E-03
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	3.01E-03
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	2.01E-02
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	3.65E+00
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	8.40E-02
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	1.28E+01
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.23E+00
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	6.21E+00
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	5.08E+04
4165	F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.13E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	1.06E+00
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Benzene	41	1.70E-03
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	1.08E-02
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124	4.53E-04
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Phenol	214	9.73E-04
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335	1.11E-03
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	1.54E+00
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	3.61E-05
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Cadmium	1070	1.03E-05
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	2.06E-05
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Manganese	1160	7.00E-04
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	8.24E-05
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	5.15E-05
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	1.61E-03
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)	1840	9.91E-03
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	4.25E-03
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	2.83E-02
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	5.15E+00
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	1.18E-01
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	1.80E+01
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.74E+00
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	8.76E+00
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	7.16E+04
4166	F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-1.88E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	1.49E+00
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	3.31E-02
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	4.47E+00
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	1.31E-02
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	8.71E-02
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	3.64E-01
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	6.49E+01
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	5.35E+00
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	2.69E+01
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	2.20E+05
4167	F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-5.78E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	4.59E+00
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Benzene	41	1.23E-02
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	7.82E-02
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Formaldehyde	124	3.29E-03
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Phenol	214	7.07E-03
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Acetaldehyde	335	8.04E-03
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	1.12E+01
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	2.62E-04
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Cadmium	1070	7.48E-05
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	1.50E-04
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Manganese	1160	5.09E-03
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	5.99E-04
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	3.74E-04
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	1.17E-02
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	PAH's (non-specified)	1840	7.20E-02
4168	F-730	ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.37E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	3.09E-02
4168	F-730	ISOCRACKER SPLITTER FEED									

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	<----- Emissions ----->		Code	lb/day
						Date	Pollutant		
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	6.39E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Formaldehyde	124	2.69E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Phenol	214	5.78E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Acetaldehyde	335	6.57E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	9.14E+00
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	2.14E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Cadmium	1070	6.11E-05
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	1.22E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Manganese	1160	4.16E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	4.89E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	3.06E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	9.54E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840	5.88E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	2.52E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	1.68E-01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	3.06E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	7.03E-01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	8.56E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.03E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	5.20E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	4.25E+05
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.12E+06	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	8.86E+00
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Benzene	41	1.89E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	1.20E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Formaldehyde	124	1.26E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Phenol	214	5.15E-03
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Toluene	293	4.03E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Acetaldehyde	335	1.26E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	1.67E+01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Copper (all) pollutant	1110	2.63E-03
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Manganese	1160	1.60E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	5.73E-04
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	1.15E-04
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	3.95E-03
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840	1.25E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	4.72E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	3.15E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	5.73E+01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	1.32E+00
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	1.26E+02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.93E+01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	9.74E+01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	7.96E+05
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-2.09E+06	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	1.66E+01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Benzene	41	4.02E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	2.55E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Formaldehyde	124	2.68E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Phenol	214	1.10E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Toluene	293	8.58E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Acetaldehyde	335	2.68E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	3.56E+01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Copper (all) pollutant	1110	5.61E-03
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Manganese	1160	3.41E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	1.22E-03
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	2.44E-04
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	8.41E-03
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840	2.66E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	1.01E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	6.71E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	1.22E+02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	2.80E+00
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	3.41E+02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.03E+02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	2.07E+02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	1.69E+06
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-4.45E+06	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	3.54E+01
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	-9.89E+05	thou gallo/yr	12/31/2009	Organics (part not spec else	990	1.63E+01
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	-5.40E+05	thou gallo/yr	12/31/2009	Organics (part not spec else	990	8.87E+00
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	-4.86E+04	thou gallo/yr	12/31/2009	Organics (part not spec else	990	7.98E-01
4188 F-651	Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009		0	0.00E+00
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Benzene	41	1.25E-03
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	7.91E-03
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124	3.33E-04
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Phenol	214	7.15E-04
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335	8.14E-04
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	1.13E+00
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Arsenic (all)	1030	2.65E-05
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Cadmium	1070	7.57E-06
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	1.51E-05
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Manganese	1160	5.15E-04
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	6.05E-05
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	3.78E-05
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	1.18E-03
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840	7.28E-03
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	3.12E-03
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	2.08E-02
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	3.78E+00
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	8.70E-02
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	1.10E+02
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.97E+00
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	6.43E+00
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	5.26E+04
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.38E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	1.10E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Benzene		41	5.90E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	3.74E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.57E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Phenol		214	3.84E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Acetaldehyde		335	3.85E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	5.35E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Arsenic (all)		1030	1.25E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Cadmium		1070	3.58E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	7.15E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	1.13E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Manganese		1160	2.43E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	1.79E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	5.58E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	PAH's (non-speciated)		1840	3.44E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	1.48E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	9.84E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.79E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	4.11E-02
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.19E+01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.32E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	3.04E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.49E+04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	5.19E-01
4191	Alkane Cooling Water Tower	Fresh water	G5005415	-6.00E+04	thou gallo/yr	12/31/2009	Organics (part not spec else		990	9.86E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Benzene		41	1.06E-04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Formaldehyde		124	1.25E-03
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Toluene		293	5.65E-05
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Organics (part not spec else		990	9.50E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Particulates (portion of tot		1990	4.98E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.84E-03
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.33E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.49E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.81E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.03E+03
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.37E+04	therms/yr	12/31/2009	Methane (CH4)		6970	3.16E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Benzene		41	1.07E-03
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Formaldehyde		124	1.26E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Toluene		293	5.69E-04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Organics (part not spec else		990	9.58E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Particulates (portion of tot		1990	5.02E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.87E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.34E+01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.52E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.86E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.05E+04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.42E+05	therms/yr	12/31/2009	Methane (CH4)		6970	3.18E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Benzene		41	1.43E-03
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Formaldehyde		124	1.68E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Toluene		293	7.61E-04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Organics (part not spec else		990	1.28E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Particulates (portion of tot		1990	6.72E-01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	5.17E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.14E+01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	6.05E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	7.84E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.74E+04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.58E+05	therms/yr	12/31/2009	Methane (CH4)		6970	4.26E-01
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	-5.95E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	1.63E+01
4227	SRU #1 TRAIN	Sulfur	G7055267	-4.28E+04	tons/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.48E+04
4228	SRU #2 TRAIN	Sulfur	G7055267	-4.04E+04	tons/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.33E+04
4229	SRU #3 TRAIN	Sulfur	G7055267	-6.89E+04	tons/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.98E+04
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997	Particulates (portion of tot		1990	6.78E-03
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	-2.17E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	5.94E+01
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	-1.80E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	4.94E+01
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	-1.01E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	8.28E+00
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	-8.05E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	2.21E+02
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	-7.74E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	3.18E+01
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	-1.08E+05	thou gal/yr	12/31/2009	LPG		160	2.37E+03
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.79E+04	million cu/yr	12/31/2009	Ethyl alcohol		105	2.19E+01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.79E+04	million cu/yr	12/31/2009	Methyl alcohol		179	7.85E+02
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.79E+04	million cu/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.72E+01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.79E+04	million cu/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.60E+06
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.10E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.10E+04	thou barre/yr	12/31/2009	Particulates (portion of tot		1990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.10E+04	thou barre/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.10E+04	thou barre/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.10E+04	thou barre/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	-2.14E+05	thou gallo/yr	12/31/2009	Organics (part not spec else		990	5.87E+01
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	-1.73E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	4.75E-03
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	-1.22E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	3.35E-03
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	-8.67E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	2.38E-03
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	-9.30E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	2.55E-03
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Organics (part not spec else		990	1.59E+02
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Particulates (portion of tot		1990	1.88E+05
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.24E+01
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.50E+02
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.57E+02
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.56E+02
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	5.55E+06
4285	FCC Plant	Coke	C5737080	-2.99E+05	tons/yr	12/31/2009	Methane (CH4)		6970	1.62E+02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Benzene		41	2.12E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Arsenic (all)		1030	9.82E-02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Chromium		1090	1.06E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Manganese		1160	2.04E+01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Nickel pollutant		1180	1.13E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Zinc pollutant		1320	1.81E+01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	PAH's (non-specified)		1840	3.05E-02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Particulates (portion of tot		1990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.76E+04	thou barre/yr	12/31/2009	Ammonia (NH3) pollutant		6990	4.76E+00
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.78E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	4.87E+01
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	-9.40E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	1.29E+01
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	-2.23E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	9.16E+00
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
4329	RLOP Cooling Tower	Fresh water	G5005415	-1.39E+05	thou gallo/yr	12/31/2009	Organics (part not spec else		990	2.66E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Benzene		41	4.65E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	2.95E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.10E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Phenol		214	1.13E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Toluene		293	8.38E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Acetaldehyde		335	4.04E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	3.97E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	2.82E-06
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	1.41E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Manganese		1160	1.27E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	1.41E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	2.82E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	1.83E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.00E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	1.16E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	7.75E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.41E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.24E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.09E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.76E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.40E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.96E+04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-5.14E+04	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	4.09E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Benzene		41	7.35E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	4.66E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Formaldehyde		124	1.74E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Phenol		214	1.78E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Toluene		293	1.33E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Acetaldehyde		335	6.40E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	6.28E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	4.46E-06
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	2.23E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Manganese		1160	2.01E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.23E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	4.46E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	2.90E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	1.59E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	<----- Emissions ----->		Code	lb/day
						Date	Pollutant		
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	1.84E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	1.23E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	2.23E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	5.13E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	6.46E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	7.53E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	3.79E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	3.10E+04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-8.13E+04	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	6.46E-01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Benzene	41	1.82E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	1.15E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124	4.29E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Phenol	214	4.40E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Toluene	293	3.28E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335	1.58E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	1.55E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	1.10E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant	1110	5.50E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Manganese	1160	4.95E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	5.50E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	1.10E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	7.16E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840	3.92E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	4.54E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	3.03E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	5.50E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	1.27E-01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	1.60E+01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.86E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	9.36E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	7.65E+04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.01E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	1.60E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	5.97E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	8.06E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	2.36E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	1.57E-01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	6.57E-01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	8.29E+01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	9.65E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	4.86E+01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	3.97E+05
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	8.29E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Benzene	41	1.17E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	7.40E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124	2.76E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Phenol	214	2.83E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Toluene	293	2.11E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335	1.02E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	9.98E-01
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	7.08E-06
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant	1110	3.54E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Manganese	1160	3.19E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	3.54E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	7.08E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	4.60E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840	2.52E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	2.92E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	1.95E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	3.54E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	8.14E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	1.03E+01
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	1.20E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	6.02E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	4.92E+04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.29E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	1.03E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Benzene	41	9.32E-04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	5.90E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124	2.20E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Phenol	214	2.26E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Toluene	293	1.68E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335	8.10E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else	990	7.96E-01
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)	1095	5.65E-06
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant	1110	2.82E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Manganese	1160	2.54E-04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Nickel pollutant	1180	2.82E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant	1190	5.65E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Zinc pollutant	1320	3.67E-04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	PAH's (non-speciated)	1840	2.01E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)	1860	2.33E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)	1870	1.55E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot	1990	2.82E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)	2030	6.49E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp	2990	8.19E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)	3990	9.54E-01
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta	4990	4.80E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic	6960	3.92E+04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.03E+05	thou cu ft/yr	12/31/2009	Methane (CH4)	6970	8.19E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Benzene	41	1.05E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s	92	6.67E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Formaldehyde	124	2.48E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Phenol	214	2.55E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Toluene	293	1.90E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Acetaldehyde	335	9.15E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	8.99E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	6.38E-06
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	3.19E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Manganese		1160	2.87E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	3.19E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	6.38E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	4.15E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	2.27E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.63E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.75E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	3.19E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.34E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	9.25E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.08E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.42E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.43E+04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	9.25E-01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.07E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	6.78E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.53E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Phenol		214	2.60E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Toluene		293	1.93E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	9.32E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	9.15E-01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	6.49E-06
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	3.25E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Manganese		1160	2.92E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	3.25E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	6.49E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	4.22E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	2.31E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.68E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.79E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	3.25E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.47E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	9.41E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.10E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.52E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.51E+04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.18E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	9.41E-01
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Benzene		41	1.43E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	9.05E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Formaldehyde		124	3.37E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Phenol		214	3.46E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Toluene		293	2.58E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Acetaldehyde		335	1.24E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.22E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	8.66E-06
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	4.33E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Manganese		1160	3.90E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	4.33E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	8.66E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	5.63E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	3.08E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	3.57E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	2.38E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	4.33E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	9.96E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.26E+01
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.46E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	7.36E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	6.02E+04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.58E+05	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	1.26E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Benzene		41	9.43E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Cycloparaffins - other/not s		92	5.97E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Formaldehyde		124	2.23E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Phenol		214	2.29E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Toluene		293	1.70E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Acetaldehyde		335	8.20E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	8.06E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Chromium (hexavalent)		1095	5.72E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Copper (all) pollutant		1110	2.86E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Manganese		1160	2.57E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Nickel pollutant		1180	2.86E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Mercury (all) pollutant		1190	5.72E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Zinc pollutant		1320	3.72E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	PAH's (non-specified)		1840	2.03E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	PAH's (benzo[a]pyrene equiv)		1860	2.36E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	PAH's (non-carcinogenic)		1870	1.57E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	2.86E+01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	6.57E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	8.29E+01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.65E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.86E+01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.97E+05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-1.04E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	8.29E+00
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.74E+05	tons/yr	12/31/2009	Organics (part not spec else		990	1.35E+01
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.44E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	1.49E+01
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.19E+06	tons/yr	12/31/2009	Organics (part not spec else		990	2.38E+01
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.17E+05	tons/yr	12/31/2009	Organics (part not spec else		990	6.37E+00
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-4.63E+05	tons/yr	12/31/2009	Organics (part not spec else		990	4.69E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Benzene		41	1.57E-03
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.43E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	7.14E-01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	5.47E-02
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.33E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.01E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.33E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.31E+04
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-8.69E+04	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	6.90E-01
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Benzene		41	8.87E-03
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Formaldehyde		124	4.25E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Organics (part not spec else		989	7.62E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	PAH's (non-specified)		1840	7.71E-03
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Particulates (portion of tot		1990	2.86E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.27E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.73E+02
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.91E+01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.58E+01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.68E+05
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Methane (CH4)		6970	6.36E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-4.80E+03	thou gal/yr	12/31/2009	Ammonia (NH3) pollutant		6990	4.26E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Benzene		41	7.16E-03
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Formaldehyde		124	3.56E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Organics (part not spec else		989	6.51E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	PAH's (non-specified)		1840	6.46E-02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Particulates (portion of tot		1990	2.47E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.01E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.79E+03
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	7.40E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	3.85E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.59E+06
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Methane (CH4)		6970	3.18E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.99E+07	therms/yr	12/31/2009	Ammonia (NH3) pollutant		6990	3.56E+02
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Benzene		41	2.07E-02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	1.88E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	9.43E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.23E-01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.40E+02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.06E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.10E+02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.37E+05
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.15E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	9.11E+00
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Benzene		41	8.68E-03
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Formaldehyde		124	4.16E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Organics (part not spec else		989	7.46E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	PAH's (non-specified)		1840	7.55E-03
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Particulates (portion of tot		1990	2.80E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.25E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.61E+02
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.87E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.48E+01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.65E+05
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Methane (CH4)		6970	6.23E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-4.70E+03	thou gal/yr	12/31/2009	Ammonia (NH3) pollutant		6990	4.17E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Benzene		41	7.05E-03
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Formaldehyde		124	3.50E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Organics (part not spec else		989	6.41E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	PAH's (non-specified)		1840	6.35E-02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Particulates (portion of tot		1990	2.43E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.96E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.72E+03
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	7.28E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	3.79E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.57E+06
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Methane (CH4)		6970	3.13E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.91E+07	therms/yr	12/31/2009	Ammonia (NH3) pollutant		6990	3.50E+02
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Benzene		41	2.20E-02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Organics (part not spec else		990	2.00E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Particulates (portion of tot		1990	1.00E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.67E-01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.67E+02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	5.63E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.17E+02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.64E+05
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.22E+06	thou cu ft/yr	12/31/2009	Methane (CH4)		6970	9.68E+00
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2009			0	0.00E+00
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2009			0	0.00E+00
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T3377210	7.23E+00	thou gal/yr	12/31/2009	Perchloroethylene		210	0.00E+00
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T4177210	0.00E+00			Perchloroethylene		210	1.61E-03
4361	Perc Surge Control Vessel V-591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4362	Perc Surge Control Vessel V-3591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4363	Perc Storage Tank V-3592	Perchloroethylene	T4277210	-3.27E+01	thou gal/yr	12/31/2009	Perchloroethylene		210	1.21E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4364	Perc Storage Tank V-4091	Perchloroethylene	T42??210	2.56E+01	thou gal/yr	12/31/2009	Perchloroethylene		210	4.80E-02
4365	Tri-Act 1825 Chemical Tote	Hydrocarbon - mixtures, other/	T4???318	3.00E+00	thou gal/yr	Unknown	Hydrocarbon - mixtures, othe		318	1.08E-02
4366	Tri-Act 1803 & 1825 Chemical Tote - Power Plant	Hydrocarbon - mixtures, other/	T82??318	2.00E+00	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	8.85E-03
4367	Tri-Act 1803 & 1825 Chemical Tote - RLOP	Hydrocarbon - mixtures, other/	T82??318	1.20E+00	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	7.75E-03
4368	Tri-Act 1803 & 1825 Chemical Tote - SRU	Hydrocarbon - mixtures, other/	T82??318	4.00E-01	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	6.64E-03
4369	Tri-Act 1803 & 1825 Chemical Tote - LSFO/D&R	Hydrocarbon - mixtures, other/	T82??318	4.00E-01	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	6.64E-03
4370	Chemical Tote, Custamine CA-066P - FCC	Hydrocarbon - mixtures, other/	T82??318	4.00E-01	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	6.64E-03
4372	NALCO EC9085A Tote	Amine - other/not spec	T42??021	5.00E+00	thou gal/yr	5/5/2010	Amine - other/not spec		21	1.73E-02
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	0.00E+00	thou barre/yr	12/31/2009			0	0.00E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2009	Benzene		41	6.09E-01
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2009	Toluene		293	1.65E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2009	Xylene		307	3.62E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	2.15E+01
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-5.51E+04	thou barre/yr	12/31/2009	Benzene		41	2.57E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-5.51E+04	thou barre/yr	12/31/2009	Toluene		293	6.95E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-5.51E+04	thou barre/yr	12/31/2009	Xylene		307	1.53E+01
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-5.51E+04	thou barre/yr	12/31/2009	Organics (part not spec else		990	9.06E+01
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	-1.52E+05	tons/yr	12/31/2009	Particulates (portion of tot		1990	4.17E+00
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE8?1052	3.47E+03	thou gal/yr	12/31/1996	Paraffins - C3+		52	2.76E+00
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE8?1052	1.33E+04	thou gal/yr	12/31/1996	Paraffins - C3+		52	5.34E+00
4405	Heavy Oil Transloading Operations	Waste oil	TE6?2549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	0.00E+00	gal/yr	12/31/2006	Glycols		131	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	6.00E+00	gal/yr	5/14/2007	Organic liquid - other/not s		201	2.78E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	6.00E+00	gal/yr	5/14/2007	Stoddard solvent		401	2.78E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007	Organic liquid - other/not s		201	8.33E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007	Ethylbenzene		333	8.08E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	7.50E+00	gal/yr	5/14/2007	Propylene glycol monomethyl		579	8.08E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	5.00E+00	gal/yr	5/14/2007	Butyl acetate		48	1.54E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	5.00E+00	gal/yr	5/14/2007	2-heptanone		729	1.54E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2006	Glycols		131	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2006	Aromatic hydrocarbons - othe		27	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2006	Glycols		131	0.00E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	-9.52E+03	thou barre/yr	12/31/2009	Benzene		41	4.93E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	-9.52E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	2.14E+02
4414	#1a Separator	Waste water - refin, other/not	G5017300	-6.33E+03	thou barre/yr	12/31/2009	Benzene		41	9.54E-01
4414	#1a Separator	Waste water - refin, other/not	G5017300	-6.33E+03	thou barre/yr	12/31/2009	Organics (part not spec else		990	4.15E+01
4415	Asphalt Tank Truck Loading Racks	Asphalt	T98?1030	0.00E+00	thou gal/yr	12/31/2009	Asphalt		30	0.00E+00
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2006	Unknown Pollutant		76	0.00E+00
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2006	Hydrocarbon - mixtures, othe		318	0.00E+00
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E-01	tons/yr	12/31/2000	Particulates (portion of tot		1990	4.75E-01
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Organics (part not spec else		990	0.00E+00
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Particulates (portion of tot		1990	0.00E+00
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006	Butyl acetate		48	4.82E-03
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006	Naphtha		188	1.61E-03
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	5.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	2.57E-02
4424	Equipment Painting Area	Mineral spirits	SG700184	4.00E+00	gal/yr	12/31/2006	Mineral spirits		184	7.35E-02
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998	Sulfuric Acid mist pollutant		1530	0.00E+00
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2006	Amide		20	0.00E+00
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2006	Organic liquid - other/not s		201	0.00E+00
4433	#3H2S Plant	Waste gases	G5998338	-2.97E+02	million cu/yr	12/31/2009	Organics (part not spec else		990	8.14E-02
4434	#4H2S Plant	Waste gases	G5998338	-1.16E+03	million cu/yr	12/31/2009	Organics (part not spec else		990	3.17E-01
4435	#5H2S Plant	Waste gases	G5998338	-1.77E+03	million cu/yr	12/31/2009	Organics (part not spec else		990	4.85E-01
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T42??201	3.28E+00	thou gal/yr	12/31/2007	Organic liquid - other/not s		201	1.07E-01
5101	Tank-Marketing T-101	Lube oil	T44??7419	1.85E+04	thou gal/yr	3/31/1997	Lube oil		419	6.22E+01
5103	Tank-Marketing T-103	Lube oil	T44??7419	1.28E+04	thou gal/yr	3/31/1997	Lube oil		419	4.88E+01
5105	Tank-Marketing T-105	Lube oil	T44??7419	1.12E+04	thou gal/yr	3/31/1997	Lube oil		419	4.50E+01
5107	Tank-Marketing T-107	Lube oil	T44??7419	3.26E+02	thou gal/yr	3/31/1997	Lube oil		419	3.99E+00
5108	Tank-Marketing T-108	Lube oil	T44??7419	2.51E+02	thou gal/yr	3/31/1997	Lube oil		419	3.81E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
5109	Tank-Marketing T-109	Lube oil	T44??419	4.98E+02	thou gal/yr	3/31/1997	Lube oil		419	4.39E+00
5110	Tank-Marketing T-110	Lube oil	T44??419	1.33E+03	thou gal/yr	3/31/1997	Lube oil		419	6.34E+00
5112	Tank-Marketing T-112	Lube oil	T43??419	5.80E+01	thou gal/yr	3/31/1997	Lube oil		419	9.01E-01
5113	Tank-Marketing T-113	Lube oil	T43??419	5.00E+00	thou gal/yr	3/31/1997	Lube oil		419	7.77E-01
5115	Tank-Marketing T-115	Lube oil	T43??419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	8.99E-01
5117	Tank-Marketing T-117	Lube oil	T44??419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5118	Tank-Marketing T-118	Lube oil	T44??419	4.60E+01	thou gal/yr	3/31/1997	Lube oil		419	1.51E+00
5119	Tank-Marketing T-119	Lube oil	T44??419	6.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.55E+00
5121	Tank-Marketing T-121	Lube oil	T44??419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	2.03E+00
5122	Tank-Marketing T-122	Lube oil	T44??419	6.70E+01	thou gal/yr	3/31/1997	Lube oil		419	1.73E+00
5123	Tank-Marketing T-123	Lube oil	T44??419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5125	Tank-Marketing T-125	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	8.26E-01
5126	Tank-Marketing T-126	Lube oil	T43??419	1.04E+02	thou gal/yr	3/31/1997	Lube oil		419	1.01E+00
5127	Tank-Marketing T-127	Lube oil	T43??419	1.92E+02	thou gal/yr	3/31/1997	Lube oil		419	1.22E+00
5128	Tank-Marketing T-128	Lube oil	T43??419	6.40E+01	thou gal/yr	3/31/1997	Lube oil		419	9.15E-01
5129	Tank-Marketing T-129	Lube oil	T43??419	3.20E+01	thou gal/yr	3/31/1997	Lube oil		419	4.33E-01
5130	Tank-Marketing T-130	Lube oil	T43??419	8.00E+01	thou gal/yr	3/31/1997	Lube oil		419	5.46E-01
5131	Tank-Marketing T-131	Lube oil	T43??419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5132	Tank-Marketing T-132	Lube oil	T43??419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5133	Tank-Marketing T-133	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5134	Tank-Marketing T-134	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5135	Tank-Marketing T-135	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5136	Tank-Marketing T-136	Lube oil	T43??419	1.36E+02	thou gal/yr	3/31/1997	Lube oil		419	6.77E-01
5137	Tank-Marketing T-137	Lube oil	T43??419	1.20E+02	thou gal/yr	3/31/1997	Lube oil		419	6.40E-01
5138	Tank-Marketing T-138	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5139	Tank-Marketing T-139	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	4.19E-01
5140	Tank-Marketing T-140	Lube oil	T43??419	1.30E+01	thou gal/yr	3/31/1997	Lube oil		419	6.16E-04
5201	Tank-Marketing T-201	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5202	Tank-Marketing T-202	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5203	Tank-Marketing T-203	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5204	Tank-Marketing T-204	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997	Lube oil		419	6.61E+00
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997	Lube oil		419	8.74E+00
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	5.05E+00
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997	Lube oil		419	3.54E+00
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.32E+00
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997	Lube oil		419	2.35E+00
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997	Lube oil		419	4.23E+00
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997	Lube oil		419	1.98E+00
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997	Lube oil		419	1.64E+00
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997	Lube oil		419	2.17E+00
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997	Lube oil		419	2.37E+00
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997	Lube oil		419	4.43E+00
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997	Lube oil		419	1.38E+00
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997	Lube oil		419	1.17E+00
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997	Lube oil		419	1.31E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997	Lube oil		419	9.20E-01
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	3.58E+00
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997	Lube oil		419	8.90E-01
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997	Lube oil		419	1.80E+00
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997	Lube oil		419	5.50E-01
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	3.95E-01
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.94E-01
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	7.66E-01
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997	Lube oil		419	5.69E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Benzene		41	2.40E-04
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Organics (part not spec else		990	3.25E+01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Particulates (portion of tot		1990	3.75E-01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	8.67E-03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.55E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.13E-02
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.88E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.60E+03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.44E+05	therms/yr	12/31/2009	Methane (CH4)		6970	3.25E+01
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Benzene		41	1.46E-04
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Organics (part not spec else		990	1.98E+01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Particulates (portion of tot		1990	2.28E-01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	5.27E-03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.55E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.30E-02
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.97E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.80E+03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-8.75E+04	therms/yr	12/31/2009	Methane (CH4)		6970	1.98E+01
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Benzene		41	2.67E-04
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Organics (part not spec else		990	3.62E+01
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Particulates (portion of tot		1990	4.18E-01
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	9.65E-03
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.84E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.37E-02
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.43E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	5.12E+03
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.60E+05	therms/yr	12/31/2009	Methane (CH4)		6970	3.62E+01
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2009			0	0.00E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Benzene		41	2.28E-04
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Organics (part not spec else		990	3.09E+01
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Particulates (portion of tot		1990	3.57E-01
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	8.25E-03
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.43E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.03E-02
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.64E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.37E+03
6016	FCC Flare V-731	Natural gas	C8700189	-1.37E+05	therms/yr	12/31/2009	Methane (CH4)		6970	3.09E+01
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Benzene		41	1.21E-04
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Organics (part not spec else		990	1.65E+01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Particulates (portion of tot		1990	1.90E-01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	4.04E-03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.29E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.08E-02
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.47E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	2.33E+03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.30E+04	therms/yr	12/31/2009	Methane (CH4)		6970	1.65E+01
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Benzene		41	2.47E-04
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Organics (part not spec else		990	3.35E+01
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Particulates (portion of tot		1990	3.87E-01
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Nitrous Oxide (N2O)		2030	8.94E-03
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.63E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	2.20E-02
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.03E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.74E+03
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.48E+05	therms/yr	12/31/2009	Methane (CH4)		6970	3.35E+01
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2009			0	0.00E+00
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-02
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998			0	0.00E+00
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-02
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-02
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2009			0	0.00E+00
6051	Alky Cooling Tower	Fresh water	G5005415	-7.97E+04	thou gallo/yr	12/31/2009	Organics (part not spec else		990	1.53E-01
6051	Alky Cooling Tower	Fresh water	G5005415	-7.97E+04	thou gallo/yr	12/31/2009	Particulates (portion of tot		1990	6.55E-02
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00	thou gal/yr	12/31/2009	Water/organics mixture		502	0.00E+00
6125	Tank 6125	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6200	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6200	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6201	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6201	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6202	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6202	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6203	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6204	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6205	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6206	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6207	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6208	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6209	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6209	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6209	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6209	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6210	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6210	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6210	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6210	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6212	Portable Polyethylene Storge Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6212	Portable Polyethylene Storge Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
6212	Portable Polyethylene Storge Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6212	Portable Polyethylene Storge Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6213	Portable Polyethylene Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00

Printed: AUG 1, 2013

[illegible]

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.71E+01	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	1.43E-01
6231	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6231	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6231	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.74E+01	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	1.44E-01
6232	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6232	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6232	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6233	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.78E+01	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	1.44E-01
6233	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6233	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6233	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.78E+01	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	1.44E-01
6234	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6234	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6234	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.71E+01	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	1.43E-01
6235	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6235	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6235	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.84E+01	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	1.45E-01
6236	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6236	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6236	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.80E+01	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	1.45E-01
6237	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6237	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6237	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.72E+01	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	8.51E-02
6238	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6238	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2009	Oil/water mixture		503	0.00E+00
6238	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2009	Refinery feedstock - other/n		239	0.00E+00
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.78E+01	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	7.53E-01
6239	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2009	Petroleum products - other/n		321	0.00E+00
6239	Portable Steel Storage Container	Oil/water mixture	T43??503	1.68E+01	thou gal/yr	12/31/2008	Oil/water mixture		503	3.02E-02
6239	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2009	Waste oil		549	0.00E+00
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2009			0	0.00E+00
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997	Ammonia (NH3) pollutant		6990	2.48E-02
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Benzene		41	1.34E-02
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Formaldehyde		124	1.09E-03
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Organics (part not spec else		990	7.29E-01
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Arsenic (all)		1030	1.15E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	6.74E-06
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Cadmium		1070	2.88E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	5.95E-07
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	2.44E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Manganese		1160	3.83E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Nickel pollutant		1180	4.65E-04
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	8.13E-06
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	6.64E-01
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	6.07E-05
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.54E-03
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	5.88E+00
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	4.31E-03
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	2.02E+00
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	4.42E+02
7010	Diesel Engine, mobile crane engine	Diesel fuel	C24AG098	-7.24E+00	thou gal/yr	12/31/2009	Methane (CH4)		6970	1.77E-02
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Benzene		41	3.54E-04
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Formaldehyde		124	2.93E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	5.20E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	3.08E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.81E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Cadmium		1070	7.71E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.59E-08
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	6.54E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Manganese		1160	1.03E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.25E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	2.18E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.77E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.63E-06

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	9.48E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.06E-01
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.16E-04
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.06E-02
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.19E+01
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.94E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	4.74E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Benzene		41	1.61E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Formaldehyde		124	1.31E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Organics (part not spec else		990	9.28E-03
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Arsenic (all)		1030	1.38E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	8.10E-08
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Cadmium		1070	3.46E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	7.15E-09
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	2.93E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Manganese		1160	4.60E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Nickel pollutant		1180	5.59E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	9.77E-08
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	3.78E-03
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	7.29E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	4.25E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	6.52E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	5.18E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.04E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	5.32E+00
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-8.70E-02	thou gal/yr	12/31/2009	Methane (CH4)		6970	2.13E-04
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Benzene		41	2.77E-05
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Formaldehyde		124	2.26E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Organics (part not spec else		990	1.51E-03
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Arsenic (all)		1030	2.38E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.40E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Cadmium		1070	5.96E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.23E-09
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	5.05E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Manganese		1160	7.93E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Nickel pollutant		1180	9.64E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.68E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.38E-03
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.26E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.33E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.93E-02
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	8.94E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.19E-03
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	9.17E-01
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-1.50E-02	thou gal/yr	12/31/2009	Methane (CH4)		6970	3.67E-05
7508	Diesel Engine, Cummins model 85SP310	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
7509	Diesel Engine, Cummins model 85SP310	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Benzene		41	2.42E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Formaldehyde		124	1.98E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	1.32E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	2.08E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.22E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Cadmium		1070	5.20E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.08E-08
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	4.41E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Manganese		1160	6.93E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	8.42E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.47E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.20E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.10E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	6.40E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.68E-01
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	7.81E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	3.66E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	8.01E+00
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-1.31E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	3.20E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Benzene		41	1.21E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Formaldehyde		124	9.84E-05
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	1.58E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	1.04E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	6.07E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Cadmium		1070	2.59E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	5.36E-08
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	2.20E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Manganese		1160	3.45E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	4.19E-05
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	7.32E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	9.45E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	5.47E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	3.19E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	3.22E-01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.89E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	6.62E-02
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.98E+01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-6.52E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	1.59E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Benzene		41	3.43E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Formaldehyde		124	2.80E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Organics (part not spec else		990	4.48E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Arsenic (all)		1030	2.95E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.73E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Cadmium		1070	7.37E-06

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.52E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	6.25E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Manganese		1160	9.81E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.19E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	2.08E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	2.69E-02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.56E-05
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	9.07E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	9.14E-01
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.11E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.88E-01
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.13E+02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	1.86E+00	thou gal/yr	12/31/2009	Methane (CH4)		6970	4.53E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Benzene		41	9.52E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Formaldehyde		124	7.77E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	5.19E-02
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	8.18E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	4.80E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Cadmium		1070	2.05E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	4.23E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	1.74E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Manganese		1160	2.72E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	3.31E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	5.78E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	4.73E-02
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	4.32E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.52E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	6.62E-01
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.07E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.44E-01
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.15E+01
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-5.15E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	1.26E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Benzene		41	2.00E-04
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Formaldehyde		124	1.63E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	1.09E-02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	1.72E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.01E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Cadmium		1070	4.29E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	8.88E-09
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	3.64E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Manganese		1160	5.71E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	6.94E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.21E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	9.91E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	9.05E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	5.28E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.39E-01
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	6.44E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	3.02E-02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	6.60E+00
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.08E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	2.64E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Benzene		41	1.06E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Formaldehyde		124	8.65E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	5.77E-02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	9.11E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	5.34E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Cadmium		1070	2.28E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	4.71E-08
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	1.93E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Manganese		1160	3.03E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	3.68E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	6.44E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	5.26E-02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	4.80E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	2.80E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	7.36E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	3.41E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.60E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	3.50E+01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-5.73E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	1.40E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Benzene		41	2.74E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Formaldehyde		124	2.23E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	1.49E-02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	2.35E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.38E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Cadmium		1070	5.88E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.22E-08
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	4.99E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Manganese		1160	7.83E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	9.51E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.66E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.36E-02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.24E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.23E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.90E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	8.82E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.14E-02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	9.05E+00
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-1.48E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	3.62E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Benzene		41	3.59E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Formaldehyde		124	2.93E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	1.95E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	3.08E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.81E-07

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Cadmium		1070	7.71E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.59E-08
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	6.54E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Manganese		1160	1.03E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.25E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	2.18E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.78E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.63E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	9.48E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.49E-01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.16E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	5.42E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.19E+01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.94E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	4.74E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Benzene		41	5.23E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Formaldehyde		124	4.27E-05
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	2.03E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	4.50E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	2.64E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Cadmium		1070	1.12E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	2.33E-08
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	9.54E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Manganese		1160	1.50E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.82E-05
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	3.18E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.09E-02
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	2.37E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.38E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	2.05E-01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.69E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.23E-01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.73E+01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.83E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	6.92E-04
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2009			0	0.00E+00
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Benzene		41	5.82E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Formaldehyde		124	4.82E-05
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	2.68E-03
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	5.07E-07
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	2.97E-07
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Cadmium		1070	1.27E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	2.62E-08
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	1.07E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Manganese		1160	1.69E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	2.05E-05
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	3.58E-07
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.97E-03
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	2.67E-06
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.56E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	4.93E-02
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.90E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	4.40E-02
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.95E+01
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	-3.19E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	7.80E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Benzene		41	4.40E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Formaldehyde		124	3.59E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	5.56E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	3.78E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	2.22E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Cadmium		1070	9.45E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.96E-08
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	8.02E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Manganese		1160	1.26E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.53E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	2.67E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	2.85E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	2.00E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	1.16E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	1.15E-01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.42E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.32E-02
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.45E+01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	5.82E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Benzene		41	3.00E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Formaldehyde		124	2.44E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Organics (part not spec else		990	3.78E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Arsenic (all)		1030	2.57E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.51E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Cadmium		1070	6.44E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.33E-08
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	5.46E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Manganese		1160	8.57E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.04E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.82E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	1.94E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.36E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	7.92E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	7.80E-02
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	9.65E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	8.95E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	9.90E+00
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-1.62E-01	thou gal/yr	12/31/2009	Methane (CH4)		6970	3.96E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Benzene		41	3.10E-03
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Formaldehyde		124	2.56E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Organics (part not spec else		990	4.40E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Arsenic (all)		1030	2.70E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Beryllium (all) pollutant		1040	1.58E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Cadmium		1070	6.75E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Chromium (hexavalent)		1095	1.40E-07
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Lead (all) pollutant		1140	5.73E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Manganese		1160	8.98E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Nickel pollutant		1180	1.09E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Mercury (all) pollutant		1190	1.91E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Diesel Engine Exhaust Partic		1350	2.57E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	PAH's (non-speciated)		1840	1.42E-05
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Nitrous Oxide (N2O)		2030	8.30E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Nitrogen Oxides (part not sp		2990	9.00E-01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Sulfur Dioxide (SO2)		3990	1.01E-03
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Carbon Monoxide (CO) polluta		4990	1.77E-01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Carbon Dioxide, non-biogenic		6960	1.04E+02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-1.70E+00	thou gal/yr	12/31/2009	Methane (CH4)		6970	4.15E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006	Ethyl alcohol		105	3.43E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006	Methyl ethyl ketone (MEK)		169	6.86E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	1.14E+01	gal/yr	12/31/2006	Organic liquid - other/not s		201	1.14E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	1.80E+01	gal/yr	12/31/2006	Methyl ethyl ketone (MEK)		169	3.31E-01
9047	Tank 6047	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	0.00E+00
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??7090	-5.45E+01	thou gal/yr	12/31/1997	Ketone - other/not spec		90	3.46E-02
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??7419	-3.51E+00	thou gal/yr	12/31/1997	Lube oil		419	5.24E-02
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998	Hydrocarbon - mixtures, othe		318	2.77E-01
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Benzene		41	4.48E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Toluene		293	1.52E-02
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Xylene		307	1.79E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Ethylbenzene		333	1.05E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Gasoline - unleaded		551	1.47E+00
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??7052	-1.50E+01	thou gal/yr	12/31/2009	Paraffins - C3+		52	5.82E-03
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??7158	-3.95E+04	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	9.73E-01
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??7242	-1.03E+05	thou gal/yr	12/31/2009	Bunker C fuel oil		242	1.69E-02
9321	Marine Loading Berth #1	Distillate oil	TB8??7315	1.10E+03	thou gal/yr	12/31/2009	Distillate oil		315	2.71E-02
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
9321	Marine Loading Berth #1	Crude oil	TF8??7089	-1.02E+05	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-1.55E+04	thou gal/yr	12/31/2009	Benzene		41	1.15E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-1.55E+04	thou gal/yr	12/31/2009	Ethylene dichloride		107	1.95E-02
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-1.55E+04	thou gal/yr	12/31/2009	Gasoline - leaded		128	1.07E+02
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-1.55E+04	thou gal/yr	12/31/2009	Toluene		293	5.75E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-1.55E+04	thou gal/yr	12/31/2009	Xylene		307	1.26E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-1.55E+04	thou gal/yr	12/31/2009	Ethylene dibromide		420	7.70E-04
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??7158	-9.81E+04	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	2.42E+00
9322	Marine Loading Berth #2	Methyl alcohol	TB8??7179	0.00E+00	thou gal/yr	12/31/2009	Methyl alcohol		179	0.00E+00
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??7201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??7242	-1.09E+05	thou gal/yr	12/31/2009	Bunker C fuel oil		242	1.79E-02
9322	Marine Loading Berth #2	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9322	Marine Loading Berth #2	Distillate oil	TB8??7315	-8.39E+04	thou gal/yr	12/31/2009	Distillate oil		315	2.07E+00
9322	Marine Loading Berth #2	Lube oil	TB8??7419	-1.98E+05	thou gal/yr	12/31/2009	Lube oil		419	1.60E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.54E+05	thou gal/yr	12/31/2009	Benzene		41	7.02E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.54E+05	thou gal/yr	12/31/2009	Toluene		293	2.39E+01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.54E+05	thou gal/yr	12/31/2009	Xylene		307	2.81E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.54E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	1.64E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.54E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	2.31E+03
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??7628	0.00E+00	thou gal/yr	12/31/2009	Methyl tertiary-butyl ether		628	0.00E+00
9322	Marine Loading Berth #2	Crude oil	TF8??7089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??7052	0.00E+00	thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
9323	Marine Loading Berth #3	Crude oil	TB8??7089	0.00E+00	thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??7128	-6.28E+03	thou gal/yr	12/31/2009	Benzene		41	4.65E-01
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??7128	-6.28E+03	thou gal/yr	12/31/2009	Ethylene dichloride		107	7.90E-03
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??7128	-6.28E+03	thou gal/yr	12/31/2009	Gasoline - leaded		128	4.32E+01
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??7128	-6.28E+03	thou gal/yr	12/31/2009	Toluene		293	2.32E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??7128	-6.28E+03	thou gal/yr	12/31/2009	Xylene		307	5.11E-01
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??7128	-6.28E+03	thou gal/yr	12/31/2009	Ethylene dibromide		420	3.11E-04
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB8??7158	-1.23E+05	thou gal/yr	12/31/2009	Fuel - jet 'A'		158	3.04E+00
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB8??7201	0.00E+00	thou gal/yr	12/31/2009	Organic liquid - other/not s		201	0.00E+00
9323	Marine Loading Berth #3	Bunker C fuel oil	TB8??7242	-1.11E+05	thou gal/yr	12/31/2009	Bunker C fuel oil		242	1.83E-02
9323	Marine Loading Berth #3	Toluene	TB8??7293	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9323	Marine Loading Berth #3	Distillate oil	TB8??7315	-1.29E+05	thou gal/yr	12/31/2009	Distillate oil		315	3.18E+00
9323	Marine Loading Berth #3	Lube oil	TB8??7419	0.00E+00	thou gal/yr	12/31/2009	Lube oil		419	0.00E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??7551	-4.94E+05	thou gal/yr	12/31/2009	Benzene		41	1.37E+01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??7551	-4.94E+05	thou gal/yr	12/31/2009	Toluene		293	4.65E+01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??7551	-4.94E+05	thou gal/yr	12/31/2009	Xylene		307	5.47E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??7551	-4.94E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	3.19E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??7551	-4.94E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	4.49E+03
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB4??2318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
9324	Marine Loading Berth #4	Bunker C fuel oil	TB8??7242	0.00E+00	thou gal/yr	12/31/2008	Bunker C fuel oil		242	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut Units	Date	Emissions ----->		Code	lb/day
						Pollutant			
9324	Marine Loading Berth #4	Distillate oil	TB877315	0.00E+00 thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
9324	Marine Loading Berth #4	Crude oil	TF877089	-3.27E+06 thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
9325	Marine Loading Berth #9	Paraffins - C3+	TB877052	-3.32E+03 thou gal/yr	12/31/2009	Paraffins - C3+		52	6.44E-01
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00 thou gal/yr	12/31/2009	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00 thou gal/yr	12/31/2009	Ethylene dichloride		107	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00 thou gal/yr	12/31/2009	Gasoline - leaded		128	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00 thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00 thou gal/yr	12/31/2009	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00 thou gal/yr	12/31/2009	Ethylene dibromide		420	0.00E+00
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB877158	-1.85E+03 thou gal/yr	12/31/2009	Fuel - jet 'A'		158	4.57E-02
9325	Marine Loading Berth #9	Bunker C fuel oil	TB877242	-1.18E+05 thou gal/yr	12/31/2009	Bunker C fuel oil		242	1.93E-02
9325	Marine Loading Berth #9	Toluene	TB877293	0.00E+00 thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Distillate oil	TB877315	-2.62E+02 thou gal/yr	12/31/2009	Distillate oil		315	6.46E-03
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB877318	0.00E+00 thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
9325	Marine Loading Berth #9	Lube oil	TB877419	0.00E+00 thou gal/yr	12/31/2009	Lube oil		419	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00 thou gal/yr	12/31/2009	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00 thou gal/yr	12/31/2009	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00 thou gal/yr	12/31/2009	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00 thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00 thou gal/yr	12/31/2009	Gasoline - unleaded		551	0.00E+00
9325	Marine Loading Berth #9	Crude oil	TF877089	0.00E+00 thou gal/yr	12/31/2009	Crude oil		89	0.00E+00
9326	Marine Loading Berth #11	Paraffins - C3+	TB877052	0.00E+00 thou gal/yr	12/31/2009	Paraffins - C3+		52	0.00E+00
9326	Marine Loading Berth #11	Bunker C fuel oil	TB877242	-2.88E+04 thou gal/yr	12/31/2009	Bunker C fuel oil		242	4.74E-03
9326	Marine Loading Berth #11	Distillate oil	TB877315	0.00E+00 thou gal/yr	12/31/2009	Distillate oil		315	0.00E+00
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00		Organics (part not spec else		990	0.00E+00
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00		Organics (part not spec else		990	1.80E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00		Benzene		41	1.74E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00		Cyclohexane		91	1.07E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00		Ethylene dichloride		107	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00		Hexane		148	1.95E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00		Isocotane		154	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00		Methyl ethyl ketone (MEK)		169	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00		Methyl alcohol		179	1.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00		Perchloroethylene		210	7.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00		Toluene		293	6.52E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00		Xylene		307	7.13E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00		Cumene		326	1.30E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00		Ethylbenzene		333	1.39E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00		1,2,4-trimethylbenzene		385	1.93E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00		Ethylene dibromide		420	3.00E-03
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00		1,3-butadiene		521	1.40E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00		Ethylene		536	4.38E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00		Propylene		564	2.68E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00		Methyl tertiary-butyl ether		628	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00		Organics (part not spec else		990	5.00E+02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00		Ammonia (NH3) pollutant		6990	3.08E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00		Benzene		41	5.60E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00		Cyclohexane		91	3.50E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00		Hexane		148	5.10E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00		Isocotane		154	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00		Methyl ethyl ketone (MEK)		169	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00		Methyl alcohol		179	1.00E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00		Toluene		293	1.94E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00		Xylene		307	2.25E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00		Ethylbenzene		333	4.60E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00		1,2,4-trimethylbenzene		385	6.70E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00		1,3-butadiene		521	1.00E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00		Cresol		525	2.00E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00		Ethylene		536	3.90E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00		Propylene		564	3.60E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00		Methyl tertiary-butyl ether		628	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00		Organics (part not spec else		990	1.27E+02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00		Ammonia (NH3) pollutant		6990	1.78E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00		Benzene		41	1.20E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00		Hexane		148	2.70E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00		Methyl ethyl ketone (MEK)		169	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00		Toluene		293	5.50E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00		Xylene		307	6.40E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00		1,3-butadiene		521	1.60E-06
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00		Cresol		525	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00		Ethylene		536	1.70E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00		Propylene		564	2.10E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00		Organics (part not spec else		990	2.20E-02
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00		Ammonia (NH3) pollutant		6990	1.30E-04
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00		Benzene		41	2.00E-03
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00		Cycloparaffins - other/not s		92	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00		Hexane		148	8.70E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00		Toluene		293	1.58E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00		Xylene		307	1.58E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00		Cumene		326	9.00E-02
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00		Ethylbenzene		333	3.60E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00		1,2,4-trimethylbenzene		385	3.00E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00		1,3-butadiene		521	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00		Cresol		525	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00		Methyl tertiary-butyl ether		628	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00		Organics (part not spec else		990	7.05E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00		Benzene		41	2.21E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00		Cycloparaffins - other/not s		92	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00		Formaldehyde		124	7.91E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00		Phenol		214	4.30E-05

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Acetaldehyde		335	1.29E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			1,3-butadiene		521	8.49E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Organics (part not spec else		990	1.79E-01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Arsenic (all)		1030	2.11E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cadmium		1070	1.16E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Chromium		1090	1.48E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Magnesium pollutant		1150	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Manganese		1160	4.01E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nickel pollutant		1180	2.21E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Mercury (all) pollutant		1190	2.74E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Zinc pollutant		1320	3.06E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			PAH's (non-speciated)		1840	7.36E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Particulates (portion of tot		1990	8.02E-02
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nitrogen Oxides (part not sp		2990	9.31E-01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Sulfur Dioxide (SO2)		3990	3.22E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Carbon Monoxide (CO) polluta		4990	5.06E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Abated Detailed Pollutant Emissions
for Calendar Year 2010***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	3.00E-01	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	3.88E-03
55	Tank 55	Distillate oil	T81??315	0.00E+00	thou gal/yr	12/31/2003	Distillate oil		315	0.00E+00
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Benzene		41	1.94E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Toluene		293	6.58E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Xylene		307	7.75E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Ethylbenzene		333	4.52E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Gasoline - unleaded		551	6.36E-02
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996	Organic liquid - other/not s		201	0.00E+00
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997	Distillate oil		315	0.00E+00
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997	Distillate oil		315	1.39E+01
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997	Distillate oil		315	6.12E+00
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.28E+00
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997	Distillate oil		315	4.12E-01
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	3.65E+04	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	5.54E+01
399	TANK	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
399	TANK	Oil - non-fuel, other/not spec	T5472352	-1.89E+04	thou gal/yr	12/31/2010	Oil - non-fuel, other/not sp		352	1.19E+01
399	TANK	Tetra-Ethyl Lead (TEL)	T5472422	0.00E+00	thou gal/yr	12/31/2010	Tetra-Ethyl Lead (TEL)		422	0.00E+00
401	TANK 401	Refinery feedstock - other/not	T4472239	4.70E+04	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	1.09E+01
634	TANK 634	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
634	TANK 634	Petroleum products - other/not	T5472321	-2.03E+04	thou gal/yr	12/31/2010	Petroleum products - other/n		321	1.57E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	2.12E+04	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	1.41E-01
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T427?502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	1.46E-03
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T427?502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Butane	T427?416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T427?419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.33E-03
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
955	TANK 955	Paraffins - C3+	T5412052	-2.07E+04	thou gal/yr	12/31/2010	Paraffins - C3+		52	2.36E+00
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
956	TANK 956	Paraffins - C3+	T5412052	-1.12E+04	thou gal/yr	12/31/2010	Paraffins - C3+		52	2.39E+00
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
957	TANK 957	Diesel fuel	T447?098	-1.47E+04	thou gal/yr	12/31/2010	Diesel oil		98	6.44E+00
957	TANK 957	Fuel - jet 'A'	T447?158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut Units	Emissions		Code	lb/day
					Date	Pollutant		
979 TANK 979		Distillate oil	T44??315	-6.13E+04 thou gal/yr	4/30/1997	Distillate oil	315	7.33E+00
984 TANK 984		Distillate oil	T4417315	-9.67E+03 thou gal/yr	12/31/1997	Distillate oil	315	1.41E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
990 TANK 990		Gasoline - unleaded	T5432551	-9.39E+04 thou gal/yr	12/31/2010	Benzene	41	1.39E-02
990 TANK 990		Gasoline - unleaded	T5432551	-9.39E+04 thou gal/yr	12/31/2010	Toluene	293	4.72E-02
990 TANK 990		Gasoline - unleaded	T5432551	-9.39E+04 thou gal/yr	12/31/2010	Xylene	307	5.55E-03
990 TANK 990		Gasoline - unleaded	T5432551	-9.39E+04 thou gal/yr	12/31/2010	Ethylbenzene	333	3.24E-03
990 TANK 990		Gasoline - unleaded	T5432551	-9.39E+04 thou gal/yr	12/31/2010	Gasoline - unleaded	551	4.56E+00
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Benzene	41	1.40E-02
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Toluene	293	4.75E-02
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Xylene	307	5.58E-03
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Ethylbenzene	333	3.26E-03
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Gasoline - unleaded	551	4.58E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.06E+05 thou gal/yr	12/31/2010	Benzene	41	1.36E-02
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.06E+05 thou gal/yr	12/31/2010	Toluene	293	4.63E-02
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.06E+05 thou gal/yr	12/31/2010	Xylene	307	5.45E-03
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.06E+05 thou gal/yr	12/31/2010	Ethylbenzene	333	3.18E-03
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.06E+05 thou gal/yr	12/31/2010	Gasoline - unleaded	551	4.47E+00
1020 Tank 1020: Inorganic Chemical Storage Tank		Diethanolamine	T44??485	4.20E+02 thou gal/yr	3/10/1995	Diethanolamine	485	1.05E-01
1052 Tank 1052: Organic Liquid Storage Tank		Kerosene	T43??159	0.00E+00 thou gal/yr	12/31/2006	Kerosene	159	0.00E+00
1052 Tank 1052: Organic Liquid Storage Tank		Hydrocarbon - mixtures, other/	T43??318	0.00E+00 thou gal/yr	12/31/2006	Hydrocarbon - mixtures, othe	318	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
1287 TANK 1287		Toluene	T5432293	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1287 TANK 1287		Petroleum products - other/not	T5432321	-2.65E+04 thou gal/yr	12/31/2010	Petroleum products - other/n	321	2.17E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Ethylbenzene	333	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Gasoline - unleaded	551	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
1289 TANK 1289		Toluene	T64?2293	-7.11E+02 thou gal/yr	12/31/2010	Toluene	293	9.92E-01
1289 TANK 1289		Hydrocarbon - mixtures, other/	T64?2318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe	318	0.00E+00
1292 TANK 1292		Diesel fuel	T5412098	-5.02E+04 thou gal/yr	12/31/2010	Diesel oil	98	4.07E-01
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00 thou gal/yr	12/31/2010	Fuel - jet 'A'	158	0.00E+00
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00 thou gal/yr	12/31/2010	Jet fuel JP8	684	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
1296 TANK 1296		Gasoline - unleaded	T5412551	-8.00E+04 thou gal/yr	12/31/2010	Benzene	41	1.75E-02
1296 TANK 1296		Gasoline - unleaded	T5412551	-8.00E+04 thou gal/yr	12/31/2010	Toluene	293	5.94E-02
1296 TANK 1296		Gasoline - unleaded	T5412551	-8.00E+04 thou gal/yr	12/31/2010	Xylene	307	6.99E-03
1296 TANK 1296		Gasoline - unleaded	T5412551	-8.00E+04 thou gal/yr	12/31/2010	Ethylbenzene	333	4.08E-03
1296 TANK 1296		Gasoline - unleaded	T5412551	-8.00E+04 thou gal/yr	12/31/2010	Gasoline - unleaded	551	5.74E+00
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T63?2502	5.90E+00 thou gal/yr	12/31/2003	Water/organics mixture	502	8.65E-04
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04 thou gal/yr	4/30/1997	Refinery feedstock - other/n	239	7.11E+00
1431 Asphalt Tank(T-907)		Asphalt	T44??030	0.00E+00 thou gal/yr	12/31/2010	Asphalt	30	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Ethylbenzene	333	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Gasoline - unleaded	551	0.00E+00
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03 thou gal/yr	4/30/1997	Refinery feedstock - other/n	239	5.30E-02
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03 thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe	318	5.97E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe		318	5.90E-01
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.38E+04	thou gal/yr	12/31/2010	Benzene		41	1.16E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.38E+04	thou gal/yr	12/31/2010	Toluene		293	3.95E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.38E+04	thou gal/yr	12/31/2010	Xylene		307	4.64E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.38E+04	thou gal/yr	12/31/2010	Ethylbenzene		333	2.71E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.38E+04	thou gal/yr	12/31/2010	Gasoline - unleaded		551	3.81E+00
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
1488 TANK 1488		Oil/water mixture	T5472503	-3.08E+03	thou gal/yr	12/31/2010	Oil/water mixture		503	3.13E+01
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1489 TANK 1489		Alkylate	T5432389	-3.88E+04	thou gal/yr	12/31/2010	Alkylate		389	4.90E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2010	Methyl alcohol		179	0.00E+00
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1491 TANK 1491		Gasoline - unleaded	T5432551	-6.05E+04	thou gal/yr	12/31/2010	Benzene		41	1.20E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	-6.05E+04	thou gal/yr	12/31/2010	Toluene		293	4.08E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	-6.05E+04	thou gal/yr	12/31/2010	Xylene		307	4.80E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	-6.05E+04	thou gal/yr	12/31/2010	Ethylbenzene		333	2.80E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	-6.05E+04	thou gal/yr	12/31/2010	Gasoline - unleaded		551	3.94E+00
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997	Distillate oil		315	3.52E+00
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.30E+00
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997	Distillate oil		315	8.02E-01
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997	Fuel oil #2		392	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1514 TANK 1514		Gasoline - unleaded	T5432551	-9.19E+04	thou gal/yr	12/31/2010	Benzene		41	1.52E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	-9.19E+04	thou gal/yr	12/31/2010	Toluene		293	5.18E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	-9.19E+04	thou gal/yr	12/31/2010	Xylene		307	6.09E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	-9.19E+04	thou gal/yr	12/31/2010	Ethylbenzene		333	3.55E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	-9.19E+04	thou gal/yr	12/31/2010	Gasoline - unleaded		551	5.00E+00
1518 TANK 1518		Fuel - jet 'A'	T5432158	1.30E+04	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	1.22E-01
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997	Paraffins - C3+		52	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	1.79E+03	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	5.44E-02
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Benzene		41	2.36E-06
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Ethylene dichloride		107	4.01E-08
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Gasoline - leaded		128	2.19E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Toluene		293	1.18E-05
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Xylene		307	2.59E-06
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Ethylene dibromide		420	1.58E-09
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Benzene		41	2.04E-03
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Toluene		293	6.94E-03
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Xylene		307	8.17E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Ethylbenzene		333	4.77E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Gasoline - unleaded		551	6.71E-01
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997	Distillate oil		315	1.27E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1637 TANK 1637		Gasoline - unleaded	T6H32551	-6.14E+03	thou gal/yr	12/31/2010	Benzene		41	3.28E-03
1637 TANK 1637		Gasoline - unleaded	T6H32551	-6.14E+03	thou gal/yr	12/31/2010	Toluene		293	1.11E-02
1637 TANK 1637		Gasoline - unleaded	T6H32551	-6.14E+03	thou gal/yr	12/31/2010	Xylene		307	1.31E-03
1637 TANK 1637		Gasoline - unleaded	T6H32551	-6.14E+03	thou gal/yr	12/31/2010	Ethylbenzene		333	7.64E-04
1637 TANK 1637		Gasoline - unleaded	T6H32551	-6.14E+03	thou gal/yr	12/31/2010	Gasoline - unleaded		551	1.08E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
1653 TANK 1653		Fuel - jet 'A'	T4417158	-6.97E+03	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	2.48E+00
1653 TANK 1653		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
1653 TANK 1653		Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2010	Jet fuel JP5		492	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.33E+05	thou gal/yr	12/31/2010	Benzene		41	1.63E-02
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.33E+05	thou gal/yr	12/31/2010	Toluene		293	5.53E-02
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.33E+05	thou gal/yr	12/31/2010	Xylene		307	6.50E-03
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.33E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	3.79E-03
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.33E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	5.34E+00
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Benzene		41	1.64E-02
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Toluene		293	5.59E-02
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Xylene		307	6.57E-03
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.84E-03
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	5.40E+00
1798 Tank 1798		Fuel - jet 'A'	T5422158	-1.78E+05	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	7.32E+00
1798 Tank 1798		Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
1799 TANK 1799		Crude oil	T5422089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
1799 TANK 1799		Fuel - jet 'A'	T5422158	-2.32E+05	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	1.69E+00
1821 Tank 1821 Fresh Sulfuric Acid Tank		H2SO4 - other/not spec	G5999146	-1.02E+05	tons/yr	12/31/2010	Particulates (portion of tot		1990	5.60E-03
1825 Tank 1825		Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	1.19E-02
1828 TANK 1828		Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006	Paraffins - C3+		52	0.00E+00
1828 TANK 1828		Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006	Pentane		209	0.00E+00
1828 TANK 1828		Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006	Butane		416	0.00E+00
1843 TANK 1843		Paraffins - C3+	T5412052	2.95E+02	thou gal/yr	12/31/2007	Paraffins - C3+		52	1.09E-02
1894 Tank 1894: Phosphoric Acid Storage Tank		Phosphoric acid	G5999217	-1.07E+02	tons/yr	12/31/2010	Particulates (portion of tot		1990	5.86E-06
1899 TANK 1899		Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997	Distillate oil		315	3.92E-01
1908 Asphalt Tank (T-908)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
1909 Tank 1909		Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
1910 Tank 1910		Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994	Organic liquid - other/not s		201	3.55E-02
1911 Tank 1911		Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
1911 Tank 1911		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
1966 TANK 1966		Fuel - jet 'A'	T5432158	2.02E+04	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	2.25E-01
2520 Wastewater/MEA Storage Tank		Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005	Ethyl amine		106	0.00E+00
2520 Wastewater/MEA Storage Tank		Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005	Waste water - refin, other/n		300	6.26E+00
2540 Tank 2540: Organic Liquid Storage Tank		Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997	Ethanolamine		664	1.12E-01
2903 Tank 903: Organic Liquid Storage Tank		Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
2903 Tank 903: Organic Liquid Storage Tank		Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.17E-04
2917 Asphalt Tank (T-917)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
2918 Asphalt Tank (T-918)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
2921 Asphalt Tank (T-921)		Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
3038 TANK 3038 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
3038 TANK 3038 (Spherical Pressure Tank)		Pentane	T3477209	-2.93E+04	thou gal/yr	12/31/2010	Pentane		209	0.00E+00
3050 TANK 3050 SPHERE		Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3066 TANK 3066		Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.53E+05	thou gal/yr	12/31/2010	Benzene		41	3.66E-01
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.53E+05	thou gal/yr	12/31/2010	Toluene		293	1.24E+00
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.53E+05	thou gal/yr	12/31/2010	Xylene		307	1.46E-01
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.53E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	8.53E-02
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.53E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	1.20E+02
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Benzene		41	1.55E-02
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Toluene		293	5.27E-02
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Xylene		307	6.20E-03
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.62E-03
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	5.09E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Paraffins - C3+	T54?2052	-1.26E+05	thou gal/yr	12/31/2010	Paraffins - C3+		52	3.40E-01
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
3074 TANK 3074		Distillate oil	T54?2315	1.14E+05	thou gal/yr	12/31/2007	Distillate oil		315	6.71E-01
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-6.87E+02	thou gal/yr	12/31/2010	Benzene		41	2.93E-02
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-6.87E+02	thou gal/yr	12/31/2010	Ethylene dichloride		107	4.98E-04
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-6.87E+02	thou gal/yr	12/31/2010	Gasoline - leaded		128	2.72E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-6.87E+02	thou gal/yr	12/31/2010	Toluene		293	1.47E-01
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-6.87E+02	thou gal/yr	12/31/2010	Xylene		307	3.23E-02
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-6.87E+02	thou gal/yr	12/31/2010	Ethylene dibromide		420	1.96E-05
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
3076 TANK T3076		Crude oil	T54?2089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
3076 TANK T3076		Hydrocarbon - mixtures, other/	T54?2318	-1.46E+04	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	3.34E+00
3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar		Crude oil	T54?2089	-4.51E+05	thou gal/yr	12/31/2010	Crude oil		89	2.17E+01
3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar		Bunker C fuel oil	T54?2242	0.00E+00	thou gal/yr	12/31/2010	Bunker C fuel oil		242	0.00E+00
3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3101 TANK 3101		Crude oil	T5432089	-4.62E+05	thou gal/yr	12/31/2010	Crude oil		89	3.06E+01
3101 TANK 3101		Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2010	Fuel oil #2		392	0.00E+00
3101 TANK 3101		Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2010	Gas oil		394	0.00E+00
3102 TANK 3102		Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
3102 TANK 3102		Hydrocarbon - mixtures, other/	T5432318	-3.17E+05	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.11E+01
3103 TANK 3103		Crude oil	T5432089	3.43E+05	thou gal/yr	12/31/2007	Crude oil		89	3.55E+01
3104 TANK 3104		Crude oil	T5432089	7.74E+05	thou gal/yr	12/31/2007	Crude oil		89	5.90E+00
3105 TANK 3105		Crude oil	T5432089	7.36E+05	thou gal/yr	12/31/2007	Crude oil		89	6.53E+01
3106 TANK 3106		Crude oil	T5432089	3.21E+05	thou gal/yr	12/31/2007	Crude oil		89	3.46E+01
3107 TANK 3107		Crude oil	T54?2089	3.40E+05	thou gal/yr	12/31/2008	Crude oil		89	3.49E+00
3110 Desalter Effluent Surge Tank A		Crude oil	T43?7089	8.08E+02	thou gal/yr	12/31/2007	Crude oil		89	7.11E+00
3111 Desalter Effluent Surge Tank B		Crude oil	T43?7089	8.08E+02	thou gal/yr	12/31/2007	Crude oil		89	6.42E+00
3126 TANK 3126		Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2010	Naphtha		188	0.00E+00
3126 TANK 3126		Oil/water mixture	T5432503	-9.59E+04	thou gal/yr	12/31/2010	Oil/water mixture		503	1.23E+00
3127 TANK 3127		Oil/water mixture	T5412503	2.38E+03	thou gal/yr	12/31/2007	Oil/water mixture		503	1.70E+00
3128 TANK 3128		Aromatic hydrocarbons - other/	T54?2027	0.00E+00	thou gal/yr	12/31/2010	Aromatic hydrocarbons - othe		27	0.00E+00
3128 TANK 3128		Water/organics mixture	T54?2502	-3.30E+03	thou gal/yr	12/31/2010	Water/organics mixture		502	1.22E+00
3129 TANK 3129		Fuel - jet 'A'	T5412158	1.16E+05	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	1.07E+00
3132 Tank 3132		Distillate oil	T54?2315	8.12E+04	thou gal/yr	4/30/1997	Distillate oil		315	5.89E-01
3133 TANK 3133		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.00E+05	thou gal/yr	12/31/2010	Benzene		41	3.11E-01
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.00E+05	thou gal/yr	12/31/2010	Toluene		293	1.06E+00
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.00E+05	thou gal/yr	12/31/2010	Xylene		307	1.24E-01
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.00E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	7.25E-02
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.00E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	1.02E+02
3133 TANK 3133		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2010	Gasoline - oxygenated, MTBE		680	0.00E+00
3134 TANK 3134		Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.78E+05	thou gal/yr	12/31/2010	Benzene		41	2.50E-01
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.78E+05	thou gal/yr	12/31/2010	Toluene		293	8.49E-01
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.78E+05	thou gal/yr	12/31/2010	Xylene		307	9.98E-02
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.78E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	5.82E-02
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.78E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	8.19E+01
3134 TANK 3134		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2010	Gasoline - oxygenated, MTBE		680	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3138 TANK 3138		Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997	Gas oil		394	5.55E-01
3139 TANK 3139		Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997	Gas oil		394	8.14E+00
3141 SULFUR STORAGE TANK 3141		Sulfur	G7014267	0.00E+00	tons/yr	12/31/2010			0	0.00E+00
3142 TANK 3142		Refinery feedstock - other/not	T4417239	4.42E+02	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
3144 TANK 3144		Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
3145 TANK 3145, Sphere		Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3146 Tank 3146: 20% Aqueous Ammonia		Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994	Organic liquid - other/not s		201	1.46E+01
3147 Tank 3147: Organic Liquid Storage Tank		Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3148 Tank 3148: Organic Liquid Storage Tank		Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3157 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.24E+01
3158 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3159 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3160 Tank 3160: Organic Liquid Storage Tank		Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994	Lube oil		419	1.34E+01
3161 Tank Lube Oil		Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997	Lube oil		419	1.19E-01
3162 Tank Lube Oil		Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997	Lube oil		419	1.22E-01
3163 Tank Lube Oil		Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997	Lube oil		419	7.74E-02
3164 Tank Lube Oil		Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997	Lube oil		419	7.23E-02
3165 Tank Lube Oil		Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997	Lube oil		419	1.41E-01
3166 Tank Lube Oil		Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997	Lube oil		419	1.40E-01
3167 Tank Lube Oil		Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997	Lube oil		419	5.27E-02
3168 Tank Lube Oil		Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997	Lube oil		419	5.36E-02
3169 organic liquid storage tank, lube oil products		Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995	Lube oil		419	1.78E-01
3170 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3171 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3172 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	9.57E+00
3179 Tank 3179: Organic Liquid Storage Tank		Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997	Distillate oil		315	1.59E-01
3180 Tank		Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
3180 Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
3180 Tank		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
3180 Tank		Alkylate	T5472389	-3.82E+04	thou gal/yr	12/31/2010	Alkylate		389	1.14E+02
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
3182 Tank 3182: Organic Liquid Storage Tank		Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997	Lube oil		419	2.61E-01
3185 Tank 3185 (previously T-982)		Fuel - jet 'A'	T5472158	2.10E+05	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	6.40E+00
3186 Gas Oil Tank		Organic liquid - other/not spe	T4477201	0.00E+00		4/21/1997	Organic liquid - other/not s		201	8.69E+00
3189 Gasoline component and Diesel Tank		Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3189 Gasoline component and Diesel Tank		Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
3189 Gasoline component and Diesel Tank		Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3189 Gasoline component and Diesel Tank		Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
3189 Gasoline component and Diesel Tank		Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2010	Gas oil		394	0.00E+00
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-2.97E+05	thou gal/yr	12/31/2010	Benzene		41	1.92E-02
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-2.97E+05	thou gal/yr	12/31/2010	Toluene		293	6.54E-02
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-2.97E+05	thou gal/yr	12/31/2010	Xylene		307	7.69E-03
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-2.97E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	4.49E-03
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-2.97E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	6.31E+00
3189 Gasoline component and Diesel Tank		Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2010	Gasoline - oxygenated, MTBE		680	0.00E+00
3190 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3190 Storage Tank		Fuel - jet 'A'	T5472158	-2.26E+05	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	1.83E+00
3191 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
3191 Storage Tank		Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2010	Naphtha		188	0.00E+00
3191 Storage Tank		Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2010	Jet fuel JP4		395	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3191 Storage Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
3191 Storage Tank		Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2010	Methyl tertiary-butyl ether		628	0.00E+00
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Benzene		41	1.22E-01
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Cyclohexane		91	5.99E-02
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Hexane		148	1.25E-01
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Toluene		293	3.49E-01
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Xylene		307	4.34E-01
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Ethylbenzene		333	9.98E-02
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Tetra-Ethyl Lead (TEL)		422	4.99E-02
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Avgas		662	1.26E+00
3192 Desalter Effluent Skim Tank		Crude oil	T3H?7089	-1.56E+04	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
3193 Gasoline component Tank		Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3193 Gasoline component Tank		Isocotane	T54?2154	-1.77E+04	thou gal/yr	12/31/2010	Isocotane		154	2.29E+00
3193 Gasoline component Tank		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3193 Gasoline component Tank		Alkylate	T54?2389	0.00E+00	thou gal/yr	12/31/2010	Alkylate		389	0.00E+00
3193 Gasoline component Tank		Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2010	Gas oil		394	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
3194 Storage Tank T-3194		Hydrocarbon - mixtures, other/	T54?2318	0.00E+00	thou gal/yr	12/31/2003	Hydrocarbon - mixtures, othe		318	0.00E+00
3194 Storage Tank T-3194		Gas oil	T54?2394	1.44E+05	thou gal/yr	12/31/2003	Gas oil		394	9.85E-01
3195 T-3195 Waxy Heavy Neutral Storage Tank		Diesel fuel	T54?7098	1.29E+05	thou gal/yr	12/31/2006	Diesel oil		98	2.35E+00
3195 T-3195 Waxy Heavy Neutral Storage Tank		Distillate oil	T54?7315	0.00E+00	thou gal/yr	12/31/2006	Distillate oil		315	0.00E+00
3195 T-3195 Waxy Heavy Neutral Storage Tank		Lube oil	T54?7419	0.00E+00	thou gal/yr	12/31/2006	Lube oil		419	0.00E+00
3196 Gasoline Components Tank		Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3196 Gasoline Components Tank		Organic liquid - other/not spe	T54?2201	-1.03E+05	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	1.24E+00
3196 Gasoline Components Tank		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3196 Gasoline Components Tank		Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2010	Gas oil		394	0.00E+00
3196 Gasoline Components Tank		Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
3196 Gasoline Components Tank		Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2010	Methyl tertiary-butyl ether		628	0.00E+00
3197 Gasoline component Tank		Ethers	T55?2103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3197 Gasoline component Tank		Naphtha	T55?2188	-2.97E+04	thou gal/yr	12/31/2010	Naphtha		188	6.21E+00
3197 Gasoline component Tank		Distillate oil	T55?2315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3197 Gasoline component Tank		Gas oil	T55?2394	0.00E+00	thou gal/yr	12/31/2010	Gas oil		394	0.00E+00
3198 3198 tank; organic liquid storage tank		Fuel - jet 'A'	T543?158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
3198 3198 tank; organic liquid storage tank		Toluene	T543?293	-2.53E+03	thou gal/yr	12/31/2010	Toluene		293	1.84E+01
3198 3198 tank; organic liquid storage tank		Distillate oil	T543?315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3200 4 Crude Unit Desalter Water Treatment Unit		Waste water - refin, other/not	G5012300	-2.28E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	5.00E-04
3200 4 Crude Unit Desalter Water Treatment Unit		Waste water - refin, other/not	G5012300	-2.28E+03	thou barre/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.39E-01
3201 Tank 3201: Whole Alkylate		Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3201 Tank 3201: Whole Alkylate		Alkylate	T54?2389	-1.30E+05	thou gal/yr	12/31/2010	Alkylate		389	1.12E+02
3202 Tank 3202: Methanol		Methyl alcohol	T54?2179	0.00E+00	thou gal/yr	12/31/2010	Methyl alcohol		179	0.00E+00
3202 Tank 3202: Methanol		Naphtha	T54?2188	-4.20E+03	thou gal/yr	12/31/2010	Naphtha		188	7.30E+01
3202 Tank 3202: Methanol		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3202 Tank 3202: Methanol		Petroleum products - other/not	T54?2321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
3204 Tank 3204: Organic Liquid Storage Tank		Lube oil	T42?7419	2.54E+00	thou gal/yr	12/31/1997	Lube oil		419	4.07E-04
3207 Butane Sphere: Organic Liquid Storage Tank		Butane	T34?7416	-9.20E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3208 Propane Sphere: Organic Liquid Storage Tank		Propane	T34?7417	-7.67E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3211 Sphere		Butane	T34?7416	-3.83E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3212 Sphere		Propane	T34?7417	-2.76E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3213 Tank 3213: Organic Liquid Storage Tank		Diesel fuel	T54?2098	0.00E+00	thou gal/yr	12/31/2010	Diesel oil		98	0.00E+00
3213 Tank 3213: Organic Liquid Storage Tank		Fuel - jet 'A'	T54?2158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
3213 Tank 3213: Organic Liquid Storage Tank		Lube oil	T54?2419	0.00E+00	thou gal/yr	12/31/2010	Lube oil		419	0.00E+00
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.85E+05	thou gal/yr	12/31/2010	Benzene		41	8.03E-01
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.85E+05	thou gal/yr	12/31/2010	Toluene		293	2.73E+00
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.85E+05	thou gal/yr	12/31/2010	Xylene		307	3.21E-01
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.85E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	1.87E-01
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.85E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	2.64E+02
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	Benzene		41	6.64E-01
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	Ethylene dichloride		107	1.13E-02
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	Gasoline - leaded		128	6.17E+01
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	Toluene		293	3.32E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	Xylene		307	7.31E-01
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	Ethylene dibromide		420	4.45E-04
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
3215 Tank 3215: Organic Liquid Storage Tank		Distillate oil	T54?2315	-1.29E+05	thou gal/yr	12/31/1997	Distillate oil		315	1.15E+00
3216 Tank 3216: Organic Liquid Storage Tank		Distillate oil	T44?7315	8.40E+04	thou gal/yr	7/9/1997	Distillate oil		315	2.27E+01
3220 400 Tank Organic Liquid Storage Tank		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3220 400 Tank Organic Liquid Storage Tank		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
3220 400 Tank Organic Liquid Storage Tank		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3220	400 Tank	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Toluene	293	0.00E+00
3220	400 Tank	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Xylene	307	0.00E+00
3220	400 Tank	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
3220	400 Tank	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-1.73E+04	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe	318	1.42E+02
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Benzene	41	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Toluene	293	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Xylene	307	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00	
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-1.60E+04	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe	318	1.82E+02	
3225	Organic Liquid Storage Tank	Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture	503	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Benzene	41	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Toluene	293	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Xylene	307	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene	333	0.00E+00	
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded	551	0.00E+00	
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.41E+05	tons/yr	12/31/2010	Particulates (portion of tot	1990	8.31E-04	
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.41E+05	tons/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	4.65E+00	
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.41E+05	tons/yr	12/31/2010	Hydrogen Sulfide (H2S)	5020	1.94E+00	
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T43??419	-3.37E+02	thou gal/yr	12/31/1997	Lube oil	419	3.31E-03	
3910	LPG Tank; # 3910	LPG	T34??160	-3.97E+04	thou gal/yr	6/10/1998	LPG	160	0.00E+00	
3911	LPG Tank, # 3911	LPG	T34??160	-2.30E+04	thou gal/yr	6/10/1998	LPG	160	0.00E+00	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Benzene	41	7.27E-03	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	4.61E-02	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	1.94E-03	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Phenol	214	4.16E-03	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	4.74E-03	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	6.59E+00	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	1.54E-04	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	4.41E-05	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	8.81E-05	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Manganese	1160	3.00E-03	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	3.53E-04	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	2.20E-04	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	6.88E-03	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)	1840	4.24E-02	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	1.82E-02	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	1.21E-01	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	2.20E+01	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	5.07E-01	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	9.03E+01	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	7.44E+00	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	3.75E+01	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	3.06E+05	
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	6.39E+00	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Benzene	41	2.88E-03	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.83E-02	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	7.69E-04	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.65E-03	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.88E-03	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.61E+00	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	6.12E-05	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.75E-05	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	3.50E-05	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Manganese	1160	1.19E-03	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.40E-04	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	8.74E-05	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.73E-03	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)	1840	1.68E-02	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	7.21E-03	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	4.81E-02	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	8.74E+00	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	2.01E-01	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	3.58E+01	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	2.95E+00	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.49E+01	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.22E+05	
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	2.54E+00	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Benzene	41	3.19E-03	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	2.02E-02	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	8.52E-04	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.83E-03	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	2.08E-03	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.89E+00	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	6.77E-05	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.94E-05	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	3.87E-05	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Manganese	1160	1.32E-03	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.55E-04	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	9.68E-05	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	3.02E-03	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)	1840	1.86E-02	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	7.98E-03	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	5.32E-02	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	9.68E+00	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	2.23E-01	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	3.97E+01	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	3.27E+00	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.64E+01	
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+0						

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Emissions ----->		Code	lb/day
						Date	Pollutant		
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	2.81E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Benzene	41	2.57E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.63E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	6.85E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.47E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.67E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.33E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	5.45E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.56E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	3.12E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Manganese	1160	1.06E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.25E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	7.79E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.43E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.50E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	6.42E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	4.28E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	7.79E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.79E-01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	3.19E+01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	2.63E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.32E+01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.08E+05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	2.26E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Benzene	41	5.08E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	3.21E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	1.35E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Phenol	214	2.91E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	3.31E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	4.60E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	1.08E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	3.08E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	6.15E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Manganese	1160	2.09E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	2.46E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	1.54E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	4.80E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	2.96E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	1.27E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	8.46E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	1.54E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	3.54E-01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	6.31E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	5.19E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	2.61E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	2.14E+05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	4.46E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Benzene	41	2.39E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.51E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	6.38E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.37E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.56E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.17E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	5.07E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.45E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	2.90E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Manganese	1160	9.86E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.16E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	7.25E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.26E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.40E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	5.98E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	3.99E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	7.25E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.67E-01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	2.97E+01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	2.45E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.23E+01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.01E+05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	2.10E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Benzene	41	3.12E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.98E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	8.32E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.79E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	2.03E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.83E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	6.62E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.89E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	3.78E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Manganese	1160	1.29E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.51E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	9.45E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.95E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.82E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	7.80E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	5.20E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	9.45E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	2.17E-01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	3.88E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	3.19E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.61E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.31E+05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	2.74E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Benzene	41	1.48E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	9.37E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	3.95E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Phenol		214	8.48E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	9.64E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.34E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	3.14E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	8.97E-06
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	1.79E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Manganese		1160	6.10E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	7.18E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	4.48E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.40E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	8.63E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	3.70E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	2.47E-02
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	4.48E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.03E-01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.84E+01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.51E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.62E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	6.23E+04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.30E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Benzene		41	3.05E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.93E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	8.14E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.75E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.99E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.76E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	6.47E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	1.85E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	3.70E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Manganese		1160	1.26E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.48E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	9.25E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.88E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.78E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	7.63E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	5.08E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	9.25E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.13E-01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.24E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	3.12E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.57E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.29E+05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.68E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Benzene		41	3.51E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	2.23E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	9.37E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Phenol		214	2.01E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	2.29E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	3.18E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	7.46E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	2.13E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	4.26E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Manganese		1160	1.45E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.70E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.07E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	3.32E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	2.05E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	8.79E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	5.86E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.07E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.45E-01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.73E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	3.60E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.81E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.48E+05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	3.09E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Benzene		41	4.94E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.13E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.32E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Phenol		214	2.83E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.22E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.48E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.05E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	3.00E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	5.99E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Manganese		1160	2.04E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.40E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.5

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.56E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.96E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.16E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	3.31E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	6.63E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Manganese		1160	2.25E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.65E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.66E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	5.17E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	3.19E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.37E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	9.12E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.66E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.81E-01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	8.45E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.60E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.82E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.30E+05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.81E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Benzene		41	2.74E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.74E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	7.32E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.57E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.79E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.49E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	5.82E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	1.66E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	3.33E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Manganese		1160	1.13E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.33E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	8.32E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.60E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.60E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	6.86E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	4.57E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	8.32E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.91E-01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.35E+02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.81E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.41E+01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.16E+05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.41E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Benzene		41	8.34E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	5.28E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	2.22E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Phenol		214	4.78E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	5.43E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	7.56E-01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.77E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Cadmium		1070	5.06E-06
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	1.01E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Manganese		1160	3.44E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	4.04E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	2.53E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	7.89E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	4.87E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	2.09E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.39E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.53E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.81E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.98E+01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	8.54E-01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	4.30E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.51E+04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	7.33E-01
4070	#4 CRUDE UNIT F 1100A	Napththa	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Benzene		41	2.17E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.37E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Formaldehyde		124	5.78E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Phenol		214	1.24E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.41E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.96E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	4.60E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Cadmium		1070	1.31E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	2.63E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Manganese		1160	8.93E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.05E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	6.57E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.05E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.26E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas								

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.81E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	4.23E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Cadmium		1070	1.21E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	2.42E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Manganese		1160	8.21E-03
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	9.66E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	6.04E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.88E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.16E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	4.98E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	3.32E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	6.04E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.39E+00
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.69E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.63E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.03E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	8.39E+05
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.75E+01
4072 #4 CRUDE UNIT	F1160	Napththa	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Benzene		41	7.36E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	4.66E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.96E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Phenol		214	4.22E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	4.80E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	6.67E+00
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.56E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	4.46E-05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	8.93E-05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Manganese		1160	3.04E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	3.57E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	2.23E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	6.96E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	4.30E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.84E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.23E-01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.23E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.13E-01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	6.25E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	6.03E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.79E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.10E+05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	6.47E+00
4073 LSFO COOLING TOWER		Fresh water	G5005415	-6.15E+04	thou gallo/yr	12/31/2010	Organics (part not spec else		990	1.01E+00
4076 3 CAT COOLING TOWER E460		Fresh water	G5005415	-1.01E+05	thou gallo/yr	12/31/2010	Organics (part not spec else		990	1.66E+00
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Benzene		41	6.04E-07
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Formaldehyde		124	7.10E-06
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Toluene		293	3.22E-07
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Organics (part not spec else		990	5.42E-04
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Particulates (portion of tot		1990	2.84E-04
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.19E-05
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.33E-02
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.38E-05
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.32E-03
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.16E+01
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Methane (CH4)		6970	1.80E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Benzene		41	3.03E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.92E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	8.99E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Phenol		214	5.50E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Toluene		293	1.09E-01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	2.64E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.60E+00
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	3.67E-05
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	1.83E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	2.75E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.56E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	9.63E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	7.57E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	5.05E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	9.16E+00
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.11E-01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.21E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	3.10E+00
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.56E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.28E+05
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.66E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Benzene		41	8.29E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	2.46E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.51E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Toluene		293	2.99E-01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	7.23E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	7.13E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	1.00E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	5.02E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	7.53E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	4.27E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	2.64E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.51E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.78E-01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	8.79E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	8.48E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	4.27E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.49E+05

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
	4131 800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	7.28E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Benzene		41	5.90E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.74E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.75E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Phenol		214	1.07E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Toluene		293	2.13E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	5.15E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	5.08E-01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	7.16E-06
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	3.58E-05
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	5.37E-05
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	3.04E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.88E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.48E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	9.84E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.79E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.11E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	6.26E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	6.04E-01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.04E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.49E+04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	5.19E-01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Benzene		41	5.60E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.55E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.66E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Phenol		214	1.02E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Toluene		293	2.02E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	4.89E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.82E-01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	6.79E-06
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	3.39E-05
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	5.09E-05
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.88E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.78E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.40E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	9.33E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.69E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.90E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	5.94E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.73E-01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.88E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.36E+04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.92E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Benzene		41	7.27E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	4.61E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	2.16E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.32E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Toluene		293	2.62E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	6.35E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	6.26E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	8.82E-05
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	4.41E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	6.61E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	3.75E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	2.31E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.82E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.21E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.20E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.07E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	7.71E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.44E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.75E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.06E+05
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	6.39E+00
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	-5.18E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	7.09E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Benzene		41	5.90E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.74E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.57E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Phenol		214	3.38E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.85E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	5.35E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.25E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Cadmium		1070	3.58E-06
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	7.16E-06
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Manganese		1160	2.43E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.86E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.79E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	5.58E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	3.44E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.48E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	9.84E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.79E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.11E-02
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	7.33E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	6.04E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.04E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.49E+04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	5.19E-01
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Benzene		41	5.60E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.55E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.49E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Phenol		214	3.21E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.65E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	5.07E-01
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.19E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Cadmium		1070	3.39E-06
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	6.79E-06
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Manganese		1160	2.31E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.71E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.70E-05
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	5.29E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	3.27E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv		1860	1.40E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	9.33E-03
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.70E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.90E-02
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	6.96E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.73E-01
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.88E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.36E+04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.92E-01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Benzene		41	7.27E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	4.61E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.94E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Phenol		214	4.17E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	4.74E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	6.59E+00
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.54E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	4.41E-05
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	8.82E-05
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Manganese		1160	3.00E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	3.53E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	2.20E-04
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	6.88E-03
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	4.24E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv		1860	1.82E-02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.21E-01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.20E+01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.07E-01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.01E+02
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.44E+00
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	9.17E+01
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.06E+05
4155	F-135 Hot Oil Furnace	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	6.39E+00
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Benzene		41	3.19E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	2.02E-02
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	8.50E-04
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.83E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	2.08E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.89E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	6.76E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	1.93E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	3.86E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Manganese		1160	1.31E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.55E-04
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	9.66E-05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	3.01E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.86E-02
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv		1860	7.97E-03
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	5.31E-02
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	9.66E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.22E-01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.96E+01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	8.15E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.64E+01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.34E+05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.80E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Benzene		41	2.02E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.28E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	5.40E-04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.16E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.32E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.83E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	4.29E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	1.23E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	2.45E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Manganese		1160	8.34E-04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	9.81E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	6.13E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.91E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.18E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv		1860	5.06E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	3.37E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	6.13E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.41E-01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.72E+01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.07E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.04E+01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	8.53E+04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.78E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Benzene		41	2.08E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Emissions		Code	lb/day
						Date	Pollutant		
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.32E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	5.56E-04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.19E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.36E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	1.89E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	4.42E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.26E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	2.53E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Manganese	1160	8.59E-04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.01E-04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	6.32E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	1.97E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.22E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	5.21E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	3.47E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	6.32E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.45E-01
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.77E+01
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	2.13E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.07E+01
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	8.78E+04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	1.83E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0.00E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Benzene	41	2.40E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.52E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	6.41E-04
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.38E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.57E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.18E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	5.10E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.46E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	2.91E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Manganese	1160	9.90E-04
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.17E-04
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	7.28E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.27E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.40E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	6.01E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	4.01E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	7.28E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.67E-01
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.10E+02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	3.79E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.24E+01
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.01E+05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	2.11E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0.00E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Benzene	41	3.19E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	2.02E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	8.51E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.83E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	2.08E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.89E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	6.77E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.93E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	3.87E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Manganese	1160	1.31E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.55E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	9.67E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	3.02E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.86E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	7.97E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	5.32E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	9.67E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	2.22E-01
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.46E+02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	5.04E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.64E+01
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.34E+05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	2.80E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0.00E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.54E-02
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	6.47E-04
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.39E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Toluene	293	0.00E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.58E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.07E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	5.14E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.47E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/20101			

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	5.83E-04
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.25E-03
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.43E-03
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	1.98E+00
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	4.64E-05
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.33E-05
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	2.65E-05
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Manganese	1160	9.01E-04
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.06E-04
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	6.63E-05
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.07E-03
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.28E-02
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	5.47E-03
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	3.65E-02
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	6.63E+00
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.52E-01
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	2.32E+01
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	2.24E+00
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.13E+01
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	9.21E+04
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	1.92E+00
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Benzene	41	1.58E-03
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.00E-02
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	4.22E-04
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Phenol	214	9.06E-04
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.03E-03
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	1.43E+00
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	3.35E-05
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	9.58E-06
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	1.92E-05
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Manganese	1160	6.52E-04
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	7.67E-05
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	4.79E-05
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	1.49E-03
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	9.22E-03
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	3.95E-03
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	2.64E-02
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	4.79E+00
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.10E-01
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.68E+01
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	1.62E+00
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	8.15E+00
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	6.66E+04
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	1.39E+00
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Benzene	41	2.25E-03
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.43E-02
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	6.01E-04
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.29E-03
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.47E-03
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.04E+00
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	4.78E-05
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.37E-05
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	2.73E-05
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Manganese	1160	9.29E-04
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.09E-04
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	6.83E-05
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.13E-03
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.31E-02
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	5.63E-03
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	3.76E-02
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	6.83E+00
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.57E-01
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	2.39E+01
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	2.31E+00
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.16E+01
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	9.49E+04
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	1.98E+00
4167 F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	4.18E-02
4167 F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	5.64E+00
4167 F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	1.65E-02
4167 F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	1.10E-01
4167 F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12			

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.32E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.01E+02
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.32E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.22E+01
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.32E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	6.16E+01
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.32E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	5.03E+05
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.32E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.05E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Benzene		41	1.08E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	6.86E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Formaldehyde		124	2.89E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Phenol		214	6.21E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Acetaldehyde		335	7.06E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	9.82E+00
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	2.30E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Cadmium		1070	6.57E-05
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	1.31E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Manganese		1160	4.47E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	5.26E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	3.28E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.02E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	6.32E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	2.71E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.81E-01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	3.28E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.55E-01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	9.20E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.11E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	5.58E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.57E+05
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	9.53E+00
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Benzene		41	5.10E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.23E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Formaldehyde		124	3.40E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Phenol		214	1.39E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Toluene		293	1.09E+00
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.40E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.52E+01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	7.11E-03
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Manganese		1160	4.33E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.55E-03
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	3.09E-04
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.07E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	3.37E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.28E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	8.50E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.55E+02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.85E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.72E+01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.22E+01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.63E+02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.15E+06
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.48E+01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Benzene		41	4.55E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	2.88E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Formaldehyde		124	3.04E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Phenol		214	1.24E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Toluene		293	9.72E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.04E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.03E+01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	6.35E-03
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Manganese		1160	3.86E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.38E-03
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	2.76E-04
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	9.52E-03
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	3.01E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.14E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	7.59E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.38E+02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.17E+00
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.86E+02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.17E+02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.35E+02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.92E+06
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.00E+01
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	-9.37E+05	thou gallo/yr	12/31/2010	Organics (part not spec else		990	1.54E+01
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	-4.13E+05	thou gallo/yr	12/31/2010	Organics (part not spec else		990	6.78E+00
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	-3.73E+04	thou gallo/yr	12/31/2010	Organics (part not spec else		990	6.14E-01
4188 F-651	Polymer Furnace									

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	4.25E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	9.77E-02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.23E+02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.21E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.22E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	5.91E+04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.23E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010			0	0.00E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Benzene		41	4.85E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.07E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.29E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Phenol		214	2.78E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.16E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.99E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.03E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Cadmium		1070	2.94E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	5.88E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	9.26E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Manganese		1160	2.00E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.47E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	4.58E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	2.83E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.21E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	8.08E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.47E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.38E-02
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.26E+01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.66E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.50E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.04E+04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.26E-01
4191	Alkane Cooling Water Tower	Fresh water	G5005415	-3.82E+04	thou gallo/yr	12/31/2010	Organics (part not spec else		990	6.28E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Benzene		41	9.59E-04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Formaldehyde		124	1.13E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Toluene		293	5.11E-04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Organics (part not spec else		990	6.80E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	4.51E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.47E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.10E+01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	4.06E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	5.26E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.84E+04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Methane (CH4)		6970	2.86E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Benzene		41	1.14E-03
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Formaldehyde		124	1.34E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Toluene		293	6.05E-04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Organics (part not spec else		990	1.02E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	5.34E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.11E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.49E+01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.01E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	6.23E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.18E+04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Methane (CH4)		6970	3.38E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Benzene		41	1.45E-03
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Formaldehyde		124	1.70E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Toluene		293	7.72E-04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Organics (part not spec else		990	1.30E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	6.81E-01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.24E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.18E+01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	6.13E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.94E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.78E+04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Methane (CH4)		6970	4.31E-01
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	-4.79E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	1.31E+01
4227	SRU #1 TRAIN	Sulfur	G7055267	-3.17E+04	tons/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	9.52E+01
4228	SRU #2 TRAIN	Sulfur	G7055267	-4.09E+04	tons/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.31E+02
4229	SRU #3 TRAIN	Sulfur	G7055267	-6.88E+04	tons/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.00E+02
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997	Particulates (portion of tot		1990	6.78E-03
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	-2.19E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	5.99E+01
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	-1.85E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	5.06E+01
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	-1.13E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	9.27E+00
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	-8.43E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	2.31E+02
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	-8.36E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	3.43E+01
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	-1.07E+05	thou gal/yr	12/31/2010	LPG		160	4.67E+01
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.72E+04	million cu/yr	12/31/2010	Ethyl alcohol		105	2.16E-01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.72E+04	million cu/yr	12/31/2010	Methyl alcohol		179	7.76E+00
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.72E+04	million cu/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	8.62E+01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.72E+04	million cu/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.54E+06
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.21E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.21E+04	thou barre/yr	12/31/2010	Particulates (portion of tot		1990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.21E+04	thou barre/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.21E+04	thou barre/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.21E+04	thou barre/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	-2.15E+05	thou gallo/yr	12/31/2010	Organics (part not spec else		990	5.90E+01
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	-1.49E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	4.09E-03
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	-1.26E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	3.45E-03
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	-9.02E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	2.47E-03
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	-7.96E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	2.18E-03
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Organics (part not spec else		990	1.33E+02
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Particulates (portion of tot		1990	1.57E+03
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.71E+01
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.59E+02
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.99E+02
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.14E+02
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.64E+06
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Methane (CH4)		6970	1.35E+02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Benzene		41	1.73E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Arsenic (all)		1030	8.05E-04
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Chromium		1090	8.67E-04
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Manganese		1160	1.67E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Nickel pollutant		1180	9.29E-04
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Zinc pollutant		1320	1.49E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	PAH's (non-speciated)		1840	2.50E-04
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Particulates (portion of tot		1990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Ammonia (NH3) pollutant		6990	3.90E+00
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.39E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	3.82E-01
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.39E+04	thou barre/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.06E+02
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	-7.58E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	1.04E+01
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	-2.32E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	9.54E+00
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
4329	RLOP Cooling Tower	Fresh water	G5005415	-1.33E+05	thou gallo/yr	12/31/2010	Organics (part not spec else		990	2.54E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Benzene		41	6.98E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	4.42E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.65E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Phenol		214	1.69E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Toluene		293	1.26E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	6.07E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	5.97E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	4.23E-06
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	2.12E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Manganese		1160	1.90E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.12E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	4.23E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.75E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.51E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.75E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.16E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.12E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.46E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.84E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.14E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.60E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.94E+04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	6.13E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Benzene		41	8.98E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	5.69E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	2.12E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Phenol		214	2.18E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Toluene		293	1.62E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	7.81E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	7.68E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	5.44E-06
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	2.72E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Manganese		1160	2.45E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.72E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	5.44E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	3.54E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	1.94E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	2.25E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.50E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.72E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.88E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.37E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	9.19E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	4.63E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.78E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	7.89E-01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Benzene		41	2.63E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.66E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	6.20E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Phenol		214	6.37E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Toluene		293	4.73E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	2.28E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.24E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	1.59E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	7.96E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Manganese		1160	7.16E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	7.96E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.59E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.03E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	5.67E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	6.56E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	4.38E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	7.96E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.49E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	6.92E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.69E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.35E+01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.11E+05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.31E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.23E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.67E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	4.87E-03
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	3.25E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.08E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	5.14E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.00E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.00E+01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	8.21E+04
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.71E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Benzene		41	1.46E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	9.25E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	3.45E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Phenol		214	3.54E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Toluene		293	2.63E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.27E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.25E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	8.85E-06
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	4.42E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Manganese		1160	3.98E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	4.42E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	8.85E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	5.75E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	3.15E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	3.65E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	2.43E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	4.42E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.05E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.85E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.49E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.52E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	6.15E+04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.28E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Benzene		41	1.29E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	8.17E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	3.04E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Phenol		214	3.13E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Toluene		293	2.33E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Ac			

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Emissions		Code	lb/day
						Date	Pollutant		
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	1.13E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Benzene	41	6.67E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	4.22E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Formaldehyde	124	1.57E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Phenol	214	1.62E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Toluene	293	1.20E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Acetaldehyde	335	5.80E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	5.70E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	4.04E-06
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant	1110	2.02E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Manganese	1160	1.82E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	2.02E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	4.04E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.63E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.44E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	1.67E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	1.11E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	2.02E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.39E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.76E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	6.83E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	3.44E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	2.81E+04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	5.86E-01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Benzene	41	1.37E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	8.66E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	3.23E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Phenol	214	3.31E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Toluene	293	2.46E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.19E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	1.17E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	8.29E-06
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant	1110	4.14E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Manganese	1160	3.73E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	4.14E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	8.29E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	5.39E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	2.95E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	3.42E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	2.28E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	4.14E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	2.86E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	3.60E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	1.40E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	7.04E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	5.76E+04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	1.20E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Benzene	41	1.84E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.16E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	4.34E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Phenol	214	4.45E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Toluene	293	3.31E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.60E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	1.57E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	1.11E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant	1110	5.57E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Manganese	1160	5.01E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	5.57E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	1.11E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	7.24E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	3.96E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	4.59E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	3.06E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	5.57E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	3.84E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	4.84E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	1.88E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	9.47E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	7.74E+04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	1.61E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Benzene	41	5.61E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	3.55E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Formaldehyde	124	1.32E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Phenol	214	1.36E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Toluene	293	1.01E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Acetaldehyde	335	4.88E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	4.79E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	3.40E-06
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant	1110	1.70E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Manganese	1160	1.53E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.70E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	3.40E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.21E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.21E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	1.40E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	9.35E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	1.70E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.17E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.48E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	5.74E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	2.89E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	2.36E+04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	4.93E-01
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.90E+05	tons/yr	12/31/2010	Organics (part not spec else	990	6.92E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.90E+05	tons/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.84E+01
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.51E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	7.55E-01
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.51E+03	thou barre/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.19E+01
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.35E+06	tons/yr	12/31/2010	Organics (part not spec else		990	1.35E+00
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.35E+06	tons/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	7.49E+01
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.77E+05	tons/yr	12/31/2010	Organics (part not spec else		990	3.78E-01
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.77E+05	tons/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.10E+01
4345	Misc.PET REF,Refinery Sour Waste Water No 2NH3-H2S	Waste gases	G5037338	-2.40E+02	million cu/yr	12/31/2010	Hydrogen Sulfide (H2S)		5020	0.00E+00
4345	Misc.PET REF,Refinery Sour Waste Water No 2NH3-H2S	Waste gases	G5037338	-2.40E+02	million cu/yr	12/31/2010	Ammonia (NH3) pollutant		6990	0.00E+00
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-5.10E+05	tons/yr	12/31/2010	Organics (part not spec else		990	2.59E+00
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-5.10E+05	tons/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.43E+02
4348	H2 Recovery Plant	Hydrocarbon - mixtures, other/	G5998318	-4.63E+04	tons/yr	12/31/2010	Organics (part not spec else		990	2.35E-01
4348	H2 Recovery Plant	Hydrocarbon - mixtures, other/	G5998318	-4.63E+04	tons/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.30E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Benzene		41	2.02E-03
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.83E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	9.17E-01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.03E-02
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.28E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.58E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.07E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.25E+04
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	8.87E-01
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Benzene		41	3.48E-03
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Formaldehyde		124	1.73E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Organics (part not spec else		989	3.16E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	PAH's (non-speciated)		1840	6.27E-02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Particulates (portion of tot		1990	2.40E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.92E-01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.66E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.19E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.49E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.55E+06
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Methane (CH4)		6970	1.54E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Ammonia (NH3) pollutant		6990	3.46E+02
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2010			0	0.00E+00
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Benzene		41	1.11E-02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.01E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.01E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.73E-02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.70E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.13E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.35E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.67E+05
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.87E+00
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Benzene		41	3.48E-03
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Formaldehyde		124	1.73E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Organics (part not spec else		989	3.16E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	PAH's (non-speciated)		1840	6.27E-02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Particulates (portion of tot		1990	2.40E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.92E-01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.66E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.19E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.49E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.55E+06
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Methane (CH4)		6970	1.54E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Ammonia (NH3) pollutant		6990	3.46E+02
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2010			0	0.00E+00
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Benzene		41	1.11E-02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.01E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.01E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.73E-02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.70E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.67E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.35E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.67E+05
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.87E+00
4354	Butamer Plant	Paraffins - C3+	G5031052	-8.16E+04	thou gallo/yr	12/31/2010	Organics (part not spec else		990	0.00E+00
4355	Deisobutanizer Plant	Paraffins - C3+	G5031052	-2.56E+05	thou gallo/yr	12/31/2010	Organics (part not spec else		990	0.00E+00
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2010			0	0.00E+00
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2010			0	0.00E+00
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T3377210	-5.96E+00	thou gal/yr	12/31/2010	Perchloroethylene		210	0.00E+00
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T4177210	0.00E+00			Perchloroethylene		210	1.61E-03
4361	Perc Surge Control Vessel V-591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4362	Perc Surge Control Vessel V-3591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4363	Perc Storage Tank V-3592	Perchloroethylene	T4277210	-2.54E+01	thou gal/yr	12/31/2010	Perchloroethylene		210	4.05E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4364	Perc Storage Tank V-4091	Perchloroethylene	T42??7210	-3.79E+01	thou gal/yr	12/31/2010	Perchloroethylene		210	2.17E-03
4365	Tri-Act 1825 Chemical Tote	Hydrocarbon - mixtures, other/	T47??318	-5.40E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.43E-02
4366	Tri-Act 1803 & 1825 Chemical Tote - Power Plant	Hydrocarbon - mixtures, other/	T82??318	2.00E+00	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	8.85E-03
4367	Tri-Act 1803 & 1825 Chemical Tote - RLOP	Hydrocarbon - mixtures, other/	T82??318	1.20E+00	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	7.75E-03
4368	Tri-Act 1803 & 1825 Chemical Tote - SRU	Hydrocarbon - mixtures, other/	T82??318	4.00E-01	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	6.64E-03
4369	Tri-Act 1803 & 1825 Chemical Tote - LSFO/D&R	Hydrocarbon - mixtures, other/	T82??318	4.00E-01	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	6.64E-03
4370	Chemical Tote, Custamine CA-066P - FCC	Hydrocarbon - mixtures, other/	T82??318	4.00E-01	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	6.64E-03
4372	NALCO EC9085A Tote	Amine - other/not spec	T42??7021	5.00E+00	thou gal/yr	5/5/2010	Amine - other/not spec		21	1.73E-02
4373	Custamine CA-0660P RO Plant	Water/organics mixture	T42??7502	2.80E+01	thou gal/yr	Unknown	Water/organics mixture		502	3.16E-01
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-4.40E+04	thou barre/yr	12/31/2010	Benzene		41	2.05E+00
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-4.40E+04	thou barre/yr	12/31/2010	Toluene		293	5.55E+00
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-4.40E+04	thou barre/yr	12/31/2010	Xylene		307	1.22E+01
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-4.40E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	7.23E+01
4391	NO. 1 OXIDATION POND	Fresh water	G5033415	0.00E+00	thou gallo/yr	12/31/2010			0	0.00E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.30E+04	thou barre/yr	12/31/2010	Benzene		41	6.07E-01
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.30E+04	thou barre/yr	12/31/2010	Toluene		293	1.64E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.30E+04	thou barre/yr	12/31/2010	Xylene		307	3.61E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.30E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	2.14E+01
4392	Wetland Marsh	Waste water - other/not spec	G5033443	0.00E+00	thou gallo/yr	12/31/2010			0	0.00E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.74E+04	thou barre/yr	12/31/2010	Benzene		41	3.14E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.74E+04	thou barre/yr	12/31/2010	Toluene		293	8.49E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.74E+04	thou barre/yr	12/31/2010	Xylene		307	1.86E+01
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.74E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	1.11E+02
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	-1.41E+05	tons/yr	12/31/2010	Particulates (portion of tot		1990	5.81E-04
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE8?1052	3.47E+03	thou gal/yr	12/31/1996	Paraffins - C3+		52	2.76E+00
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE8?1052	1.33E+04	thou gal/yr	12/31/1996	Paraffins - C3+		52	5.34E+00
4405	Heavy Oil Transloading Operations	Waste oil	TE6?2549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	-4.13E+01	gal/yr	12/31/2010	Glycols		131	6.27E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	-4.13E+01	gal/yr	12/31/2010	Organic liquid - other/not s		201	9.20E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	0.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	0.00E+00	gal/yr	12/31/2010	Stoddard solvent		401	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	0.00E+00	gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	0.00E+00	gal/yr	12/31/2010	Propylene glycol monomethyl		579	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	0.00E+00	gal/yr	12/31/2010	Butyl acetate		48	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	0.00E+00	gal/yr	12/31/2010	2-heptanone		729	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2010	Glycols		131	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2010	Aromatic hydrocarbons - othe		27	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2010	Glycols		131	0.00E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	-9.79E+03	thou barre/yr	12/31/2010	Benzene		41	5.07E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	-9.79E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	2.20E+02
4414	#1a Separator	Waste water - refin, other/not	G5017300	-6.53E+03	thou barre/yr	12/31/2010	Benzene		41	9.83E-01
4414	#1a Separator	Waste water - refin, other/not	G5017300	-6.53E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	4.27E+01
4415	Asphalt Tank Truck Loading Racks	Asphalt	T98?1030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2010	Unknown Pollutant		76	0.00E+00
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E-01	tons/yr	12/31/2000	Particulates (portion of tot		1990	4.75E-03
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Organics (part not spec else		990	0.00E+00
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Particulates (portion of tot		1990	0.00E+00
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	0.00E+00	gal/yr	12/31/2010	Butyl acetate		48	0.00E+00
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	0.00E+00	gal/yr	12/31/2010	Naphtha		188	0.00E+00
4424	Equipment Painting Area	Mineral spirits	SG700184	0.00E+00	gal/yr	12/31/2010	Mineral spirits		184	0.00E+00
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998	Sulfuric Acid mist pollutant		1530	0.00E+00
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-5.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	8.90E-02
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2010	Amide		20	0.00E+00
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-2.50E+01	gal/yr	12/31/2010	Organic liquid - other/not s		201	4.45E-01
4429	#8(NH3-H2S)Plant	Waste gases	G5037338	-2.64E+02	million cu/yr	12/31/2010	Hydrogen Sulfide (H2S)		5020	0.00E+00
4429	#8(NH3-H2S)Plant	Waste gases	G5037338	-2.64E+02	million cu/yr	12/31/2010	Ammonia (NH3) pollutant		6990	0.00E+00
4433	#3H2S Plant	Waste gases	G5998338	-2.59E+02	million cu/yr	12/31/2010	Organics (part not spec else		990	7.10E-02
4434	#4H2S Plant	Waste gases	G5998338	-1.19E+03	million cu/yr	12/31/2010	Organics (part not spec else		990	3.26E-01
4435	#5H2S Plant	Waste gases	G5998338	-1.82E+03	million cu/yr	12/31/2010	Organics (part not spec else		990	4.99E-01
4440	Jet Additive Project Fugitive Sources	Petroleum products - other/not	G9000321	0.00E+00	thou gallo/yr				0	0.00E+00
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T42??7201	3.28E+00	thou gal/yr	12/31/2007	Organic liquid - other/not s		201	1.07E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5101	Tank-Marketing T-101	Lube oil	T44??419	1.85E+04	thou gal/yr	3/31/1997	Lube oil		419	6.22E+01
5103	Tank-Marketing T-103	Lube oil	T44??419	1.28E+04	thou gal/yr	3/31/1997	Lube oil		419	4.88E+01
5105	Tank-Marketing T-105	Lube oil	T44??419	1.12E+04	thou gal/yr	3/31/1997	Lube oil		419	4.50E+01
5107	Tank-Marketing T-107	Lube oil	T44??419	3.26E+02	thou gal/yr	3/31/1997	Lube oil		419	3.99E+00
5108	Tank-Marketing T-108	Lube oil	T44??419	2.51E+02	thou gal/yr	3/31/1997	Lube oil		419	3.81E+00
5109	Tank-Marketing T-109	Lube oil	T44??419	4.98E+02	thou gal/yr	3/31/1997	Lube oil		419	4.39E+00
5110	Tank-Marketing T-110	Lube oil	T44??419	1.33E+03	thou gal/yr	3/31/1997	Lube oil		419	6.34E+00
5112	Tank-Marketing T-112	Lube oil	T43??419	5.80E+01	thou gal/yr	3/31/1997	Lube oil		419	9.01E-01
5113	Tank-Marketing T-113	Lube oil	T43??419	5.00E+00	thou gal/yr	3/31/1997	Lube oil		419	7.77E-01
5115	Tank-Marketing T-115	Lube oil	T43??419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	8.99E-01
5117	Tank-Marketing T-117	Lube oil	T44??419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5118	Tank-Marketing T-118	Lube oil	T44??419	4.60E+01	thou gal/yr	3/31/1997	Lube oil		419	1.51E+00
5119	Tank-Marketing T-119	Lube oil	T44??419	6.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.55E+00
5121	Tank-Marketing T-121	Lube oil	T44??419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	2.03E+00
5122	Tank-Marketing T-122	Lube oil	T44??419	6.70E+01	thou gal/yr	3/31/1997	Lube oil		419	1.73E+00
5123	Tank-Marketing T-123	Lube oil	T44??419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5125	Tank-Marketing T-125	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	8.26E-01
5126	Tank-Marketing T-126	Lube oil	T43??419	1.04E+02	thou gal/yr	3/31/1997	Lube oil		419	1.01E+00
5127	Tank-Marketing T-127	Lube oil	T43??419	1.92E+02	thou gal/yr	3/31/1997	Lube oil		419	1.22E+00
5128	Tank-Marketing T-128	Lube oil	T43??419	6.40E+01	thou gal/yr	3/31/1997	Lube oil		419	9.15E-01
5129	Tank-Marketing T-129	Lube oil	T43??419	3.20E+01	thou gal/yr	3/31/1997	Lube oil		419	4.33E-01
5130	Tank-Marketing T-130	Lube oil	T43??419	8.00E+01	thou gal/yr	3/31/1997	Lube oil		419	5.46E-01
5131	Tank-Marketing T-131	Lube oil	T43??419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5132	Tank-Marketing T-132	Lube oil	T43??419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5133	Tank-Marketing T-133	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5134	Tank-Marketing T-134	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5135	Tank-Marketing T-135	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5136	Tank-Marketing T-136	Lube oil	T43??419	1.36E+02	thou gal/yr	3/31/1997	Lube oil		419	6.77E-01
5137	Tank-Marketing T-137	Lube oil	T43??419	1.20E+02	thou gal/yr	3/31/1997	Lube oil		419	6.40E-01
5138	Tank-Marketing T-138	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5139	Tank-Marketing T-139	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	4.19E-01
5140	Tank-Marketing T-140	Lube oil	T43??419	1.30E+01	thou gal/yr	3/31/1997	Lube oil		419	6.16E-04
5201	Tank-Marketing T-201	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5202	Tank-Marketing T-202	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5203	Tank-Marketing T-203	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5204	Tank-Marketing T-204	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997	Lube oil		419	6.61E+00
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997	Lube oil		419	8.74E+00
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	5.05E+00
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997	Lube oil		419	3.54E+00
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.32E+00
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997	Lube oil		419	2.35E+00
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997	Lube oil		419	4.23E+00
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997	Lube oil		419	1.98E+00
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997	Lube oil		419	1.64E+00
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997	Lube oil		419	2.17E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997	Lube oil		419	2.37E+00
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997	Lube oil		419	4.43E+00
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997	Lube oil		419	1.38E+00
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997	Lube oil		419	1.17E+00
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997	Lube oil		419	1.31E+00
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997	Lube oil		419	9.20E-01
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	3.58E+00
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997	Lube oil		419	8.90E-01
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997	Lube oil		419	1.80E+00
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997	Lube oil		419	5.50E-01
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	3.95E-01
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.94E-01
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	7.66E-01
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997	Lube oil		419	5.69E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Benzene		41	2.48E-04
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Organics (part not spec else		990	3.36E+01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	3.88E-01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	8.96E-03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.64E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.20E-02
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	5.04E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.75E+03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Methane (CH4)		6970	3.36E+01
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Benzene		41	2.32E-04
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Organics (part not spec else		990	3.16E+01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	3.64E-01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	8.42E-03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.48E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.07E-02
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	4.73E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.46E+03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Methane (CH4)		6970	3.16E+01
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Benzene		41	2.08E-04
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Organics (part not spec else		990	2.82E+01
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	3.26E-01
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.52E-03
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.22E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.85E-02
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	4.23E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.99E+03
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Methane (CH4)		6970	2.82E+01
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2010			0	0.00E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Benzene		41	2.10E-04
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Organics (part not spec else		990	2.85E+01
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	3.29E-01
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.59E-03
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.24E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.87E-02
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	4.27E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.03E+03
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Methane (CH4)		6970	2.85E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010				0 0.00E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Benzene		41	1.12E-04
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Organics (part not spec else		990	1.51E+01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Particulates (portion of tot		1990	1.75E-01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.04E-03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.19E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	9.94E-03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.27E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.14E+03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Methane (CH4)		6970	1.51E+01
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05	therms/yr	12/31/2010	Benzene		41	2.61E-04
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05	therms/yr	12/31/2010	Organics (part not spec else		990	3.54E+01
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	4.09E-01
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	9.45E-03
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.78E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.32E-02
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	5.31E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	5.01E+03
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05	therms/yr	12/31/2010	Methane (CH4)		6970	3.54E+01
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-04
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998			0	0.00E+00
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-04
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-04
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2010			0	0.00E+00
6051	Alky Cooling Tower	Fresh water	G5005415	-4.34E+04	thou gallo/yr	12/31/2010	Organics (part not spec else		990	8.33E-02
6051	Alky Cooling Tower	Fresh water	G5005415	-4.34E+04	thou gallo/yr	12/31/2010	Particulates (portion of tot		1990	3.57E-02
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00	thou gal/yr	12/31/2010	Water/organics mixture		502	0.00E+00
6125	Tank 6125	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6200	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6200	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6201	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6201	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6202	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6202	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6203	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6204	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6205	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6206	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6207	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6208	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6209	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6209	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6209	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6209	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6210	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6210	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6210	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6210	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00

Printed: AUG 1 2013

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6212	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6212	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6212	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6212	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6213	Portable Polyethylene Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6213	Portable Polyethylene Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6213	Portable Polyethylene Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6213	Portable Polyethylene Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6214	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6214	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6214	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6214	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6215	Portabel Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6215	Portabel Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6215	Portabel Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6215	Portabel Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6216	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6216	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6216	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6216	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6217	Portable Polyethylene Sotrage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6217	Portable Polyethylene Sotrage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6217	Portable Polyethylene Sotrage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6217	Portable Polyethylene Sotrage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6218	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6218	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6218	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6218	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6219	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6219	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6219	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6219	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6220	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
6220	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6220	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-6.85E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.06E-02
6220	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6220	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6221	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
6221	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6221	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.47E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	8.54E-03
6221	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6221	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6222	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
6222	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6222	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.34E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.01E-02
6222	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6222	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6223	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6223	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-2.06E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	5.35E-03
6223	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6223	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6223	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6224	Portable Steel Storage Container	Paraffins - C3+	T43??052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
6224	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6224	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-3.43E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	2.94E-04
6224	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6224	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6224	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6225	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6225	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-3.52E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	7.87E-02
6225	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6225	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6225	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6226	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6226	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.31E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	5.63E-02
6226	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6226	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6226	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6227	Portable Steel Storage	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6227	Portable Steel Storage	Hydrocarbon - mixtures, other/	T43??318	-1.88E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	7.27E-03
6227	Portable Steel Storage	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6227	Portable Steel Storage	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6227	Portable Steel Storage	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6228	Portable Steel Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??318	-1.45E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	6.67E-03
6228	Portable Steel Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6228	Portable Steel Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6228	Portable Steel Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.72E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	7.05E-03
6229	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6229	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6229	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6230	Portable Steel Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6230	Portable Steel Container	Hydrocarbon - mixtures, other/	T43??7318	-1.45E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	5.77E-02
6230	Portable Steel Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6230	Portable Steel Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6230	Portable Steel Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-2.18E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.15E-03
6231	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6231	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6231	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.26E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.35E-03
6232	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6232	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6232	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6233	Portable Steel Storage Container	Paraffins - C3+	T43??7052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.26E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.35E-03
6233	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6233	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6233	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-3.36E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.73E-03
6234	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6234	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6234	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.76E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.44E-03
6235	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6235	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6235	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.76E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.44E-03
6236	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6236	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6236	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.76E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.44E-03
6237	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6237	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6237	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.76E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	8.55E-04
6238	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6238	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6238	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.76E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	7.51E-03
6239	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6239	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6239	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2010			0	0.00E+00
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997	Ammonia (NH3) pollutant		6990	2.48E-02
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Benzene		41	2.68E-04
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Formaldehyde		124	2.22E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	3.94E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	2.34E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	1.37E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Cadmium		1070	5.84E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.21E-08
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	4.95E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Manganese		1160	7.77E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	9.45E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.65E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	1.34E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	1.23E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.19E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	8.03E-02
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	8.76E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	8.05E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	8.98E+00
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	3.59E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Benzene		41	2.60E-03
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Formaldehyde		124	2.12E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Organics (part not spec else		990	1.50E-01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Arsenic (all)		1030	2.23E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	1.31E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Cadmium		1070	5.58E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.15E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	4.73E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Manganese		1160	7.43E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Nickel pollutant		1180	9.03E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.58E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	6.11E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	1.18E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	6.87E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.05E+00
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	8.37E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.30E+00
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	8.59E+01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Methane (CH4)		6970	3.43E-03
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Benzene		41	4.44E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Formaldehyde		124	3.62E-06
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Organics (part not spec else		990	2.42E-03
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Arsenic (all)		1030	3.81E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	2.24E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Cadmium		1070	9.53E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.97E-09
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	8.09E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Manganese		1160	1.27E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Nickel pollutant		1180	1.54E-06
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	2.70E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	2.20E-03
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	2.01E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.17E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.08E-02
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.43E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	6.71E-03
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.47E+00
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Methane (CH4)		6970	5.87E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Benzene		41	1.85E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Formaldehyde		124	1.51E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Organics (part not spec else		990	1.01E-03
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Arsenic (all)		1030	1.59E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	9.32E-09
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Cadmium		1070	3.97E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	8.22E-10
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	3.37E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Manganese		1160	5.29E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Nickel pollutant		1180	6.43E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.12E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	9.18E-04
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	8.38E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.89E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.28E-02
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.96E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.79E-03
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	6.11E-01
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Methane (CH4)		6970	2.44E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Benzene		41	2.98E-04
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Formaldehyde		124	2.43E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	1.02E-03
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	2.56E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	1.50E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Cadmium		1070	6.40E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.32E-08
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	5.43E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Manganese		1160	8.51E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	1.03E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.81E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	4.01E-03
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	1.35E-06
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.87E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	8.83E-02
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	9.59E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.57E-02
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	9.84E+00
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	3.93E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Benzene		41	1.35E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Formaldehyde		124	1.10E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Organics (part not spec else		990	7.35E-03
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Arsenic (all)		1030	1.16E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	6.80E-08
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Cadmium		1070	2.90E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	6.00E-09
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	2.46E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Manganese		1160	3.86E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Nickel pollutant		1180	4.69E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	8.20E-08
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	6.70E-03
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	6.12E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.57E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	9.38E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	4.35E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.04E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.46E+00
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Methane (CH4)		6970	1.78E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Benzene		41	1.42E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Formaldehyde		124	1.16E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Organics (part not spec else		990	1.85E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Arsenic (all)		1030	3.65E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	2.14E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Cadmium		1070	9.12E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.89E-08
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	7.74E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Manganese		1160	1.21E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Nickel pollutant		1180	1.48E-05
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	2.58E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	3.33E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	1.93E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.48E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	7.56E-01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	9.12E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	6.21E-02
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	9.36E+01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Methane (CH4)		6970	1.87E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Benzene		41	4.86E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Formaldehyde		124	3.97E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Organics (part not spec else		990	6.35E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Arsenic (all)		1030	1.25E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	7.35E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Cadmium		1070	3.13E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	6.48E-08
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	2.66E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Manganese		1160	4.17E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Nickel pollutant		1180	5.07E-05
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	8.86E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	1.14E-02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	6.61E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.57E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.59E+00
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	3.13E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.13E-01
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.21E+02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Methane (CH4)		6970	6.43E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Benzene		41	1.66E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Formaldehyde		124	1.36E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	9.06E-02
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	1.43E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	8.37E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Cadmium		1070	3.57E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	7.39E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	3.03E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Manganese		1160	4.75E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	5.78E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.01E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	8.25E-02
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	7.54E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.39E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.16E+00
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.36E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.51E-01
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	5.49E+01
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	2.20E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Benzene		41	2.37E-04
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Formaldehyde		124	1.93E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	1.29E-02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	2.03E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	1.19E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Cadmium		1070	5.08E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.05E-08
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	4.31E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Manganese		1160	6.77E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	8.23E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.44E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	1.17E-02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	1.07E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	6.26E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.64E-01
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.63E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.58E-02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	7.82E+00
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	3.13E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Benzene		41	1.92E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Formaldehyde		124	1.56E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Organics (part not spec else		990	1.04E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Arsenic (all)		1030	4.94E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	2.90E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Cadmium		1070	1.24E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	2.56E-08
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	1.05E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Manganese		1160	1.64E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Nickel pollutant		1180	2.00E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	3.49E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	2.85E-02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	2.61E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.01E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.66E+00
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.24E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.32E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.27E+02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Emissions		Code	lb/day
						Date	Pollutant		
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Methane (CH4)	6970	2.53E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Benzene	41	2.61E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Formaldehyde	124	2.13E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Organics (part not spec else	990	1.42E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Arsenic (all)	1030	6.72E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Beryllium (all) pollutant	1040	3.94E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Cadmium	1070	1.68E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Chromium (hexavalent)	1095	3.48E-08
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Lead (all) pollutant	1140	1.43E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Manganese	1160	2.24E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Nickel pollutant	1180	2.72E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Mercury (all) pollutant	1190	4.75E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic	1350	3.88E-02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	PAH's (non-speciated)	1840	3.55E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.38E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	3.62E+00
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	1.68E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	3.15E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.73E+02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Methane (CH4)	6970	3.45E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Benzene	41	2.32E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Formaldehyde	124	1.89E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Organics (part not spec else	990	1.26E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Arsenic (all)	1030	5.98E-08
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant	1040	3.51E-08
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Cadmium	1070	1.50E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)	1095	3.09E-09
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Lead (all) pollutant	1140	1.27E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Manganese	1160	1.99E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Nickel pollutant	1180	2.42E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant	1190	4.23E-08
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic	1350	3.46E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	PAH's (non-speciated)	1840	3.16E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.23E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	3.23E-01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	1.50E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	2.81E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.54E+01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Methane (CH4)	6970	3.07E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Benzene	41	1.85E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Formaldehyde	124	1.51E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Organics (part not spec else	990	7.20E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Arsenic (all)	1030	4.78E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Beryllium (all) pollutant	1040	2.80E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Cadmium	1070	1.19E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Chromium (hexavalent)	1095	2.47E-08
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Lead (all) pollutant	1140	1.01E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Manganese	1160	1.59E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Nickel pollutant	1180	1.93E-05
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Mercury (all) pollutant	1190	3.38E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic	1350	1.15E-02
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	PAH's (non-speciated)	1840	2.52E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)	2030	9.80E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.45E+00
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	1.19E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	3.50E-01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.23E+02
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Methane (CH4)	6970	2.45E-03
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2010		0	0.00E+00
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2010		0	0.00E+00
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2010		0	0.00E+00
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Benzene	41	5.40E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Formaldehyde	124	4.41E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Organics (part not spec else	990	6.82E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Arsenic (all)	1030	4.64E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant	1040	2.72E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Cadmium	1070	1.16E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)	1095	2.40E-08
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Lead (all) pollutant	1140	9.84E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Manganese	1160	1.54E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Nickel pollutant	1180	1.88E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant	1190	3.28E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic	1350	3.50E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	PAH's (non-speciated)	1840	2.45E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.43E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.41E-01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	1.74E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.61E-02
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.78E+01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Methane (CH4)	6970	7.14E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Benzene	41	6.36E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Formaldehyde	124	5.19E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Organics (part not spec else	990	8.03E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Arsenic (all)	1030	5.47E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant	1040	3.20E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Cadmium	1070	1.37E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)	1095	2.83E-08
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Lead (all) pollutant	1140	1.16E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Manganese	1160	1.82E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Nickel pollutant	1180	2.21E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant	1190	3.86E-07

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	4.13E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	PAH's (non-specified)		1840	2.88E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.68E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.66E-01
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.05E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.90E-02
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.10E+01
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	8.41E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Benzene		41	5.47E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Formaldehyde		124	4.53E-05
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	7.77E-03
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	4.77E-07
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	2.79E-07
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Cadmium		1070	1.19E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	2.47E-08
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	1.01E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Manganese		1160	1.59E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	1.93E-05
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	3.37E-07
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	4.53E-03
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	PAH's (non-specified)		1840	2.52E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.47E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.59E-01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.79E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.12E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.83E+01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	7.33E-04
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Benzene		41	1.06E-03
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Formaldehyde		124	8.68E-05
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Organics (part not spec else		990	8.82E-03
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Arsenic (all)		1030	2.74E-07
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Beryllium (all) pollutant		1040	1.61E-07
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Cadmium		1070	6.85E-07
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Chromium (hexavalent)		1095	1.42E-08
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Lead (all) pollutant		1140	5.81E-07
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Manganese		1160	9.12E-07
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Nickel pollutant		1180	1.11E-05
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Mercury (all) pollutant		1190	1.94E-07
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Diesel Engine Exhaust Partic		1350	2.99E-03
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	PAH's (non-specified)		1840	1.45E-06
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Nitrous Oxide (N2O)		2030	5.62E-04
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Nitrogen Oxides (part not sp		2990	3.79E-01
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Sulfur Dioxide (SO2)		3990	6.85E-04
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Carbon Monoxide (CO) polluta		4990	1.38E-01
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Carbon Dioxide, non-biogenic		6960	7.03E+01
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Methane (CH4)		6970	1.41E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010	Ethyl alcohol		105	1.66E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010	Methyl ethyl ketone (MEK)		169	3.33E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	5.55E-04
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	-4.00E+00	gal/yr	12/31/2010	Methyl ethyl ketone (MEK)		169	7.35E-02
9047	Tank 6047	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	0.00E+00
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??7090	-5.45E+01	thou gal/yr	12/31/1997	Ketone - other/not spec		90	3.46E-02
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??7419	-3.51E+00	thou gal/yr	12/31/1997	Lube oil		419	5.24E-02
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998	Hydrocarbon - mixtures, othe		318	2.77E-01
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Benzene		41	4.48E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Toluene		293	1.52E-02
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Xylene		307	1.79E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Ethylbenzene		333	1.05E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Gasoline - unleaded		551	1.47E+00
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??7052	-5.23E+05	thou gal/yr	12/31/2010	Paraffins - C3+		52	1.01E+01
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??7158	-1.02E+04	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	1.26E-02
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??7242	-7.30E+04	thou gal/yr	12/31/2010	Bunker C fuel oil		242	6.00E-04
9321	Marine Loading Berth #1	Distillate oil	TB8??7315	-3.64E+04	thou gal/yr	12/31/2010	Distillate oil		315	4.48E-02
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
9321	Marine Loading Berth #1	Crude oil	TB8??7089	-7.73E+04	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??7052	-7.78E+04	thou gal/yr	12/31/2010	Paraffins - C3+		52	1.51E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-8.57E+03	thou gal/yr	12/31/2010	Benzene		41	3.17E-02
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-8.57E+03	thou gal/yr	12/31/2010	Ethylene dichloride		107	5.39E-04
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-8.57E+03	thou gal/yr	12/31/2010	Gasoline - leaded		128	2.94E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-8.57E+03	thou gal/yr	12/31/2010	Toluene		293	1.59E-01
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-8.57E+03	thou gal/yr	12/31/2010	Xylene		307	3.49E-02
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-8.57E+03	thou gal/yr	12/31/2010	Ethylene dibromide		420	2.12E-05
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??7158	-9.54E+04	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	1.18E-01
9322	Marine Loading Berth #2	Methyl alcohol	TB8??7179	0.00E+00	thou gal/yr	12/31/2010	Methyl alcohol		179	0.00E+00
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??7201	-2.54E+03	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	3.96E-02
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??7242	-1.32E+05	thou gal/yr	12/31/2010	Bunker C fuel oil		242	1.09E-03
9322	Marine Loading Berth #2	Toluene	TB8??7293	-4.21E+03	thou gal/yr	12/31/2010	Toluene		293	1.75E-01
9322	Marine Loading Berth #2	Distillate oil	TB8??7315	-1.42E+05	thou gal/yr	12/31/2010	Distillate oil		315	1.75E-01
9322	Marine Loading Berth #2	Lube oil	TB8??7419	-2.01E+05	thou gal/yr	12/31/2010	Lube oil		419	8.14E-02
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.59E+05	thou gal/yr	12/31/2010	Benzene		41	3.58E-01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.59E+05	thou gal/yr	12/31/2010	Toluene		293	1.22E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.59E+05	thou gal/yr	12/31/2010	Xylene		307	1.43E-01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.59E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	8.36E-02
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??7551	-2.59E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	1.18E+02
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??7628	0.00E+00	thou gal/yr	12/31/2010	Methyl tertiary-butyl ether		628	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
9322	Marine Loading Berth #2	Crude oil	TF8??089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??052	-4.74E+04	thou gal/yr	12/31/2010	Paraffins - C3+		52	9.19E-01
9323	Marine Loading Berth #3	Crude oil	TB8??089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-1.54E+04	thou gal/yr	12/31/2010	Benzene		41	5.69E-02
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-1.54E+04	thou gal/yr	12/31/2010	Ethylene dichloride		107	9.67E-04
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-1.54E+04	thou gal/yr	12/31/2010	Gasoline - leaded		128	5.28E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-1.54E+04	thou gal/yr	12/31/2010	Toluene		293	2.84E-01
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-1.54E+04	thou gal/yr	12/31/2010	Xylene		307	6.26E-02
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-1.54E+04	thou gal/yr	12/31/2010	Ethylene dibromide		420	3.81E-05
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB8??158	-8.93E+04	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	1.10E-01
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB8??201	-2.00E+03	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	1.89E+00
9323	Marine Loading Berth #3	Bunker C fuel oil	TB8??242	-8.15E+04	thou gal/yr	12/31/2010	Bunker C fuel oil		242	6.70E-04
9323	Marine Loading Berth #3	Toluene	TB8??293	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
9323	Marine Loading Berth #3	Distillate oil	TB8??315	-1.64E+05	thou gal/yr	12/31/2010	Distillate oil		315	2.02E-01
9323	Marine Loading Berth #3	Lube oil	TB8??419	0.00E+00	thou gal/yr	12/31/2010	Lube oil		419	0.00E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	-5.05E+05	thou gal/yr	12/31/2010	Benzene		41	6.98E-01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	-5.05E+05	thou gal/yr	12/31/2010	Toluene		293	2.37E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	-5.05E+05	thou gal/yr	12/31/2010	Xylene		307	2.79E-01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	-5.05E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	1.63E-01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB8??551	-5.05E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	2.29E+02
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB4??2318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB4??2551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
9324	Marine Loading Berth #4	Bunker C fuel oil	TB8??242	0.00E+00	thou gal/yr	12/31/2010	Bunker C fuel oil		242	0.00E+00
9324	Marine Loading Berth #4	Distillate oil	TB8??315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
9324	Marine Loading Berth #4	Crude oil	TF8??089	-3.42E+06	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
9325	Marine Loading Berth #9	Paraffins - C3+	TB8??052	-1.60E+03	thou gal/yr	12/31/2010	Paraffins - C3+		52	1.55E-02
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB8??128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB8??158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
9325	Marine Loading Berth #9	Bunker C fuel oil	TB8??242	-1.07E+05	thou gal/yr	12/31/2010	Bunker C fuel oil		242	8.83E-04
9325	Marine Loading Berth #9	Toluene	TB8??293	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Distillate oil	TB8??315	-1.27E+03	thou gal/yr	12/31/2010	Distillate oil		315	1.56E-03
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB8??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
9325	Marine Loading Berth #9	Lube oil	TB8??419	0.00E+00	thou gal/yr	12/31/2010	Lube oil		419	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
9325	Marine Loading Berth #9	Crude oil	TF8??089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
9326	Marine Loading Berth #11	Paraffins - C3+	TB8??052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
9326	Marine Loading Berth #11	Bunker C fuel oil	TB8??242	-1.29E+04	thou gal/yr	12/31/2010	Bunker C fuel oil		242	2.11E-03
9326	Marine Loading Berth #11	Distillate oil	TB8??315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00			Organics (part not spec else		990	0.00E+00
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00			Organics (part not spec else		990	7.50E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Benzene		41	1.37E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cyclohexane		91	8.47E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylene dichloride		107	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Hexane		148	1.65E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Isooctane		154	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl alcohol		179	1.30E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Perchloroethylene		210	5.50E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Toluene		293	5.11E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Xylene		307	5.64E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cumene		326	1.09E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylbenzene		333	1.11E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,2,4-trimethylbenzene		385	1.54E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene dibromide		420	3.00E-03
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,3-butadiene		521	1.16E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene		536	3.95E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Propylene		564	2.32E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Organics (part not spec else		990	9.89E+02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ammonia (NH3) pollutant		6990	3.10E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Benzene		41	2.66E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cyclohexane		91	1.52E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Hexane		148	2.36E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Isooctane		154	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl alcohol		179	3.00E-04
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Toluene		293	9.14E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Xylene		307	1.06E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Ethylbenzene		333	2.16E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,2,4-trimethylbenzene		385	3.21E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,3-butadiene		521	3.50E-04
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cresol		525	1.15E-03
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ethylene		536	1.64E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Propylene		564	1.42E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Organics (part not spec else		990	2.88E+01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Carbon Dioxide, non-biogenic		6960	1.45E+03
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ammonia (NH3) pollutant		6990	1.80E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Benzene		41	1.18E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Hexane		148	2.68E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Toluene		293	5.55E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Xylene		307	6.36E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			1,3-butadiene		521	1.63E-06
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Cresol		525	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ethylene		536	1.69E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Propylene		564	2.09E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Organics (part not spec else		990	2.24E-02
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ammonia (NH3) pollutant		6990	1.28E-04
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Benzene		41	7.36E+01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Hexane		148	9.10E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Toluene		293	1.65E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Xylene		307	1.65E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cumene		326	9.10E-02
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Ethylbenzene		333	3.75E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,2,4-trimethylbenzene		385	3.12E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,3-butadiene		521	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cresol		525	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Organics (part not spec else		990	7.36E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Benzene		41	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Formaldehyde		124	7.41E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Phenol		214	4.03E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Acetaldehyde		335	1.21E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			1,3-butadiene		521	2.28E-03
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Organics (part not spec else		990	3.68E-01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Arsenic (all)		1030	1.98E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cadmium		1070	1.09E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Chromium		1090	1.38E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Magnesium pollutant		1150	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Manganese		1160	3.76E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nickel pollutant		1180	2.08E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Mercury (all) pollutant		1190	2.57E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Zinc pollutant		1320	2.86E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			PAH's (non-specified)		1840	6.90E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Particulates (portion of tot		1990	7.51E-02
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nitrogen Oxides (part not sp		2990	6.06E-01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Sulfur Dioxide (SO2)		3990	1.19E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Carbon Monoxide (CO) polluta		4990	3.30E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Unabated Detailed Pollutant Emissions
for Calendar Year 2010***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	3.00E-01	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	3.88E-03
55	Tank 55	Distillate oil	T81??315	0.00E+00	thou gal/yr	12/31/2003	Distillate oil		315	0.00E+00
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Benzene		41	1.94E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Toluene		293	6.58E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Xylene		307	7.75E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Ethylbenzene		333	4.52E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Gasoline - unleaded		551	6.36E-02
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996	Organic liquid - other/not s		201	0.00E+00
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997	Distillate oil		315	0.00E+00
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997	Distillate oil		315	1.39E+01
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997	Distillate oil		315	6.12E+00
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.28E+00
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997	Distillate oil		315	4.12E-01
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	3.65E+04	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	5.54E+01
399	TANK	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
399	TANK	Oil - non-fuel, other/not spec	T5472352	-1.89E+04	thou gal/yr	12/31/2010	Oil - non-fuel, other/not sp		352	1.19E+01
399	TANK	Tetra-Ethyl Lead (TEL)	T5472422	0.00E+00	thou gal/yr	12/31/2010	Tetra-Ethyl Lead (TEL)		422	0.00E+00
401	TANK 401	Refinery feedstock - other/not	T4472239	4.70E+04	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	1.09E+01
634	TANK 634	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
634	TANK 634	Petroleum products - other/not	T5472321	-2.03E+04	thou gal/yr	12/31/2010	Petroleum products - other/n		321	1.57E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	2.12E+04	thou gal/yr	12/31/2007	Hydrocarbon - mixtures, othe		318	1.41E-01
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T427?502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	1.46E-03
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T427?502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Butane	T427?416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T427?419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.33E-03
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
955	TANK 955	Paraffins - C3+	T5412052	-2.07E+04	thou gal/yr	12/31/2010	Paraffins - C3+		52	2.36E+00
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
956	TANK 956	Paraffins - C3+	T5412052	-1.12E+04	thou gal/yr	12/31/2010	Paraffins - C3+		52	2.39E+00
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
957	TANK 957	Diesel fuel	T447?098	-1.47E+04	thou gal/yr	12/31/2010	Diesel oil		98	6.44E+00
957	TANK 957	Fuel - jet 'A'	T447?158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut Units	Emissions		Code	lb/day
					Date	Pollutant		
979 TANK 979		Distillate oil	T44??315	-6.13E+04 thou gal/yr	4/30/1997	Distillate oil	315	7.33E+00
984 TANK 984		Distillate oil	T4417315	-9.67E+03 thou gal/yr	12/31/1997	Distillate oil	315	1.41E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
990 TANK 990		Gasoline - unleaded	T5432551	-9.39E+04 thou gal/yr	12/31/2010	Benzene	41	1.39E-02
990 TANK 990		Gasoline - unleaded	T5432551	-9.39E+04 thou gal/yr	12/31/2010	Toluene	293	4.72E-02
990 TANK 990		Gasoline - unleaded	T5432551	-9.39E+04 thou gal/yr	12/31/2010	Xylene	307	5.55E-03
990 TANK 990		Gasoline - unleaded	T5432551	-9.39E+04 thou gal/yr	12/31/2010	Ethylbenzene	333	3.24E-03
990 TANK 990		Gasoline - unleaded	T5432551	-9.39E+04 thou gal/yr	12/31/2010	Gasoline - unleaded	551	4.56E+00
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Benzene	41	1.40E-02
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Toluene	293	4.75E-02
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Xylene	307	5.58E-03
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Ethylbenzene	333	3.26E-03
991 TANK 991		Gasoline - unleaded	T5432551	1.27E+05 thou gal/yr	12/31/2007	Gasoline - unleaded	551	4.58E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.06E+05 thou gal/yr	12/31/2010	Benzene	41	1.36E-02
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.06E+05 thou gal/yr	12/31/2010	Toluene	293	4.63E-02
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.06E+05 thou gal/yr	12/31/2010	Xylene	307	5.45E-03
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.06E+05 thou gal/yr	12/31/2010	Ethylbenzene	333	3.18E-03
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-1.06E+05 thou gal/yr	12/31/2010	Gasoline - unleaded	551	4.47E+00
1020 Tank 1020: Inorganic Chemical Storage Tank		Diethanolamine	T44??485	4.20E+02 thou gal/yr	3/10/1995	Diethanolamine	485	1.05E-01
1052 Tank 1052: Organic Liquid Storage Tank		Kerosene	T43??159	0.00E+00 thou gal/yr	12/31/2006	Kerosene	159	0.00E+00
1052 Tank 1052: Organic Liquid Storage Tank		Hydrocarbon - mixtures, other/	T43??318	0.00E+00 thou gal/yr	12/31/2006	Hydrocarbon - mixtures, othe	318	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
1287 TANK 1287		Toluene	T5432293	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1287 TANK 1287		Petroleum products - other/not	T5432321	-2.65E+04 thou gal/yr	12/31/2010	Petroleum products - other/n	321	2.17E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Ethylbenzene	333	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Gasoline - unleaded	551	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
1289 TANK 1289		Toluene	T64?2293	-7.11E+02 thou gal/yr	12/31/2010	Toluene	293	9.92E-01
1289 TANK 1289		Hydrocarbon - mixtures, other/	T64?2318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe	318	0.00E+00
1292 TANK 1292		Diesel fuel	T5412098	-5.02E+04 thou gal/yr	12/31/2010	Diesel oil	98	4.07E-01
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00 thou gal/yr	12/31/2010	Fuel - jet 'A'	158	0.00E+00
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00 thou gal/yr	12/31/2010	Jet fuel JP8	684	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
1296 TANK 1296		Gasoline - unleaded	T5412551	-8.00E+04 thou gal/yr	12/31/2010	Benzene	41	1.75E-02
1296 TANK 1296		Gasoline - unleaded	T5412551	-8.00E+04 thou gal/yr	12/31/2010	Toluene	293	5.94E-02
1296 TANK 1296		Gasoline - unleaded	T5412551	-8.00E+04 thou gal/yr	12/31/2010	Xylene	307	6.99E-03
1296 TANK 1296		Gasoline - unleaded	T5412551	-8.00E+04 thou gal/yr	12/31/2010	Ethylbenzene	333	4.08E-03
1296 TANK 1296		Gasoline - unleaded	T5412551	-8.00E+04 thou gal/yr	12/31/2010	Gasoline - unleaded	551	5.74E+00
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T63?2502	5.90E+00 thou gal/yr	12/31/2003	Water/organics mixture	502	8.65E-04
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04 thou gal/yr	4/30/1997	Refinery feedstock - other/n	239	7.11E+00
1431 Asphalt Tank(T-907)		Asphalt	T44??030	0.00E+00 thou gal/yr	12/31/2010	Asphalt	30	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Benzene	41	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Toluene	293	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Xylene	307	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Ethylbenzene	333	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2010	Gasoline - unleaded	551	0.00E+00
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03 thou gal/yr	4/30/1997	Refinery feedstock - other/n	239	5.30E-02
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03 thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe	318	5.97E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe		318	5.90E-01
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.38E+04	thou gal/yr	12/31/2010	Benzene		41	1.16E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.38E+04	thou gal/yr	12/31/2010	Toluene		293	3.95E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.38E+04	thou gal/yr	12/31/2010	Xylene		307	4.64E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.38E+04	thou gal/yr	12/31/2010	Ethylbenzene		333	2.71E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.38E+04	thou gal/yr	12/31/2010	Gasoline - unleaded		551	3.81E+00
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
1488 TANK 1488		Oil/water mixture	T5472503	-3.08E+03	thou gal/yr	12/31/2010	Oil/water mixture		503	3.13E+01
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1489 TANK 1489		Alkylate	T5432389	-3.88E+04	thou gal/yr	12/31/2010	Alkylate		389	4.90E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2010	Methyl alcohol		179	0.00E+00
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1491 TANK 1491		Gasoline - unleaded	T5432551	-6.05E+04	thou gal/yr	12/31/2010	Benzene		41	1.20E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	-6.05E+04	thou gal/yr	12/31/2010	Toluene		293	4.08E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	-6.05E+04	thou gal/yr	12/31/2010	Xylene		307	4.80E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	-6.05E+04	thou gal/yr	12/31/2010	Ethylbenzene		333	2.80E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	-6.05E+04	thou gal/yr	12/31/2010	Gasoline - unleaded		551	3.94E+00
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997	Distillate oil		315	3.52E+00
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.30E+00
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997	Distillate oil		315	8.02E-01
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997	Fuel oil #2		392	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1514 TANK 1514		Gasoline - unleaded	T5432551	-9.19E+04	thou gal/yr	12/31/2010	Benzene		41	1.52E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	-9.19E+04	thou gal/yr	12/31/2010	Toluene		293	5.18E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	-9.19E+04	thou gal/yr	12/31/2010	Xylene		307	6.09E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	-9.19E+04	thou gal/yr	12/31/2010	Ethylbenzene		333	3.55E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	-9.19E+04	thou gal/yr	12/31/2010	Gasoline - unleaded		551	5.00E+00
1518 TANK 1518		Fuel - jet 'A'	T5432158	1.30E+04	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	1.22E-01
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997	Paraffins - C3+		52	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	1.79E+03	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	5.44E-02
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Benzene		41	2.36E-06
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Ethylene dichloride		107	4.01E-08
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Gasoline - leaded		128	2.19E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Toluene		293	1.18E-05
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Xylene		307	2.59E-06
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	9.00E+00	thou gal/yr	12/31/2007	Ethylene dibromide		420	1.58E-09
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Benzene		41	2.04E-03
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Toluene		293	6.94E-03
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Xylene		307	8.17E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Ethylbenzene		333	4.77E-04
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	1.57E+02	thou gal/yr	12/31/2007	Gasoline - unleaded		551	6.71E-01
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997	Distillate oil		315	1.27E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1637 TANK 1637		Gasoline - unleaded	T6H32551	-6.14E+03	thou gal/yr	12/31/2010	Benzene		41	3.28E-03
1637 TANK 1637		Gasoline - unleaded	T6H32551	-6.14E+03	thou gal/yr	12/31/2010	Toluene		293	1.11E-02
1637 TANK 1637		Gasoline - unleaded	T6H32551	-6.14E+03	thou gal/yr	12/31/2010	Xylene		307	1.31E-03
1637 TANK 1637		Gasoline - unleaded	T6H32551	-6.14E+03	thou gal/yr	12/31/2010	Ethylbenzene		333	7.64E-04
1637 TANK 1637		Gasoline - unleaded	T6H32551	-6.14E+03	thou gal/yr	12/31/2010	Gasoline - unleaded		551	1.08E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
1653 TANK 1653		Fuel - jet 'A'	T4417158	-6.97E+03	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	2.48E+00
1653 TANK 1653		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
1653 TANK 1653		Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2010	Jet fuel JP5		492	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.33E+05	thou gal/yr	12/31/2010	Benzene		41	1.63E-02
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.33E+05	thou gal/yr	12/31/2010	Toluene		293	5.53E-02
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.33E+05	thou gal/yr	12/31/2010	Xylene		307	6.50E-03
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.33E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	3.79E-03
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.33E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	5.34E+00
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Benzene		41	1.64E-02
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Toluene		293	5.59E-02
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Xylene		307	6.57E-03
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Ethylbenzene		333	3.84E-03
1688 TANK 1688		Gasoline - unleaded	T5432551	1.46E+05	thou gal/yr	12/31/2007	Gasoline - unleaded		551	5.40E+00
1798 Tank 1798		Fuel - jet 'A'	T5422158	-1.78E+05	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	7.32E+00
1798 Tank 1798		Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
1799 TANK 1799		Crude oil	T5422089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
1799 TANK 1799		Fuel - jet 'A'	T5422158	-2.32E+05	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	1.69E+00
1821 Tank 1821 Fresh Sulfuric Acid Tank		H2SO4 - other/not spec	G5999146	-1.02E+05	tons/yr	12/31/2010	Particulates (portion of tot		1990	5.60E-03
1825 Tank 1825		Organic liquid - other/not spe	T4227201	-2.77E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	1.19E-02
1828 TANK 1828		Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006	Paraffins - C3+		52	0.00E+00
1828 TANK 1828		Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006	Pentane		209	0.00E+00
1828 TANK 1828		Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006	Butane		416	0.00E+00
1843 TANK 1843		Paraffins - C3+	T5412052	2.95E+02	thou gal/yr	12/31/2007	Paraffins - C3+		52	1.09E-02
1894 Tank 1894: Phosphoric Acid Storage Tank		Phosphoric acid	G5999217	-1.07E+02	tons/yr	12/31/2010	Particulates (portion of tot		1990	5.86E-06
1899 TANK 1899		Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997	Distillate oil		315	3.92E-01
1908 Asphalt Tank (T-908)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
1909 Tank 1909		Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
1910 Tank 1910		Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994	Organic liquid - other/not s		201	3.55E-02
1911 Tank 1911		Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
1911 Tank 1911		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
1966 TANK 1966		Fuel - jet 'A'	T5432158	2.02E+04	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	2.25E-01
2520 Wastewater/MEA Storage Tank		Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005	Ethyl amine		106	0.00E+00
2520 Wastewater/MEA Storage Tank		Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005	Waste water - refin, other/n		300	6.26E+00
2540 Tank 2540: Organic Liquid Storage Tank		Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997	Ethanolamine		664	1.12E-01
2903 Tank 903: Organic Liquid Storage Tank		Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
2903 Tank 903: Organic Liquid Storage Tank		Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.17E-04
2917 Asphalt Tank (T-917)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
2918 Asphalt Tank (T-918)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
2921 Asphalt Tank (T-921)		Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
3038 TANK 3038 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
3038 TANK 3038 (Spherical Pressure Tank)		Pentane	T3477209	-2.93E+04	thou gal/yr	12/31/2010	Pentane		209	0.00E+00
3050 TANK 3050 SPHERE		Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3066 TANK 3066		Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5427128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5427128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	<----- Emissions ----->		Code	lb/day
						Date	Pollutant		
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Toluene	293	0.00E+00
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Xylene	307	0.00E+00
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.53E+05	thou gal/yr	12/31/2010	Benzene	41	3.66E-01
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.53E+05	thou gal/yr	12/31/2010	Toluene	293	1.24E+00
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.53E+05	thou gal/yr	12/31/2010	Xylene	307	1.46E-01
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.53E+05	thou gal/yr	12/31/2010	Ethylbenzene	333	8.53E-02
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.53E+05	thou gal/yr	12/31/2010	Gasoline - unleaded	551	1.20E+02
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Benzene	41	1.55E-02
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Toluene	293	5.27E-02
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Xylene	307	6.20E-03
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Ethylbenzene	333	3.62E-03
3072 TANK 3072		Gasoline - unleaded	T54?2551	1.05E+05	thou gal/yr	12/31/2007	Gasoline - unleaded	551	5.09E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Paraffins - C3+	T54?2052	-1.26E+05	thou gal/yr	12/31/2010	Paraffins - C3+	52	6.81E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Benzene	41	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride	107	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded	128	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Toluene	293	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Xylene	307	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide	420	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Benzene	41	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Toluene	293	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Xylene	307	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene	333	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded	551	0.00E+00
3074 TANK 3074		Distillate oil	T54?2315	1.14E+05	thou gal/yr	12/31/2007	Distillate oil	315	6.71E-01
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-6.87E+02	thou gal/yr	12/31/2010	Benzene	41	2.93E-02
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-6.87E+02	thou gal/yr	12/31/2010	Ethylene dichloride	107	4.98E-04
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-6.87E+02	thou gal/yr	12/31/2010	Gasoline - leaded	128	2.72E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-6.87E+02	thou gal/yr	12/31/2010	Toluene	293	1.47E-01
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-6.87E+02	thou gal/yr	12/31/2010	Xylene	307	3.23E-02
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-6.87E+02	thou gal/yr	12/31/2010	Ethylene dibromide	420	1.96E-05
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2010	Benzene	41	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2010	Toluene	293	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2010	Xylene	307	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene	333	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded	551	0.00E+00
3076 TANK T3076		Crude oil	T54?2089	0.00E+00	thou gal/yr	12/31/2010	Crude oil	89	0.00E+00
3076 TANK T3076		Hydrocarbon - mixtures, other/	T54?2318	-1.46E+04	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe	318	3.34E+00
3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar		Crude oil	T54?2089	-4.51E+05	thou gal/yr	12/31/2010	Crude oil	89	2.17E+01
3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar		Bunker C fuel oil	T54?2242	0.00E+00	thou gal/yr	12/31/2010	Bunker C fuel oil	242	0.00E+00
3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil	315	0.00E+00
3101 TANK 3101		Crude oil	T5432089	-4.62E+05	thou gal/yr	12/31/2010	Crude oil	89	3.06E+01
3101 TANK 3101		Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2010	Fuel oil #2	392	0.00E+00
3101 TANK 3101		Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2010	Gas oil	394	0.00E+00
3102 TANK 3102		Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2010	Crude oil	89	0.00E+00
3102 TANK 3102		Hydrocarbon - mixtures, other/	T5432318	-3.17E+05	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe	318	1.11E+01
3103 TANK 3103		Crude oil	T5432089	3.43E+05	thou gal/yr	12/31/2007	Crude oil	89	3.55E+01
3104 TANK 3104		Crude oil	T5432089	7.74E+05	thou gal/yr	12/31/2007	Crude oil	89	5.90E+00
3105 TANK 3105		Crude oil	T5432089	7.36E+05	thou gal/yr	12/31/2007	Crude oil	89	6.53E+01
3106 TANK 3106		Crude oil	T5432089	3.21E+05	thou gal/yr	12/31/2007	Crude oil	89	3.46E+01
3107 TANK 3107		Crude oil	T54?2089	3.40E+05	thou gal/yr	12/31/2008	Crude oil	89	3.49E+00
3110 Desalter Effluent Surge Tank A		Crude oil	T43?7089	8.08E+02	thou gal/yr	12/31/2007	Crude oil	89	7.11E+00
3111 Desalter Effluent Surge Tank B		Crude oil	T43?7089	8.08E+02	thou gal/yr	12/31/2007	Crude oil	89	6.42E+00
3126 TANK 3126		Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2010	Naphtha	188	0.00E+00
3126 TANK 3126		Oil/water mixture	T5432503	-9.59E+04	thou gal/yr	12/31/2010	Oil/water mixture	503	1.23E+00
3127 TANK 3127		Oil/water mixture	T5412503	2.38E+03	thou gal/yr	12/31/2007	Oil/water mixture	503	1.70E+00
3128 TANK 3128		Aromatic hydrocarbons - other/	T54?2027	0.00E+00	thou gal/yr	12/31/2010	Aromatic hydrocarbons - othe	27	0.00E+00
3128 TANK 3128		Water/organics mixture	T54?2502	-3.30E+03	thou gal/yr	12/31/2010	Water/organics mixture	502	1.22E+00
3129 TANK 3129		Fuel - jet 'A'	T5412158	1.16E+05	thou gal/yr	12/31/2007	Fuel - jet 'A'	158	1.07E+00
3132 Tank 3132		Distillate oil	T54?2315	8.12E+04	thou gal/yr	4/30/1997	Distillate oil	315	5.89E-01
3133 TANK 3133		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'	158	0.00E+00
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.00E+05	thou gal/yr	12/31/2010	Benzene	41	3.11E-01
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.00E+05	thou gal/yr	12/31/2010	Toluene	293	1.06E+00
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.00E+05	thou gal/yr	12/31/2010	Xylene	307	1.24E-01
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.00E+05	thou gal/yr	12/31/2010	Ethylbenzene	333	7.25E-02
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.00E+05	thou gal/yr	12/31/2010	Gasoline - unleaded	551	1.02E+02
3133 TANK 3133		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2010	Gasoline - oxygenated, MTBE	680	0.00E+00
3134 TANK 3134		Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil	315	0.00E+00
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.78E+05	thou gal/yr	12/31/2010	Benzene	41	2.50E-01
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.78E+05	thou gal/yr	12/31/2010	Toluene	293	8.49E-01
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.78E+05	thou gal/yr	12/31/2010	Xylene	307	9.98E-02
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.78E+05	thou gal/yr	12/31/2010	Ethylbenzene	333	5.82E-02
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.78E+05	thou gal/yr	12/31/2010	Gasoline - unleaded	551	8.19E+01
3134 TANK 3134		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2010	Gasoline - oxygenated, MTBE	680	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3138	TANK 3138	Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997	Gas oil		394	5.55E-01
3139	TANK 3139	Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997	Gas oil		394	8.14E+00
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	0.00E+00	tons/yr	12/31/2010			0	0.00E+00
3142	TANK 3142	Refinery feedstock - other/not	T4417239	4.42E+02	thou gal/yr	12/31/2008	Refinery feedstock - other/n		239	0.00E+00
3144	TANK 3144	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
3145	TANK 3145, Sphere	Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3146	Tank 3146: 20% Aqueous Ammonia	Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994	Organic liquid - other/not s		201	1.46E+01
3147	Tank 3147: Organic Liquid Storage Tank	Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3148	Tank 3148: Organic Liquid Storage Tank	Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3157	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.24E+01
3158	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3159	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3160	Tank 3160: Organic Liquid Storage Tank	Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994	Lube oil		419	1.34E+01
3161	Tank Lube Oil	Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997	Lube oil		419	1.19E-01
3162	Tank Lube Oil	Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997	Lube oil		419	1.22E-01
3163	Tank Lube Oil	Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997	Lube oil		419	7.74E-02
3164	Tank Lube Oil	Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997	Lube oil		419	7.23E-02
3165	Tank Lube Oil	Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997	Lube oil		419	1.41E-01
3166	Tank Lube Oil	Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997	Lube oil		419	1.40E-01
3167	Tank Lube Oil	Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997	Lube oil		419	5.27E-02
3168	Tank Lube Oil	Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997	Lube oil		419	5.36E-02
3169	organic liquid storage tank, lube oil products	Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995	Lube oil		419	1.78E-01
3170	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3171	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3172	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	9.57E+00
3179	Tank 3179: Organic Liquid Storage Tank	Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997	Distillate oil		315	1.59E-01
3180	Tank	Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
3180	Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
3180	Tank	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
3180	Tank	Alkylate	T5472389	-3.82E+04	thou gal/yr	12/31/2010	Alkylate		389	1.14E+02
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
3180	Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
3182	Tank 3182: Organic Liquid Storage Tank	Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997	Lube oil		419	2.61E-01
3185	Tank 3185 (previously T-982)	Fuel - jet 'A'	T5472158	2.10E+05	thou gal/yr	12/31/2007	Fuel - jet 'A'		158	6.40E+00
3186	Gas Oil Tank	Organic liquid - other/not spe	T4477201	0.00E+00		4/21/1997	Organic liquid - other/not s		201	8.69E+00
3189	Gasoline component and Diesel Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3189	Gasoline component and Diesel Tank	Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
3189	Gasoline component and Diesel Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3189	Gasoline component and Diesel Tank	Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
3189	Gasoline component and Diesel Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2010	Gas oil		394	0.00E+00
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	-2.97E+05	thou gal/yr	12/31/2010	Benzene		41	1.92E-02
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	-2.97E+05	thou gal/yr	12/31/2010	Toluene		293	6.54E-02
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	-2.97E+05	thou gal/yr	12/31/2010	Xylene		307	7.69E-03
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	-2.97E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	4.49E-03
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	-2.97E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	6.31E+00
3189	Gasoline component and Diesel Tank	Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2010	Gasoline - oxygenated, MTBE		680	0.00E+00
3190	Storage Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3190	Storage Tank	Fuel - jet 'A'	T5472158	-2.26E+05	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	1.83E+00
3191	Storage Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
3191	Storage Tank	Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2010	Naphtha		188	0.00E+00
3191	Storage Tank	Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2010	Jet fuel JP4		395	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3191 Storage Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
3191 Storage Tank		Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2010	Methyl tertiary-butyl ether		628	0.00E+00
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Benzene		41	1.22E-01
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Cyclohexane		91	5.99E-02
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Hexane		148	1.25E-01
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Toluene		293	3.49E-01
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Xylene		307	4.34E-01
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Ethylbenzene		333	9.98E-02
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Tetra-Ethyl Lead (TEL)		422	4.99E-02
3191 Storage Tank		Avgas	T54?2662	-1.52E+04	thou gal/yr	5/16/2011	Avgas		662	1.26E+00
3192 Desalter Effluent Skim Tank		Crude oil	T3H?7089	-1.56E+04	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
3193 Gasoline component Tank		Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3193 Gasoline component Tank		Isocane	T54?2154	-1.77E+04	thou gal/yr	12/31/2010	Isocane		154	2.29E+00
3193 Gasoline component Tank		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3193 Gasoline component Tank		Alkylate	T54?2389	0.00E+00	thou gal/yr	12/31/2010	Alkylate		389	0.00E+00
3193 Gasoline component Tank		Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2010	Gas oil		394	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
3194 Storage Tank T-3194		Hydrocarbon - mixtures, other/	T54?2318	0.00E+00	thou gal/yr	12/31/2003	Hydrocarbon - mixtures, othe		318	0.00E+00
3194 Storage Tank T-3194		Gas oil	T54?2394	1.44E+05	thou gal/yr	12/31/2003	Gas oil		394	9.85E-01
3195 T-3195 Waxy Heavy Neutral Storage Tank		Diesel fuel	T54?7098	1.29E+05	thou gal/yr	12/31/2006	Diesel oil		98	2.35E+00
3195 T-3195 Waxy Heavy Neutral Storage Tank		Distillate oil	T54?7315	0.00E+00	thou gal/yr	12/31/2006	Distillate oil		315	0.00E+00
3195 T-3195 Waxy Heavy Neutral Storage Tank		Lube oil	T54?7419	0.00E+00	thou gal/yr	12/31/2006	Lube oil		419	0.00E+00
3196 Gasoline Components Tank		Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3196 Gasoline Components Tank		Organic liquid - other/not spe	T54?2201	-1.03E+05	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	1.24E+00
3196 Gasoline Components Tank		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3196 Gasoline Components Tank		Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2010	Gas oil		394	0.00E+00
3196 Gasoline Components Tank		Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
3196 Gasoline Components Tank		Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2010	Methyl tertiary-butyl ether		628	0.00E+00
3197 Gasoline component Tank		Ethers	T55?2103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3197 Gasoline component Tank		Naphtha	T55?2188	-2.97E+04	thou gal/yr	12/31/2010	Naphtha		188	6.21E+00
3197 Gasoline component Tank		Distillate oil	T55?2315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3197 Gasoline component Tank		Gas oil	T55?2394	0.00E+00	thou gal/yr	12/31/2010	Gas oil		394	0.00E+00
3198 3198 tank; organic liquid storage tank		Fuel - jet 'A'	T543?158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
3198 3198 tank; organic liquid storage tank		Toluene	T543?293	-2.53E+03	thou gal/yr	12/31/2010	Toluene		293	1.84E+01
3198 3198 tank; organic liquid storage tank		Distillate oil	T543?315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3200 4 Crude Unit Desalter Water Treatment Unit		Waste water - refin, other/not	G5012300	-2.28E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	5.00E+01
3201 Tank 3201: Whole Alkylate		Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2010	Ethers		103	0.00E+00
3201 Tank 3201: Whole Alkylate		Alkylate	T54?2389	-1.30E+05	thou gal/yr	12/31/2010	Alkylate		389	1.12E+02
3202 Tank 3202: Methanol		Methyl alcohol	T54?2179	0.00E+00	thou gal/yr	12/31/2010	Methyl alcohol		179	0.00E+00
3202 Tank 3202: Methanol		Naphtha	T54?2188	-4.20E+03	thou gal/yr	12/31/2010	Naphtha		188	7.30E+01
3202 Tank 3202: Methanol		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
3202 Tank 3202: Methanol		Petroleum products - other/not	T54?2321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
3204 Tank 3204: Organic Liquid Storage Tank		Lube oil	T42?7419	2.54E+00	thou gal/yr	12/31/1997	Lube oil		419	4.07E-04
3207 Butane Sphere: Organic Liquid Storage Tank		Butane	T34?7416	-9.20E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3208 Propane Sphere: Organic Liquid Storage Tank		Propane	T34?7417	-7.67E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3211 Sphere		Butane	T34?7416	-3.83E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3212 Sphere		Propane	T34?7417	-2.76E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3213 Tank 3213: Organic Liquid Storage Tank		Diesel fuel	T54?2098	0.00E+00	thou gal/yr	12/31/2010	Diesel oil		98	0.00E+00
3213 Tank 3213: Organic Liquid Storage Tank		Fuel - jet 'A'	T54?2158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
3213 Tank 3213: Organic Liquid Storage Tank		Lube oil	T54?2419	0.00E+00	thou gal/yr	12/31/2010	Lube oil		419	0.00E+00
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.85E+05	thou gal/yr	12/31/2010	Benzene		41	8.03E-01
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.85E+05	thou gal/yr	12/31/2010	Toluene		293	2.73E+00
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.85E+05	thou gal/yr	12/31/2010	Xylene		307	3.21E-01
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.85E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	1.87E-01
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.85E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	2.64E+02
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	Benzene		41	6.64E-01
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	Ethylene dichloride		107	1.13E-02
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	Gasoline - leaded		128	6.17E+01
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	Toluene		293	3.32E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	Xylene		307	7.31E-01
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.48E+04	thou gal/yr	12/31/2010	Ethylene dibromide		420	4.45E-04
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
3215 Tank 3215: Organic Liquid Storage Tank		Distillate oil	T54?2315	-1.29E+05	thou gal/yr	12/31/1997	Distillate oil		315	1.15E+00
3216 Tank 3216: Organic Liquid Storage Tank		Distillate oil	T44?7315	8.40E+04	thou gal/yr	7/9/1997	Distillate oil		315	2.27E+01
3220 400 Tank Organic Liquid Storage Tank		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3220 400 Tank Organic Liquid Storage Tank		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
3220 400 Tank Organic Liquid Storage Tank		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
3220 400 Tank Organic Liquid Storage Tank		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3220	400 Tank	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	12/31/2010	Xylene		307	0.00E+00
3220	400 Tank	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	12/31/2010	Ethylene dibromide		420	0.00E+00
3220	400 Tank	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-1.73E+04	12/31/2010	Hydrocarbon - mixtures, othe		318	1.42E+02
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-1.60E+04	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.82E+02
3225	Organic Liquid Storage Tank	Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.41E+05	tons/yr	12/31/2010	Particulates (portion of tot		1990	5.54E+00
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.41E+05	tons/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.55E+02
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.41E+05	tons/yr	12/31/2010	Hydrogen Sulfide (H2S)		5020	9.69E+01
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T43?7419	-3.37E+02	thou gal/yr	12/31/1997	Lube oil		419	3.31E-03
3910	LPG Tank; # 3910	LPG	T34???160	-3.97E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
3911	LPG Tank, # 3911	LPG	T34???160	-2.30E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Benzene		41	7.27E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	4.61E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.94E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Phenol		214	4.16E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	4.74E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	6.59E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.54E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	4.41E-05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	8.81E-05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Manganese		1160	3.00E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	3.53E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	2.20E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	6.88E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	4.24E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.82E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.21E-01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.20E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.07E-01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	9.03E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.44E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.75E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.06E+05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	6.39E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Benzene		41	2.88E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.83E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	7.69E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.65E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.88E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.61E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	6.12E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	1.75E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	3.50E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Manganese		1160	1.19E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.40E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	8.74E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.73E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.68E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	7.21E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	4.81E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	8.74E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.01E-01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.58E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.95E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.49E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.22E+05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-3.19E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.54E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Benzene		41	3.19E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	2.02E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	8.52E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.83E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	2.08E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.89E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	6.77E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	1.94E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	3.87E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Manganese		1160	1.32E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.55E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	9.68E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	3.02E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.86E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	7.98E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	5.32E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	9.68E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.23E-01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.97E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	3.27E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.64E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.35E+05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-3.53E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.81E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Benzene		41	2.57E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.63E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	6.85E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.47E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.67E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.33E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	5.45E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	1.56E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	3.12E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Manganese		1160	1.06E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.25E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	7.79E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.43E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.50E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	6.42E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	4.28E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	7.79E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.79E-01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.19E+01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.63E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.32E+01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.08E+05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.84E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.26E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Benzene		41	5.08E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.21E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.35E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Phenol		214	2.91E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.31E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.60E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.08E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	3.08E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	6.15E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Manganese		1160	2.09E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.46E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.54E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	4.80E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	2.96E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.27E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	8.46E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.54E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.54E-01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	6.31E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.19E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.61E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.14E+05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.61E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.46E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Benzene		41	2.39E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.51E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	6.38E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.37E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.56E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.17E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	5.07E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	1.45E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	2.90E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Manganese		1160	9.86E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.16E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	7.25E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.26E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.40E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	5.98E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	3.99E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	7.25E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.67E-01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.97E+01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.45E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.23E+01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.01E+05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.65E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.10E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Benzene		41	3.12E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.98E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	8.32E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.79E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	2.03E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.83E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	6.62E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	1.89E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	3.78E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.45						

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	3.95E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Phenol		214	8.48E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	9.64E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.34E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	3.14E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	8.97E-06
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	1.79E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Manganese		1160	6.10E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	7.18E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	4.48E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.40E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	8.63E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	3.70E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	2.47E-02
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	4.48E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.03E-01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.84E+01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.51E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.62E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	6.23E+04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.30E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Benzene		41	3.05E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.93E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	8.14E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.75E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.99E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.76E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	6.47E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	1.85E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	3.70E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Manganese		1160	1.26E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.48E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	9.25E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.88E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	1.78E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	7.63E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	5.08E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	9.25E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.13E-01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.24E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	3.12E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.57E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.29E+05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.37E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.68E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Benzene		41	3.51E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	2.23E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	9.37E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Phenol		214	2.01E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	2.29E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	3.18E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	7.46E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	2.13E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	4.26E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Manganese		1160	1.45E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.70E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.07E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	3.32E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	2.05E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	8.79E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	5.86E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.07E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.45E-01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.73E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	3.60E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.81E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.48E+05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.89E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	3.09E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Benzene		41	4.94E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.13E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.32E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Phenol		214	2.83E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.22E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.48E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.05E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	3.00E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	5.99E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Manganese		1160	2.04E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.40E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.50E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.47E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.96E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.16E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	3.31E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	6.63E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Manganese		1160	2.25E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.65E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.66E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	5.17E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	3.19E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.37E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	9.12E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.66E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.81E-01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	8.45E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.60E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.82E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.30E+05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-6.05E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.81E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Benzene		41	2.74E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.74E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	7.32E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.57E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.79E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.49E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	5.82E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	1.66E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	3.33E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Manganese		1160	1.13E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.33E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	8.32E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.60E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.60E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	6.86E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	4.57E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	8.32E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.91E-01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.35E+02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.81E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.41E+01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.16E+05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.04E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.41E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Benzene		41	8.34E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	5.28E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	2.22E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Phenol		214	4.78E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	5.43E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	7.56E-01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.77E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Cadmium		1070	5.06E-06
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	1.01E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Manganese		1160	3.44E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	4.04E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	2.53E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	7.89E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	4.87E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	2.09E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.39E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.53E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.81E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.98E+01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	8.54E-01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	4.30E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.51E+04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-9.23E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	7.33E-01
4070	#4 CRUDE UNIT F 1100A	Napththa	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Benzene		41	2.17E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.37E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Formaldehyde		124	5.78E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Phenol		214	1.24E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.41E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.96E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	4.60E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Cadmium		1070	1.31E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	2.63E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Manganese		1160	8.93E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.05E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	6.57E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.05E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.26E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	5.42E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	3.61E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	6.57E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.51E+00
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.84E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.77E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.12E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	9.13E+05
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.40E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.90E+01
4071	#4 CRUDE UNIT F1100B	Napththa	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Benzene		41	1.99E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.26E-01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Formaldehyde		124	5.31E-03
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Phenol		214	1.14E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.30E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.81E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	4.23E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Cadmium		1070	1.21E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	2.42E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Manganese		1160	8.21E-03
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	9.66E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	6.04E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.88E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.16E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	4.98E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	3.32E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	6.04E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.39E+00
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.69E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.63E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.03E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	8.39E+05
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.20E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.75E+01
4072 #4 CRUDE UNIT	F1160	Napththa	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Benzene		41	7.36E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	4.66E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.96E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Phenol		214	4.22E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	4.80E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	6.67E+00
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.56E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Cadmium		1070	4.46E-05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	8.93E-05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Manganese		1160	3.04E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	3.57E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	2.23E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	6.96E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	4.30E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.84E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.23E-01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.23E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.13E-01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	6.25E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	6.03E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.79E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.10E+05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-8.15E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	6.47E+00
4073 LSFO COOLING TOWER		Fresh water	G5005415	-6.15E+04	thou gallo/yr	12/31/2010	Organics (part not spec else		990	1.01E+00
4076 3 CAT COOLING TOWER E460		Fresh water	G5005415	-1.01E+05	thou gallo/yr	12/31/2010	Organics (part not spec else		990	1.66E+00
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Benzene		41	6.04E-07
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Formaldehyde		124	7.10E-06
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Toluene		293	3.22E-07
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Organics (part not spec else		990	5.42E-04
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Particulates (portion of tot		1990	2.84E-04
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.19E-05
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.33E-02
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.38E-05
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.32E-03
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.16E+01
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-3.63E+02	therms/yr	12/31/2010	Methane (CH4)		6970	1.80E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Benzene		41	3.03E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.92E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	8.99E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Phenol		214	5.50E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Toluene		293	1.09E-01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	2.64E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.60E+00
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	3.67E-05
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	1.83E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	2.75E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.56E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	9.63E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	7.57E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	5.05E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	9.16E+00
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.11E-01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.21E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	3.10E+00
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.56E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.28E+05
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-3.35E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.66E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Benzene		41	8.29E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	2.46E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.51E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Toluene		293	2.99E-01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	7.23E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	7.13E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	1.00E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	5.02E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	7.53E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	4.27E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	2.64E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.51E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.78E-01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	8.79E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	8.48E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	4.27E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.49E+05
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-9.17E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	7.28E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Benzene		41	5.90E-04
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.74E-03
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.75E-03
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Phenol		214	1.07E-04
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Toluene		293	2.13E-02
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	5.15E-03
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	5.08E-01
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	7.16E-06
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	3.58E-05
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	5.37E-05
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	3.04E-04
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.88E-03
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.48E-03
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	9.84E-03
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.79E+00
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.11E-02
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	6.26E+00
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	6.04E-01
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.04E+00
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.49E+04
4132 800# STM BLR #4 #1 PP		Chevron refinery fuel gas	C1130708	-6.53E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	5.19E-01
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Benzene		41	5.60E-04
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.55E-03
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.66E-03
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Phenol		214	1.02E-04
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Toluene		293	2.02E-02
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	4.89E-03
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.82E-01
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	6.79E-06
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	3.39E-05
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	5.09E-05
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.88E-04
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.78E-03
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.40E-03
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	9.33E-03
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.69E+00
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.90E-02
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	5.94E+00
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.73E-01
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.88E+00
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.36E+04
4133 800# STEAM BLR #5 #1PP		Chevron refinery fuel gas	C1130708	-6.19E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.92E-01
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Benzene		41	7.27E-03
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	4.61E-02
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	2.16E-02
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Phenol		214	1.32E-03
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Toluene		293	2.62E-01
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	6.35E-02
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	6.26E+00
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	8.82E-05
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	4.41E-04
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	6.61E-04
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	3.75E-03
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	2.31E-02
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.82E-02
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.21E-01
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.20E+01
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.07E-01
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	7.71E+01
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.44E+00
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.75E+01
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.06E+05
4135 800# STM BLR #7 #1 PP		Chevron refinery fuel gas	C1120708	-8.04E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	6.39E+00
4148 #13 SEPARATOR		Waste water - refin, other/not	G5017300	-5.18E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	7.09E+00
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Benzene		41	5.90E-04
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.74E-03
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.57E-04
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Phenol		214	3.38E-04
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.85E-04
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	5.35E-01
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.25E-05
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Cadmium		1070	3.58E-06
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	7.16E-06
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Manganese		1160	2.43E-04
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.86E-05
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.79E-05
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	5.58E-04
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	3.44E-03
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.48E-03
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	9.84E-03
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.79E+00
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.11E-02
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	7.73E+00
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	6.04E-01
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.04E+00
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.49E+04
4152 F-100 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.53E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	5.19E-01
4153 F-110 ASPHALT SOLUTION HEATER SDA 150 MAX		Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
4154 F-120 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Benzene		41	5.60E-04
4154 F-120 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.55E-03
4154 F-120 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.49E-04
4154 F-120 ASPHALT SOLUTION HEATER SDA ISOMAX		Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Phenol		214	3.21E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Acetaldehyde	335	3.65E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	5.07E-01
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	1.19E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Cadmium	1070	3.39E-06
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	6.79E-06
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Manganese	1160	2.31E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	2.71E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	1.70E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	5.29E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	3.27E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	1.40E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	9.33E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	1.70E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	3.90E-02
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	6.96E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	5.73E-01
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	2.88E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	2.36E+04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-6.19E+04	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	4.92E-01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Benzene	41	7.27E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	4.61E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	1.94E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Phenol	214	4.17E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	4.74E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	6.59E+00
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	1.54E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	4.41E-05
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	8.82E-05
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Manganese	1160	3.00E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	3.53E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	2.20E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	6.88E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	4.24E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	1.82E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	1.21E-01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	2.20E+01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	5.07E-01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.01E+02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	7.44E+00
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	9.17E+01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	3.06E+05
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-8.04E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	6.39E+00
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT	ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010		0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT		Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2010		0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT		Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010		0	0.00E+00
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Benzene	41	3.19E-03
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	2.02E-02
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	8.50E-04
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.83E-03
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	2.08E-03
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.89E+00
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	6.76E-05
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.93E-05
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	3.86E-05
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Manganese	1160	1.31E-03
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.55E-04
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	9.66E-05
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	3.01E-03
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.86E-02
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	7.97E-03
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	5.31E-02
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	9.66E+00
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	2.22E-01
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	3.96E+01
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	8.15E+00
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.64E+01
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.34E+05
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	2.80E+00
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Benzene	41	2.02E-03
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.28E-02
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	5.40E-04
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.16E-03
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.32E-03
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	1.83E+00
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	4.29E-05
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.23E-05
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	2.45E-05
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Manganese	1160	8.34E-04
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	9.81E-05
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	6.13E-05
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.24E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	1.91E-03
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540.						

Printed: AUG 1, 2013

[illegible]

Material	Source Code	ThruPut	Units	Date	Pollutant	Emissions	
						Code	lb/day
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	5.56E-04
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.19E-03
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.36E-03
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	1.89E+00
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	4.42E-05
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.26E-05
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	2.53E-05
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Manganese	1160	8.59E-04
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.01E-04
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	6.32E-05
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	1.97E-03
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.22E-02
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equi)	1860	5.21E-03
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	3.47E-02
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	6.32E+00
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.45E-01
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.77E+01
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	2.13E+00
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.07E+01
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	8.78E+00
Chevron refinery fuel gas	C1540708	-2.31E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	1.83E+00
Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0.00E+00
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Benzene	41	2.40E-03
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.52E-02
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	6.41E-04
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.38E-03
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.57E-03
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.18E+00
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	5.10E-05
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.46E-05
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	2.91E-05
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Manganese	1160	9.90E-04
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.17E-04
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	7.28E-05
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.27E-03
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.40E-02
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equi)	1860	6.01E-03
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	4.01E-02
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	7.28E+00
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.67E-01
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.77E+01
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	2.13E+00
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.24E+01
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.01E+05
Chevron refinery fuel gas	C1540708	-2.66E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	2.11E+00
Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0.00E+00
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Benzene	41	3.19E-03
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	2.02E-02
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	8.51E-04
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.83E-03
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	2.08E-03
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.89E+00
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	6.77E-05
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.93E-05
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	3.87E-05
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Manganese	1160	1.31E-03
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.55E-04
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	9.67E-05
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	3.02E-03
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.86E-02
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equi)	1860	7.97E-03
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	5.32E-02
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	9.67E+00
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	2.22E-01
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.46E+02
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	5.04E+00
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.64E+01
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.34E+05
Chevron refinery fuel gas	C1540708	-3.53E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	2.80E+00
Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010		0	0.00E+00
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.54E-02
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	6.47E-04
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.39E-03
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Toluene	293	0.00E+00
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.58E-03
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.07E+00
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	5.14E-05
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.47E-05
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	2.94E-05
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Manganese	1160	1.00E-03
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.18E-04
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	7.35E-05
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.29E-03
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)	1840	1.41E-02
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equi)	1860	6.06E-03
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	4.04E-02
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.69E-01
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.11E+02
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	3.83E+00
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.25E+01
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	1.02E+05
Chevron refinery fuel gas	C1540708	-2.68E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	2.13E+00
Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Benzene	41	2.19E-03
Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.39E-02
Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	5.83E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.25E-03
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.43E-03
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	1.98E+00
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	4.64E-05
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.33E-05
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	2.65E-05
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Manganese	1160	9.01E-04
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.06E-04
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	6.63E-05
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.07E-03
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)	1840	1.28E-02
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	5.47E-03
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	3.65E-02
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	6.63E+00
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.52E-01
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	2.32E+01
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	2.24E+00
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.13E+01
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	9.21E+04
4164 F-630	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.42E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	1.92E+00
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Benzene	41	1.58E-03
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.00E-02
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	4.22E-04
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Phenol	214	9.06E-04
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.03E-03
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	1.43E+00
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	3.35E-05
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	9.58E-06
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	1.92E-05
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Manganese	1160	6.52E-04
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	7.67E-05
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	4.79E-05
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	1.49E-03
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)	1840	9.22E-03
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	3.95E-03
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	2.64E-02
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	4.79E+00
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.10E-01
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	1.68E+01
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	1.62E+00
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	8.15E+00
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	6.66E+04
4165 F620	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.75E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	1.39E+00
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Benzene	41	2.25E-03
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	1.43E-02
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Formaldehyde	124	6.01E-04
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Phenol	214	1.29E-03
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Acetaldehyde	335	1.47E-03
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	2.04E+00
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Arsenic (all)	1030	4.78E-05
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Cadmium	1070	1.37E-05
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)	1095	2.73E-05
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Manganese	1160	9.29E-04
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Nickel pollutant	1180	1.09E-04
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant	1190	6.83E-05
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Zinc pollutant	1320	2.13E-03
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)	1840	1.31E-02
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	5.63E-03
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	3.76E-02
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot	1990	6.83E+00
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	1.57E-01
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp	2990	2.39E+01
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)	3990	2.31E+00
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta	4990	1.16E+01
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic	6960	9.49E+04
4166 F-610	ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.49E+05	thou cu ft/yr	12/31/2010	Methane (CH4)	6970	1.98E+00
4167 F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s	92	4.18E-02
4167 F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else	990	5.64E+00
4167 F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)	1860	1.65E-02
4167 F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)	1870	1.10E-01
4167 F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)	2030	4.60E-01
4167 F-710	TKC FRACTIONATOR	ISOMAX	Chevron refinery fuel gas	C1530708	-7.30E+05	thou cu ft/yr	12/31			

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.32E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.22E+01
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.32E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	6.16E+01
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.32E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	5.03E+05
4168 F-730	ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	1.32E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.05E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Benzene		41	1.08E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	6.86E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Formaldehyde		124	2.89E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Phenol		214	6.21E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Acetaldehyde		335	7.06E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	9.82E+00
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	2.30E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Cadmium		1070	6.57E-05
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	1.31E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Manganese		1160	4.47E-03
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	5.26E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	3.28E-04
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.02E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	6.32E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	2.71E-02
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.81E-01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	3.28E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.55E-01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	9.20E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.11E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	5.58E+01
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.57E+05
4169 F-731	ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.20E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	9.53E+00
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Benzene		41	5.10E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.23E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Formaldehyde		124	3.40E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Phenol		214	1.39E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Toluene		293	1.09E+00
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.40E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.52E+01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	7.11E-03
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Manganese		1160	4.33E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.55E-03
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	3.09E-04
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.07E-02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	3.37E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.28E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	8.50E-01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.55E+02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.56E+00
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.40E+02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.22E+01
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.63E+02
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.15E+06
4170 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.64E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.48E+01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Benzene		41	4.55E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	2.88E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Formaldehyde		124	3.04E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Phenol		214	1.24E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Toluene		293	9.72E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.04E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.03E+01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	6.35E-03
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Manganese		1160	3.86E-02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.38E-03
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	2.76E-04
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	9.52E-03
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	3.01E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.14E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	7.59E-01
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.38E+02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.17E+00
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.86E+02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.17E+02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.35E+02
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.92E+06
4171 F355	REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.04E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.00E+01
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	-9.37E+05	thou gallo/yr	12/31/2010	Organics (part not spec else		990	1.54E+01
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	-4.13E+05	thou gallo/yr	12/31/2010	Organics (part not spec else		990	6.78E+00
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	-3.73E+04	thou gallo/yr	12/31/2010	Organics (part not spec else		990	6.14E-01
4188 F-651	Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010			0	0.00E+00
4188 F-651	Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05						

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	9.77E-02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.23E+02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.21E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.22E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	5.91E+04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.55E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.23E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2010			0	0.00E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Benzene		41	4.85E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.07E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.29E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Phenol		214	2.78E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	3.16E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.39E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Arsenic (all)		1030	1.03E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Cadmium		1070	2.94E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	5.88E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	9.26E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Manganese		1160	2.00E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.47E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	4.58E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	2.83E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.21E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	8.08E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.47E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.38E-02
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.26E+01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.66E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.50E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.04E+04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-5.36E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.26E-01
4191	Alkane Cooling Water Tower	Fresh water	G5005415	-3.82E+04	thou gallo/yr	12/31/2010	Organics (part not spec else		990	6.28E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Benzene		41	9.59E-04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Formaldehyde		124	1.13E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Toluene		293	5.11E-04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Organics (part not spec else		990	8.60E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	4.51E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.47E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.10E+01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	4.06E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	5.26E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.84E+04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-5.76E+05	therms/yr	12/31/2010	Methane (CH4)		6970	2.86E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Benzene		41	1.14E-03
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Formaldehyde		124	1.34E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Toluene		293	6.05E-04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Organics (part not spec else		990	1.02E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	5.34E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.11E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.49E+01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.01E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	6.23E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.18E+04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-6.82E+05	therms/yr	12/31/2010	Methane (CH4)		6970	3.38E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Benzene		41	1.45E-03
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Formaldehyde		124	1.70E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Toluene		293	7.72E-04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Organics (part not spec else		990	1.30E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	6.81E-01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	5.24E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.18E+01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	6.13E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.94E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.78E+04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-8.70E+05	therms/yr	12/31/2010	Methane (CH4)		6970	4.31E-01
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	-4.79E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	1.31E+01
4227	SRU #1 TRAIN	Sulfur	G7055267	-3.17E+04	tons/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	9.52E+03
4228	SRU #2 TRAIN	Sulfur	G7055267	-4.09E+04	tons/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.31E+04
4229	SRU #3 TRAIN	Sulfur	G7055267	-6.88E+04	tons/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.00E+04
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997	Particulates (portion of tot		1990	6.78E-03
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	-2.19E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	5.99E+01
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	-1.85E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	5.06E+01
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	-1.13E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	9.27E+00
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	-8.43E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	2.31E+02
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	-8.36E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	3.43E+01
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	-1.07E+05	thou gal/yr	12/31/2010	LPG		160	2.33E+03
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.72E+04	million cu/yr	12/31/2010	Ethyl alcohol		105	2.16E+01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.72E+04	million cu/yr	12/31/2010	Methyl alcohol		179	7.76E+02
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.72E+04	million cu/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	8.62E+01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.72E+04	million cu/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.54E+06
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.21E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.21E+04	thou barre/yr	12/31/2010	Particulates (portion of tot		1990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.21E+04	thou barre/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.21E+04	thou barre/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.21E+04	thou barre/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	-2.15E+05	thou gallo/yr	12/31/2010	Organics (part not spec else		990	5.90E+01
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	-1.49E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	4.09E-03
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	-1.26E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	3.45E-03
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	-9.02E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	2.47E-03
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	-7.96E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	2.18E-03
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Organics (part not spec else		990	1.33E+02
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Particulates (portion of tot		1990	1.57E+05
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.71E+01
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.59E+02
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.99E+02
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.14E+02
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.64E+06
4285	FCC Plant	Coke	C5737080	-2.49E+05	tons/yr	12/31/2010	Methane (CH4)		6970	1.35E+02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Benzene		41	1.73E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Arsenic (all)		1030	8.05E-02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Chromium		1090	8.67E-02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Manganese		1160	1.67E+01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Nickel pollutant		1180	9.29E-02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Zinc pollutant		1320	1.49E+01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	PAH's (non-specified)		1840	2.50E-02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Particulates (portion of tot		1990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.26E+04	thou barre/yr	12/31/2010	Ammonia (NH3) pollutant		6990	3.90E+00
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.39E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	3.82E+01
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	-7.58E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	1.04E+01
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	-2.32E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	9.54E+00
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
4329	RLOP Cooling Tower	Fresh water	G5005415	-1.33E+05	thou gallo/yr	12/31/2010	Organics (part not spec else		990	2.54E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Benzene		41	6.98E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	4.42E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.65E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Phenol		214	1.69E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Toluene		293	1.26E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	6.07E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	5.97E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	4.23E-06
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	2.12E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Manganese		1160	1.90E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.12E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	4.23E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.75E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	1.51E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.75E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.16E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.12E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.87E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	6.13E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.14E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.60E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.94E+04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.72E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	6.13E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Benzene		41	8.98E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	5.69E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	2.12E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Phenol		214	2.18E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Toluene		293	1.62E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	7.81E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	7.68E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	5.44E-06

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	2.72E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Manganese		1160	2.45E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.72E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	5.44E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	3.54E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	1.94E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	2.25E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.50E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.72E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	6.26E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	7.89E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	9.19E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	4.63E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.78E+04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-9.94E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	7.89E-01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Benzene		41	2.63E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.66E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	6.20E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Phenol		214	6.37E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Toluene		293	4.73E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	2.28E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.24E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	1.59E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	7.96E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Manganese		1160	7.16E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	7.96E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.59E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	1.03E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	5.67E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	6.56E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	4.38E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	7.96E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.83E-01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.31E+01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.69E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.35E+01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.11E+05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.90E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	2.31E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.23E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.67E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	4.87E-03
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	3.25E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.36E-01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.71E+01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.00E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.00E+01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	8.21E+04
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-2.16E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.71E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Benzene		41	1.46E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	9.25E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	3.45E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Phenol		214	3.54E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Toluene		293	2.63E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.27E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.25E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	8.85E-06
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	4.42E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Manganese		1160	3.98E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	4.42E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	8.85E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	5.75E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	PAH's (non-specified)		1840	3.15E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	3.65E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	2.43E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	4.42E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.02E-01
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.28E+01
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.49E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.52E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	6.15E+04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.61E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.28E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Benzene		41	1.29E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	8.17E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	3.04E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Phenol		214	3.13E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Toluene		293	2.33E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.12E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.10E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.43E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	7.82E-06
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C15							

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Benzene		41	6.67E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	4.22E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.57E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Phenol		214	1.62E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Toluene		293	1.20E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	5.80E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	5.70E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	4.04E-06
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	2.02E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Manganese		1160	1.82E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	2.02E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	4.04E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.63E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.44E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.67E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	1.11E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	2.02E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.65E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	5.86E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	6.83E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.44E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.81E+04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-7.38E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	5.86E-01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Benzene		41	1.37E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	8.66E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	3.23E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Phenol		214	3.31E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Toluene		293	2.46E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.19E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.17E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	8.29E-06
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	4.14E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Manganese		1160	3.73E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	4.14E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	8.29E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	5.39E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	2.95E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	3.42E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	2.28E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	4.14E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	9.53E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.20E+01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.40E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.04E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	5.76E+04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.51E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.20E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Benzene		41	1.84E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	1.16E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Formaldehyde		124	4.34E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Phenol		214	4.45E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Toluene		293	3.31E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Acetaldehyde		335	1.60E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.57E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	1.11E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	5.57E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Manganese		1160	5.01E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	5.57E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	1.11E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	7.24E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	3.96E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	4.59E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	3.06E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	5.57E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.28E-01
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.61E+01
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.88E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	9.47E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	7.74E+04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-2.03E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	1.61E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Benzene		41	5.61E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Cycloparaffins - other/not s		92	3.55E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Formaldehyde		124	1.32E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Phenol		214	1.36E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Toluene		293	1.01E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Acetaldehyde		335	4.88E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	4.79E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Chromium (hexavalent)		1095	3.40E-06
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Copper (all) pollutant		1110	1.70E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Manganese		1160	1.53E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Nickel pollutant		1180	1.70E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Mercury (all) pollutant		1190	3.40E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Zinc pollutant		1320	2.21E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	PAH's (non-speciated)		1840	1.21E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	PAH's (benzo[a]pyrene equiv)		1860	1.40E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	PAH's (non-carcinogenic)		1870	9.35E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.70E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.91E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.93E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.74E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.89E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.36E+04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.20E+04	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	4.93E-01
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.90E+05	tons/yr	12/31/2010	Organics (part not spec else		990	1.38E+01
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.51E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	1.51E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.35E+06	tons/yr	12/31/2010	Organics (part not spec else		990	2.70E+01
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.77E+05	tons/yr	12/31/2010	Organics (part not spec else		990	7.56E+00
4345	Misc.PET REF,Refinery Sour Waste Water No 2NH3-H2S	Waste gases	G5037338	-2.40E+02	million cu/yr	12/31/2010	Hydrogen Sulfide (H2S)		5020	0.00E+00
4345	Misc.PET REF,Refinery Sour Waste Water No 2NH3-H2S	Waste gases	G5037338	-2.40E+02	million cu/yr	12/31/2010	Ammonia (NH3) pollutant		6990	0.00E+00
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-5.10E+05	tons/yr	12/31/2010	Organics (part not spec else		990	5.17E+01
4348	H2 Recovery Plant	Hydrocarbon - mixtures, other/	G5998318	-4.63E+04	tons/yr	12/31/2010	Organics (part not spec else		990	4.69E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Benzene		41	2.02E-03
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	1.83E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	9.17E-01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.03E-02
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.28E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.58E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.07E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.25E+04
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.12E+05	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	8.87E-01
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Benzene		41	6.96E-03
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Formaldehyde		124	3.46E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Organics (part not spec else		989	6.33E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	PAH's (non-speciated)		1840	6.27E-02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Particulates (portion of tot		1990	2.40E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.92E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.66E+03
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.19E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.75E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.55E+06
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Methane (CH4)		6970	3.09E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Ammonia (NH3) pollutant		6990	3.46E+02
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2010			0	0.00E+00
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Benzene		41	2.22E-02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.01E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.01E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.73E-01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.70E+02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.13E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.18E+02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.67E+05
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	9.74E+00
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Benzene		41	6.96E-03
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Formaldehyde		124	3.46E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Organics (part not spec else		989	6.33E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	PAH's (non-speciated)		1840	6.27E-02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Particulates (portion of tot		1990	2.40E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.92E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.66E+03
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.19E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.75E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.55E+06
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Methane (CH4)		6970	3.09E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-4.85E+07	therms/yr	12/31/2010	Ammonia (NH3) pollutant		6990	3.46E+02
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2010			0	0.00E+00
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Benzene		41	2.22E-02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Organics (part not spec else		990	2.01E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Particulates (portion of tot		1990	1.01E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.73E-01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	4.70E+02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.67E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.18E+02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.67E+05
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.23E+06	thou cu ft/yr	12/31/2010	Methane (CH4)		6970	9.74E+00
4354	Butamer Plant	Paraffins - C3+	G5031052	-8.16E+04	thou gallo/yr	12/31/2010	Organics (part not spec else		990	0.00E+00
4355	Deisobutanizer Plant	Paraffins - C3+	G5031052	-2.56E+05	thou gallo/yr	12/31/2010	Organics (part not spec else		990	0.00E+00
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2010			0	0.00E+00
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2010			0	0.00E+00
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T33??210	-5.96E+00	thou gal/yr	12/31/2010	Perchloroethylene		210	0.00E+00
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T41??210	0.00E+00			Perchloroethylene		210	1.61E-03
4361	Perc Surge Control Vessel V-591	Reformate	T41??398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4362	Perc Surge Control Vessel V-3591	Reformate	T41??398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4363	Perc Storage Tank V-3592	Perchloroethylene	T42??210	-2.54E+01	thou gal/yr	12/31/2010	Perchloroethylene		210	1.00E-01
4364	Perc Storage Tank V-4091	Perchloroethylene	T42??210	-3.79E+01	thou gal/yr	12/31/2010	Perchloroethylene		210	5.37E-02
4365	Tri-Act 1825 Chemical Tote	Hydrocarbon - mixtures, other/	T47??318	-5.40E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.43E-02
4366	Tri-Act 1803 & 1825 Chemical Tote - Power Plant	Hydrocarbon - mixtures, other/	T82??318	2.00E+00	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	8.85E-03
4367	Tri-Act 1803 & 1825 Chemical Tote - RLOP	Hydrocarbon - mixtures, other/	T82??318	1.20E+00	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	7.75E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4368	Tri-Act 1803 & 1825 Chemical Tote - SRU	Hydrocarbon - mixtures, other/	T8277318	4.00E-01	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	6.64E-03
4369	Tri-Act 1803 & 1825 Chemical Tote - LSFO/D&R	Hydrocarbon - mixtures, other/	T8277318	4.00E-01	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	6.64E-03
4370	Chemical Tote, Custamine CA-066P - FCC	Hydrocarbon - mixtures, other/	T8277318	4.00E-01	thou gal/yr	5/10/2010	Hydrocarbon - mixtures, othe		318	6.64E-03
4372	NALCO EC9085A Tote	Amine - other/not spec	T4277021	5.00E+00	thou gal/yr	5/5/2010	Amine - other/not spec		21	1.73E-02
4373	Custamine CA-0660P RO Plant	Water/organics mixture	T4277502	2.80E+01	thou gal/yr	Unknown	Water/organics mixture		502	3.16E-01
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-4.40E+04	thou barre/yr	12/31/2010	Benzene		41	2.05E+00
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-4.40E+04	thou barre/yr	12/31/2010	Toluene		293	5.55E+00
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-4.40E+04	thou barre/yr	12/31/2010	Xylene		307	1.22E+01
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-4.40E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	7.23E+01
4391	NO. 1 OXIDATION POND	Fresh water	G5033415	0.00E+00	thou gallo/yr	12/31/2010			0	0.00E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.30E+04	thou barre/yr	12/31/2010	Benzene		41	6.07E-01
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.30E+04	thou barre/yr	12/31/2010	Toluene		293	1.64E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.30E+04	thou barre/yr	12/31/2010	Xylene		307	3.61E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.30E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	2.14E+01
4392	Wetland Marsh	Waste water - other/not spec	G5033443	0.00E+00	thou gallo/yr	12/31/2010			0	0.00E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.74E+04	thou barre/yr	12/31/2010	Benzene		41	3.14E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.74E+04	thou barre/yr	12/31/2010	Toluene		293	8.49E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.74E+04	thou barre/yr	12/31/2010	Xylene		307	1.86E+01
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.74E+04	thou barre/yr	12/31/2010	Organics (part not spec else		990	1.11E+02
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	-1.41E+05	tons/yr	12/31/2010	Particulates (portion of tot		1990	3.87E+00
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE871052	3.47E+03	thou gal/yr	12/31/1996	Paraffins - C3+		52	2.76E+00
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE871052	1.33E+04	thou gal/yr	12/31/1996	Paraffins - C3+		52	5.34E+00
4405	Heavy Oil Transloading Operations	Waste oil	TE672549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	-4.13E+01	gal/yr	12/31/2010	Glycols		131	6.27E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	-4.13E+01	gal/yr	12/31/2010	Organic liquid - other/not s		201	9.20E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	0.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	0.00E+00	gal/yr	12/31/2010	Stoddard solvent		401	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	0.00E+00	gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	0.00E+00	gal/yr	12/31/2010	Propylene glycol monomethyl		579	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	0.00E+00	gal/yr	12/31/2010	Butyl acetate		48	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	0.00E+00	gal/yr	12/31/2010	2-heptanone		729	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2010	Glycols		131	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2010	Aromatic hydrocarbons - othe		27	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2010	Glycols		131	0.00E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	-9.79E+03	thou barre/yr	12/31/2010	Benzene		41	5.07E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	-9.79E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	2.20E+02
4414	#1a Separator	Waste water - refin, other/not	G5017300	-6.53E+03	thou barre/yr	12/31/2010	Benzene		41	9.83E-01
4414	#1a Separator	Waste water - refin, other/not	G5017300	-6.53E+03	thou barre/yr	12/31/2010	Organics (part not spec else		990	4.27E+01
4415	Asphalt Tank Truck Loading Racks	Asphalt	T9871030	0.00E+00	thou gal/yr	12/31/2010	Asphalt		30	0.00E+00
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2010	Unknown Pollutant		76	0.00E+00
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E-01	tons/yr	12/31/2000	Particulates (portion of tot		1990	4.75E-01
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Organics (part not spec else		990	0.00E+00
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Particulates (portion of tot		1990	0.00E+00
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	0.00E+00	gal/yr	12/31/2010	Butyl acetate		48	0.00E+00
4424	Equipment Painting Area	Coating/lnk/etc.	SG52A048	0.00E+00	gal/yr	12/31/2010	Naphtha		188	0.00E+00
4424	Equipment Painting Area	Mineral spirits	SG700184	0.00E+00	gal/yr	12/31/2010	Mineral spirits		184	0.00E+00
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998	Sulfuric Acid mist pollutant		1530	0.00E+00
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-5.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	8.90E-02
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2010	Amide		20	0.00E+00
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-2.50E+01	gal/yr	12/31/2010	Organic liquid - other/not s		201	4.45E-01
4429	#8(NH3-H2S)Plant	Waste gases	G5037338	-2.64E+02	million cu/yr	12/31/2010	Hydrogen Sulfide (H2S)		5020	0.00E+00
4429	#8(NH3-H2S)Plant	Waste gases	G5037338	-2.64E+02	million cu/yr	12/31/2010	Ammonia (NH3) pollutant		6990	0.00E+00
4433	#3H2S Plant	Waste gases	G5998338	-2.59E+02	million cu/yr	12/31/2010	Organics (part not spec else		990	7.10E-02
4434	#4H2S Plant	Waste gases	G5998338	-1.19E+03	million cu/yr	12/31/2010	Organics (part not spec else		990	3.26E-01
4435	#5H2S Plant	Waste gases	G5998338	-1.82E+03	million cu/yr	12/31/2010	Organics (part not spec else		990	4.99E-01
4440	Jet Additive Project Fugitive Sources	Petroleum products - other/not	G9000321	0.00E+00	thou gallo/yr				0	0.00E+00
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T4277201	3.28E+00	thou gal/yr	12/31/2007	Organic liquid - other/not s		201	1.07E-01
5101	Tank-Marketing T-101	Lube oil	T4477419	1.85E+04	thou gal/yr	3/31/1997	Lube oil		419	6.22E+01
5103	Tank-Marketing T-103	Lube oil	T4477419	1.28E+04	thou gal/yr	3/31/1997	Lube oil		419	4.88E+01
5105	Tank-Marketing T-105	Lube oil	T4477419	1.12E+04	thou gal/yr	3/31/1997	Lube oil		419	4.50E+01
5107	Tank-Marketing T-107	Lube oil	T4477419	3.26E+02	thou gal/yr	3/31/1997	Lube oil		419	3.99E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
5108	Tank-Marketing T-108	Lube oil	T44??419	2.51E+02	thou gal/yr	3/31/1997	Lube oil		419	3.81E+00
5109	Tank-Marketing T-109	Lube oil	T44??419	4.98E+02	thou gal/yr	3/31/1997	Lube oil		419	4.39E+00
5110	Tank-Marketing T-110	Lube oil	T44??419	1.33E+03	thou gal/yr	3/31/1997	Lube oil		419	6.34E+00
5112	Tank-Marketing T-112	Lube oil	T43??419	5.80E+01	thou gal/yr	3/31/1997	Lube oil		419	9.01E-01
5113	Tank-Marketing T-113	Lube oil	T43??419	5.00E+00	thou gal/yr	3/31/1997	Lube oil		419	7.77E-01
5115	Tank-Marketing T-115	Lube oil	T43??419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	8.99E-01
5117	Tank-Marketing T-117	Lube oil	T44??419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5118	Tank-Marketing T-118	Lube oil	T44??419	4.60E+01	thou gal/yr	3/31/1997	Lube oil		419	1.51E+00
5119	Tank-Marketing T-119	Lube oil	T44??419	6.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.55E+00
5121	Tank-Marketing T-121	Lube oil	T44??419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	2.03E+00
5122	Tank-Marketing T-122	Lube oil	T44??419	6.70E+01	thou gal/yr	3/31/1997	Lube oil		419	1.73E+00
5123	Tank-Marketing T-123	Lube oil	T44??419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5125	Tank-Marketing T-125	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	8.26E-01
5126	Tank-Marketing T-126	Lube oil	T43??419	1.04E+02	thou gal/yr	3/31/1997	Lube oil		419	1.01E+00
5127	Tank-Marketing T-127	Lube oil	T43??419	1.92E+02	thou gal/yr	3/31/1997	Lube oil		419	1.22E+00
5128	Tank-Marketing T-128	Lube oil	T43??419	6.40E+01	thou gal/yr	3/31/1997	Lube oil		419	9.15E-01
5129	Tank-Marketing T-129	Lube oil	T43??419	3.20E+01	thou gal/yr	3/31/1997	Lube oil		419	4.33E-01
5130	Tank-Marketing T-130	Lube oil	T43??419	8.00E+01	thou gal/yr	3/31/1997	Lube oil		419	5.46E-01
5131	Tank-Marketing T-131	Lube oil	T43??419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5132	Tank-Marketing T-132	Lube oil	T43??419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5133	Tank-Marketing T-133	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5134	Tank-Marketing T-134	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5135	Tank-Marketing T-135	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5136	Tank-Marketing T-136	Lube oil	T43??419	1.36E+02	thou gal/yr	3/31/1997	Lube oil		419	6.77E-01
5137	Tank-Marketing T-137	Lube oil	T43??419	1.20E+02	thou gal/yr	3/31/1997	Lube oil		419	6.40E-01
5138	Tank-Marketing T-138	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5139	Tank-Marketing T-139	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	4.19E-01
5140	Tank-Marketing T-140	Lube oil	T43??419	1.30E+01	thou gal/yr	3/31/1997	Lube oil		419	6.16E-04
5201	Tank-Marketing T-201	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5202	Tank-Marketing T-202	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5203	Tank-Marketing T-203	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5204	Tank-Marketing T-204	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997	Lube oil		419	6.61E+00
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997	Lube oil		419	8.74E+00
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	5.05E+00
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997	Lube oil		419	3.54E+00
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.32E+00
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997	Lube oil		419	2.35E+00
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997	Lube oil		419	4.23E+00
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997	Lube oil		419	1.98E+00
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997	Lube oil		419	1.64E+00
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997	Lube oil		419	2.17E+00
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997	Lube oil		419	2.37E+00
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997	Lube oil		419	4.43E+00
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997	Lube oil		419	1.38E+00
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997	Lube oil		419	1.17E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997	Lube oil		419	1.31E+00
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997	Lube oil		419	9.20E-01
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	3.58E+00
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997	Lube oil		419	8.90E-01
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997	Lube oil		419	1.80E+00
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997	Lube oil		419	5.50E-01
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	3.95E-01
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.94E-01
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	7.66E-01
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997	Lube oil		419	5.69E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Benzene		41	2.48E-04
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Organics (part not spec else		990	3.36E+01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	3.88E-01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	8.96E-03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.64E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.20E-02
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	5.04E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.75E+03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2010	Methane (CH4)		6970	3.36E+01
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Benzene		41	2.32E-04
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Organics (part not spec else		990	3.16E+01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	3.64E-01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	8.42E-03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.48E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.07E-02
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	4.73E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.46E+03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.40E+05	therms/yr	12/31/2010	Methane (CH4)		6970	3.16E+01
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Benzene		41	2.08E-04
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Organics (part not spec else		990	2.82E+01
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	3.26E-01
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.52E-03
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.22E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.85E-02
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	4.23E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.99E+03
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.25E+05	therms/yr	12/31/2010	Methane (CH4)		6970	2.82E+01
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2010			0	0.00E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Benzene		41	2.10E-04
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Organics (part not spec else		990	2.85E+01
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Particulates (portion of tot		1990	3.29E-01
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.59E-03
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.24E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.87E-02
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	4.27E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.03E+03
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2010	Methane (CH4)		6970	2.85E+01
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2010			0	0.00E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Benzene		41	1.12E-04
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Organics (part not spec else		990	1.51E+01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Particulates (portion of tot		1990	1.75E-01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.04E-03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.19E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04	therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	9.94E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut Units	Date	<----- Emissions ----->		Code	lb/day
						Pollutant			
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04 therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.27E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04 therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.14E+03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-6.70E+04 therms/yr	12/31/2010	Methane (CH4)		6970	1.51E+01
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00 thou cu ft/yr	12/31/2010			0	0.00E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05 therms/yr	12/31/2010	Benzene		41	2.61E-04
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05 therms/yr	12/31/2010	Organics (part not spec else		990	3.54E+01
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05 therms/yr	12/31/2010	Particulates (portion of tot		1990	4.09E-01
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05 therms/yr	12/31/2010	Nitrous Oxide (N2O)		2030	9.45E-03
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05 therms/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.78E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05 therms/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.32E-02
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05 therms/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	5.31E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05 therms/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	5.01E+03
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.57E+05 therms/yr	12/31/2010	Methane (CH4)		6970	3.54E+01
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00 thou cu ft/yr	12/31/2010			0	0.00E+00
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01 tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-02
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00 tons/yr	6/1/1998			0	0.00E+00
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01 tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-02
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01 tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-02
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00 tons/yr	12/31/2010			0	0.00E+00
6051	Alky Cooling Tower	Fresh water	G5005415	-4.34E+04 thou gallo/yr	12/31/2010	Organics (part not spec else		990	8.33E-02
6051	Alky Cooling Tower	Fresh water	G5005415	-4.34E+04 thou gallo/yr	12/31/2010	Particulates (portion of tot		1990	3.57E-02
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00 thou gal/yr	12/31/2010	Water/organics mixture		502	0.00E+00
6125	Tank 6125	Organic liquid - other/not spe	T42??201	0.00E+00 thou gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00 thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6200	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00 thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6200	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6201	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00 thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6201	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00 thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6202	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00 thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6202	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00 thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6203	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00 thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6204	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00 thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6205	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00 thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6206	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00 thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6207	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00 thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6208	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6209	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6209	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6209	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00 thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6209	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6210	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6210	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6210	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00 thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6210	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Petroleum products - other/not	T43??7321	0.00E+00 thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6211	PORTABLE POLYETHYLENE STORAGE CONTAINER	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6212	Portable Polyethylene Storge Container	Refinery feedstock - other/not	T43??7239	0.00E+00 thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6212	Portable Polyethylene Storge Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00 thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
6212	Portable Polyethylene Storge Container	Petroleum products - other/not	T43??7321	0.00E+00 thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6212	Portable Polyethylene Storge Container	Waste oil	T43??7549	0.00E+00 thou gal/yr	12/31/2010	Waste oil		549	0.00E+00

Printed: AUG 1, 2013

Printed: AUG 1, 2013

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6230	Portable Steel Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6230	Portable Steel Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6230	Portable Steel Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-2.18E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.15E-01
6231	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6231	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6231	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.26E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.35E-01
6232	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6232	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6232	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6233	Portable Steel Storage Container	Paraffins - C3+	T43??7052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.26E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.35E-01
6233	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6233	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6233	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-3.36E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.73E-01
6234	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6234	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6234	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.76E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.44E-01
6235	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6235	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6235	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.76E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.44E-01
6236	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6236	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6236	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.76E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	1.44E-01
6237	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6237	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6237	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.76E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	8.55E-02
6238	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6238	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6238	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2010	Refinery feedstock - other/n		239	0.00E+00
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	-1.76E+01	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	7.51E-01
6239	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2010	Petroleum products - other/n		321	0.00E+00
6239	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2010	Oil/water mixture		503	0.00E+00
6239	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2010	Waste oil		549	0.00E+00
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2010			0	0.00E+00
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997	Ammonia (NH3) pollutant		6990	2.48E-02
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Benzene		41	2.68E-04
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Formaldehyde		124	2.22E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	3.94E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	2.34E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	1.37E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Cadmium		1070	5.84E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.21E-08
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	4.95E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Manganese		1160	7.77E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	9.45E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.65E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	1.34E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	1.23E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.19E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	8.03E-02
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	8.76E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	8.05E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	8.98E+00
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.47E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	3.59E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Benzene		41	2.60E-03
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Formaldehyde		124	2.12E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Organics (part not spec else		990	1.50E-01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Arsenic (all)		1030	2.23E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	1.31E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Cadmium		1070	5.58E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.15E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	4.73E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Manganese		1160	7.43E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Nickel pollutant		1180	9.03E-05

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.58E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	6.11E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	1.18E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	6.87E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.05E+00
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	8.37E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.30E+00
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	8.59E+01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-1.40E+00	thou gal/yr	12/31/2010	Methane (CH4)		6970	3.43E-03
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Benzene		41	4.44E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Formaldehyde		124	3.62E-06
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Organics (part not spec else		990	2.42E-03
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Arsenic (all)		1030	3.81E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	2.24E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Cadmium		1070	9.53E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.97E-09
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	8.09E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Manganese		1160	1.27E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Nickel pollutant		1180	1.54E-06
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	2.70E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	2.20E-03
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	2.01E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.17E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.08E-02
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.43E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	6.71E-03
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.47E+00
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-2.40E-02	thou gal/yr	12/31/2010	Methane (CH4)		6970	5.87E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Benzene		41	1.85E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Formaldehyde		124	1.51E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Organics (part not spec else		990	1.01E-03
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Arsenic (all)		1030	1.59E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	9.32E-09
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Cadmium		1070	3.97E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	8.22E-10
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	3.37E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Manganese		1160	5.29E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Nickel pollutant		1180	6.43E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.12E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	9.18E-04
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	8.38E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.89E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.28E-02
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.96E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.79E-03
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	6.11E-01
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-1.00E-02	thou gal/yr	12/31/2010	Methane (CH4)		6970	2.44E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Benzene		41	2.98E-04
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Formaldehyde		124	2.43E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	1.02E-03
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	2.56E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	1.50E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Cadmium		1070	6.40E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.32E-08
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	5.43E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Manganese		1160	8.51E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	1.03E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.81E-07
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	4.01E-03
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	1.35E-06
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.87E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	8.83E-02
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	9.59E-05
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.57E-02
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	9.84E+00
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	-1.61E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	3.93E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Benzene		41	1.35E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Formaldehyde		124	1.10E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Organics (part not spec else		990	7.35E-03
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Arsenic (all)		1030	1.16E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	6.80E-08
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Cadmium		1070	2.90E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	6.00E-09
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	2.46E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Manganese		1160	3.86E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Nickel pollutant		1180	4.69E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	8.20E-08
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	6.70E-03
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	6.12E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	3.57E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	9.38E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	4.35E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.04E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	4.46E+00
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-7.30E-02	thou gal/yr	12/31/2010	Methane (CH4)		6970	1.78E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Benzene		41	2.83E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Formaldehyde		124	2.31E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Organics (part not spec else		990	3.70E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Arsenic (all)		1030	2.43E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	1.43E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Cadmium		1070	6.08E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.26E-07

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	5.16E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Manganese		1160	8.10E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Nickel pollutant		1180	9.84E-05
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.72E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	2.22E-02
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	PAH's (non-specified)		1840	1.28E-05
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	7.48E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	7.56E-01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	9.12E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.55E-01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	9.36E+01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-1.53E+00	thou gal/yr	12/31/2010	Methane (CH4)		6970	3.74E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Benzene		41	9.72E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Formaldehyde		124	7.93E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Organics (part not spec else		990	1.27E-02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Arsenic (all)		1030	8.36E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	4.90E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Cadmium		1070	2.09E-05
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	4.32E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	1.77E-05
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Manganese		1160	2.78E-05
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Nickel pollutant		1180	3.38E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	5.91E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	7.62E-02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	PAH's (non-specified)		1840	4.41E-05
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	2.57E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.59E+00
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	3.13E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	5.34E-01
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	3.21E+02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	5.26E+00	thou gal/yr	12/31/2010	Methane (CH4)		6970	1.29E-02
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Benzene		41	1.66E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Formaldehyde		124	1.36E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	9.06E-02
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	1.43E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	8.37E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Cadmium		1070	3.57E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	7.39E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	3.03E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Manganese		1160	4.75E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	5.78E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.01E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	8.25E-02
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	PAH's (non-specified)		1840	7.54E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	4.39E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.16E+00
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	5.36E-04
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	2.51E-01
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	5.49E+01
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	8.99E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	2.20E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Benzene		41	2.37E-04
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Formaldehyde		124	1.93E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	1.29E-02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	2.03E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	1.19E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Cadmium		1070	5.08E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.05E-08
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	4.31E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Manganese		1160	6.77E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	8.23E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	1.44E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	1.17E-02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	PAH's (non-specified)		1840	1.07E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	6.26E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.64E-01
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	7.63E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.58E-02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	7.82E+00
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-1.28E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	3.13E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Benzene		41	3.83E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Formaldehyde		124	3.13E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Organics (part not spec else		990	2.09E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Arsenic (all)		1030	3.29E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	1.93E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Cadmium		1070	8.24E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.70E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	6.99E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Manganese		1160	1.10E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Nickel pollutant		1180	1.33E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	2.33E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	1.90E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	PAH's (non-specified)		1840	1.74E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.01E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	2.66E+00
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.24E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	5.79E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.27E+02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.07E+00	thou gal/yr	12/31/2010	Methane (CH4)		6970	5.07E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Benzene		41	5.22E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Formaldehyde		124	4.26E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Organics (part not spec else		990	2.84E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Arsenic (all)		1030	4.48E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	2.63E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Cadmium		1070	1.12E-05

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	2.32E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	9.50E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Manganese		1160	1.49E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Nickel pollutant		1180	1.81E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	3.17E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	2.59E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	2.36E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.38E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.62E+00
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.68E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.88E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.72E+02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.82E+00	thou gal/yr	12/31/2010	Methane (CH4)		6970	6.89E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Benzene		41	4.64E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Formaldehyde		124	3.79E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	2.53E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	3.99E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	2.34E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Cadmium		1070	9.97E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	2.06E-08
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	8.46E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Manganese		1160	1.33E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	1.61E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	2.82E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	2.30E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	2.10E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.23E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	3.23E-01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.50E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	7.01E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.53E+01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-2.51E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	6.13E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Benzene		41	3.71E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Formaldehyde		124	3.02E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Organics (part not spec else		990	1.44E-02
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Arsenic (all)		1030	3.18E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	1.87E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Cadmium		1070	7.96E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	1.65E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	6.75E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Manganese		1160	1.06E-05
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Nickel pollutant		1180	1.29E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	2.25E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	7.68E-02
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	1.68E-05
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	9.80E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.45E+00
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.19E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	8.74E-01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.22E+02
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-2.00E+00	thou gal/yr	12/31/2010	Methane (CH4)		6970	4.90E-03
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2010			0	0.00E+00
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Benzene		41	5.40E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Formaldehyde		124	4.41E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	6.82E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	4.64E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	2.72E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Cadmium		1070	1.16E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	2.40E-08
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	9.84E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Manganese		1160	1.54E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	1.88E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	3.28E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	3.50E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	2.45E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.43E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.41E-01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.74E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.61E-02
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.78E+01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.92E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	7.14E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Benzene		41	6.36E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Formaldehyde		124	5.19E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	8.03E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	5.47E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	3.20E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Cadmium		1070	1.37E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	2.83E-08
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	1.16E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Manganese		1160	1.82E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	2.21E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	3.86E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	4.13E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	PAH's (non-speciated)		1840	2.88E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.68E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.66E-01
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	2.05E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	1.90E-02
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	2.10E+01
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-3.44E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	8.41E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Benzene		41	5.47E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Formaldehyde		124	4.53E-05
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Organics (part not spec else		990	7.77E-03
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Arsenic (all)		1030	4.77E-07
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Beryllium (all) pollutant		1040	2.79E-07
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Cadmium		1070	1.19E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Chromium (hexavalent)		1095	2.47E-08
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Lead (all) pollutant		1140	1.01E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Manganese		1160	1.59E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Nickel pollutant		1180	1.93E-05
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Mercury (all) pollutant		1190	3.37E-07
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Diesel Engine Exhaust Partic		1350	4.53E-03
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	PAH's (non-specified)		1840	2.52E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Nitrous Oxide (N2O)		2030	1.47E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Nitrogen Oxides (part not sp		2990	1.59E-01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Sulfur Dioxide (SO2)		3990	1.79E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Carbon Monoxide (CO) polluta		4990	3.12E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Carbon Dioxide, non-biogenic		6960	1.83E+01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-3.00E-01	thou gal/yr	12/31/2010	Methane (CH4)		6970	7.33E-04
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Benzene		41	2.13E-03
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Formaldehyde		124	1.74E-04
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Organics (part not spec else		990	1.76E-02
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Arsenic (all)		1030	1.83E-06
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Beryllium (all) pollutant		1040	1.07E-06
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Cadmium		1070	4.57E-06
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Chromium (hexavalent)		1095	9.45E-08
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Lead (all) pollutant		1140	3.88E-06
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Manganese		1160	6.08E-06
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Nickel pollutant		1180	7.39E-05
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Mercury (all) pollutant		1190	1.29E-06
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Diesel Engine Exhaust Partic		1350	1.99E-02
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	PAH's (non-specified)		1840	9.64E-06
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Nitrous Oxide (N2O)		2030	5.62E-04
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Nitrogen Oxides (part not sp		2990	3.79E-01
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Sulfur Dioxide (SO2)		3990	6.85E-04
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Carbon Monoxide (CO) polluta		4990	3.45E-01
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Carbon Dioxide, non-biogenic		6960	7.03E+01
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	1.15E+00	thou gal/yr	10/30/2008	Methane (CH4)		6970	2.81E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010	Ethyl alcohol		105	1.66E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010	Methyl ethyl ketone (MEK)		169	3.33E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	5.55E-04
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	-4.00E+00	gal/yr	12/31/2010	Methyl ethyl ketone (MEK)		169	7.35E-02
9047	Tank 6047	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	0.00E+00
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??090	-5.45E+01	thou gal/yr	12/31/1997	Ketone - other/not spec		90	3.46E-02
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??419	-3.51E+00	thou gal/yr	12/31/1997	Lube oil		419	5.24E-02
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998	Hydrocarbon - mixtures, othe		318	2.77E-01
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Benzene		41	4.48E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Toluene		293	1.52E-02
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Xylene		307	1.79E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Ethylbenzene		333	1.05E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Gasoline - unleaded		551	1.47E+00
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??052	-5.23E+05	thou gal/yr	12/31/2010	Paraffins - C3+		52	2.03E+02
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??158	-1.02E+04	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	2.51E-01
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??242	-7.30E+04	thou gal/yr	12/31/2010	Bunker C fuel oil		242	1.20E-02
9321	Marine Loading Berth #1	Distillate oil	TB8??315	-3.64E+04	thou gal/yr	12/31/2010	Distillate oil		315	8.97E-01
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
9321	Marine Loading Berth #1	Crude oil	TB8??089	-7.73E+04	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??052	-7.78E+04	thou gal/yr	12/31/2010	Paraffins - C3+		52	3.02E+01
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	-8.57E+03	thou gal/yr	12/31/2010	Benzene		41	6.34E-01
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	-8.57E+03	thou gal/yr	12/31/2010	Ethylene dichloride		107	1.08E-02
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	-8.57E+03	thou gal/yr	12/31/2010	Gasoline - leaded		128	5.89E+01
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	-8.57E+03	thou gal/yr	12/31/2010	Toluene		293	3.17E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	-8.57E+03	thou gal/yr	12/31/2010	Xylene		307	6.98E-01
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??128	-8.57E+03	thou gal/yr	12/31/2010	Ethylene dibromide		420	4.25E-04
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB8??158	-9.54E+04	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	2.35E+00
9322	Marine Loading Berth #2	Methyl alcohol	TB8??179	0.00E+00	thou gal/yr	12/31/2010	Methyl alcohol		179	0.00E+00
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB8??201	-2.54E+03	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	7.93E-01
9322	Marine Loading Berth #2	Bunker C fuel oil	TB8??242	-1.32E+05	thou gal/yr	12/31/2010	Bunker C fuel oil		242	2.18E-02
9322	Marine Loading Berth #2	Toluene	TB8??293	-4.21E+03	thou gal/yr	12/31/2010	Toluene		293	3.50E+00
9322	Marine Loading Berth #2	Distillate oil	TB8??315	-1.42E+05	thou gal/yr	12/31/2010	Distillate oil		315	3.51E+00
9322	Marine Loading Berth #2	Lube oil	TB8??419	-2.01E+05	thou gal/yr	12/31/2010	Lube oil		419	1.63E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	-2.59E+05	thou gal/yr	12/31/2010	Benzene		41	7.17E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	-2.59E+05	thou gal/yr	12/31/2010	Toluene		293	2.44E+01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	-2.59E+05	thou gal/yr	12/31/2010	Xylene		307	2.87E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	-2.59E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	1.67E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB8??551	-2.59E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	2.35E+03
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB8??628	0.00E+00	thou gal/yr	12/31/2010	Methyl tertiary-butyl ether		628	0.00E+00
9322	Marine Loading Berth #2	Crude oil	TB8??089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Paraffins - C3+	TB8??052	-4.74E+04	thou gal/yr	12/31/2010	Paraffins - C3+		52	1.84E+01
9323	Marine Loading Berth #3	Crude oil	TB8??089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-1.54E+04	thou gal/yr	12/31/2010	Benzene		41	1.14E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-1.54E+04	thou gal/yr	12/31/2010	Ethylene dichloride		107	1.93E-02
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-1.54E+04	thou gal/yr	12/31/2010	Gasoline - leaded		128	1.06E+02
9323	Marine Loading Berth #3	Gasoline - leaded	TB8??128	-1.54E+04	thou gal/yr	12/31/2010	Toluene		293	5.69E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-1.54E+04	thou gal/yr	12/31/2010	Xylene		307	1.25E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-1.54E+04	thou gal/yr	12/31/2010	Ethylene dibromide		420	7.62E-04
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB877158	-8.93E+04	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	2.20E+00
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB877201	-2.00E+03	thou gal/yr	12/31/2010	Organic liquid - other/not s		201	3.78E+01
9323	Marine Loading Berth #3	Bunker C fuel oil	TB877242	-8.15E+04	thou gal/yr	12/31/2010	Bunker C fuel oil		242	1.34E-02
9323	Marine Loading Berth #3	Toluene	TB877293	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
9323	Marine Loading Berth #3	Distillate oil	TB877315	-1.64E+05	thou gal/yr	12/31/2010	Distillate oil		315	4.03E+00
9323	Marine Loading Berth #3	Lube oil	TB877419	0.00E+00	thou gal/yr	12/31/2010	Lube oil		419	0.00E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-5.05E+05	thou gal/yr	12/31/2010	Benzene		41	1.40E+01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-5.05E+05	thou gal/yr	12/31/2010	Toluene		293	4.75E+01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-5.05E+05	thou gal/yr	12/31/2010	Xylene		307	5.59E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-5.05E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	3.26E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-5.05E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	4.59E+03
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB472318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB472551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB472551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB472551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB472551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB472551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
9324	Marine Loading Berth #4	Bunker C fuel oil	TB877242	0.00E+00	thou gal/yr	12/31/2010	Bunker C fuel oil		242	0.00E+00
9324	Marine Loading Berth #4	Distillate oil	TB877315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
9324	Marine Loading Berth #4	Crude oil	TF877089	-3.42E+06	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
9325	Marine Loading Berth #9	Paraffins - C3+	TB877052	-1.60E+03	thou gal/yr	12/31/2010	Paraffins - C3+		52	3.11E-01
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dichloride		107	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2010	Gasoline - leaded		128	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2010	Ethylene dibromide		420	0.00E+00
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB877158	0.00E+00	thou gal/yr	12/31/2010	Fuel - jet 'A'		158	0.00E+00
9325	Marine Loading Berth #9	Bunker C fuel oil	TB877242	-1.07E+05	thou gal/yr	12/31/2010	Bunker C fuel oil		242	1.77E-02
9325	Marine Loading Berth #9	Toluene	TB877293	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Distillate oil	TB877315	-1.27E+03	thou gal/yr	12/31/2010	Distillate oil		315	3.13E-02
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB877318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
9325	Marine Loading Berth #9	Lube oil	TB877419	0.00E+00	thou gal/yr	12/31/2010	Lube oil		419	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2010	Gasoline - unleaded		551	0.00E+00
9325	Marine Loading Berth #9	Crude oil	TF877089	0.00E+00	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
9326	Marine Loading Berth #11	Paraffins - C3+	TB877052	0.00E+00	thou gal/yr	12/31/2010	Paraffins - C3+		52	0.00E+00
9326	Marine Loading Berth #11	Bunker C fuel oil	TB877242	-1.29E+04	thou gal/yr	12/31/2010	Bunker C fuel oil		242	2.11E-03
9326	Marine Loading Berth #11	Distillate oil	TB877315	0.00E+00	thou gal/yr	12/31/2010	Distillate oil		315	0.00E+00
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00			Organics (part not spec else		990	0.00E+00
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00			Organics (part not spec else		990	7.50E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Benzene		41	1.37E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cyclohexane		91	8.47E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylene dichloride		107	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Hexane		148	1.65E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Isocotane		154	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl alcohol		179	1.30E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Perchloroethylene		210	5.50E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Toluene		293	5.11E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Xylene		307	5.64E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cumene		326	1.09E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylbenzene		333	1.11E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,2,4-trimethylbenzene		385	1.54E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene dibromide		420	3.00E-03
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,3-butadiene		521	1.16E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene		536	3.95E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Propylene		564	2.32E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Organics (part not spec else		990	9.89E+02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ammonia (NH3) pollutant		6990	3.10E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Benzene		41	5.32E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cyclohexane		91	3.04E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Hexane		148	4.72E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Isocotane		154	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl alcohol		179	6.00E-03
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Toluene		293	1.83E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Xylene		307	2.13E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Ethylbenzene		333	4.32E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,2,4-trimethylbenzene		385	6.43E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,3-butadiene		521	7.00E-03
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cresol		525	2.30E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ethylene		536	3.28E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Propylene		564	2.84E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Organics (part not spec else		990	5.75E+02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ammonia (NH3) pollutant		6990	1.80E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Benzene		41	1.18E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Hexane		148	2.68E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Toluene		293	5.55E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Xylene		307	6.36E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			1,3-butadiene		521	1.63E-06
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Cresol		525	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ethylene		536	1.69E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Propylene		564	2.09E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Organics (part not spec else		990	2.24E-02
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ammonia (NH3) pollutant		6990	1.28E-04
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Benzene		41	7.36E+01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Hexane		148	9.10E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Toluene		293	1.65E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Xylene		307	1.65E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cumene		326	9.10E-02
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Ethylbenzene		333	3.75E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,2,4-trimethylbenzene		385	3.12E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,3-butadiene		521	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cresol		525	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Organics (part not spec else		990	7.36E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Benzene		41	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Formaldehyde		124	7.41E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Phenol		214	4.03E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Acetaldehyde		335	1.21E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			1,3-butadiene		521	2.28E-03
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Organics (part not spec else		990	3.68E-01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Arsenic (all)		1030	1.98E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cadmium		1070	1.09E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Chromium		1090	1.38E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Magnesium pollutant		1150	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Manganese		1160	3.76E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nickel pollutant		1180	2.08E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Mercury (all) pollutant		1190	2.57E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Zinc pollutant		1320	2.86E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			PAH's (non-speciated)		1840	6.90E-06
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Particulates (portion of tot		1990	7.51E-02
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nitrogen Oxides (part not sp		2990	6.06E-01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Sulfur Dioxide (SO2)		3990	1.19E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Carbon Monoxide (CO) polluta		4990	3.30E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Abated Detailed Pollutant Emissions
for Calendar Year 2011***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T4277158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T4277201	0.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T4277315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T4277318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	-3.10E-02	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	3.48E-03
55	Tank 55	Distillate oil	T8177315	0.00E+00	thou gal/yr	12/31/2003	Distillate oil		315	0.00E+00
55	Tank 55	Gasoline - unleaded	T8177551	1.70E+00	thou gal/yr	12/31/2003	Benzene		41	1.94E-04
55	Tank 55	Gasoline - unleaded	T8177551	1.70E+00	thou gal/yr	12/31/2003	Toluene		293	6.58E-04
55	Tank 55	Gasoline - unleaded	T8177551	1.70E+00	thou gal/yr	12/31/2003	Xylene		307	7.75E-05
55	Tank 55	Gasoline - unleaded	T8177551	1.70E+00	thou gal/yr	12/31/2003	Ethylbenzene		333	4.52E-05
55	Tank 55	Gasoline - unleaded	T8177551	1.70E+00	thou gal/yr	12/31/2003	Gasoline - unleaded		551	6.36E-02
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996	Organic liquid - other/not s		201	0.00E+00
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997	Distillate oil		315	0.00E+00
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997	Distillate oil		315	1.39E+01
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997	Distillate oil		315	6.12E+00
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.28E+00
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997	Distillate oil		315	4.12E-01
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	-2.98E+04	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	4.92E+01
399	TANK	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
399	TANK	Oil - non-fuel, other/not spec	T5472352	-2.30E+04	thou gal/yr	12/31/2011	Oil - non-fuel, other/not sp		352	1.19E+01
399	TANK	Tetra-Ethyl Lead (TEL)	T5472422	0.00E+00	thou gal/yr	12/31/2011	Tetra-Ethyl Lead (TEL)		422	0.00E+00
401	TANK 401	Refinery feedstock - other/not	T4477239	4.70E+04	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	1.09E+01
634	TANK 634	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
634	TANK 634	Petroleum products - other/not	T5472321	-1.84E+04	thou gal/yr	12/31/2011	Petroleum products - other/n		321	1.56E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	-1.32E+04	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	8.78E-02
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T4277502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	1.46E-03
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T4277502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.33E-03
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
955	TANK 955	Paraffins - C3+	T5412052	-2.94E+04	thou gal/yr	12/31/2011	Paraffins - C3+		52	2.41E+00
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	0.00E+00
956	TANK 956	Paraffins - C3+	T5412052	-4.56E+03	thou gal/yr	12/31/2011	Paraffins - C3+		52	2.36E+00
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
957	Tank 957	Diesel fuel	T4477098	-2.62E+04	thou gal/yr	12/31/2011	Diesel oil		98	7.42E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
957	Tank 957	Fuel - jet 'A'	T4477158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
979	TANK 979	Distillate oil	T4477315	-6.13E+04	thou gal/yr	4/30/1997	Distillate oil		315	7.33E+00
984	TANK 984	Distillate oil	T4417315	-9.67E+03	thou gal/yr	12/31/1997	Distillate oil		315	1.41E+00
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
990	TANK 990	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
990	TANK 990	Gasoline - unleaded	T5432551	-9.22E+04	thou gal/yr	12/31/2011	Benzene		41	1.38E-02
990	TANK 990	Gasoline - unleaded	T5432551	-9.22E+04	thou gal/yr	12/31/2011	Toluene		293	4.71E-02
990	TANK 990	Gasoline - unleaded	T5432551	-9.22E+04	thou gal/yr	12/31/2011	Xylene		307	5.54E-03
990	TANK 990	Gasoline - unleaded	T5432551	-9.22E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	3.23E-03
990	TANK 990	Gasoline - unleaded	T5432551	-9.22E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	4.55E+00
991	TANK 991	Gasoline - unleaded	T5432551	-1.08E+05	thou gal/yr	12/31/2011	Benzene		41	1.37E-02
991	TANK 991	Gasoline - unleaded	T5432551	-1.08E+05	thou gal/yr	12/31/2011	Toluene		293	4.64E-02
991	TANK 991	Gasoline - unleaded	T5432551	-1.08E+05	thou gal/yr	12/31/2011	Xylene		307	5.46E-03
991	TANK 991	Gasoline - unleaded	T5432551	-1.08E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	3.19E-03
991	TANK 991	Gasoline - unleaded	T5432551	-1.08E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	4.48E+00
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
992	Storage Tank T-992	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-9.79E+04	thou gal/yr	12/31/2011	Benzene		41	1.35E-02
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-9.79E+04	thou gal/yr	12/31/2011	Toluene		293	4.59E-02
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-9.79E+04	thou gal/yr	12/31/2011	Xylene		307	5.40E-03
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-9.79E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	3.15E-03
992	Storage Tank T-992	Gasoline - unleaded	T5472551	-9.79E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	4.43E+00
1020	Tank 1020: Inorganic Chemical Storage Tank	Diethanolamine	T4477485	4.20E+02	thou gal/yr	3/10/1995	Diethanolamine		485	1.05E-01
1052	Tank 1052: Organic Liquid Storage Tank	Kerosene	T4377159	0.00E+00	thou gal/yr	12/31/2006	Kerosene		159	0.00E+00
1052	Tank 1052: Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T4377318	0.00E+00	thou gal/yr	12/31/2006	Hydrocarbon - mixtures, othe		318	0.00E+00
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1287	TANK 1287	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1287	TANK 1287	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1287	TANK 1287	Petroleum products - other/not	T5432321	-2.45E+04	thou gal/yr	12/31/2011	Petroleum products - other/n		321	2.16E+00
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
1287	TANK 1287	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1289	TANK 1289	Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1289	TANK 1289	Toluene	T6472293	-1.49E+03	thou gal/yr	12/31/2011	Toluene		293	1.00E+00
1289	TANK 1289	Hydrocarbon - mixtures, other/	T6472318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
1292	TANK 1292	Diesel fuel	T5412098	-5.56E+04	thou gal/yr	12/31/2011	Diesel oil		98	4.40E-01
1292	TANK 1292	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
1292	TANK 1292	Jet fuel JP8	T5412684	0.00E+00	thou gal/yr	12/31/2011	Jet fuel JP8		684	0.00E+00
1296	TANK 1296	Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1296	TANK 1296	Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1296	TANK 1296	Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1296	TANK 1296	Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1296	TANK 1296	Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1296	TANK 1296	Gasoline - leaded	T5412128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1296	TANK 1296	Gasoline - unleaded	T5412551	-7.91E+04	thou gal/yr	12/31/2011	Benzene		41	1.75E-02
1296	TANK 1296	Gasoline - unleaded	T5412551	-7.91E+04	thou gal/yr	12/31/2011	Toluene		293	5.94E-02
1296	TANK 1296	Gasoline - unleaded	T5412551	-7.91E+04	thou gal/yr	12/31/2011	Xylene		307	6.99E-03
1296	TANK 1296	Gasoline - unleaded	T5412551	-7.91E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	4.08E-03
1296	TANK 1296	Gasoline - unleaded	T5412551	-7.91E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	5.73E+00
1297	Tank 1297: Organic Storage Tank	Water/organics mixture	T6372502	5.90E+00	thou gal/yr	12/31/2003	Water/organics mixture		502	8.65E-04
1428	TANK 1428	Refinery feedstock - other/not	T5412239	4.26E+04	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	7.11E+00
1431	Asphalt Tank(T-907)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
1444	TANK 1444	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1444	TANK 1444	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1444	TANK 1444	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1444	TANK 1444	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1444	TANK 1444	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1444	TANK 1444	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1444	TANK 1444	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1444	TANK 1444	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1444	TANK 1444	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1444	TANK 1444	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
1444	TANK 1444	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	5.30E-02
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03	thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe		318	5.97E-01
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe		318	5.90E-01
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.16E+04	thou gal/yr	12/31/2011	Benzene		41	1.16E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.16E+04	thou gal/yr	12/31/2011	Toluene		293	3.93E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.16E+04	thou gal/yr	12/31/2011	Xylene		307	4.63E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.16E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	2.70E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.16E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	3.80E+00
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
1488 TANK 1488		Oil/water mixture	T5472503	-1.01E+04	thou gal/yr	12/31/2011	Oil/water mixture		503	3.14E+01
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1489 TANK 1489		Alkylate	T5432389	-3.34E+04	thou gal/yr	12/31/2011	Alkylate		389	4.85E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+		52	0.00E+00
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2011	Methyl alcohol		179	0.00E+00
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1491 TANK 1491		Gasoline - unleaded	T5432551	-4.98E+04	thou gal/yr	12/31/2011	Benzene		41	1.18E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	-4.98E+04	thou gal/yr	12/31/2011	Toluene		293	4.01E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	-4.98E+04	thou gal/yr	12/31/2011	Xylene		307	4.71E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	-4.98E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	2.75E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	-4.98E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	3.87E+00
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997	Distillate oil		315	3.52E+00
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.30E+00
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	-1.34E+04	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	2.13E+00
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997	Distillate oil		315	8.02E-01
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997	Fuel oil #2		392	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1514 TANK 1514		Gasoline - unleaded	T5432551	-7.53E+04	thou gal/yr	12/31/2011	Benzene		41	1.50E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	-7.53E+04	thou gal/yr	12/31/2011	Toluene		293	5.10E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	-7.53E+04	thou gal/yr	12/31/2011	Xylene		307	6.00E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	-7.53E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	3.50E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	-7.53E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	4.93E+00
1518 TANK 1518		Fuel - jet 'A'	T5432158	-1.34E+04	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	1.25E-01
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997	Paraffins - C3+		52	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	-3.00E+03	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	8.91E-02
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - unleaded	T6472551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
1635	Tank 1635 Organic Liquid Storage Tank	Gasoline - unleaded	T6472551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
1636	TANK 1636	Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997	Distillate oil		315	1.27E+00
1637	TANK 1637	Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1637	TANK 1637	Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1637	TANK 1637	Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1637	TANK 1637	Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1637	TANK 1637	Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1637	TANK 1637	Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1637	TANK 1637	Gasoline - unleaded	T6H32551	-1.67E+04	thou gal/yr	12/31/2011	Benzene		41	4.07E-03
1637	TANK 1637	Gasoline - unleaded	T6H32551	-1.67E+04	thou gal/yr	12/31/2011	Toluene		293	1.38E-02
1637	TANK 1637	Gasoline - unleaded	T6H32551	-1.67E+04	thou gal/yr	12/31/2011	Xylene		307	1.63E-03
1637	TANK 1637	Gasoline - unleaded	T6H32551	-1.67E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	9.49E-04
1637	TANK 1637	Gasoline - unleaded	T6H32551	-1.67E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	1.34E+00
1645	TANK 1645	Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1645	TANK 1645	Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1645	TANK 1645	Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1645	TANK 1645	Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1645	TANK 1645	Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1645	TANK 1645	Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1645	TANK 1645	Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1645	TANK 1645	Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1645	TANK 1645	Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1645	TANK 1645	Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
1645	TANK 1645	Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
1653	TANK 1653	Fuel - jet 'A'	T4417158	-6.21E+03	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	2.41E+00
1653	TANK 1653	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
1653	TANK 1653	Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2011	Jet fuel JP5		492	0.00E+00
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1687	TANK 1687	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1687	TANK 1687	Gasoline - unleaded	T5432551	-1.10E+05	thou gal/yr	12/31/2011	Benzene		41	1.60E-02
1687	TANK 1687	Gasoline - unleaded	T5432551	-1.10E+05	thou gal/yr	12/31/2011	Toluene		293	5.42E-02
1687	TANK 1687	Gasoline - unleaded	T5432551	-1.10E+05	thou gal/yr	12/31/2011	Xylene		307	6.38E-03
1687	TANK 1687	Gasoline - unleaded	T5432551	-1.10E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	3.72E-03
1687	TANK 1687	Gasoline - unleaded	T5432551	-1.10E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	5.24E+00
1688	TANK 1688	Gasoline - unleaded	T5432551	-1.49E+05	thou gal/yr	12/31/2011	Benzene		41	1.65E-02
1688	TANK 1688	Gasoline - unleaded	T5432551	-1.49E+05	thou gal/yr	12/31/2011	Toluene		293	5.60E-02
1688	TANK 1688	Gasoline - unleaded	T5432551	-1.49E+05	thou gal/yr	12/31/2011	Xylene		307	6.59E-03
1688	TANK 1688	Gasoline - unleaded	T5432551	-1.49E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	3.84E-03
1688	TANK 1688	Gasoline - unleaded	T5432551	-1.49E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	5.41E+00
1798	Tank 1798	Fuel - jet 'A'	T5422158	-2.12E+05	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	7.50E+00
1798	Tank 1798	Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
1799	TANK 1799	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
1799	TANK 1799	Fuel - jet 'A'	T5472158	-2.04E+05	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	1.53E+00
1821	Tank 1821 Fresh Sulfuric Acid Tank	H2SO4 - other/not spec	G5999146	-1.25E+05	tons/yr	12/31/2011	Particulates (portion of tot		1990	6.83E-03
1825	Tank 1825	Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	1.19E-02
1828	TANK 1828	Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006	Paraffins - C3+		52	0.00E+00
1828	TANK 1828	Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006	Pentane		209	0.00E+00
1828	TANK 1828	Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006	Butane		416	0.00E+00
1843	TANK 1843	Paraffins - C3+	T5412052	-1.56E+02	thou gal/yr	12/31/2011	Paraffins - C3+		52	7.73E-03
1894	Tank 1894: Phosphoric Acid Storage Tank	Phosphoric acid	G5999217	-8.70E+01	tons/yr	12/31/2011	Particulates (portion of tot		1990	4.77E-06
1899	TANK 1899	Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997	Distillate oil		315	3.92E-01
1908	Asphalt Tank (T-908)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
1909	Tank 1909	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	0.00E+00
1910	Tank 1910	Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994	Organic liquid - other/not s		201	3.55E-02
1911	Tank 1911	Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	0.00E+00
1911	Tank 1911	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
1966	TANK 1966	Fuel - jet 'A'	T5432158	-1.46E+04	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	1.65E-01
2520	Wastewater/MEA Storage Tank	Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005	Ethyl amine		106	0.00E+00
2520	Wastewater/MEA Storage Tank	Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005	Waste water - refin, other/n		300	6.26E+00
2540	Tank 2540: Organic Liquid Storage Tank	Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997	Ethanolamine		664	1.12E-01
2903	Tank 903: Organic Liquid Storage Tank	Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
2903	Tank 903: Organic Liquid Storage Tank	Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.17E-04
2917	Asphalt Tank (T-917)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
2918	Asphalt Tank (T-918)	Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
2921	Asphalt Tank (T-921)	Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
3038	TANK 3038 (Spherical Pressure Tank)	Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+		52	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
3038	TANK 3038 (Spherical Pressure Tank)	Pentane	T3477209	-4.32E+03	thou gal/yr	12/31/2011	Pentane		209	0.00E+00
3050	TANK 3050 SPHERE	Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3066	TANK 3066	Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3071	TANK 3071	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
3071	TANK 3071	Gasoline - unleaded	T5472551	-1.56E+05	thou gal/yr	12/31/2011	Benzene		41	3.66E-01
3071	TANK 3071	Gasoline - unleaded	T5472551	-1.56E+05	thou gal/yr	12/31/2011	Toluene		293	1.24E+00
3071	TANK 3071	Gasoline - unleaded	T5472551	-1.56E+05	thou gal/yr	12/31/2011	Xylene		307	1.46E-01
3071	TANK 3071	Gasoline - unleaded	T5472551	-1.56E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	8.53E-02
3071	TANK 3071	Gasoline - unleaded	T5472551	-1.56E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	1.20E+02
3072	TANK 3072	Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2011	Benzene		41	1.60E-02
3072	TANK 3072	Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2011	Toluene		293	5.43E-02
3072	TANK 3072	Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2011	Xylene		307	6.38E-03
3072	TANK 3072	Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	3.72E-03
3072	TANK 3072	Gasoline - unleaded	T5472551	-1.38E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	5.24E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+		52	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	-9.70E+04	thou gal/yr	12/31/2011	Benzene		41	6.96E-04
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	-9.70E+04	thou gal/yr	12/31/2011	Toluene		293	2.37E-03
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	-9.70E+04	thou gal/yr	12/31/2011	Xylene		307	2.78E-04
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	-9.70E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	1.62E-04
3073	TANK 3073,external floating roof storage tank w/primary and	Gasoline - unleaded	T5472551	-9.70E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	2.29E-01
3074	TANK 3074	Distillate oil	T5472315	-6.37E+04	thou gal/yr	12/31/2011	Distillate oil		315	3.78E-01
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	-1.90E+01	thou gal/yr	12/31/2011	Benzene		41	2.93E-02
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	-1.90E+01	thou gal/yr	12/31/2011	Ethylene dichloride		107	4.98E-04
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	-1.90E+01	thou gal/yr	12/31/2011	Gasoline - leaded		128	1.72E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	-1.90E+01	thou gal/yr	12/31/2011	Toluene		293	1.46E-01
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	-1.90E+01	thou gal/yr	12/31/2011	Xylene		307	3.22E-02
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - leaded	T5477128	-1.90E+01	thou gal/yr	12/31/2011	Ethylene dibromide		420	1.96E-05
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
3075	External Floating Roof Storage Tank w/primary & secondary se	Gasoline - unleaded	T5477551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
3076	TANK T3076	Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
3076	TANK T3076	Hydrocarbon - mixtures, other/	T5472318	-5.42E+03	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	3.29E+00
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Crude oil	T5472089	-2.99E+05	thou gal/yr	12/31/2011	Crude oil		89	2.06E+01
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Bunker C fuel oil	T5472242	0.00E+00	thou gal/yr	12/31/2011	Bunker C fuel oil		242	0.00E+00
3100	W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3101	TANK 3101	Crude oil	T5432089	-3.29E+05	thou gal/yr	12/31/2011	Crude oil		89	2.97E+01
3101	TANK 3101	Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2011	Fuel oil #2		392	0.00E+00
3101	TANK 3101	Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2011	Gas oil		394	0.00E+00
3102	TANK 3102	Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
3102	TANK 3102	Hydrocarbon - mixtures, other/	T5432318	-3.05E+05	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	1.10E+01
3103	TANK 3103	Crude oil	T5432089	-3.47E+05	thou gal/yr	12/31/2011	Crude oil		89	3.55E+01
3104	TANK 3104	Crude oil	T5432089	-2.39E+05	thou gal/yr	12/31/2011	Crude oil		89	2.83E+00
3105	TANK 3105	Crude oil	T5432089	-7.21E+05	thou gal/yr	12/31/2011	Crude oil		89	6.52E+01
3106	TANK 3106	Crude oil	T5432089	-7.62E+05	thou gal/yr	12/31/2011	Crude oil		89	3.71E+01
3107	TANK 3107	Crude oil	T5472089	-4.59E+05	thou gal/yr	12/31/2011	Crude oil		89	4.24E+00
3110	Desalter Effluent Surge Tank A	Crude oil	T4377089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
3111	Desalter Effluent Surge Tank B	Crude oil	T4377089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
3126	TANK 3126	Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2011	Naphtha		188	0.00E+00
3126	TANK 3126	Oil/water mixture	T5432503	-8.15E+04	thou gal/yr	12/31/2011	Oil/water mixture		503	1.09E+00
3127	TANK 3127	Oil/water mixture	T5412503	-4.27E+03	thou gal/yr	12/31/2011	Oil/water mixture		503	1.71E+00
3128	TANK 3128	Aromatic hydrocarbons - other/	T5472027	0.00E+00	thou gal/yr	12/31/2011	Aromatic hydrocarbons - othe		27	0.00E+00
3128	TANK 3128	Water/organics mixture	T5472502	-6.52E+03	thou gal/yr	12/31/2011	Water/organics mixture		502	1.25E+00
3129	TANK 3129	Fuel - jet 'A'	T5412158	-1.78E+05	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	1.55E+00
3132	Tank 3132	Distillate oil	T5472315	8.12E+04	thou gal/yr	4/30/1997	Distillate oil		315	5.89E-01
3133	TANK 3133	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
3133	TANK 3133	Gasoline - unleaded	T5412551	-4.16E+05	thou gal/yr	12/31/2011	Benzene		41	3.11E-01
3133	TANK 3133	Gasoline - unleaded	T5412551	-4.16E+05	thou gal/yr	12/31/2011	Toluene		293	1.06E+00
3133	TANK 3133	Gasoline - unleaded	T5412551	-4.16E+05	thou gal/yr	12/31/2011	Xylene		307	1.24E-01
3133	TANK 3133	Gasoline - unleaded	T5412551	-4.16E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	7.26E-02
3133	TANK 3133	Gasoline - unleaded	T5412551	-4.16E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	1.02E+02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
3133	TANK 3133	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2011	Gasoline - oxygenated, MTBE		680	0.00E+00
3134	TANK 3134	Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3134	TANK 3134	Gasoline - unleaded	T5412551	-2.19E+05	thou gal/yr	12/31/2011	Benzene		41	2.49E-01
3134	TANK 3134	Gasoline - unleaded	T5412551	-2.19E+05	thou gal/yr	12/31/2011	Toluene		293	8.46E-01
3134	TANK 3134	Gasoline - unleaded	T5412551	-2.19E+05	thou gal/yr	12/31/2011	Xylene		307	9.95E-02
3134	TANK 3134	Gasoline - unleaded	T5412551	-2.19E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	5.81E-02
3134	TANK 3134	Gasoline - unleaded	T5412551	-2.19E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	8.17E+01
3134	TANK 3134	Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2011	Gasoline - oxygenated, MTBE		680	0.00E+00
3138	TANK 3138	Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997	Gas oil		394	5.55E-01
3139	TANK 3139	Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997	Gas oil		394	8.14E+00
3141	SULFUR STORAGE TANK 3141	Sulfur	G7014267	0.00E+00	tons/yr	12/31/2011			0	0.00E+00
3142	TANK 3142	Refinery feedstock - other/not	T4417239	-3.33E+02	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
3144	TANK 3144	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
3145	TANK 3145, Sphere	Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3146	Tank 3146: 20% Aqueous Ammonia	Organic liquid - other/not spe	T4477201	9.66E+01	thou gal/yr	12/13/1994	Organic liquid - other/not s		201	1.46E+01
3147	Tank 3147: Organic Liquid Storage Tank	Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3148	Tank 3148: Organic Liquid Storage Tank	Diethanolamine	T4377485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3157	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.24E+01
3158	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3159	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3160	Tank 3160: Organic Liquid Storage Tank	Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994	Lube oil		419	1.34E+01
3161	Tank Lube Oil	Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997	Lube oil		419	1.19E-01
3162	Tank Lube Oil	Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997	Lube oil		419	1.22E-01
3163	Tank Lube Oil	Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997	Lube oil		419	7.74E-02
3164	Tank Lube Oil	Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997	Lube oil		419	7.23E-02
3165	Tank Lube Oil	Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997	Lube oil		419	1.41E-01
3166	Tank Lube Oil	Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997	Lube oil		419	1.40E-01
3167	Tank Lube Oil	Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997	Lube oil		419	5.27E-02
3168	Tank Lube Oil	Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997	Lube oil		419	5.36E-02
3169	organic liquid storage tank, lube oil products	Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995	Lube oil		419	1.78E-01
3170	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3171	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3172	Lube Oil Tank	Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	9.57E+00
3179	Tank 3179: Organic Liquid Storage Tank	Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997	Distillate oil		315	1.59E-01
3180	Tank	Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+		52	0.00E+00
3180	Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3180	Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
3180	Tank	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
3180	Tank	Alkylate	T5472389	0.00E+00	thou gal/yr	12/31/2011	Alkylate		389	0.00E+00
3180	Tank	Gasoline - unleaded	T5472551	-5.29E+04	thou gal/yr	12/31/2011	Benzene		41	2.30E-01
3180	Tank	Gasoline - unleaded	T5472551	-5.29E+04	thou gal/yr	12/31/2011	Toluene		293	7.83E-01
3180	Tank	Gasoline - unleaded	T5472551	-5.29E+04	thou gal/yr	12/31/2011	Xylene		307	9.22E-02
3180	Tank	Gasoline - unleaded	T5472551	-5.29E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	5.38E-02
3180	Tank	Gasoline - unleaded	T5472551	-5.29E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	7.56E+01
3182	Tank 3182: Organic Liquid Storage Tank	Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997	Lube oil		419	2.61E-01
3185	Tank 3185 (previously T-982)	Fuel - jet 'A'	T5472158	-2.08E+05	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	6.39E+00
3186	Gas Oil Tank	Organic liquid - other/not spe	T4477201	0.00E+00		4/21/1997	Organic liquid - other/not s		201	8.69E+00
3189	Gasoline component and Diesel Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3189	Gasoline component and Diesel Tank	Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
3189	Gasoline component and Diesel Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3189	Gasoline component and Diesel Tank	Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
3189	Gasoline component and Diesel Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2011	Gas oil		394	0.00E+00
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	-3.02E+05	thou gal/yr	12/31/2011	Benzene		41	1.93E-02
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	-3.02E+05	thou gal/yr	12/31/2011	Toluene		293	6.56E-02
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	-3.02E+05	thou gal/yr	12/31/2011	Xylene		307	7.72E-03
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	-3.02E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	4.50E-03
3189	Gasoline component and Diesel Tank	Gasoline - unleaded	T5572551	-3.02E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	6.33E+00
3189	Gasoline component and Diesel Tank	Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2011	Gasoline - oxygenated, MTBE		680	0.00E+00
3190	Storage Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant	Fuel - jet 'A'		
3190	Storage Tank	Fuel - jet 'A'	T5472158	-2.16E+05	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	1.75E+00
3191	Storage Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3191	Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
3191	Storage Tank	Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2011	Naphtha		188	0.00E+00
3191	Storage Tank	Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2011	Jet fuel JP4		395	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
3191	Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
3191	Storage Tank	Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2011	Methyl tertiary-butyl ether		628	0.00E+00
3191	Storage Tank	Avgas	T5472662	-1.12E+04	thou gal/yr	12/31/2011	Benzene		41	1.21E-01
3191	Storage Tank	Avgas	T5472662	-1.12E+04	thou gal/yr	12/31/2011	Cyclohexane		91	5.93E-02
3191	Storage Tank	Avgas	T5472662	-1.12E+04	thou gal/yr	12/31/2011	Hexane		148	1.24E-01
3191	Storage Tank	Avgas	T5472662	-1.12E+04	thou gal/yr	12/31/2011	Toluene		293	3.46E-01
3191	Storage Tank	Avgas	T5472662	-1.12E+04	thou gal/yr	12/31/2011	Xylene		307	4.30E-01
3191	Storage Tank	Avgas	T5472662	-1.12E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	8.89E-02
3191	Storage Tank	Avgas	T5472662	-1.12E+04	thou gal/yr	12/31/2011	Tetra-Ethyl Lead (TEL)		422	4.94E-02
3191	Storage Tank	Avgas	T5472662	-1.12E+04	thou gal/yr	12/31/2011	Avgas		662	1.24E+00
3192	Desalter Effluent Skim Tank	Crude oil	T3H77089	-1.56E+04	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
3193	Gasoline component Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3193	Gasoline component Tank	Isocotane	T5472154	-1.31E+04	thou gal/yr	12/31/2011	Isocotane		154	2.26E+00
3193	Gasoline component Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3193	Gasoline component Tank	Alkylate	T5472389	0.00E+00	thou gal/yr	12/31/2011	Alkylate		389	0.00E+00
3193	Gasoline component Tank	Gas oil	T5472394	0.00E+00	thou gal/yr	12/31/2011	Gas oil		394	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
3193	Gasoline component Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
3194	Storage Tank T-3194	Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2003	Hydrocarbon - mixtures, othe		318	0.00E+00
3194	Storage Tank T-3194	Gas oil	T5472394	1.44E+05	thou gal/yr	12/31/2003	Gas oil		394	9.85E-01
3195	T-3195 Waxy Heavy Neutral Storage Tank	Diesel fuel	T5477098	1.29E+05	thou gal/yr	12/31/2006	Diesel oil		98	2.35E+00
3195	T-3195 Waxy Heavy Neutral Storage Tank	Distillate oil	T5477315	0.00E+00	thou gal/yr	12/31/2006	Distillate oil		315	0.00E+00
3195	T-3195 Waxy Heavy Neutral Storage Tank	Lube oil	T5477419	0.00E+00	thou gal/yr	12/31/2006	Lube oil		419	0.00E+00
3196	Gasoline Components Tank	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3196	Gasoline Components Tank	Organic liquid - other/not spe	T5472201	0.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	0.00E+00
3196	Gasoline Components Tank	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3196	Gasoline Components Tank	Gas oil	T5472394	-1.18E+05	thou gal/yr	12/31/2011	Gas oil		394	6.84E-01
3196	Gasoline Components Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
3196	Gasoline Components Tank	Methyl tertiary-butyl ether	T5472628	0.00E+00	thou gal/yr	12/31/2011	Methyl tertiary-butyl ether		628	0.00E+00
3197	Gasoline component Tank	Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3197	Gasoline component Tank	Naphtha	T5572188	-2.67E+04	thou gal/yr	12/31/2011	Naphtha		188	6.20E+00
3197	Gasoline component Tank	Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3197	Gasoline component Tank	Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2011	Gas oil		394	0.00E+00
3198	3198 tank; organic liquid storage tank	Fuel - jet 'A'	T5437158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
3198	3198 tank; organic liquid storage tank	Toluene	T5437293	-2.69E+03	thou gal/yr	12/31/2011	Toluene		293	1.85E+01
3198	3198 tank; organic liquid storage tank	Distillate oil	T5437315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	-1.94E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	4.25E-04
3200	4 Crude Unit Desalter Water Treatment Unit	Waste water - refin, other/not	G5012300	-1.94E+03	thou barre/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.18E-01
3201	Tank 3201: Whole Alkylate	Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3201	Tank 3201: Whole Alkylate	Alkylate	T5472389	-1.24E+05	thou gal/yr	12/31/2011	Alkylate		389	1.12E+02
3202	Tank 3202: Methanol	Methyl alcohol	T5472179	0.00E+00	thou gal/yr	12/31/2011	Methyl alcohol		179	0.00E+00
3202	Tank 3202: Methanol	Naphtha	T5472188	-1.48E+04	thou gal/yr	12/31/2011	Naphtha		188	7.30E+01
3202	Tank 3202: Methanol	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3202	Tank 3202: Methanol	Petroleum products - other/not	T5472321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
3204	Tank 3204: Organic Liquid Storage Tank	Lube oil	T4277419	2.54E+00	thou gal/yr	12/31/1997	Lube oil		419	4.07E-04
3207	Butane Sphere: Organic Liquid Storage Tank	Butane	T3477416	-9.20E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3208	Propane Sphere: Organic Liquid Storage Tank	Propane	T3477417	-7.67E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3211	Sphere	Butane	T3477416	-3.83E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3212	Sphere	Propane	T3477417	-2.76E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Diesel fuel	T5472098	0.00E+00	thou gal/yr	12/31/2011	Diesel oil		98	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Lube oil	T5472419	0.00E+00	thou gal/yr	12/31/2011	Lube oil		419	0.00E+00
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	-2.69E+05	thou gal/yr	12/31/2011	Benzene		41	8.03E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	-2.69E+05	thou gal/yr	12/31/2011	Toluene		293	2.73E+00
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	-2.69E+05	thou gal/yr	12/31/2011	Xylene		307	3.21E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	-2.69E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	1.87E-01
3213	Tank 3213: Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	-2.69E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	2.64E+02
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011	Benzene		41	6.64E-01
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011	Ethylene dichloride		107	1.13E-02
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011	Gasoline - leaded		128	6.17E+01
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011	Toluene		293	3.32E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011	Xylene		307	7.30E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011	Ethylene dibromide		420	4.45E-04
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
3214	Tank 3214: Organic Liquid Storage Tank	Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
3215	Tank 3215: Organic Liquid Storage Tank	Distillate oil	T5472315	-1.29E+05	thou gal/yr	12/31/1997	Distillate oil		315	1.15E+00
3216	Tank 3216: Organic Liquid Storage Tank	Distillate oil	T4477315	8.40E+04	thou gal/yr	7/9/1997	Distillate oil		315	2.27E+01
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
3220	400 Tank Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	-1.23E+04	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	1.42E+02
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T5472318	-2.12E+04	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	1.82E+02
3225	Organic Liquid Storage Tank	Oil/water mixture	T5472503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.28E+05	tons/yr	12/31/2011	Particulates (portion of tot		1990	7.52E-04
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.28E+05	tons/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.21E+00
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.28E+05	tons/yr	12/31/2011	Hydrogen Sulfide (H2S)		5020	1.75E+00
3232	Tank 3232 - Propylene Tetramer Storage Tank	Propylene tetramer	T4477842	1.60E+06	thou gal/yr	Unknown	Propylene tetramer		842	4.13E+02
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T4377419	-3.37E+02	thou gal/yr	12/31/1997	Lube oil		419	3.31E-03
3910	LPG Tank; # 3910	LPG	T3477160	-3.97E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
3911	LPG Tank, # 3911	LPG	T3477160	-2.30E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Benzene		41	6.44E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	4.08E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.72E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Phenol		214	3.69E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	4.20E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	5.84E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	1.37E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	3.91E-05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	7.81E-05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Manganese		1160	2.66E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	3.12E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	1.95E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	6.09E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	3.76E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.61E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.07E-01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.95E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.49E-01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	8.01E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	6.60E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.32E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.71E+05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	5.66E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Benzene		41	2.36E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.50E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	6.30E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Phenol		214	1.35E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.54E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.14E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	5.01E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	1.43E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	2.86E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Manganese		1160	9.74E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.15E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	7.16E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.23E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.38E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	5.91E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	3.94E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	7.16E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.65E-01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.94E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.42E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.22E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	9.95E+04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	2.08E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Benzene		41	2.55E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.61E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	6.79E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Phenol		214	1.46E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.66E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.31E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	5.40E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	1.54E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	3.09E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Manganese		1160	1.05E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.24E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	7.72E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.41E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.49E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	6.37E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	4.25E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	7.72E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.78E-01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.17E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.61E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.31E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.07E+05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	2.24E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Benzene		41	2.53E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.60E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	6.75E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Phenol		214	1.45E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.65E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.29E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	5.37E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	1.53E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	3.07E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Manganese		1160	1.04E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.23E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	7.67E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.39E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.48E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	6.33E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	4.22E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	7.67E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.76E-01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.14E+01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.59E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.30E+01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.07E+05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	2.22E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Benzene		41	4.69E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	2.97E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.25E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Phenol		214	2.69E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	3.06E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.25E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	9.95E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	2.84E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	5.68E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Manganese		1160	1.93E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	2.27E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	1.42E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	4.43E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	2.74E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.17E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	7.82E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.42E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.27E-01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.83E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.80E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.42E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.98E+05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	4.12E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Benzene		41	1.84E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.17E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	4.92E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Phenol		214	1.06E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.20E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.67E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	3.91E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	1.12E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	2.23E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Manganese		1160	7.60E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	8.94E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	5.59E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/3				

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Pollutant	Code	lb/day
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.95E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	6.91E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.97E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	3.95E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Manganese	1160	1.34E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.58E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	9.87E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	3.08E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	1.90E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	8.14E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	5.43E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	9.87E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	2.27E-01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	4.04E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	3.33E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.68E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.37E+05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	2.86E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Benzene	41	1.48E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	9.38E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	3.95E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Phenol	214	8.48E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	9.65E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	1.34E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	3.14E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	8.97E-06
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	1.79E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Manganese	1160	6.10E-04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	7.18E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	4.49E-05
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	1.40E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	8.64E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	3.70E-03
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	2.47E-02
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	4.49E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.03E-01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	1.84E+01
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	1.52E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	7.63E+00
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	6.24E+04
4045	#5 RHENIF F580	Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	1.30E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Benzene	41	2.90E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.84E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	7.73E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.66E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.89E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.63E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	6.15E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.76E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	3.52E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Manganese	1160	1.20E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.41E-04
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	8.79E-05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.74E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	1.69E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	7.25E-03
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	4.83E-02
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	8.79E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	2.02E-01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	3.08E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	2.97E+00
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.49E+01
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.22E+05
4059	#1 JHT Furnace #247	Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	2.55E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Benzene	41	3.03E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.92E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	8.07E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.73E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.97E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.74E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	6.42E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.83E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	3.67E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Manganese	1160	1.25E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.47E-04
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	9.17E-05
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.86E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	1.77E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	7.57E-03
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	5.04E-02
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	9.17E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	2.11E-01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	3.21E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	3.10E+00
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.56E+01
4060	#1 JHT Furnace #210A&B	Chevron refinery fuel gas	C1530708	-3.35E+05					

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Emissions		Code	lb/day
						Date	Pollutant		
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	1.02E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	2.91E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	5.82E-05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Manganese	1160	1.98E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	2.33E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	1.45E-04
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	4.54E-03
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	2.80E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	1.20E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	8.00E-02
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	1.45E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	3.34E-01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	7.41E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	4.91E+00
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	2.47E+01
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	2.02E+05
4061	#5 NAPH HYDROTREATER F410	Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	4.22E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Benzene	41	4.83E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	3.06E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	1.29E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Phenol	214	2.77E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	3.15E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	4.38E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	1.02E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	2.93E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	5.85E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Manganese	1160	1.99E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	2.34E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	1.46E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	4.57E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	2.82E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	1.21E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	8.05E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	1.46E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	3.37E-01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	7.46E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	4.94E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	2.49E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	2.03E+05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	4.24E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Benzene	41	2.85E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.81E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	7.60E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.63E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.86E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.58E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	6.05E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.73E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	3.46E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Manganese	1160	1.18E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.38E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	8.64E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.70E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	1.66E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	7.13E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	4.75E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	8.64E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.99E-01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	1.40E+02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	2.92E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.47E+01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.20E+05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	2.51E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Benzene	41	1.14E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	7.22E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	3.04E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Phenol	214	6.53E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	7.43E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	1.03E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	2.42E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	6.91E-06
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	1.38E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Manganese	1160	4.70E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	5.53E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	3.45E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	1.08E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	6.65E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	2.85E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	1.90E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	3.45E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	7.94E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	6.80E+01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	1.17E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	5.87E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	4.80E+04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	1.00E+00
4070	#4 CRUDE UNIT F 1100A	Naphtha	C1520188	0.00E+00	/yr	12/31/2009		0	0.00E+00
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Benzene	41	1.97E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.25E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Formaldehyde	124	5.26E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Phenol	214	1.13E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.29E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	1.79E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	4.19E-04
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Cadmium		1070	1.20E-04
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	2.39E-04
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Manganese		1160	8.14E-03
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	9.57E-04
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	5.98E-04
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.87E-02
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.15E-01
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	4.94E-02
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	3.29E-01
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	5.98E+01
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.38E+00
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.67E+02
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.62E+02
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.02E+02
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	8.31E+05
4070 #4 CRUDE UNIT	F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.73E+01
4071 #4 CRUDE UNIT	F1100B	Naphtha	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Benzene		41	1.90E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.20E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Formaldehyde		124	5.06E-03
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Phenol		214	1.09E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.24E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.72E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	4.02E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Cadmium		1070	1.15E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	2.30E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Manganese		1160	7.82E-03
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	9.20E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	5.75E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.79E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.11E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	4.74E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	3.16E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	5.75E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.32E+00
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.61E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.55E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	9.77E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	7.99E+05
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.67E+01
4072 #4 CRUDE UNIT	F1160	Naphtha	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Benzene		41	6.99E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	4.43E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.86E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Phenol		214	4.00E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	4.55E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	6.33E+00
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	1.48E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	4.24E-05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	8.47E-05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Manganese		1160	2.88E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	3.39E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	2.12E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	6.61E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	4.08E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.75E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.17E-01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	2.12E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.87E-01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.93E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	5.72E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.60E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.94E+05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	6.14E+00
4073 L5FO COOLING TOWER		Fresh water	G5005415	-1.35E+07	thou gallo/yr	12/31/2011	Organics (part not spec else		990	2.22E+02
4076 3 CAT COOLING TOWER E460		Fresh water	G5005415	-1.53E+07	thou gallo/yr	12/31/2011	Organics (part not spec else		990	2.52E+02
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Benzene		41	1.32E-06
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Formaldehyde		124	1.55E-05
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Toluene		293	7.03E-07
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Organics (part not spec else		990	1.18E-03
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Particulates (portion of tot		1990	6.20E-04
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.77E-05
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.89E-02
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.17E-04
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	7.23E-03
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.53E+01
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Methane (CH4)		6970	3.93E-04
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Benzene		41	4.99E-03
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.16E-02
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.48E-02
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Phenol		214	9.07E-04
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Toluene		293	1.80E-01
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	4.35E-02
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.29E+00
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	6.05E-05
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	3.02E-04
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	4.53E-04
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.57E-03
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.59E-02
4129 800# STM BLR #1 #IPP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.25E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	8.31E-02
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.51E+01
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2030	3.48E-01
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not spec else		2990	5.29E+01
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	5.10E+00
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.57E+01
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.10E+05
4129	800# STM BLR #1 #1PP	Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	4.38E+00
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Benzene		41	3.47E-03
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.03E-02
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Phenol		214	6.30E-04
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Toluene		293	1.25E-01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	3.03E-02
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.98E+00
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	4.20E-05
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	2.10E-04
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	3.15E-04
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.79E-03
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	1.10E-02
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.05E+01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (N2O)		2030	2.42E-01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not spec		2990	3.68E+01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.55E+00
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.79E+01
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.46E+05
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	3.05E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Benzene		41	3.27E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	2.07E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	9.71E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Phenol		214	5.94E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Toluene		293	1.18E-01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	2.85E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.81E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	3.96E-05
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	1.98E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	2.97E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.68E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	1.04E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	8.17E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	5.45E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	9.89E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxide (N2O)		2030	2.28E-01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not spec		2990	3.47E+01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.35E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.68E+01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.38E+05
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	2.87E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Benzene		41	5.20E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.29E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.54E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Phenol		214	9.45E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Toluene		293	1.88E-01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	4.54E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.47E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	6.30E-05
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	3.15E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	4.73E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.68E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	1.65E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.30E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	8.67E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.57E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxide (N2O)		2030	3.62E-01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not spec		2990	5.52E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	5.32E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.68E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.19E+05
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	4.57E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Benzene		41	8.84E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	5.60E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	2.63E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Phenol		214	1.61E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Toluene		293	3.19E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	7.72E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	7.60E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	1.07E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	5.36E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	8.04E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	4.55E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	2.81E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	2.21E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.47E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	2.68E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxide (N2O)		2030	6.16E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not spec		2990	9.38E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	9.05E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	4.55E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.72E+05
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	7.77E+00
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	-4.40E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	6.03E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Benzene		41	4.41E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	2.80E-03
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Formaldehyde	124	1.18E-04
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Phenol	214	2.53E-04
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Acetaldehyde	335	2.88E-04
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	4.00E-01
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	9.36E-06
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Cadmium	1070	2.68E-06
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	5.35E-06
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Manganese	1160	1.82E-04
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	2.14E-05
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	1.34E-05
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	4.17E-04
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	2.58E-03
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	1.10E-03
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	7.36E-03
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	1.34E+00
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	3.08E-02
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	5.49E+00
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	4.52E-01
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	2.27E+00
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.86E+04
4152	F-100 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	3.88E-01
4153	F-110 ASPHALT SOLUTION HEATER	SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0.00E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Benzene	41	5.14E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	3.25E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Formaldehyde	124	1.37E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Phenol	214	2.94E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Acetaldehyde	335	3.35E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	4.66E-01
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	1.09E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Cadmium	1070	3.11E-06
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	6.23E-06
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Manganese	1160	2.12E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	2.49E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	1.56E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	4.86E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	3.00E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	1.28E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	8.56E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	1.56E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	3.58E-02
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	6.38E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	5.26E-01
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	2.65E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	2.16E+04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	4.52E-01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Benzene	41	6.78E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	4.30E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	1.81E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Phenol	214	3.88E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	4.42E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	6.15E+00
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	1.44E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	4.11E-05
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	8.22E-05
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Manganese	1160	2.80E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	3.29E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	2.06E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	6.41E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	3.96E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	1.70E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	1.13E-01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	2.06E+01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	4.73E-01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	9.45E+01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	6.94E+00
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	8.55E+01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	2.86E+05
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	5.96E+00
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX		Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2011		0	0.00E+00	
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0.00E+00	
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Benzene	41	3.14E-03
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.99E-02
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	8.37E-04
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.80E-03
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	2.05E-03
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.85E+00
4158	Hydrogen Plant Preheat Furnace F-340		Chevron refinery fuel gas	C1540708	-3.47E+0					

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Emissions ----->		Code	lb/day
						Date	Pollutant		
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	8.04E+00
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.62E+01
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.32E+05
4158	Hydrogen Plant Preheat Furnace F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	2.76E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Benzene	41	2.19E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.39E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	5.85E-04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.26E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.43E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	1.99E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	4.65E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.33E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	2.66E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Manganese	1160	9.04E-04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.06E-04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	6.65E-05
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.07E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	1.28E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	5.49E-03
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	3.66E-02
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	6.65E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.53E-01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	1.86E+01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	2.25E+00
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.13E+01
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	9.24E+04
4159	F410 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	1.93E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Benzene	41	2.18E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.38E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	5.82E-04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.25E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.42E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	1.98E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	4.63E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.32E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	2.65E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Manganese	1160	9.00E-04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.06E-04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	6.62E-05
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.06E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	1.27E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	5.46E-03
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	3.64E-02
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	6.62E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.52E-01
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	1.85E+01
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	2.23E+00
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.12E+01
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	9.20E+04
4160	F420 TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	1.92E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011		0	0.00E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Benzene	41	2.66E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.68E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	7.09E-04
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.52E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.73E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.41E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	5.64E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.61E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	3.22E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Manganese	1160	1.10E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.29E-04
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	8.05E-05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.51E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	1.55E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	6.65E-03
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	4.43E-02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	8.05E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.85E-01
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	1.22E+02
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	4.20E+00
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.37E+01
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.12E+05
4161	F-510 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	2.34E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011		0	0.00E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Benzene	41	3.56E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	2.25E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	9.48E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Phenol	214	2.04E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	2.32E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	3.22E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	7.54E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	2.16E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	4.31E-05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Manganese	1160	1.47E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.72E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	1.08E-04
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	3.36E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	2.07E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	8.89E-03
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	5.93E-02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	1.08E+01
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	2.48E-01

Printed: AUG 1, 2013

←----- Emissions -----→

Sl	Name	Material	Source	Conc	ThruPut	Units	Date	Pollutant	Code	lb/day
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr		12/31/2011	Nitrogen Oxides (part not sp	2990	1.63E+02
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr		12/31/2011	Sulfur Dioxide (SO2)	3990	5.61E+00
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr		12/31/2011	Carbon Monoxide (CO) polluta	4990	1.83E+01
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr		12/31/2011	Carbon Dioxide, non-biogenic	6960	1.50E+05
4162	F-520 TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr		12/31/2011	Methane (CH4)	6970	3.13E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr		12/31/2011		0	0.00E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Cycloparaffins - other/not s	92	2.17E-02
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Formaldehyde	124	9.12E-04
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Phenol	214	1.96E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Toluene	293	0.00E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Acetaldehyde	335	2.23E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Organics (part not spec else	990	2.92E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Arsenic (all)	1030	7.25E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Cadmium	1070	2.07E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Chromium (hexavalent)	1095	4.14E-05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Manganese	1160	1.41E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Nickel pollutant	1180	1.66E-04
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Mercury (all) pollutant	1190	1.04E-04
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Zinc pollutant	1320	3.23E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	PAH's (non-specified)	1840	1.99E-02
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	8.55E-03
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	PAH's (non-carcinogenic)	1870	5.70E-02
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Nitrous Oxide (N2O)	2030	2.38E-01
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Nitrogen Oxides (part not sp	2990	1.56E+02
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Sulfur Dioxide (SO2)	3990	5.40E+00
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Carbon Monoxide (CO) polluta	4990	1.76E+01
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Carbon Dioxide, non-biogenic	6960	1.44E+05
4163	F-530 TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr		12/31/2011	Methane (CH4)	6970	3.01E+00
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Benzene	41	2.40E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.52E-02
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	6.40E-04
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.37E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.56E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.17E+00
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	5.09E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.45E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	2.91E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Manganese	1160	9.89E-04
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.16E-04
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	7.27E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.27E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)	1840	1.40E-02
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	6.00E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	4.00E-02
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	7.27E+00
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.67E-01
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	2.54E+01
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	2.46E+00
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.24E+01
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.01E+05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	2.11E+00
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Benzene	41	1.63E-03
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.03E-02
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	4.34E-04
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Phenol	214	9.32E-04
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.06E-03
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	1.47E+00
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	3.45E-05
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	9.86E-06
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	1.97E-05
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Manganese	1160	6.71E-04
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	7.89E-05
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	4.93E-05
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	1.54E-03
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)	1840	9.49E-03
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	4.07E-03
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	2.71E-02
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	4.93E+00
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.13E-01
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	1.73E+01
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	1.67E+00
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	8.38E+00
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	6.85E+04
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	1.43E+00
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Benzene	41	2.28E-03
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.44E-02
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	6.08E-04
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.31E-03
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.48E-03
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.07E+00
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	4.83E-05
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.38E-05
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	2.76E-05
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Manganese	1160	9.39E-04
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.11E-04
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	6.91E-05
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.15E-03
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)	1840	1.33E-02
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	5.70E-03
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	3.80E-02
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne								

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4166	F-610 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.33E+00
4166	F-610 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.17E+01
4166	F-610 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	9.60E+04
4166	F-610 ISOCRACKER FEED FURNACE ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	2.00E+00
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	4.43E-02
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	5.98E+00
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.75E-02
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.17E-01
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.88E-01
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	8.70E+01
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	7.16E+00
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.61E+01
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.95E+05
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	6.15E+00
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Benzene		41	1.46E-02
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	9.22E-02
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Formaldehyde		124	3.88E-03
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Phenol		214	8.33E-03
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Acetaldehyde		335	9.48E-03
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.32E+01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	3.09E-04
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Cadmium		1070	8.82E-05
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	1.76E-04
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Manganese		1160	6.00E-03
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	7.06E-04
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	4.41E-04
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.38E-02
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	8.49E-02
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	3.64E-02
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	2.43E-01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	4.41E+01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.01E+00
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.23E+02
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.49E+01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	7.50E+01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	6.13E+05
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.28E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Benzene		41	1.27E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	8.02E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Formaldehyde		124	3.38E-03
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Phenol		214	7.26E-03
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Acetaldehyde		335	8.26E-03
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.15E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	2.69E-04
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Cadmium		1070	7.68E-05
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	1.54E-04
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Manganese		1160	5.22E-03
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	6.14E-04
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	3.84E-04
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.20E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	7.39E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	3.17E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	2.11E-01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	3.84E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	8.83E-01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.08E+02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.30E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	6.53E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	5.34E+05
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.11E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Benzene		41	5.39E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.42E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Formaldehyde		124	3.60E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Phenol		214	1.47E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Toluene		293	1.15E+00
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Acetaldehyde		335	3.60E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.77E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	7.52E-03
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Manganese		1160	4.58E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.63E-03
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	3.27E-04
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.13E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	3.56E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.35E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	8.99E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.63E+02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.01E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.88E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	5.52E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.78E+02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.27E+06
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	4.74E+01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Benzene		41	4.55E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	2.88E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Formaldehyde		124	3.03E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Phenol		214	1.24E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Toluene		293	9.70E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Acetaldehyde		335	3.03E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.03E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	2.76E-04
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	9.51E-03
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	3.00E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.14E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	7.58E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.38E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.17E+00
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.86E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.16E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.34E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.92E+06
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	4.00E+01
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	-3.37E+07	thou gallo/yr	12/31/2011	Organics (part not spec else		990	5.53E+02
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	-2.81E+07	thou gallo/yr	12/31/2011	Organics (part not spec else		990	4.62E+02
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	-8.64E+05	thou gallo/yr	12/31/2011	Organics (part not spec else		990	1.42E+01
4188	F-651 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011			0	0.00E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Benzene		41	1.55E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	9.81E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	4.13E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Phenol		214	8.87E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.01E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.40E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	3.29E-05
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	9.39E-06
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	1.88E-05
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Manganese		1160	6.38E-04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	7.51E-05
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	4.69E-05
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.46E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	9.04E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	3.87E-03
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	2.58E-02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	4.69E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.08E-01
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.36E+02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.45E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	7.98E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	6.53E+04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.36E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011			0	0.00E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Benzene		41	6.16E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.90E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.64E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Phenol		214	3.53E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Acetaldehyde		335	4.01E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	5.58E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	1.31E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Cadmium		1070	3.73E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	7.47E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	1.18E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Manganese		1160	2.54E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	1.87E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	5.82E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	3.59E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.54E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.03E-02
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.87E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.29E-02
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.41E+01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	9.72E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.17E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.59E+04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	5.41E-01
4191	Alkane Cooling Water Tower	Fresh water	G5005415	-2.28E+06	thou gallo/yr	12/31/2011	Organics (part not spec else		990	3.75E+01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Benzene		41	1.03E-03
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Formaldehyde		124	1.21E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Toluene		293	5.51E-04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Organics (part not spec else		990	9.26E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	4.86E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.74E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.27E+01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.38E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.67E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.98E+04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Methane (CH4)		6970	3.08E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Benzene		41	1.23E-03
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Formaldehyde		124	1.45E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Toluene		293	6.57E-04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Organics (part not spec else		990	1.10E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	5.80E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.46E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.70E+01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.10E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	6.76E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.37E+04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Methane (CH4)		6970	3.67E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Benzene		41	1.15E-03
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Formaldehyde		124	1.35E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Toluene		293	6.12E-04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Organics (part not spec else		990	1.03E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	5.40E-01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.16E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.52E+01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.87E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	6.30E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.21E+04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Methane (CH4)		6970	3.42E-01
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	-6.11E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.67E+01
4227	SRU #1 TRAIN	Sulfur	G7055267	-3.45E+04	tons/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.04E+02
4228	SRU #2 TRAIN	Sulfur	G7055267	-4.23E+04	tons/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.35E+02
4229	SRU #3 TRAIN	Sulfur	G7055267	-4.29E+04	tons/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.25E+02
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997	Particulates (portion of tot		1990	6.78E-03
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	-1.83E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	5.02E+01
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	-1.40E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	3.84E+01
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	-9.37E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	7.70E+00
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	-7.27E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.99E+02
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	-7.51E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	3.08E+01
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	-1.58E+05	thou gal/yr	12/31/2011	LPG		160	6.91E+01
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.64E+04	million cu/yr	12/31/2011	Ethyl alcohol		105	2.13E-01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.64E+04	million cu/yr	12/31/2011	Methyl alcohol		179	7.65E+00
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.64E+04	million cu/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	8.49E+01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.64E+04	million cu/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.48E+06
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.05E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.05E+04	thou barre/yr	12/31/2011	Particulates (portion of tot		1990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.05E+04	thou barre/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.05E+04	thou barre/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.05E+04	thou barre/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	-4.12E+03	thou gallo/yr	12/31/2011	Organics (part not spec else		990	1.13E+00
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	-1.62E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	4.45E-03
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	-1.23E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	3.38E-03
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	-6.87E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.88E-03
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	-6.63E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.82E-03
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Organics (part not spec else		990	1.48E+02
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Particulates (portion of tot		1990	1.75E+03
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.02E+01
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.12E+02
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	8.92E+02
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.39E+02
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	5.17E+06
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Methane (CH4)		6970	1.51E+02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Benzene		41	1.97E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Arsenic (all)		1030	9.15E-04
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Chromium		1090	9.85E-04
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Manganese		1160	1.90E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Nickel pollutant		1180	1.06E-03
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Zinc pollutant		1320	1.69E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	PAH's (non-specified)		1840	2.84E-04
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Particulates (portion of tot		1990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Ammonia (NH3) pollutant		6990	4.43E+00
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.47E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	4.02E-01
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.47E+04	thou barre/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.12E+02
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	-7.96E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.09E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	-2.56E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.05E+01
4315	POINT ORIENT WHARF	Benzene	TB872041	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
4315	POINT ORIENT WHARF	Xylene	TB872307	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
4315	POINT ORIENT WHARF	Distillate oil	TB872315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	TB872318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
4329	RLOP Cooling Tower	Fresh water	G5005415	-1.05E+07	thou gallo/yr	12/31/2011	Organics (part not spec else		990	2.02E+01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Benzene		41	6.60E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	4.18E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.56E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Phenol		214	1.60E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Toluene		293	1.19E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Acetaldehyde		335	5.74E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	5.64E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	4.00E-06
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	2.00E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Manganese		1160	1.80E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	2.00E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	4.00E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.60E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.42E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.65E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.10E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	2.00E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.38E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.74E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	6.76E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.40E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.78E+04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	5.80E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Benzene		41	6.30E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.99E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.49E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Phenol		214	1.53E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Toluene		293	1.14E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Acetaldehyde		335	5.48E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	5.38E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	3.82E-06
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	1.91E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Manganese		1160	1.72E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.91E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	3.82E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.48E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.36E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.58E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.05E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.91E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.32E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.66E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	6.45E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.25E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.65E+04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	5.54E-01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Benzene		41	2.52E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.60E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	5.96E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Phenol		214	6.12E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Toluene		293	4.55E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	2.19E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.16E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	1.53E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	7.64E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Manganese		1160	6.88E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	7.64E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	1.53E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	9.94E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	5.44E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	6.31E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	4.20E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	7.64E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	5.27E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	6.65E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.58E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.30E+01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.06E+05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	2.22E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.06E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.43E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	4.18E-03
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	2.79E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.50E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	4.41E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.71E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	8.62E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	7.05E+04
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.47E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Benzene		41	1.04E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	6.62E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	2.47E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Phenol		214	2.53E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Toluene		293	1.88E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	9.09E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	8.93E-01
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	6.33E-06
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	3.17E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Manganese		1160	2.85E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	3.17E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	6.33E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	4.12E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	2.25E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	2.61E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.74E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	3.17E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.18E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.75E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.07E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.38E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.40E+04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	9.18E-01
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Benzene		41	1.09E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	6.92E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	2.58E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Phenol		214	2.65E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Toluene		293	1.97E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	9.50E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	9.33E-01
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	6.62E-06
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	3.31E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Manganese		1160	2.98E-04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	3.31E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	6.62E-05
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	4.30E-04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	2.36E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	2.73E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.82E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	3.31E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.28E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.88E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.12E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.63E+00
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.60E+04
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	9.60E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Benzene		41	5.89E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.73E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.39E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Phenol		214	1.43E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Toluene		293	1.06E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Acetaldehyde		335	5.12E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	5.03E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	3.57E-06
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	1.79E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Manganese		1160	1.61E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.79E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	3.57E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.32E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.27E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.47E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	9.82E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.79E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.23E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.55E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	6.03E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.03E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.48E+04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	5.18E-01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Benzene		41	1.15E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	7.26E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	2.71E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Phenol		214	2.78E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Toluene		293	2.07E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	9.97E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	9.80E-01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	6.95E-06
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	3.47E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Manganese		1160	1.31E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	3.47E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	6.95E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	4.52E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	2.47E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	2.87E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.91E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	3.47E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.40E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.02E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.17E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.91E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.83E+04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.01E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Benzene		41	1.68E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.07E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	3.98E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Phenol		214	4.08E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Toluene		293	3.04E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.46E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.44E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	1.02E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	5.10E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Manganese		1160	4.59E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	5.10E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	1.02E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	6.63E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	3.63E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	4.21E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	2.81E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	5.10E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.52E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	4.44E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.72E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	8.67E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	7.09E+04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.48E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Benzene		41	5.82E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.68E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.37E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Phenol		214	1.41E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Toluene		293	1.05E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Acetaldehyde		335	5.06E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.97E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	3.53E-06
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	1.76E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Manganese		1160	1.59E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.76E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	3.53E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.29E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.26E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.45E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	9.70E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.76E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.22E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.53E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	5.95E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.00E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.45E+04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	5.11E-01
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.13E+05	tons/yr	12/31/2011	Organics (part not spec else		990	6.15E-01
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.13E+05	tons/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.41E+01
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.10E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	6.98E-01
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.10E+03	thou barre/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.87E+01
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.21E+06	tons/yr	12/31/2011	Organics (part not spec else		990	1.22E+00
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.21E+06	tons/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	6.74E+01
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.50E+05	tons/yr	12/31/2011	Organics (part not spec else		990	3.51E-01
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.50E+05	tons/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.95E+01
4345	Misc.PET REF,Refinery Sour Waste Water No 2NH3-H2S	Waste gases	G5037338	-1.17E+02	million cu/yr	12/31/2011	Hydrogen Sulfide (H2S)		5020	0.00E+00
4345	Misc.PET REF,Refinery Sour Waste Water No 2NH3-H2S	Waste gases	G5037338	-1.17E+02	million cu/yr	12/31/2011	Ammonia (NH3) pollutant		6990	0.00E+00
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-2.31E+05	tons/yr	12/31/2011	Organics (part not spec else		990	1.17E+00
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-2.31E+05	tons/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	6.50E+01
4348	H2 Recovery Plant	Hydrocarbon - mixtures, other/	G5998318	-5.33E+04	tons/yr	12/31/2011	Organics (part not spec else		990	2.70E-01
4348	H2 Recovery Plant	Hydrocarbon - mixtures, other/	G5998318	-5.33E+04	tons/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.50E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Benzene		41	1.84E-03
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.67E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	8.37E-01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	6.42E-02
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.91E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.36E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	9.77E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.88E+04
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	8.09E-01
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Benzene		41	8.87E-05
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Formaldehyde		124	4.25E-03
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Organics (part not spec else		989	7.62E-02
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	PAH's (non-speciated)		1840	1.54E-04
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Particulates (portion of tot		1990	5.73E-02
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.54E-03
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.15E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.81E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.83E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.37E+03
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Methane (CH4)		6970	6.36E-02
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Ammonia (NH3) pollutant		6990	8.51E-01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Benzene		41	2.37E-03
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Formaldehyde		124	1.18E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Organics (part not spec else		989	2.16E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	PAH's (non-speciated)		1840	4.28E-02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Particulates (portion of tot		1990	1.64E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.99E-01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.18E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.90E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.11E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.06E+06

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Methane (CH4)		6970	1.05E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Ammonia (NH3) pollutant		6990	2.36E+02
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Benzene		41	1.11E-03
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Formaldehyde		124	5.49E-01
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Organics (part not spec else		989	1.01E+00
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	PAH's (non-speciated)		1840	1.99E-02
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Particulates (portion of tot		1990	7.64E+00
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Nitrous Oxide (N2O)		2030	9.29E-02
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Nitrogen Oxides (part not sp		2990	1.48E+02
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Sulfur Dioxide (SO2)		3990	2.28E+00
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Carbon Monoxide (CO) polluta		4990	2.38E+01
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Carbon Dioxide, non-biogenic		6960	4.91E+05
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Methane (CH4)		6970	4.91E+01
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Ammonia (NH3) pollutant		6990	1.10E+02
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2011			0	0.00E+00
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc., other	C7020198	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Benzene		41	1.28E-02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.16E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.17E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	8.93E-02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.44E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.31E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.72E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	5.40E+05
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	5.63E+00
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Benzene		41	8.87E-05
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Formaldehyde		124	4.25E-03
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Organics (part not spec else		989	7.62E-02
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	PAH's (non-speciated)		1840	1.54E-04
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Particulates (portion of tot		1990	5.73E-02
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.54E-03
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.15E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.81E-03
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.83E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.37E+03
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Methane (CH4)		6970	6.36E-02
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Ammonia (NH3) pollutant		6990	8.51E-01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Benzene		41	2.37E-03
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Formaldehyde		124	1.18E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Organics (part not spec else		989	2.16E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	PAH's (non-speciated)		1840	4.28E-02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Particulates (portion of tot		1990	1.64E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.99E-01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.18E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.90E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.11E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.06E+06
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Methane (CH4)		6970	1.05E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Ammonia (NH3) pollutant		6990	2.36E+02
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Benzene		41	1.11E-03
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Formaldehyde		124	5.49E-01
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Organics (part not spec else		989	1.01E+00
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	PAH's (non-speciated)		1840	1.99E-02
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Particulates (portion of tot		1990	7.64E+00
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Nitrous Oxide (N2O)		2030	9.29E-02
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Nitrogen Oxides (part not sp		2990	1.48E+02
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Sulfur Dioxide (SO2)		3990	2.28E+00
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Carbon Monoxide (CO) polluta		4990	2.38E+01
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Carbon Dioxide, non-biogenic		6960	4.91E+05
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Methane (CH4)		6970	4.91E+01
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Ammonia (NH3) pollutant		6990	1.10E+02
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2011			0	0.00E+00
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc., other	C7020198	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Benzene		41	1.28E-02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.16E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.17E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	8.93E-02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.44E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	6.56E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.72E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	5.40E+05
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	5.63E+00
4354	Butamer Plant	Paraffins - C3+	G5031052	-8.17E+04	thou gallo/yr	12/31/2011	Organics (part not spec else		990	0.00E+00
4355	Deisobutanizer Plant	Paraffins - C3+	G5031052	-2.83E+05	thou gallo/yr	12/31/2011	Organics (part not spec else		990	0.00E+00
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2011			0	0.00E+00
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2011			0	0.00E+00
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T3377210	-5.77E+00	thou gal/yr	12/31/2011	Perchloroethylene		210	0.00E+00
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T4177210	0.00E+00			Perchloroethylene		210	1.61E-03
4361	Perc Surge Control Vessel V-591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4362	Perc Surge Control Vessel V-3591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4363	Perc Storage Tank V-3592	Perchloroethylene	T4277210	-2.53E+01	thou gal/yr	12/31/2011	Perchloroethylene		210	4.05E-03
4364	Perc Storage Tank V-4091	Perchloroethylene	T4277210	-2.18E+01	thou gal/yr	12/31/2011	Perchloroethylene		210	1.87E-03
4365	Tri-Act 1825 Chemical Tote	Hydrocarbon - mixtures, other/	T4777318	-7.07E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	1.68E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
4366	Tri-Act 1803 & 1825 Chemical Tote - Power Plant	Hydrocarbon - mixtures, other/	T8277318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
4367	Tri-Act 1803 & 1825 Chemical Tote - RLOP	Hydrocarbon - mixtures, other/	T8277318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
4368	Tri-Act 1803 & 1825 Chemical Tote - SRU	Hydrocarbon - mixtures, other/	T8277318	-3.60E-01	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	6.59E-03
4369	Tri-Act 1803 & 1825 Chemical Tote - LSFO/D&R	Hydrocarbon - mixtures, other/	T8277318	-2.12E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	9.02E-03
4370	Chemical Tote, Custamine CA-066P - FCC	Hydrocarbon - mixtures, other/	T8277318	-1.43E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	8.07E-03
4372	NALCO EC9085A Tote	Amine - other/not spec	T4277021	0.00E+00	thou gal/yr	12/31/2011	Amine - other/not spec		21	0.00E+00
4373	Custamine CA-0660P RO Plant	Water/organics mixture	T4277502	-1.64E+01	thou gal/yr	12/31/2011	Water/organics mixture		502	2.83E-01
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-5.00E+02	thou barre/yr	12/31/2011	Benzene		41	2.33E-02
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-5.00E+02	thou barre/yr	12/31/2011	Toluene		293	6.30E-02
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-5.00E+02	thou barre/yr	12/31/2011	Xylene		307	1.38E-01
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-5.00E+02	thou barre/yr	12/31/2011	Organics (part not spec else		990	8.22E-01
4391	NO. 1 OXIDATION POND	Fresh water	G5033415	0.00E+00	thou gallo/yr	12/31/2011			0	0.00E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2011	Benzene		41	6.09E-01
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2011	Toluene		293	1.65E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2011	Xylene		307	3.62E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	2.15E+01
4392	Wetland Marsh	Waste water - other/not spec	G5033443	0.00E+00	thou gallo/yr	12/31/2011			0	0.00E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.20E+04	thou barre/yr	12/31/2011	Benzene		41	2.89E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.20E+04	thou barre/yr	12/31/2011	Toluene		293	7.81E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.20E+04	thou barre/yr	12/31/2011	Xylene		307	1.71E+01
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.20E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.02E+02
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	-1.20E+05	tons/yr	12/31/2011	Particulates (portion of tot		1990	4.92E-04
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE871052	3.47E+03	thou gal/yr	12/31/1996	Paraffins - C3+		52	2.76E+00
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE871052	1.33E+04	thou gal/yr	12/31/1996	Paraffins - C3+		52	5.34E+00
4405	Heavy Oil Transloading Operations	Waste oil	TE672549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A131	-4.13E+01	gal/yr	12/31/2010	Glycols		131	6.27E-02
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A131	-4.13E+01	gal/yr	12/31/2010	Organic liquid - other/not s		201	9.20E-03
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A401	0.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A401	0.00E+00	gal/yr	12/31/2010	Stoddard solvent		401	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A579	0.00E+00	gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A579	0.00E+00	gal/yr	12/31/2010	Propylene glycol monomethyl		579	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A729	0.00E+00	gal/yr	12/31/2010	Butyl acetate		48	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52A729	0.00E+00	gal/yr	12/31/2010	2-heptanone		729	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52B131	0.00E+00	gal/yr	12/31/2010	Glycols		131	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52B131	0.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52C027	0.00E+00	gal/yr	12/31/2010	Aromatic hydrocarbons - othe		27	0.00E+00
4410	General Maintenance Paint Booth	Coating/ink/etc.	SG52C027	0.00E+00	gal/yr	12/31/2010	Glycols		131	0.00E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	-1.05E+04	thou barre/yr	12/31/2011	Benzene		41	5.45E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	-1.05E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	2.37E+02
4414	#1a Separator	Waste water - refin, other/not	G5017300	-7.44E+03	thou barre/yr	12/31/2011	Benzene		41	1.12E+00
4414	#1a Separator	Waste water - refin, other/not	G5017300	-7.44E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	4.87E+01
4415	Asphalt Tank Truck Loading Racks	Asphalt	T9871030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2010	Unknown Pollutant		76	0.00E+00
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E-01	tons/yr	12/31/2000	Particulates (portion of tot		1990	4.75E-03
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Organics (part not spec else		990	0.00E+00
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Particulates (portion of tot		1990	0.00E+00
4424	Equipment Painting Area	Coating/ink/etc.	SG52A048	0.00E+00	gal/yr	12/31/2010	Butyl acetate		48	0.00E+00
4424	Equipment Painting Area	Coating/ink/etc.	SG52A048	0.00E+00	gal/yr	12/31/2010	Naphtha		188	0.00E+00
4424	Equipment Painting Area	Mineral spirits	SG700184	0.00E+00	gal/yr	12/31/2010	Mineral spirits		184	0.00E+00
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998	Sulfuric Acid mist pollutant		1530	0.00E+00
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-5.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	8.90E-02
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2010	Amide		20	0.00E+00
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-2.50E+01	gal/yr	12/31/2010	Organic liquid - other/not s		201	4.45E-01
4429	#8(NH3-H2S)Plant	Waste gases	G5037338	-2.88E+02	million cu/yr	12/31/2011	Hydrogen Sulfide (H2S)		5020	0.00E+00
4429	#8(NH3-H2S)Plant	Waste gases	G5037338	-2.88E+02	million cu/yr	12/31/2011	Ammonia (NH3) pollutant		6990	0.00E+00
4433	#3H2S Plant	Waste gases	G5998338	-2.66E+02	million cu/yr	12/31/2011	Organics (part not spec else		990	7.29E-02
4434	#4H2S Plant	Waste gases	G5998338	-1.25E+03	million cu/yr	12/31/2011	Organics (part not spec else		990	3.42E-01
4435	#5H2S Plant	Waste gases	G5998338	-1.56E+03	million cu/yr	12/31/2011	Organics (part not spec else		990	4.26E-01
4440	Jet Additive Project Fugitive Sources	Petroleum products - other/not	G9000321	0.00E+00	thou gallo/yr				0	0.00E+00
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T4277201	-2.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	9.81E-02
5101	Tank-Marketing T-101	Lube oil	T4477419	1.85E+04	thou gal/yr	3/31/1997	Lube oil		419	6.22E+01
5103	Tank-Marketing T-103	Lube oil	T4477419	1.28E+04	thou gal/yr	3/31/1997	Lube oil		419	4.88E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5105	Tank-Marketing T-105	Lube oil	T44??419	1.12E+04	thou gal/yr	3/31/1997	Lube oil		419	4.50E+01
5107	Tank-Marketing T-107	Lube oil	T44??419	3.26E+02	thou gal/yr	3/31/1997	Lube oil		419	3.99E+00
5108	Tank-Marketing T-108	Lube oil	T44??419	2.51E+02	thou gal/yr	3/31/1997	Lube oil		419	3.81E+00
5109	Tank-Marketing T-109	Lube oil	T44??419	4.98E+02	thou gal/yr	3/31/1997	Lube oil		419	4.39E+00
5110	Tank-Marketing T-110	Lube oil	T44??419	1.33E+03	thou gal/yr	3/31/1997	Lube oil		419	6.34E+00
5112	Tank-Marketing T-112	Lube oil	T43??419	5.80E+01	thou gal/yr	3/31/1997	Lube oil		419	9.01E-01
5113	Tank-Marketing T-113	Lube oil	T43??419	5.00E+00	thou gal/yr	3/31/1997	Lube oil		419	7.77E-01
5115	Tank-Marketing T-115	Lube oil	T43??419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	8.99E-01
5117	Tank-Marketing T-117	Lube oil	T44??419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5118	Tank-Marketing T-118	Lube oil	T44??419	4.60E+01	thou gal/yr	3/31/1997	Lube oil		419	1.51E+00
5119	Tank-Marketing T-119	Lube oil	T44??419	6.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.55E+00
5121	Tank-Marketing T-121	Lube oil	T44??419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	2.03E+00
5122	Tank-Marketing T-122	Lube oil	T44??419	6.70E+01	thou gal/yr	3/31/1997	Lube oil		419	1.73E+00
5123	Tank-Marketing T-123	Lube oil	T44??419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5125	Tank-Marketing T-125	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	8.26E-01
5126	Tank-Marketing T-126	Lube oil	T43??419	1.04E+02	thou gal/yr	3/31/1997	Lube oil		419	1.01E+00
5127	Tank-Marketing T-127	Lube oil	T43??419	1.92E+02	thou gal/yr	3/31/1997	Lube oil		419	1.22E+00
5128	Tank-Marketing T-128	Lube oil	T43??419	6.40E+01	thou gal/yr	3/31/1997	Lube oil		419	9.15E-01
5129	Tank-Marketing T-129	Lube oil	T43??419	3.20E+01	thou gal/yr	3/31/1997	Lube oil		419	4.33E-01
5130	Tank-Marketing T-130	Lube oil	T43??419	8.00E+01	thou gal/yr	3/31/1997	Lube oil		419	5.46E-01
5131	Tank-Marketing T-131	Lube oil	T43??419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5132	Tank-Marketing T-132	Lube oil	T43??419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5133	Tank-Marketing T-133	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5134	Tank-Marketing T-134	Lube oil	T43??419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5135	Tank-Marketing T-135	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5136	Tank-Marketing T-136	Lube oil	T43??419	1.36E+02	thou gal/yr	3/31/1997	Lube oil		419	6.77E-01
5137	Tank-Marketing T-137	Lube oil	T43??419	1.20E+02	thou gal/yr	3/31/1997	Lube oil		419	6.40E-01
5138	Tank-Marketing T-138	Lube oil	T43??419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5139	Tank-Marketing T-139	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	4.19E-01
5140	Tank-Marketing T-140	Lube oil	T43??419	1.30E+01	thou gal/yr	3/31/1997	Lube oil		419	6.16E-04
5201	Tank-Marketing T-201	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5202	Tank-Marketing T-202	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5203	Tank-Marketing T-203	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5204	Tank-Marketing T-204	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997	Lube oil		419	6.61E+00
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997	Lube oil		419	8.74E+00
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	5.05E+00
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997	Lube oil		419	3.54E+00
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.32E+00
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997	Lube oil		419	2.35E+00
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997	Lube oil		419	4.23E+00
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997	Lube oil		419	1.98E+00
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997	Lube oil		419	1.64E+00
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997	Lube oil		419	2.17E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
5219	Tank-Marketing T-219	Lube oil	T4377419	6.84E+02	thou gal/yr	3/31/1997	Lube oil		419	2.37E+00
5220	Tank-Marketing T-220	Lube oil	T4377419	3.49E+03	thou gal/yr	3/31/1997	Lube oil		419	4.43E+00
5221	Tank-Marketing T-221	Lube oil	T4377419	3.36E+02	thou gal/yr	3/31/1997	Lube oil		419	1.38E+00
5222	Tank-Marketing T-222	Lube oil	T4377419	2.49E+02	thou gal/yr	3/31/1997	Lube oil		419	1.17E+00
5223	Tank-Marketing T-223	Lube oil	T4377419	3.07E+02	thou gal/yr	3/31/1997	Lube oil		419	1.31E+00
5224	Tank-Marketing T-224	Lube oil	T4377419	1.41E+02	thou gal/yr	3/31/1997	Lube oil		419	9.20E-01
5227	Tank-Marketing T-227	Lube oil	T4377419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	3.58E+00
5228	Tank-Marketing T-228	Lube oil	T4377419	1.28E+02	thou gal/yr	3/31/1997	Lube oil		419	8.90E-01
5229	Tank-Marketing T-229	Lube oil	T4477419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5230	Tank-Marketing T-230	Lube oil	T4377419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5232	Tank-Marketing T-232	Lube oil	T4377419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5233	Tank-Marketing T-233	Lube oil	T4377419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5234	Tank-Marketing T-234	Lube oil	T4377419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5237	Tank-Marketing T-237	Lube oil	T4377419	1.26E+03	thou gal/yr	3/31/1997	Lube oil		419	1.80E+00
5240	Tank-Marketing T-240	Lube oil	T4377419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5241	Tank-Marketing T-241	Lube oil	T4377419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5301	Tank-Marketing T-301	Lube oil	T4377419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5302	Tank-Marketing T-302	Lube oil	T4377419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5303	Tank-Marketing T-303	Lube oil	T4377419	3.60E+02	thou gal/yr	3/31/1997	Lube oil		419	5.50E-01
5304	Tank-Marketing T-304	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	3.95E-01
5305	Tank-Marketing T-305	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.94E-01
5306	Tank-Marketing T-306	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5307	Tank-Marketing T-307	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5308	Tank-Marketing T-308	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	7.66E-01
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T4377419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5603	Tank-Marketing T-603	Lube oil	T4377419	5.10E+03	thou gal/yr	3/31/1997	Lube oil		419	5.69E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Benzene		41	2.55E-04
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Organics (part not spec else		990	3.46E+01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	4.00E-01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	9.24E-03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.72E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.27E-02
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.19E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.90E+03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Methane (CH4)		6970	3.46E+01
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Benzene		41	2.95E-04
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Organics (part not spec else		990	4.00E+01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	4.62E-01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.07E-02
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.14E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.63E-02
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	6.00E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	5.66E+03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Methane (CH4)		6970	4.00E+01
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Benzene		41	1.97E-04
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Organics (part not spec else		990	2.68E+01
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	3.09E-01
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	7.14E-03
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.10E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.76E-02
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	4.02E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.79E+03
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Methane (CH4)		6970	2.68E+01
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2011			0	0.00E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Benzene		41	2.10E-04
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Organics (part not spec else		990	2.85E+01
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	3.29E-01
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	7.60E-03
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.24E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.87E-02
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	4.27E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.03E+03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Methane (CH4)		6970	2.85E+01
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Benzene		41	1.25E-04
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Organics (part not spec else		990	1.70E+01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Particulates (portion of tot		1990	1.96E-01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.52E-03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.33E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.11E-02
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.54E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.40E+03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Methane (CH4)		6970	1.70E+01
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Benzene		41	2.48E-04
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Organics (part not spec else		990	3.37E+01
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	3.89E-01
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	8.98E-03
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.64E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.11E-02
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.05E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.76E+03
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Methane (CH4)		6970	3.37E+01
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-04
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998			0	0.00E+00
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-04
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-04
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2011			0	0.00E+00
6051	Alky Cooling Tower	Fresh water	G5005415	-1.26E+07	thou gallo/yr	12/31/2011	Organics (part not spec else		990	2.41E+01
6051	Alky Cooling Tower	Fresh water	G5005415	-1.26E+07	thou gallo/yr	12/31/2011	Particulates (portion of tot		1990	1.03E+01
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00	thou gal/yr	12/31/2011	Water/organics mixture		502	0.00E+00
6125	Tank 6125	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	0.00E+00
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6200	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6200	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6201	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6201	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6202	Portable Polyethylene Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6202	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6203	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6203	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6203	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6204	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6204	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6204	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6204	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6205	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6205	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6205	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6205	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6206	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6206	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6206	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6206	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6207	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6207	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6207	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6207	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6208	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6208	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6208	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6208	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6209	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6209	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6209	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6209	Portable Polyethylene Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6210	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6210	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6210	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00

Printed: AUG 1, 2013

←----- Emissions ----->

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, other/		318	0.00E+00
6228	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6228	Portable Steel Storage Container	Oil/water mixture	T43??7503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	3.02E-04
6228	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, other/		318	0.00E+00
6229	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6229	Portable Steel Storage Container	Oil/water mixture	T43??7503	-1.47E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	2.52E-04
6229	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6230	Portable Steel Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6230	Portable Steel Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, other/		318	0.00E+00
6230	Portable Steel Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6230	Portable Steel Container	Oil/water mixture	T43??7503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	3.02E-04
6230	Portable Steel Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, other/		318	0.00E+00
6231	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6231	Portable Steel Storage Container	Oil/water mixture	T43??7503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	3.02E-04
6231	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, other/		318	0.00E+00
6232	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6232	Portable Steel Storage Container	Oil/water mixture	T43??7503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	3.02E-04
6232	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6233	Portable Steel Storage Container	Paraffins - C3+	T43??7052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+		52	0.00E+00
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, other/		318	0.00E+00
6233	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6233	Portable Steel Storage Container	Oil/water mixture	T43??7503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	3.02E-04
6233	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, other/		318	0.00E+00
6234	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6234	Portable Steel Storage Container	Oil/water mixture	T43??7503	-5.04E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	2.64E-04
6234	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, other/		318	0.00E+00
6235	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6235	Portable Steel Storage Container	Oil/water mixture	T43??7503	-2.39E+02	thou gal/yr	12/31/2011	Oil/water mixture		503	1.03E-03
6235	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, other/		318	0.00E+00
6236	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6236	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6236	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, other/		318	0.00E+00
6237	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6237	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6237	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, other/		318	0.00E+00
6238	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6238	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6238	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, other/		318	0.00E+00
6239	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6239	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6239	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2011			0	0.00E+00
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997	Ammonia (NH3) pollutant		6990	2.48E-02
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Benzene		41	2.04E-04
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Formaldehyde		124	1.69E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	3.00E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	1.78E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	1.04E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Cadmium		1070	4.45E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	9.21E-09
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	3.77E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Manganese		1160	5.92E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	7.20E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	1.26E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	1.02E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	9.39E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	5.47E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	6.12E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	6.67E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	6.14E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	6.85E+00
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	2.74E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Benzene		41	5.07E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Formaldehyde		124	4.13E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	2.92E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	4.35E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.55E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Cadmium		1070	1.09E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	2.25E-08
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	9.23E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Manganese		1160	1.45E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.76E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	3.08E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	1.19E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	2.30E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.34E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.05E-01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.63E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.53E-01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.67E+01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	6.70E-04
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Benzene		41	7.03E-05
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Formaldehyde		124	5.73E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Organics (part not spec else		990	3.83E-03
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Arsenic (all)		1030	6.04E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	3.54E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Cadmium		1070	1.51E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	3.12E-09
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	1.28E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Manganese		1160	2.01E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Nickel pollutant		1180	2.44E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	4.27E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	3.49E-03
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	3.19E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.86E-05
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	4.88E-02
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.26E-05
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.06E-02
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.22E+00
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Methane (CH4)		6970	9.29E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Benzene		41	1.29E-04
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Formaldehyde		124	1.06E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Organics (part not spec else		990	7.05E-03
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Arsenic (all)		1030	1.11E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	6.52E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Cadmium		1070	2.78E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	5.75E-09
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	2.36E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Manganese		1160	3.70E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Nickel pollutant		1180	4.50E-06
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	7.86E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	6.42E-03
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	5.87E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.42E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	8.99E-02
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.17E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.96E-02
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.28E+00
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Methane (CH4)		6970	1.71E-04
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Benzene		41	1.15E-04
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Formaldehyde		124	9.36E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Organics (part not spec else		990	6.25E-03
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Arsenic (all)		1030	9.85E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	5.78E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Cadmium		1070	2.46E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	5.10E-09
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	2.09E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Manganese		1160	3.28E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Nickel pollutant		1180	3.98E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	6.96E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	5.69E-03
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	5.20E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.03E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	7.97E-02
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.69E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.73E-02
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.79E+00
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Methane (CH4)		6970	1.52E-04
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Benzene		41	5.31E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Formaldehyde		124	4.33E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	2.89E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	4.56E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.67E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Cadmium		1070	1.14E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	2.36E-08
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	9.67E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Manganese		1160	1.52E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.84E-05

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	3.22E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	2.63E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	2.41E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.40E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.69E-01
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.71E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	8.02E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.75E+01
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	7.01E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Benzene		41	5.45E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Formaldehyde		124	4.45E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Organics (part not spec else		990	7.12E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Arsenic (all)		1030	1.40E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	8.24E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Cadmium		1070	3.51E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	7.27E-08
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	2.98E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Manganese		1160	4.67E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Nickel pollutant		1180	5.68E-05
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	9.93E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	1.28E-02
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	7.41E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.88E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.91E+00
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.51E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.39E-01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.60E+02
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Methane (CH4)		6970	7.20E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Benzene		41	8.41E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Formaldehyde		124	6.87E-05
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	1.10E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	2.17E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	1.27E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Cadmium		1070	5.42E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	1.12E-08
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	4.60E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Manganese		1160	7.22E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	8.77E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	1.53E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	1.98E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	1.14E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.45E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	4.49E-01
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	5.42E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.69E-02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	5.56E+01
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	1.11E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Benzene		41	4.25E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Formaldehyde		124	3.47E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Organics (part not spec else		990	2.32E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Arsenic (all)		1030	3.65E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.14E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Cadmium		1070	9.14E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	1.89E-09
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	7.75E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Manganese		1160	1.22E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.48E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	2.58E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	2.11E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	1.93E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.12E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.96E-02
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.37E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	6.43E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.41E+00
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Methane (CH4)		6970	5.62E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Benzene		41	5.17E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Formaldehyde		124	4.22E-04
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Organics (part not spec else		990	2.82E-01
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Arsenic (all)		1030	4.44E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.60E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Cadmium		1070	1.11E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	2.30E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	9.42E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Manganese		1160	1.48E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.80E-04
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	3.14E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	2.57E-01
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	2.34E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.37E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.59E+00
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.67E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	7.81E-01
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.71E+02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Methane (CH4)		6970	6.83E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Benzene		41	1.93E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Formaldehyde		124	1.58E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	1.05E-02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	4.98E-08
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.92E-08
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Cadmium		1070	1.25E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	2.58E-09

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	1.06E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Manganese		1160	1.66E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	2.01E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	3.52E-08
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	2.88E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	2.63E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.02E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.69E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.25E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.34E-02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.28E+01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	2.55E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Benzene		41	1.86E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Formaldehyde		124	1.52E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Organics (part not spec else		990	1.01E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Arsenic (all)		1030	4.80E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.81E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Cadmium		1070	1.20E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	2.48E-08
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	1.02E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Manganese		1160	1.60E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.94E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	3.39E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	2.77E-02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	2.53E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	9.83E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.59E+00
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.20E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.25E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.23E+02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Methane (CH4)		6970	2.46E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Benzene		41	1.69E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Formaldehyde		124	1.38E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	9.22E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	4.36E-08
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.56E-08
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Cadmium		1070	1.09E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	2.26E-09
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	9.25E-08
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Manganese		1160	1.45E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.76E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	3.08E-08
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	2.52E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	2.30E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	8.95E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.35E-01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.09E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.05E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.12E+01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	2.24E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Benzene		41	2.95E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Formaldehyde		124	2.41E-05
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	1.15E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	7.60E-08
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	4.46E-08
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Cadmium		1070	1.90E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	3.93E-09
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	1.61E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Manganese		1160	2.53E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	3.08E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	5.37E-08
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	1.83E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	4.01E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.56E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.31E-01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.90E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.56E-02
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.95E+01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	3.90E-04
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Benzene		41	1.24E-04
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Formaldehyde		124	1.03E-05
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Organics (part not spec else		990	5.99E-03
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Arsenic (all)		1030	1.08E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	6.33E-08
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Cadmium		1070	2.70E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	5.59E-09
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	2.29E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Manganese		1160	3.60E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Nickel pollutant		1180	4.37E-06
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	7.64E-08
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	6.24E-03
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	5.70E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.32E-05
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	8.74E-02
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.05E-05
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.90E-02
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.16E+00
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Methane (CH4)		6970	1.66E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	Emissions ----->		Code	lb/day
							Pollutant			
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Benzene		41	5.20E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Formaldehyde		124	4.24E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	6.56E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	4.47E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.62E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Cadmium		1070	1.12E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	2.31E-08
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	9.47E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Manganese		1160	1.49E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.81E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	3.16E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	3.37E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	2.36E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.37E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.35E-01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.67E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.55E-02
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.72E+01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	6.87E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Benzene		41	4.40E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Formaldehyde		124	3.59E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	5.56E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	3.78E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.22E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Cadmium		1070	9.45E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	1.96E-08
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	8.02E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Manganese		1160	1.26E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.53E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	2.67E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	2.85E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	2.00E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.16E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.15E-01
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.42E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.32E-02
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.45E+01
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	5.82E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Benzene		41	1.43E-03
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Formaldehyde		124	1.18E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	2.02E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	1.24E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	7.28E-07
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Cadmium		1070	3.10E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	6.42E-08
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	2.63E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Manganese		1160	4.13E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	5.02E-05
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	8.77E-07
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	1.18E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	6.55E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.82E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	4.14E-01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.65E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	8.12E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.77E+01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	1.91E-03
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010	Ethyl alcohol		105	1.66E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010	Methyl ethyl ketone (MEK)		169	3.33E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	5.55E-04
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	-4.00E+00	gal/yr	12/31/2010	Methyl ethyl ketone (MEK)		169	7.35E-02
9047	Tank 6047	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	0.00E+00
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??7090	-5.45E+01	thou gal/yr	12/31/1997	Ketone - other/not spec		90	3.46E-02
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??7419	-3.51E+00	thou gal/yr	12/31/1997	Lube oil		419	5.24E-02
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SF01A318	-1.50E+01	gal/yr	6/1/1998	Hydrocarbon - mixtures, othe		318	2.77E-01
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Benzene		41	4.48E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Toluene		293	1.52E-02
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Xylene		307	1.79E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Ethylbenzene		333	1.05E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Gasoline - unleaded		551	1.47E+00
9321	Marine Loading Berth #1	Paraffins - C3+	TB8??7052	-5.95E+05	thou gal/yr	12/31/2011	Paraffins - C3+		52	1.15E+01
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB8??7158	-7.70E+04	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	9.50E-02
9321	Marine Loading Berth #1	Bunker C fuel oil	TB8??7242	-7.33E+04	thou gal/yr	12/31/2011	Bunker C fuel oil		242	6.02E-04
9321	Marine Loading Berth #1	Distillate oil	TB8??7315	-3.35E+04	thou gal/yr	12/31/2011	Distillate oil		315	4.13E-02
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB8??7551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
9321	Marine Loading Berth #1	Crude oil	TF8??7089	-2.66E+05	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
9322	Marine Loading Berth #2	Paraffins - C3+	TB8??7052	-9.52E+04	thou gal/yr	12/31/2011	Paraffins - C3+		52	1.85E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-7.96E+03	thou gal/yr	12/31/2011	Benzene		41	2.94E-02
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-7.96E+03	thou gal/yr	12/31/2011	Ethylene dichloride		107	5.01E-04
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-7.96E+03	thou gal/yr	12/31/2011	Gasoline - leaded		128	2.73E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB8??7128	-7.96E+03	thou gal/yr	12/31/2011	Toluene		293	1.47E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Emissions ----->		Code	lb/day
						Date	Pollutant		
9322	Marine Loading Berth #2	Gasoline - leaded	TB877128	-7.96E+03	thou gal/yr	12/31/2011	Xylene	307	3.24E-02
9322	Marine Loading Berth #2	Gasoline - leaded	TB877128	-7.96E+03	thou gal/yr	12/31/2011	Ethylene dibromide	420	1.97E-05
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB877158	-1.98E+05	thou gal/yr	12/31/2011	Fuel - jet 'A'	158	2.43E-01
9322	Marine Loading Berth #2	Methyl alcohol	TB877179	0.00E+00	thou gal/yr	12/31/2011	Methyl alcohol	179	0.00E+00
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB877201	-8.05E+03	thou gal/yr	12/31/2011	Organic liquid - other/not s	201	1.26E-01
9322	Marine Loading Berth #2	Bunker C fuel oil	TB877242	-8.37E+04	thou gal/yr	12/31/2011	Bunker C fuel oil	242	6.88E-04
9322	Marine Loading Berth #2	Toluene	TB877293	-1.25E+03	thou gal/yr	12/31/2011	Toluene	293	5.18E-02
9322	Marine Loading Berth #2	Distillate oil	TB877315	-1.16E+05	thou gal/yr	12/31/2011	Distillate oil	315	1.44E-01
9322	Marine Loading Berth #2	Lube oil	TB877419	-2.07E+05	thou gal/yr	12/31/2011	Lube oil	419	8.40E-02
9322	Marine Loading Berth #2	Gasoline - unleaded	TB877551	-1.91E+05	thou gal/yr	12/31/2011	Benzene	41	2.65E-01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB877551	-1.91E+05	thou gal/yr	12/31/2011	Toluene	293	9.01E-01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB877551	-1.91E+05	thou gal/yr	12/31/2011	Xylene	307	1.06E-01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB877551	-1.91E+05	thou gal/yr	12/31/2011	Ethylbenzene	333	6.18E-02
9322	Marine Loading Berth #2	Gasoline - unleaded	TB877551	-1.91E+05	thou gal/yr	12/31/2011	Gasoline - unleaded	551	8.70E+01
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB877628	0.00E+00	thou gal/yr	12/31/2011	Methyl tertiary-butyl ether	628	0.00E+00
9322	Marine Loading Berth #2	Crude oil	TF877089	0.00E+00	thou gal/yr	12/31/2011	Crude oil	89	0.00E+00
9323	Marine Loading Berth #3	Paraffins - C3+	TB877052	-9.16E+04	thou gal/yr	12/31/2011	Paraffins - C3+	52	1.78E+00
9323	Marine Loading Berth #3	Crude oil	TB877089	-6.17E+03	thou gal/yr	12/31/2011	Crude oil	89	1.01E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-9.00E+03	thou gal/yr	12/31/2011	Benzene	41	3.33E-02
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-9.00E+03	thou gal/yr	12/31/2011	Ethylene dichloride	107	5.66E-04
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-9.00E+03	thou gal/yr	12/31/2011	Gasoline - leaded	128	3.09E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-9.00E+03	thou gal/yr	12/31/2011	Toluene	293	1.66E-01
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-9.00E+03	thou gal/yr	12/31/2011	Xylene	307	3.66E-02
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-9.00E+03	thou gal/yr	12/31/2011	Ethylene dibromide	420	2.23E-05
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB877158	-7.72E+04	thou gal/yr	12/31/2011	Fuel - jet 'A'	158	9.52E-02
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB877201	-2.68E+03	thou gal/yr	12/31/2011	Organic liquid - other/not s	201	2.53E+00
9323	Marine Loading Berth #3	Bunker C fuel oil	TB877242	-1.01E+05	thou gal/yr	12/31/2011	Bunker C fuel oil	242	8.27E-04
9323	Marine Loading Berth #3	Toluene	TB877293	-1.78E+03	thou gal/yr	12/31/2011	Toluene	293	7.37E-02
9323	Marine Loading Berth #3	Distillate oil	TB877315	-2.25E+05	thou gal/yr	12/31/2011	Distillate oil	315	2.78E-01
9323	Marine Loading Berth #3	Lube oil	TB877419	0.00E+00	thou gal/yr	12/31/2011	Lube oil	419	0.00E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-4.82E+05	thou gal/yr	12/31/2011	Benzene	41	6.67E-01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-4.82E+05	thou gal/yr	12/31/2011	Toluene	293	2.27E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-4.82E+05	thou gal/yr	12/31/2011	Xylene	307	2.67E-01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-4.82E+05	thou gal/yr	12/31/2011	Ethylbenzene	333	1.56E-01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-4.82E+05	thou gal/yr	12/31/2011	Gasoline - unleaded	551	2.19E+02
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB422318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe	318	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB422551	0.00E+00	thou gal/yr	12/31/2011	Benzene	41	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB422551	0.00E+00	thou gal/yr	12/31/2011	Toluene	293	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB422551	0.00E+00	thou gal/yr	12/31/2011	Xylene	307	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB422551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene	333	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB422551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded	551	0.00E+00
9324	Marine Loading Berth #4	Bunker C fuel oil	TB877242	0.00E+00	thou gal/yr	12/31/2011	Bunker C fuel oil	242	0.00E+00
9324	Marine Loading Berth #4	Distillate oil	TB877315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil	315	0.00E+00
9324	Marine Loading Berth #4	Crude oil	TF877089	-2.77E+06	thou gal/yr	12/31/2011	Crude oil	89	0.00E+00
9325	Marine Loading Berth #9	Paraffins - C3+	TB877052	-4.91E+03	thou gal/yr	12/31/2011	Paraffins - C3+	52	4.76E-02
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2011	Benzene	41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride	107	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded	128	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2011	Toluene	293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2011	Xylene	307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide	420	0.00E+00
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB877158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'	158	0.00E+00
9325	Marine Loading Berth #9	Bunker C fuel oil	TB877242	-1.25E+05	thou gal/yr	12/31/2011	Bunker C fuel oil	242	1.02E-03
9325	Marine Loading Berth #9	Toluene	TB877293	0.00E+00	thou gal/yr	12/31/2011	Toluene	293	0.00E+00
9325	Marine Loading Berth #9	Distillate oil	TB877315	-2.93E+03	thou gal/yr	12/31/2011	Distillate oil	315	3.61E-03
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB877318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe	318	0.00E+00
9325	Marine Loading Berth #9	Lube oil	TB877419	0.00E+00	thou gal/yr	12/31/2011	Lube oil	419	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Benzene	41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Toluene	293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Xylene	307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene	333	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded	551	0.00E+00
9325	Marine Loading Berth #9	Crude oil	TF877089	0.00E+00	thou gal/yr	12/31/2011	Crude oil	89	0.00E+00
9326	Marine Loading Berth #11	Paraffins - C3+	TB877052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+	52	0.00E+00
9326	Marine Loading Berth #11	Bunker C fuel oil	TB877242	0.00E+00	thou gal/yr	12/31/2011	Bunker C fuel oil	242	0.00E+00
9326	Marine Loading Berth #11	Distillate oil	TB877315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil	315	0.00E+00
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00			Organics (part not spec else	990	0.00E+00
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00			Organics (part not spec else	990	6.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Benzene	41	4.52E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cyclohexane	91	2.96E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylene dichloride	107	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Hexane	148	4.49E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Isooctane	154	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl ethyl ketone (MEK)	169	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl alcohol	179	5.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Perchloroethylene	210	2.66E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Toluene	293	1.58E+01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Xylene	307	1.77E+01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cumene	326	3.80E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylbenzene	333	3.55E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,2,4-trimethylbenzene	385	4.90E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene dibromide	420	1.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,3-butadiene	521	2.20E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene	536	6.81E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Propylene	564	4.27E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Methyl tertiary-butyl ether	628	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Organics (part not spec else	990	9.59E+02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ammonia (NH3) pollutant	6990	1.08E+01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Benzene	41	1.23E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Cod	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cyclohexane		91	6.90E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Hexane		148	9.10E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Isocotane		154	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl alcohol		179	1.45E-03
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Toluene		293	3.95E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Xylene		307	4.71E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Ethylbenzene		333	9.70E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,2,4-trimethylbenzene		385	1.47E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,3-butadiene		521	5.00E-04
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cresol		525	6.30E-03
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ethylene		536	1.70E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Propylene		564	1.60E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Organics (part not spec else		990	2.87E+01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Carbon Dioxide, non-biogenic		6960	1.45E+03
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ammonia (NH3) pollutant		6990	9.14E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Benzene		41	1.20E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Hexane		148	2.70E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Toluene		293	5.50E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Xylene		307	6.40E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			1,3-butadiene		521	1.60E-06
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Cresol		525	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ethylene		536	1.70E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Propylene		564	2.10E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Organics (part not spec else		990	2.20E-02
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ammonia (NH3) pollutant		6990	1.30E-04
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Benzene		41	9.00E-03
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Hexane		148	9.10E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Toluene		293	1.64E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Xylene		307	1.65E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cumene		326	9.10E-02
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Ethylbenzene		333	3.70E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,2,4-trimethylbenzene		385	3.10E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,3-butadiene		521	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cresol		525	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Organics (part not spec else		990	7.36E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Benzene		41	2.99E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Formaldehyde		124	1.07E-02
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Phenol		214	5.81E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Acetaldehyde		335	1.74E-03
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			1,3-butadiene		521	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Organics (part not spec else		990	1.03E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Arsenic (all)		1030	2.85E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cadmium		1070	1.57E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Chromium		1090	1.99E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Magnesium pollutant		1150	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Manganese		1160	5.41E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nickel pollutant		1180	2.99E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Mercury (all) pollutant		1190	3.70E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Zinc pollutant		1320	4.13E-03
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			PAH's (non-specified)		1840	9.94E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Particulates (portion of tot		1990	1.08E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nitrogen Oxides (part not sp		2990	2.45E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Sulfur Dioxide (SO2)		3990	3.32E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Carbon Monoxide (CO) polluta		4990	1.33E+02

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Products Company - Unabated Detailed Pollutant Emissions
for Calendar Year 2011***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Fuel - jet 'A'	T42??158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Distillate oil	T42??315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
21	4042Laboratory Recovered Oil Tank, 750 gallon Capacity	Hydrocarbon - mixtures, other/	T42??318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
25	Tank 25: Organic Liquid Storage Container	Hydrocarbon - mixtures, other/	T4217318	-3.10E-02	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	3.48E-03
55	Tank 55	Distillate oil	T81??315	0.00E+00	thou gal/yr	12/31/2003	Distillate oil		315	0.00E+00
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Benzene		41	1.94E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Toluene		293	6.58E-04
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Xylene		307	7.75E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Ethylbenzene		333	4.52E-05
55	Tank 55	Gasoline - unleaded	T81??551	1.70E+00	thou gal/yr	12/31/2003	Gasoline - unleaded		551	6.36E-02
200	TANK 200A	Organic liquid - other/not spe	T4417201	4.40E+03	thou gal/yr	12/31/1996	Organic liquid - other/not s		201	0.00E+00
204	TANK 204	Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/1997	Distillate oil		315	0.00E+00
223	TANK 223	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
225	TANK 225	Water/organics mixture	T4417502	0.00E+00	thou gal/yr	12/31/1997	Water/organics mixture		502	0.00E+00
231	TANK 231	Fuel - jet 'A'	T5432158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
231	TANK 231	Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
231	TANK 231	Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
231	TANK 231	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
234	TANK 234	Distillate oil	T4417315	1.01E+05	thou gal/yr	4/30/1997	Distillate oil		315	1.39E+01
290	TANK 290	Distillate oil	T4417315	3.81E+04	thou gal/yr	4/30/1997	Distillate oil		315	6.12E+00
291	TANK 291	Distillate oil	T4417315	1.08E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.28E+00
319	TANK 319	Distillate oil	T4417315	1.21E+03	thou gal/yr	4/30/1997	Distillate oil		315	4.12E-01
397	TANK 397	Hydrocarbon - mixtures, other/	T4417318	-2.98E+04	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	4.92E+01
399	TANK	Distillate oil	T5472315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
399	TANK	Oil - non-fuel, other/not spec	T5472352	-2.30E+04	thou gal/yr	12/31/2011	Oil - non-fuel, other/not sp		352	1.19E+01
399	TANK	Tetra-Ethyl Lead (TEL)	T5472422	0.00E+00	thou gal/yr	12/31/2011	Tetra-Ethyl Lead (TEL)		422	0.00E+00
401	TANK 401	Refinery feedstock - other/not	T4472239	4.70E+04	thou gal/yr	4/30/1997	Refinery feedstock - other/n		239	1.09E+01
634	TANK 634	Fuel - jet 'A'	T5472158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
634	TANK 634	Petroleum products - other/not	T5472321	-1.84E+04	thou gal/yr	12/31/2011	Petroleum products - other/n		321	1.56E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
634	TANK 634	Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
679	TANK 679	Hydrocarbon - mixtures, other/	T5412318	-1.32E+04	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	8.78E-02
892	Tank 892: Inorganic Chemical Storage	Water/organics mixture	T427?502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	1.46E-03
893	Tank 893: Water Storage Tank (No Organics)	Water/organics mixture	T427?502	6.30E+00	thou gal/yr	3/10/1995	Water/organics mixture		502	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Butane	T427?416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
902	Tank 902: Organic Liquid Storage Tank	Lube oil	T427?419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.33E-03
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
953	TANK 953	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
953	TANK 953	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
954	TANK 954	Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
954	TANK 954	Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
955	TANK 955	Paraffins - C3+	T5412052	-2.94E+04	thou gal/yr	12/31/2011	Paraffins - C3+		52	2.41E+00
955	TANK 955	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
955	TANK 955	Organic liquid - other/not spe	T5412201	0.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	0.00E+00
956	TANK 956	Paraffins - C3+	T5412052	-4.56E+03	thou gal/yr	12/31/2011	Paraffins - C3+		52	2.36E+00
956	TANK 956	Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
957	Tank 957	Diesel fuel	T447?098	-2.62E+04	thou gal/yr	12/31/2011	Diesel oil		98	7.42E+00
957	Tank 957	Fuel - jet 'A'	T447?158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut Units	Emissions		Code	lb/day
					Date	Pollutant		
979 TANK 979		Distillate oil	T44??315	-6.13E+04 thou gal/yr	4/30/1997	Distillate oil	315	7.33E+00
984 TANK 984		Distillate oil	T4417315	-9.67E+03 thou gal/yr	12/31/1997	Distillate oil	315	1.41E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Benzene	41	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Ethylene dichloride	107	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Gasoline - leaded	128	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Toluene	293	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Xylene	307	0.00E+00
990 TANK 990		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Ethylene dibromide	420	0.00E+00
990 TANK 990		Gasoline - unleaded	T5432551	-9.22E+04 thou gal/yr	12/31/2011	Benzene	41	1.38E-02
990 TANK 990		Gasoline - unleaded	T5432551	-9.22E+04 thou gal/yr	12/31/2011	Toluene	293	4.71E-02
990 TANK 990		Gasoline - unleaded	T5432551	-9.22E+04 thou gal/yr	12/31/2011	Xylene	307	5.54E-03
990 TANK 990		Gasoline - unleaded	T5432551	-9.22E+04 thou gal/yr	12/31/2011	Ethylbenzene	333	3.23E-03
990 TANK 990		Gasoline - unleaded	T5432551	-9.22E+04 thou gal/yr	12/31/2011	Gasoline - unleaded	551	4.55E+00
991 TANK 991		Gasoline - unleaded	T5432551	-1.08E+05 thou gal/yr	12/31/2011	Benzene	41	1.37E-02
991 TANK 991		Gasoline - unleaded	T5432551	-1.08E+05 thou gal/yr	12/31/2011	Toluene	293	4.64E-02
991 TANK 991		Gasoline - unleaded	T5432551	-1.08E+05 thou gal/yr	12/31/2011	Xylene	307	5.46E-03
991 TANK 991		Gasoline - unleaded	T5432551	-1.08E+05 thou gal/yr	12/31/2011	Ethylbenzene	333	3.19E-03
991 TANK 991		Gasoline - unleaded	T5432551	-1.08E+05 thou gal/yr	12/31/2011	Gasoline - unleaded	551	4.48E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2011	Benzene	41	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2011	Ethylene dichloride	107	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2011	Gasoline - leaded	128	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2011	Toluene	293	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2011	Xylene	307	0.00E+00
992 Storage Tank T-992		Gasoline - leaded	T54?2128	0.00E+00 thou gal/yr	12/31/2011	Ethylene dibromide	420	0.00E+00
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-9.79E+04 thou gal/yr	12/31/2011	Benzene	41	1.35E-02
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-9.79E+04 thou gal/yr	12/31/2011	Toluene	293	4.59E-02
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-9.79E+04 thou gal/yr	12/31/2011	Xylene	307	5.40E-03
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-9.79E+04 thou gal/yr	12/31/2011	Ethylbenzene	333	3.15E-03
992 Storage Tank T-992		Gasoline - unleaded	T54?2551	-9.79E+04 thou gal/yr	12/31/2011	Gasoline - unleaded	551	4.43E+00
1020 Tank 1020: Inorganic Chemical Storage Tank		Diethanolamine	T44??485	4.20E+02 thou gal/yr	3/10/1995	Diethanolamine	485	1.05E-01
1052 Tank 1052: Organic Liquid Storage Tank		Kerosene	T43??159	0.00E+00 thou gal/yr	12/31/2006	Kerosene	159	0.00E+00
1052 Tank 1052: Organic Liquid Storage Tank		Hydrocarbon - mixtures, other/	T43??318	0.00E+00 thou gal/yr	12/31/2006	Hydrocarbon - mixtures, othe	318	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Benzene	41	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Ethylene dichloride	107	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Gasoline - leaded	128	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Toluene	293	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Xylene	307	0.00E+00
1287 TANK 1287		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Ethylene dibromide	420	0.00E+00
1287 TANK 1287		Toluene	T5432293	0.00E+00 thou gal/yr	12/31/2011	Toluene	293	0.00E+00
1287 TANK 1287		Petroleum products - other/not	T5432321	-2.45E+04 thou gal/yr	12/31/2011	Petroleum products - other/n	321	2.16E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2011	Benzene	41	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2011	Toluene	293	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2011	Xylene	307	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2011	Ethylbenzene	333	0.00E+00
1287 TANK 1287		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2011	Gasoline - unleaded	551	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2011	Benzene	41	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2011	Ethylene dichloride	107	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2011	Gasoline - leaded	128	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2011	Toluene	293	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2011	Xylene	307	0.00E+00
1289 TANK 1289		Gasoline - leaded	T64?2128	0.00E+00 thou gal/yr	12/31/2011	Ethylene dibromide	420	0.00E+00
1289 TANK 1289		Toluene	T64?2293	-1.49E+03 thou gal/yr	12/31/2011	Toluene	293	1.00E+00
1289 TANK 1289		Hydrocarbon - mixtures, other/	T64?2318	0.00E+00 thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe	318	0.00E+00
1292 TANK 1292		Diesel fuel	T5412098	-5.56E+04 thou gal/yr	12/31/2011	Diesel oil	98	4.40E-01
1292 TANK 1292		Fuel - jet 'A'	T5412158	0.00E+00 thou gal/yr	12/31/2011	Fuel - jet 'A'	158	0.00E+00
1292 TANK 1292		Jet fuel JP8	T5412684	0.00E+00 thou gal/yr	12/31/2011	Jet fuel JP8	684	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2011	Benzene	41	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2011	Ethylene dichloride	107	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2011	Gasoline - leaded	128	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2011	Toluene	293	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2011	Xylene	307	0.00E+00
1296 TANK 1296		Gasoline - leaded	T5412128	0.00E+00 thou gal/yr	12/31/2011	Ethylene dibromide	420	0.00E+00
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.91E+04 thou gal/yr	12/31/2011	Benzene	41	1.75E-02
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.91E+04 thou gal/yr	12/31/2011	Toluene	293	5.94E-02
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.91E+04 thou gal/yr	12/31/2011	Xylene	307	6.99E-03
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.91E+04 thou gal/yr	12/31/2011	Ethylbenzene	333	4.08E-03
1296 TANK 1296		Gasoline - unleaded	T5412551	-7.91E+04 thou gal/yr	12/31/2011	Gasoline - unleaded	551	5.73E+00
1297 Tank 1297: Organic Storage Tank		Water/organics mixture	T63?2502	5.90E+00 thou gal/yr	12/31/2003	Water/organics mixture	502	8.65E-04
1428 TANK 1428		Refinery feedstock - other/not	T5412239	4.26E+04 thou gal/yr	4/30/1997	Refinery feedstock - other/n	239	7.11E+00
1431 Asphalt Tank(T-907)		Asphalt	T44??030	0.00E+00 thou gal/yr	12/31/2011	Asphalt	30	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Benzene	41	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Ethylene dichloride	107	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Gasoline - leaded	128	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Toluene	293	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Xylene	307	0.00E+00
1444 TANK 1444		Gasoline - leaded	T5432128	0.00E+00 thou gal/yr	12/31/2011	Ethylene dibromide	420	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2011	Benzene	41	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2011	Toluene	293	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2011	Xylene	307	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2011	Ethylbenzene	333	0.00E+00
1444 TANK 1444		Gasoline - unleaded	T5432551	0.00E+00 thou gal/yr	12/31/2011	Gasoline - unleaded	551	0.00E+00
1451 TANK 1451		Refinery feedstock - other/not	T5412239	3.30E+03 thou gal/yr	4/30/1997	Refinery feedstock - other/n	239	5.30E-02
1455 TANK 1455		Hydrocarbon - mixtures, other/	T4417318	3.30E+03 thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe	318	5.97E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
1456 TANK 1456		Hydrocarbon - mixtures, other/	T4417318	2.70E+03	thou gal/yr	4/30/1997	Hydrocarbon - mixtures, othe		318	5.90E-01
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1459 TANK 1459		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.16E+04	thou gal/yr	12/31/2011	Benzene		41	1.16E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.16E+04	thou gal/yr	12/31/2011	Toluene		293	3.93E-02
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.16E+04	thou gal/yr	12/31/2011	Xylene		307	4.63E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.16E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	2.70E-03
1459 TANK 1459		Gasoline - unleaded	T5432551	-1.16E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	3.80E+00
1488 TANK 1488		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
1488 TANK 1488		Oil/water mixture	T5472503	-1.01E+04	thou gal/yr	12/31/2011	Oil/water mixture		503	3.14E+01
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1489 TANK 1489		Alkylate	T5432389	-3.34E+04	thou gal/yr	12/31/2011	Alkylate		389	4.85E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
1489 TANK 1489		Gasoline - unleaded	T5432551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
1491 TANK 1491		Paraffins - C3+	T5432052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+		52	0.00E+00
1491 TANK 1491		Ethers	T5432103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
1491 TANK 1491		Methyl alcohol	T5432179	0.00E+00	thou gal/yr	12/31/2011	Methyl alcohol		179	0.00E+00
1491 TANK 1491		Toluene	T5432293	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1491 TANK 1491		Gasoline - unleaded	T5432551	-4.98E+04	thou gal/yr	12/31/2011	Benzene		41	1.18E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	-4.98E+04	thou gal/yr	12/31/2011	Toluene		293	4.01E-02
1491 TANK 1491		Gasoline - unleaded	T5432551	-4.98E+04	thou gal/yr	12/31/2011	Xylene		307	4.71E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	-4.98E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	2.75E-03
1491 TANK 1491		Gasoline - unleaded	T5432551	-4.98E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	3.87E+00
1492 TANK 1492		Distillate oil	T4417315	6.28E+03	thou gal/yr	4/30/1997	Distillate oil		315	3.52E+00
1493 TANK 1493		Distillate oil	T4417315	1.26E+04	thou gal/yr	4/30/1997	Distillate oil		315	4.30E+00
1504 TANK 1504		Crude oil	T5472089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
1504 TANK 1504		Hydrocarbon - mixtures, other/	T5472318	-1.34E+04	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	2.13E+00
1506 TANK 1506		Distillate oil	T5472315	1.47E+05	thou gal/yr	4/30/1997	Distillate oil		315	8.02E-01
1507 Tank 910		Fuel oil #2	T4477392	0.00E+00	thou gal/yr	4/30/1997	Fuel oil #2		392	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1514 TANK 1514		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1514 TANK 1514		Gasoline - unleaded	T5432551	-7.53E+04	thou gal/yr	12/31/2011	Benzene		41	1.50E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	-7.53E+04	thou gal/yr	12/31/2011	Toluene		293	5.10E-02
1514 TANK 1514		Gasoline - unleaded	T5432551	-7.53E+04	thou gal/yr	12/31/2011	Xylene		307	6.00E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	-7.53E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	3.50E-03
1514 TANK 1514		Gasoline - unleaded	T5432551	-7.53E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	4.93E+00
1518 TANK 1518		Fuel - jet 'A'	T5432158	-1.34E+04	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	1.25E-01
1622 LPG Tank, # 1622		LPG	T3477160	-4.29E+04	thou gal/yr	6/10/1998	LPG		160	0.00E+00
1623 TANK 1623 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/1997	Paraffins - C3+		52	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - leaded	T6432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
1633 TANK 1633		Gasoline - unleaded	T6432551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
1634 TANK 1634 (JET A)		Fuel - jet 'A'	T6412158	-3.00E+03	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	8.91E-02
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - leaded	T6472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
1635 Tank 1635 Organic Liquid Storage Tank		Gasoline - unleaded	T6472551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
1636 TANK 1636		Distillate oil	T4417315	3.70E+04	thou gal/yr	4/30/1997	Distillate oil		315	1.27E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1637 TANK 1637		Gasoline - leaded	T6H32128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.67E+04	thou gal/yr	12/31/2011	Benzene		41	4.07E-03
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.67E+04	thou gal/yr	12/31/2011	Toluene		293	1.38E-02
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.67E+04	thou gal/yr	12/31/2011	Xylene		307	1.63E-03
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.67E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	9.49E-04
1637 TANK 1637		Gasoline - unleaded	T6H32551	-1.67E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	1.34E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1645 TANK 1645		Gasoline - leaded	T6437128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
1645 TANK 1645		Gasoline - unleaded	T6437551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
1653 TANK 1653		Fuel - jet 'A'	T4417158	-6.21E+03	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	2.41E+00
1653 TANK 1653		Distillate oil	T4417315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
1653 TANK 1653		Jet fuel JP5	T4417492	0.00E+00	thou gal/yr	12/31/2011	Jet fuel JP5		492	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
1687 TANK 1687		Gasoline - leaded	T5432128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.10E+05	thou gal/yr	12/31/2011	Benzene		41	1.60E-02
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.10E+05	thou gal/yr	12/31/2011	Toluene		293	5.42E-02
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.10E+05	thou gal/yr	12/31/2011	Xylene		307	6.38E-03
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.10E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	3.72E-03
1687 TANK 1687		Gasoline - unleaded	T5432551	-1.10E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	5.24E+00
1688 TANK 1688		Gasoline - unleaded	T5432551	-1.49E+05	thou gal/yr	12/31/2011	Benzene		41	1.65E-02
1688 TANK 1688		Gasoline - unleaded	T5432551	-1.49E+05	thou gal/yr	12/31/2011	Toluene		293	5.60E-02
1688 TANK 1688		Gasoline - unleaded	T5432551	-1.49E+05	thou gal/yr	12/31/2011	Xylene		307	6.59E-03
1688 TANK 1688		Gasoline - unleaded	T5432551	-1.49E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	3.84E-03
1688 TANK 1688		Gasoline - unleaded	T5432551	-1.49E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	5.41E+00
1798 Tank 1798		Fuel - jet 'A'	T5422158	-2.12E+05	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	7.50E+00
1798 Tank 1798		Distillate oil	T5422315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
1799 TANK 1799		Crude oil	T5422089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
1799 TANK 1799		Fuel - jet 'A'	T5422158	-2.04E+05	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	1.53E+00
1821 Tank 1821 Fresh Sulfuric Acid Tank		H2SO4 - other/not spec	G5999146	-1.25E+05	tons/yr	12/31/2011	Particulates (portion of tot		1990	6.83E-03
1825 Tank 1825		Organic liquid - other/not spe	T4277201	-2.77E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	1.19E-02
1828 TANK 1828		Paraffins - C3+	T3447052	0.00E+00	thou gal/yr	12/31/2006	Paraffins - C3+		52	0.00E+00
1828 TANK 1828		Pentane	T3447209	0.00E+00	thou gal/yr	12/31/2006	Pentane		209	0.00E+00
1828 TANK 1828		Butane	T3447416	1.68E+03	thou gal/yr	12/31/2006	Butane		416	0.00E+00
1843 TANK 1843		Paraffins - C3+	T5412052	-1.56E+02	thou gal/yr	12/31/2011	Paraffins - C3+		52	7.73E-03
1894 Tank 1894: Phosphoric Acid Storage Tank		Phosphoric acid	G5999217	-8.70E+01	tons/yr	12/31/2011	Particulates (portion of tot		1990	4.77E-06
1899 TANK 1899		Distillate oil	T5412315	4.14E+04	thou gal/yr	4/30/1997	Distillate oil		315	3.92E-01
1908 Asphalt Tank (T-908)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
1909 Tank 1909		Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	0.00E+00
1910 Tank 1910		Organic liquid - other/not spe	T4377201	7.90E+00	thou gal/yr	12/31/1994	Organic liquid - other/not s		201	3.55E-02
1911 Tank 1911		Organic liquid - other/not spe	T4377201	0.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	0.00E+00
1911 Tank 1911		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
1966 TANK 1966		Fuel - jet 'A'	T5432158	-1.46E+04	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	1.65E-01
2520 Wastewater/MEA Storage Tank		Ethyl amine	T4477106	0.00E+00	thou gal/yr	12/31/2005	Ethyl amine		106	0.00E+00
2520 Wastewater/MEA Storage Tank		Waste water - refin, other/not	T4477300	1.05E+05	thou gal/yr	12/31/2005	Waste water - refin, other/n		300	6.26E+00
2540 Tank 2540: Organic Liquid Storage Tank		Ethanolamine	T4477664	-1.79E+03	thou gal/yr	12/31/1997	Ethanolamine		664	1.12E-01
2903 Tank 903: Organic Liquid Storage Tank		Butane	T4277416	0.00E+00	thou gal/yr	12/31/2003	Butane		416	0.00E+00
2903 Tank 903: Organic Liquid Storage Tank		Lube oil	T4277419	2.60E+00	thou gal/yr	12/31/2003	Lube oil		419	8.17E-04
2917 Asphalt Tank (T-917)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
2918 Asphalt Tank (T-918)		Asphalt	T4477030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
2921 Asphalt Tank (T-921)		Asphalt	T4377030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
3038 TANK 3038 (Spherical Pressure Tank)		Paraffins - C3+	T3477052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+		52	0.00E+00
3038 TANK 3038 (Spherical Pressure Tank)		Pentane	T3477209	-4.32E+03	thou gal/yr	12/31/2011	Pentane		209	0.00E+00
3050 TANK 3050 SPHERE		Propane	T3447417	-2.30E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3066 TANK 3066		Paraffins - C3+	T3447052	-7.50E+02	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3071 TANK 3071		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3071 TANK 3071		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.56E+05	thou gal/yr	12/31/2011	Benzene		41	3.66E-01
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.56E+05	thou gal/yr	12/31/2011	Toluene		293	1.24E+00
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.56E+05	thou gal/yr	12/31/2011	Xylene		307	1.46E-01
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.56E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	8.53E-02
3071 TANK 3071		Gasoline - unleaded	T54?2551	-1.56E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	1.20E+02
3072 TANK 3072		Gasoline - unleaded	T54?2551	-1.38E+05	thou gal/yr	12/31/2011	Benzene		41	1.60E-02
3072 TANK 3072		Gasoline - unleaded	T54?2551	-1.38E+05	thou gal/yr	12/31/2011	Toluene		293	5.43E-02
3072 TANK 3072		Gasoline - unleaded	T54?2551	-1.38E+05	thou gal/yr	12/31/2011	Xylene		307	6.38E-03
3072 TANK 3072		Gasoline - unleaded	T54?2551	-1.38E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	3.72E-03
3072 TANK 3072		Gasoline - unleaded	T54?2551	-1.38E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	5.24E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Paraffins - C3+	T54?2052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+		52	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	-9.70E+04	thou gal/yr	12/31/2011	Benzene		41	1.39E-02
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	-9.70E+04	thou gal/yr	12/31/2011	Toluene		293	4.73E-02
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	-9.70E+04	thou gal/yr	12/31/2011	Xylene		307	5.57E-03
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	-9.70E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	3.25E-03
3073 TANK 3073,external floating roof storage tank w/primary and		Gasoline - unleaded	T54?2551	-9.70E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	4.57E+00
3074 TANK 3074		Distillate oil	T54?2315	-6.37E+04	thou gal/yr	12/31/2011	Distillate oil		315	3.78E-01
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-1.90E+01	thou gal/yr	12/31/2011	Benzene		41	2.93E-02
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-1.90E+01	thou gal/yr	12/31/2011	Ethylene dichloride		107	4.98E-04
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-1.90E+01	thou gal/yr	12/31/2011	Gasoline - leaded		128	2.72E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-1.90E+01	thou gal/yr	12/31/2011	Toluene		293	1.46E-01
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-1.90E+01	thou gal/yr	12/31/2011	Xylene		307	3.22E-02
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - leaded	T54?7128	-1.90E+01	thou gal/yr	12/31/2011	Ethylene dibromide		420	1.96E-05
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
3075 External Floating Roof Storage Tank w/primary & secondary se		Gasoline - unleaded	T54?7551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
3076 TANK T3076		Crude oil	T54?2089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
3076 TANK T3076		Hydrocarbon - mixtures, other/	T54?2318	-5.42E+03	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	3.29E+00
3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar		Crude oil	T54?2089	-2.99E+05	thou gal/yr	12/31/2011	Crude oil		89	2.06E+01
3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar		Bunker C fuel oil	T54?2242	0.00E+00	thou gal/yr	12/31/2011	Bunker C fuel oil		242	0.00E+00
3100 W.G. Seals Inc. Compressor Shoe primary seal and Weatherguar		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3101 TANK 3101		Crude oil	T5432089	-3.29E+05	thou gal/yr	12/31/2011	Crude oil		89	2.97E+01
3101 TANK 3101		Fuel oil #2	T5432392	0.00E+00	thou gal/yr	12/31/2011	Fuel oil #2		392	0.00E+00
3101 TANK 3101		Gas oil	T5432394	0.00E+00	thou gal/yr	12/31/2011	Gas oil		394	0.00E+00
3102 TANK 3102		Crude oil	T5432089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
3102 TANK 3102		Hydrocarbon - mixtures, other/	T5432318	-3.05E+05	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	1.10E+01
3103 TANK 3103		Crude oil	T5432089	-3.47E+05	thou gal/yr	12/31/2011	Crude oil		89	3.55E+01
3104 TANK 3104		Crude oil	T5432089	-2.39E+05	thou gal/yr	12/31/2011	Crude oil		89	2.83E+00
3105 TANK 3105		Crude oil	T5432089	-7.21E+05	thou gal/yr	12/31/2011	Crude oil		89	6.52E+01
3106 TANK 3106		Crude oil	T5432089	-7.62E+05	thou gal/yr	12/31/2011	Crude oil		89	3.71E+01
3107 TANK 3107		Crude oil	T54?2089	-4.59E+05	thou gal/yr	12/31/2011	Crude oil		89	4.24E+00
3110 Desalter Effluent Surge Tank A		Crude oil	T43?7089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
3111 Desalter Effluent Surge Tank B		Crude oil	T43?7089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
3126 TANK 3126		Naphtha	T5432188	0.00E+00	thou gal/yr	12/31/2011	Naphtha		188	0.00E+00
3126 TANK 3126		Oil/water mixture	T5432503	-8.15E+04	thou gal/yr	12/31/2011	Oil/water mixture		503	1.09E+00
3127 TANK 3127		Oil/water mixture	T5412503	-4.27E+03	thou gal/yr	12/31/2011	Oil/water mixture		503	1.71E+00
3128 TANK 3128		Aromatic hydrocarbons - other/	T54?2027	0.00E+00	thou gal/yr	12/31/2011	Aromatic hydrocarbons - othe		27	0.00E+00
3128 TANK 3128		Water/organics mixture	T54?2502	-6.52E+03	thou gal/yr	12/31/2011	Water/organics mixture		502	1.25E+00
3129 TANK 3129		Fuel - jet 'A'	T5412158	-1.78E+05	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	1.55E+00
3132 Tank 3132		Distillate oil	T54?2315	8.12E+04	thou gal/yr	4/30/1997	Distillate oil		315	5.89E-01
3133 TANK 3133		Fuel - jet 'A'	T5412158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.16E+05	thou gal/yr	12/31/2011	Benzene		41	3.11E-01
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.16E+05	thou gal/yr	12/31/2011	Toluene		293	1.06E+00
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.16E+05	thou gal/yr	12/31/2011	Xylene		307	1.24E-01
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.16E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	7.26E-02
3133 TANK 3133		Gasoline - unleaded	T5412551	-4.16E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	1.02E+02
3133 TANK 3133		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2011	Gasoline - oxygenated, MTBE		680	0.00E+00
3134 TANK 3134		Distillate oil	T5412315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.19E+05	thou gal/yr	12/31/2011	Benzene		41	2.49E-01
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.19E+05	thou gal/yr	12/31/2011	Toluene		293	8.46E-01
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.19E+05	thou gal/yr	12/31/2011	Xylene		307	9.95E-02
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.19E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	5.81E-02
3134 TANK 3134		Gasoline - unleaded	T5412551	-2.19E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	8.17E+01
3134 TANK 3134		Gasoline - oxygenated, MTBE ad	T5412680	0.00E+00	thou gal/yr	12/31/2011	Gasoline - oxygenated, MTBE		680	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3138 TANK 3138		Gas oil	T5412394	9.35E+04	thou gal/yr	4/30/1997	Gas oil		394	5.55E-01
3139 TANK 3139		Gas oil	T5422394	-2.88E+04	thou gal/yr	12/31/1997	Gas oil		394	8.14E+00
3141 SULFUR STORAGE TANK 3141		Sulfur	G7014267	0.00E+00	tons/yr	12/31/2011			0	0.00E+00
3142 TANK 3142		Refinery feedstock - other/not	T4417239	-3.33E+02	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
3144 TANK 3144		Oil/water mixture	T5432503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
3145 TANK 3145, Sphere		Paraffins - C3+	T3H37052	-1.37E+05	thou gal/yr	6/10/1998	Paraffins - C3+		52	0.00E+00
3146 Tank 3146: 20% Aqueous Ammonia		Organic liquid - other/not spe	T447201	9.66E+01	thou gal/yr	12/13/1994	Organic liquid - other/not s		201	1.46E+01
3147 Tank 3147: Organic Liquid Storage Tank		Diethanolamine	T6472485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3148 Tank 3148: Organic Liquid Storage Tank		Diethanolamine	T4372485	0.00E+00	thou gal/yr	12/31/1997	Diethanolamine		485	0.00E+00
3157 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.24E+01
3158 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3159 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.64E+01
3160 Tank 3160: Organic Liquid Storage Tank		Lube oil	T4477419	2.73E+02	thou gal/yr	10/19/1994	Lube oil		419	1.34E+01
3161 Tank Lube Oil		Lube oil	T4477419	3.89E+04	thou gal/yr	4/30/1997	Lube oil		419	1.19E-01
3162 Tank Lube Oil		Lube oil	T4477419	5.23E+04	thou gal/yr	4/30/1997	Lube oil		419	1.22E-01
3163 Tank Lube Oil		Lube oil	T4477419	3.02E+04	thou gal/yr	4/30/1997	Lube oil		419	7.74E-02
3164 Tank Lube Oil		Lube oil	T4477419	5.21E+03	thou gal/yr	4/30/1997	Lube oil		419	7.23E-02
3165 Tank Lube Oil		Lube oil	T4477419	3.83E+04	thou gal/yr	4/30/1997	Lube oil		419	1.41E-01
3166 Tank Lube Oil		Lube oil	T4477419	3.62E+04	thou gal/yr	4/30/1997	Lube oil		419	1.40E-01
3167 Tank Lube Oil		Lube oil	T4477419	1.88E+04	thou gal/yr	4/30/1997	Lube oil		419	5.27E-02
3168 Tank Lube Oil		Lube oil	T4477419	2.31E+04	thou gal/yr	4/30/1997	Lube oil		419	5.36E-02
3169 organic liquid storage tank, lube oil products		Lube oil	T4477419	2.88E+04	thou gal/yr	5/1/1995	Lube oil		419	1.78E-01
3170 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3171 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	1.54E+01
3172 Lube Oil Tank		Lube oil	T4477419	0.00E+00		4/21/1997	Lube oil		419	9.57E+00
3179 Tank 3179: Organic Liquid Storage Tank		Distillate oil	T4477315	-2.61E-01	thou gal/yr	12/31/1997	Distillate oil		315	1.59E-01
3180 Tank		Paraffins - C3+	T5472052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+		52	0.00E+00
3180 Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3180 Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
3180 Tank		Hydrocarbon - mixtures, other/	T5472318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
3180 Tank		Alkylate	T5472389	0.00E+00	thou gal/yr	12/31/2011	Alkylate		389	0.00E+00
3180 Tank		Gasoline - unleaded	T5472551	-5.29E+04	thou gal/yr	12/31/2011	Benzene		41	2.30E-01
3180 Tank		Gasoline - unleaded	T5472551	-5.29E+04	thou gal/yr	12/31/2011	Toluene		293	7.83E-01
3180 Tank		Gasoline - unleaded	T5472551	-5.29E+04	thou gal/yr	12/31/2011	Xylene		307	9.22E-02
3180 Tank		Gasoline - unleaded	T5472551	-5.29E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	5.38E-02
3180 Tank		Gasoline - unleaded	T5472551	-5.29E+04	thou gal/yr	12/31/2011	Gasoline - unleaded		551	7.56E+01
3182 Tank 3182: Organic Liquid Storage Tank		Lube oil	T6472419	-4.30E+04	thou gal/yr	12/31/1997	Lube oil		419	2.61E-01
3185 Tank 3185 (previously T-982)		Fuel - jet 'A'	T5472158	-2.08E+05	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	6.39E+00
3186 Gas Oil Tank		Organic liquid - other/not spe	T447201	0.00E+00		4/21/1997	Organic liquid - other/not s		201	8.69E+00
3189 Gasoline component and Diesel Tank		Ethers	T5572103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3189 Gasoline component and Diesel Tank		Fuel - jet 'A'	T5572158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
3189 Gasoline component and Diesel Tank		Distillate oil	T5572315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3189 Gasoline component and Diesel Tank		Hydrocarbon - mixtures, other/	T5572318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
3189 Gasoline component and Diesel Tank		Gas oil	T5572394	0.00E+00	thou gal/yr	12/31/2011	Gas oil		394	0.00E+00
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-3.02E+05	thou gal/yr	12/31/2011	Benzene		41	1.93E-02
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-3.02E+05	thou gal/yr	12/31/2011	Toluene		293	6.56E-02
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-3.02E+05	thou gal/yr	12/31/2011	Xylene		307	7.72E-03
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-3.02E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	4.50E-03
3189 Gasoline component and Diesel Tank		Gasoline - unleaded	T5572551	-3.02E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	6.33E+00
3189 Gasoline component and Diesel Tank		Gasoline - oxygenated, MTBE ad	T5572680	0.00E+00	thou gal/yr	12/31/2011	Gasoline - oxygenated, MTBE		680	0.00E+00
3190 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3190 Storage Tank		Fuel - jet 'A'	T5472158	-2.16E+05	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	1.75E+00
3191 Storage Tank		Ethers	T5472103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3191 Storage Tank		Gasoline - leaded	T5472128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
3191 Storage Tank		Naphtha	T5472188	0.00E+00	thou gal/yr	12/31/2011	Naphtha		188	0.00E+00
3191 Storage Tank		Jet fuel JP4	T5472395	0.00E+00	thou gal/yr	12/31/2011	Jet fuel JP4		395	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T5472551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
3191 Storage Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
3191 Storage Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
3191 Storage Tank		Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2011	Methyl tertiary-butyl ether		628	0.00E+00
3191 Storage Tank		Avgas	T54?2662	-1.12E+04	thou gal/yr	12/31/2011	Benzene		41	1.21E-01
3191 Storage Tank		Avgas	T54?2662	-1.12E+04	thou gal/yr	12/31/2011	Cyclohexane		91	5.93E-02
3191 Storage Tank		Avgas	T54?2662	-1.12E+04	thou gal/yr	12/31/2011	Hexane		148	1.24E-01
3191 Storage Tank		Avgas	T54?2662	-1.12E+04	thou gal/yr	12/31/2011	Toluene		293	3.46E-01
3191 Storage Tank		Avgas	T54?2662	-1.12E+04	thou gal/yr	12/31/2011	Xylene		307	4.30E-01
3191 Storage Tank		Avgas	T54?2662	-1.12E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	9.89E-02
3191 Storage Tank		Avgas	T54?2662	-1.12E+04	thou gal/yr	12/31/2011	Tetra-Ethyl Lead (TEL)		422	4.94E-02
3191 Storage Tank		Avgas	T54?2662	-1.12E+04	thou gal/yr	12/31/2011	Avgas		662	1.24E+00
3192 Desalter Effluent Skim Tank		Crude oil	T3H?7089	-1.56E+04	thou gal/yr	12/31/2010	Crude oil		89	0.00E+00
3193 Gasoline component Tank		Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3193 Gasoline component Tank		Isocane	T54?2154	-1.31E+04	thou gal/yr	12/31/2011	Isocane		154	2.26E+00
3193 Gasoline component Tank		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3193 Gasoline component Tank		Alkylate	T54?2389	0.00E+00	thou gal/yr	12/31/2011	Alkylate		389	0.00E+00
3193 Gasoline component Tank		Gas oil	T54?2394	0.00E+00	thou gal/yr	12/31/2011	Gas oil		394	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
3193 Gasoline component Tank		Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
3194 Storage Tank T-3194		Hydrocarbon - mixtures, other/	T54?2318	0.00E+00	thou gal/yr	12/31/2003	Hydrocarbon - mixtures, othe		318	0.00E+00
3194 Storage Tank T-3194		Gas oil	T54?2394	1.44E+05	thou gal/yr	12/31/2003	Gas oil		394	9.85E-01
3195 T-3195 Waxy Heavy Neutral Storage Tank		Diesel fuel	T54?7098	1.29E+05	thou gal/yr	12/31/2006	Diesel oil		98	2.35E+00
3195 T-3195 Waxy Heavy Neutral Storage Tank		Distillate oil	T54?7315	0.00E+00	thou gal/yr	12/31/2006	Distillate oil		315	0.00E+00
3195 T-3195 Waxy Heavy Neutral Storage Tank		Lube oil	T54?7419	0.00E+00	thou gal/yr	12/31/2006	Lube oil		419	0.00E+00
3196 Gasoline Components Tank		Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3196 Gasoline Components Tank		Organic liquid - other/not spe	T54?2201	0.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	0.00E+00
3196 Gasoline Components Tank		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3196 Gasoline Components Tank		Gas oil	T54?2394	-1.18E+05	thou gal/yr	12/31/2011	Gas oil		394	6.84E-01
3196 Gasoline Components Tank		Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
3196 Gasoline Components Tank		Methyl tertiary-butyl ether	T54?2628	0.00E+00	thou gal/yr	12/31/2011	Methyl tertiary-butyl ether		628	0.00E+00
3197 Gasoline component Tank		Ethers	T55?2103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3197 Gasoline component Tank		Naphtha	T55?2188	-2.67E+04	thou gal/yr	12/31/2011	Naphtha		188	6.20E+00
3197 Gasoline component Tank		Distillate oil	T55?2315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3197 Gasoline component Tank		Gas oil	T55?2394	0.00E+00	thou gal/yr	12/31/2011	Gas oil		394	0.00E+00
3198 3198 tank; organic liquid storage tank		Fuel - jet 'A'	T543?158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
3198 3198 tank; organic liquid storage tank		Toluene	T543?293	-2.69E+03	thou gal/yr	12/31/2011	Toluene		293	1.85E+01
3198 3198 tank; organic liquid storage tank		Distillate oil	T543?315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3200 4 Crude Unit Desalter Water Treatment Unit		Waste water - refin, other/not	G5012300	-1.94E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	4.25E+01
3201 Tank 3201: Whole Alkylate		Ethers	T54?2103	0.00E+00	thou gal/yr	12/31/2011	Ethers		103	0.00E+00
3201 Tank 3201: Whole Alkylate		Alkylate	T54?2389	-1.24E+05	thou gal/yr	12/31/2011	Alkylate		389	1.12E+02
3202 Tank 3202: Methanol		Methyl alcohol	T54?2179	0.00E+00	thou gal/yr	12/31/2011	Methyl alcohol		179	0.00E+00
3202 Tank 3202: Methanol		Naphtha	T54?2188	-1.48E+04	thou gal/yr	12/31/2011	Naphtha		188	7.30E+01
3202 Tank 3202: Methanol		Distillate oil	T54?2315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
3202 Tank 3202: Methanol		Petroleum products - other/not	T54?2321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
3204 Tank 3204: Organic Liquid Storage Tank		Lube oil	T42?7419	2.54E+00	thou gal/yr	12/31/1997	Lube oil		419	4.07E-04
3207 Butane Sphere: Organic Liquid Storage Tank		Butane	T34?7416	-9.20E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3208 Propane Sphere: Organic Liquid Storage Tank		Propane	T34?7417	-7.67E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3211 Sphere		Butane	T34?7416	-3.83E+04	thou gal/yr	6/10/1998	Butane		416	0.00E+00
3212 Sphere		Propane	T34?7417	-2.76E+04	thou gal/yr	6/10/1998	Propane		417	0.00E+00
3213 Tank 3213: Organic Liquid Storage Tank		Diesel fuel	T54?2098	0.00E+00	thou gal/yr	12/31/2011	Diesel oil		98	0.00E+00
3213 Tank 3213: Organic Liquid Storage Tank		Fuel - jet 'A'	T54?2158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
3213 Tank 3213: Organic Liquid Storage Tank		Lube oil	T54?2419	0.00E+00	thou gal/yr	12/31/2011	Lube oil		419	0.00E+00
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.69E+05	thou gal/yr	12/31/2011	Benzene		41	8.03E-01
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.69E+05	thou gal/yr	12/31/2011	Toluene		293	2.73E+00
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.69E+05	thou gal/yr	12/31/2011	Xylene		307	3.21E-01
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.69E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	1.87E-01
3213 Tank 3213: Organic Liquid Storage Tank		Gasoline - unleaded	T54?2551	-2.69E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	2.64E+02
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011	Benzene		41	6.64E-01
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011	Ethylene dichloride		107	1.13E-02
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011	Gasoline - leaded		128	6.17E+01
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011	Toluene		293	3.32E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011	Xylene		307	7.30E-01
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - leaded	T5332128	-2.00E+04	thou gal/yr	12/31/2011	Ethylene dibromide		420	4.45E-04
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
3214 Tank 3214: Organic Liquid Storage Tank		Gasoline - unleaded	T5332551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
3215 Tank 3215: Organic Liquid Storage Tank		Distillate oil	T54?2315	-1.29E+05	thou gal/yr	12/31/1997	Distillate oil		315	1.15E+00
3216 Tank 3216: Organic Liquid Storage Tank		Distillate oil	T44?7315	8.40E+04	thou gal/yr	7/9/1997	Distillate oil		315	2.27E+01
3220 400 Tank Organic Liquid Storage Tank		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
3220 400 Tank Organic Liquid Storage Tank		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
3220 400 Tank Organic Liquid Storage Tank		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
3220 400 Tank Organic Liquid Storage Tank		Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Emissions		Code	lb/day
						←-----	-----→		
3220	400 Tank	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011 Xylene	307	0.00E+00
3220	400 Tank	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011 Ethylene dibromide	420	0.00E+00
3220	400 Tank	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-1.23E+04	thou gal/yr	12/31/2011 Hydrocarbon - mixtures, othe	318	1.42E+02
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011 Benzene		41	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011 Ethylene dichloride		107	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011 Gasoline - leaded		128	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011 Toluene		293	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011 Xylene		307	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - leaded	T54?2128	0.00E+00	thou gal/yr	12/31/2011 Ethylene dibromide		420	0.00E+00
3225	Organic Liquid Storage Tank	Hydrocarbon - mixtures, other/	T54?2318	-2.12E+04	thou gal/yr	12/31/2011 Hydrocarbon - mixtures, othe		318	1.82E+02
3225	Organic Liquid Storage Tank	Oil/water mixture	T54?2503	0.00E+00	thou gal/yr	12/31/2011 Oil/water mixture		503	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011 Benzene		41	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011 Toluene		293	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011 Xylene		307	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011 Ethylbenzene		333	0.00E+00
3225	Organic Liquid Storage Tank	Gasoline - unleaded	T54?2551	0.00E+00	thou gal/yr	12/31/2011 Gasoline - unleaded		551	0.00E+00
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.28E+05	tons/yr	12/31/2011 Particulates (portion of tot		1990	5.02E+00
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.28E+05	tons/yr	12/31/2011 Sulfur Dioxide (SO2)		3990	1.40E+02
3226	sulfur storage tank (fixed roof)	Sulfur	G7014267	-1.28E+05	tons/yr	12/31/2011 Hydrogen Sulfide (H2S)		5020	8.77E+01
3232	Tank 3232 - Propylene Tetramer Storage Tank	Propylene tetramer	T44?7842	1.60E+06	thou gal/yr	Unknown Propylene tetramer		842	4.13E+02
3310	Tank 3310: Organic Liquid Storage Tank	Lube oil	T43??419	-3.37E+02	thou gal/yr	12/31/1997 Lube oil		419	3.31E-03
3910	LPG Tank; # 3910	LPG	T34??160	-3.97E+04	thou gal/yr	6/10/1998 LPG		160	0.00E+00
3911	LPG Tank, # 3911	LPG	T34??160	-2.30E+04	thou gal/yr	6/10/1998 LPG		160	0.00E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Benzene		41	6.44E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Cycloparaffins - other/not s		92	4.08E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Formaldehyde		124	1.72E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Phenol		214	3.69E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Acetaldehyde		335	4.20E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Organics (part not spec else		990	5.84E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Arsenic (all)		1030	1.37E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Cadmium		1070	3.91E-05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Chromium (hexavalent)		1095	7.81E-05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Manganese		1160	2.66E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Nickel pollutant		1180	3.12E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Mercury (all) pollutant		1190	1.95E-04
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Zinc pollutant		1320	6.09E-03
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 PAH's (non-specified)		1840	3.76E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 PAH's (benzo[a]pyrene equiv)		1860	1.61E-02
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 PAH's (non-carcinogenic)		1870	1.07E-01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Particulates (portion of tot		1990	1.95E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Nitrous Oxide (N2O)		2030	4.49E-01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Nitrogen Oxides (part not sp		2990	8.01E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Sulfur Dioxide (SO2)		3990	6.60E+00
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Carbon Monoxide (CO) polluta		4990	3.32E+01
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Carbon Dioxide, non-biogenic		6960	2.71E+05
4038	#4 RHENIFORMER, F-3550	Chevron refinery fuel gas	C1530708	-7.13E+05	thou cu ft/yr	12/31/2011 Methane (CH4)		6970	5.66E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Benzene		41	2.36E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Cycloparaffins - other/not s		92	1.50E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Formaldehyde		124	6.30E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Phenol		214	1.35E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Acetaldehyde		335	1.54E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Organics (part not spec else		990	2.14E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Arsenic (all)		1030	5.01E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Cadmium		1070	1.43E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Chromium (hexavalent)		1095	2.86E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Manganese		1160	9.74E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Nickel pollutant		1180	1.15E-04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Mercury (all) pollutant		1190	1.76E-05
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Zinc pollutant		1320	2.23E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 PAH's (non-specified)		1840	1.38E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 PAH's (benzo[a]pyrene equiv)		1860	5.91E-03
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 PAH's (non-carcinogenic)		1870	3.94E-02
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Particulates (portion of tot		1990	7.16E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Nitrous Oxide (N2O)		2030	1.65E-01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Nitrogen Oxides (part not sp		2990	2.94E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Sulfur Dioxide (SO2)		3990	2.42E+00
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Carbon Monoxide (CO) polluta		4990	1.22E+01
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Carbon Dioxide, non-biogenic		6960	9.95E+04
4039	#4 RHENIFORMER, F-3560	Chevron refinery fuel gas	C1530708	-2.61E+05	thou cu ft/yr	12/31/2011 Methane (CH4)		6970	2.08E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Benzene		41	2.55E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Cycloparaffins - other/not s		92	1.61E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Formaldehyde		124	6.79E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Phenol		214	1.46E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Acetaldehyde		335	1.66E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Organics (part not spec else		990	2.31E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Arsenic (all)		1030	5.40E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Cadmium		1070	1.54E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Chromium (hexavalent)		1095	3.09E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Manganese		1160	1.05E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Nickel pollutant		1180	1.24E-04
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Mercury (all) pollutant		1190	7.72E-05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Zinc pollutant		1320	2.41E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 PAH's (non-specified)		1840	1.49E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 PAH's (benzo[a]pyrene equiv)		1860	6.37E-03
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 PAH's (non-carcinogenic)		1870	4.25E-02
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Particulates (portion of tot		1990	7.72E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Nitrous Oxide (N2O)		2030	1.78E-01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Nitrogen Oxides (part not sp		2990	3.17E+01
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Sulfur Dioxide (SO2)		3990	2.61E+00
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011 Carbon Monoxide (CO) polluta		4990	1.31E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	<----- Emissions ----->		Code	lb/day
						Date	Pollutant		
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.07E+05
4040	#4 RHENIFORMER, F-3570	Chevron refinery fuel gas	C1530708	-2.82E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	2.24E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Benzene	41	2.53E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.60E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	6.75E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.45E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.65E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.29E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	5.37E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.53E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	3.07E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Manganese	1160	1.04E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.23E-04
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	7.67E-05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.39E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)	1840	1.48E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	6.33E-03
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	4.22E-02
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	7.67E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.76E-01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	3.14E+01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	2.59E+00
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.30E+01
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.07E+05
4041	F3580, #4 RHENIFORMER	Chevron refinery fuel gas	C1540708	-2.80E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	2.22E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Benzene	41	4.69E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	2.97E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	1.25E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Phenol	214	2.69E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	3.06E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	4.25E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	9.95E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	2.84E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	5.68E-05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Manganese	1160	1.93E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	2.27E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	1.42E-04
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	4.43E-03
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)	1840	2.74E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	1.17E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	7.82E-02
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	1.42E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	3.27E-01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	5.83E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	4.80E+00
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	2.42E+01
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.98E+05
4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Chevron refinery fuel gas	C1530708	-5.19E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	4.12E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Benzene	41	1.84E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.17E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	4.92E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.06E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.20E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	1.67E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	3.91E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.12E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	2.23E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Manganese	1160	7.60E-04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	8.94E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	5.59E-05
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	1.74E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)	1840	1.08E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	4.61E-03
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	3.07E-02
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	5.59E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.28E-01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	2.29E+01
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	1.89E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	9.50E+00
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	7.76E+04
4043	F560, #5 RHENIFORMER	Chevron refinery fuel gas	C1530708	-2.04E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	1.62E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Benzene	41	3.26E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	2.06E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	8.68E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.86E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	2.12E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.95E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	6.91E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.97E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	3.95E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Manganese	1160	1.34E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.58E-04
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	9.87E-05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	3.08E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)	1840	1.90E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	8.14E-03
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	5.43E-02
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	9.87E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	2.27E-01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	4.04E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	3.33E+00
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.68E+01
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.37E+05
4044	#5 RHENIF F570	Chevron refinery fuel gas	C1540708	-3.60E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	2.86E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Benzene		41	1.48E-03
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	9.38E-03
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	3.95E-04
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Phenol		214	8.48E-04
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	9.65E-04
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.34E+00
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	3.14E-05
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	8.97E-06
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	1.79E-05
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Manganese		1160	6.10E-04
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	7.18E-05
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	4.49E-05
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.40E-03
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	8.64E-03
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	3.70E-03
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	2.47E-02
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	4.49E+00
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.03E-01
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.84E+01
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.52E+00
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	7.63E+00
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	6.24E+04
4045 #5 RHENIF F580		Chevron refinery fuel gas	C1540708	-1.64E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.30E+00
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Benzene		41	2.90E-03
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.84E-02
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	7.73E-04
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Phenol		214	1.66E-03
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.89E-03
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.63E+00
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	6.15E-05
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	1.76E-05
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	3.52E-05
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Manganese		1160	1.20E-03
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.41E-04
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	8.79E-05
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.74E-03
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.69E-02
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	7.25E-03
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	4.83E-02
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	8.79E+00
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.02E-01
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.08E+01
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.97E+00
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.49E+01
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.22E+05
4059 #1 JHT Furnace #247		Chevron refinery fuel gas	C1530708	-3.21E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	2.55E+00
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Benzene		41	3.03E-03
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.92E-02
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	8.07E-04
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Phenol		214	1.73E-03
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.97E-03
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.74E+00
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	6.42E-05
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	1.83E-05
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	3.67E-05
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Manganese		1160	1.25E-03
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.47E-04
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	9.17E-05
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.86E-03
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.77E-02
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	7.57E-03
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	5.04E-02
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	9.17E+00
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.11E-01
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.21E+01
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.10E+00
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.56E+01
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.27E+05
4060 #1 JHT Furnace #210A&B		Chevron refinery fuel gas	C1530708	-3.35E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	2.66E+00
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Benzene		41	4.80E-03
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.04E-02
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.28E-03
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Phenol		214	2.75E-03
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	3.13E-03
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.35E+00
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	1.02E-04
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	2.91E-05
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	5.82E-05
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Manganese		1160	1.98E-03
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	2.33E-04
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	1.45E-04
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	4.54E-03
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	2.80E-02
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.20E-02
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	8.00E-02
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.45E+01
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.34E-01
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	7.41E+01
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.91E+00
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.47E+01
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.02E+05
4061 #5 NAPH HYDROTREATER F410		Chevron refinery fuel gas	C1530708	-5.31E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	4.22E+00
4062 #5 NAPH HYDROTREATER F447		Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Benzene		41	4.83E-03
4062 #5 NAPH HYDROTREATER F447		Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.06E-02
4062 #5 NAPH HYDROTREATER F447		Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Phenol		214	2.77E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	3.15E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.38E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	1.02E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	2.93E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	5.85E-05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Manganese		1160	1.99E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	2.34E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	1.46E-04
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	4.57E-03
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	2.82E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv		1860	1.21E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	8.05E-02
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.46E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.37E-01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	7.46E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.94E+00
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.49E+01
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.03E+05
4062	#5 NAPH HYDROTREATER F447	Chevron refinery fuel gas	C1530708	-5.34E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	4.24E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Benzene		41	2.85E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.81E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	7.60E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Phenol		214	1.63E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.86E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.58E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	6.05E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	1.73E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	3.46E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Manganese		1160	1.18E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.38E-04
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	8.64E-05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.70E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.66E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv		1860	7.13E-03
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	4.75E-02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	8.64E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.99E-01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.40E+02
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.92E+00
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.47E+01
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.20E+05
4068	VGO DESULFURIZER F-1610	Chevron refinery fuel gas	C1530708	-3.15E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	2.51E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Benzene		41	1.14E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	7.22E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	3.04E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Phenol		214	6.53E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	7.43E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.03E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	2.42E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	6.91E-06
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	1.38E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Manganese		1160	4.70E-04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	5.53E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	3.45E-05
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.08E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	6.65E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv		1860	2.85E-03
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.90E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	3.45E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	7.94E-02
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	6.80E+01
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.17E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.87E+00
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.80E+04
4069	VGO F1660	Chevron refinery fuel gas	C1540708	-1.26E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.00E+00
4070	#4 CRUDE UNIT F 1100A	Napththa	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Benzene		41	1.97E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.25E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Formaldehyde		124	5.26E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Phenol		214	1.13E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.29E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.79E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	4.19E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Cadmium		1070	1.20E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	2.39E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Manganese		1160	8.14E-03
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	9.57E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	5.98E-04
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.87E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.15E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv		1860	4.94E-02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	3.29E-01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	5.98E+01
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.38E+00
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.67E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.62E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.02E+02
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	8.31E+05
4070	#4 CRUDE UNIT F 1100A	Chevron refinery fuel gas	C1520708	-2.18E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.73E+01
4071	#4 CRUDE UNIT F1100B	Napththa	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Benzene		41	1.90E-02
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.20E-01
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Formaldehyde		124	5.06E-03
4071	#4 CRUDE UNIT F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Phenol		214	1.09E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.24E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.72E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	4.02E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Cadmium		1070	1.15E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	2.30E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Manganese		1160	7.82E-03
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	9.20E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	5.75E-04
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.79E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.11E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	4.74E-02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	3.16E-01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	5.75E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.32E+00
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.61E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.55E+02
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	9.77E+01
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	7.99E+05
4071 #4 CRUDE UNIT	F1100B	Chevron refinery fuel gas	C1520708	-2.10E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.67E+01
4072 #4 CRUDE UNIT	F1160	Napththa	C1520188	0.00E+00	/yr	12/31/2009			0	0.00E+00
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Benzene		41	6.99E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	4.43E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.86E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Phenol		214	4.00E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	4.55E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	6.33E+00
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	1.48E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	4.24E-05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	8.47E-05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Manganese		1160	2.88E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	3.39E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	2.12E-04
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	6.61E-03
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	4.08E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.75E-02
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.17E-01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	2.12E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.87E-01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.93E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	5.72E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.60E+01
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.94E+05
4072 #4 CRUDE UNIT	F1160	Chevron refinery fuel gas	C1520708	-7.73E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	6.14E+00
4073 LSFO COOLING TOWER		Fresh water	G5005415	-1.35E+07	thou gallo/yr	12/31/2011	Organics (part not spec else		990	2.22E+02
4076 3 CAT COOLING TOWER E460		Fresh water	G5005415	-1.53E+07	thou gallo/yr	12/31/2011	Organics (part not spec else		990	2.52E+02
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Benzene		41	1.32E-06
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Formaldehyde		124	1.55E-05
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Toluene		293	7.03E-07
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Organics (part not spec else		990	1.18E-03
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Particulates (portion of tot		1990	6.20E-04
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.77E-05
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.89E-02
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.17E-04
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	7.23E-03
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.53E+01
4107 HEAT TREATING FURNACE NO. 1 BOILER SHOP		Natural gas	C1550189	-7.92E+02	therms/yr	12/31/2011	Methane (CH4)		6970	3.93E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Benzene		41	4.99E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.16E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.48E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Phenol		214	9.07E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Toluene		293	1.80E-01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	4.35E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.29E+00
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	6.05E-05
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	3.02E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	4.53E-04
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.57E-03
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.59E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.25E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	8.31E-02
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.51E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.48E-01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.29E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	5.10E+00
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.57E+01
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.10E+05
4129 800# STM BLR #1 #1PP		Chevron refinery fuel gas	C1130708	-5.52E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	4.38E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Benzene		41	3.47E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.03E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Phenol		214	6.30E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Toluene		293	1.25E-01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	3.03E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.98E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	4.20E-05
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	2.10E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	3.15E-04
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.79E-03
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.10E-02
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.05E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.42E-01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.68E+01
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.55E+00
4131 800# STM BLR #3 #1PP		Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.79E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.46E+05
4131	800# STM BLR #3 #1PP	Chevron refinery fuel gas	C1130708	-3.83E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	3.05E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Benzene		41	3.27E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	2.07E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	9.71E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Phenol		214	5.94E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Toluene		293	1.18E-01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	2.85E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.81E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	3.96E-05
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	1.98E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	2.97E-04
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.68E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	1.04E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	8.17E-03
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	5.45E-02
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	9.89E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.28E-01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.47E+01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.35E+00
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.68E+01
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.38E+05
4132	800# STM BLR #4 #1 PP	Chevron refinery fuel gas	C1130708	-3.62E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	2.87E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Benzene		41	5.20E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.29E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.54E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Phenol		214	9.45E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Toluene		293	1.88E-01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	4.54E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.47E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	6.30E-05
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	3.15E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	4.73E-04
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.68E-03
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	1.65E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.30E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	8.67E-02
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.57E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.62E-01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.52E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	5.32E+00
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.68E+01
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.19E+05
4133	800# STEAM BLR #5 #1PP	Chevron refinery fuel gas	C1130708	-5.75E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	4.57E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Benzene		41	8.84E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	5.60E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	2.63E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Phenol		214	1.61E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Toluene		293	3.19E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	7.72E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	7.60E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	1.07E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	5.36E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	8.04E-04
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	4.55E-03
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	2.81E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	2.21E-02
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.47E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	2.68E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	6.16E-01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	9.38E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	9.05E+00
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	4.55E+01
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.72E+05
4135	800# STM BLR #7 #1 PP	Chevron refinery fuel gas	C1120708	-9.78E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	7.77E+00
4148	#13 SEPARATOR	Waste water - refin, other/not	G5017300	-4.40E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	6.03E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Benzene		41	4.41E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	2.80E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.18E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Phenol		214	2.53E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Acetaldehyde		335	2.88E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.00E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	9.36E-06
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Cadmium		1070	2.68E-06
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	5.35E-06
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Manganese		1160	1.82E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	2.14E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	1.34E-05
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	4.17E-04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	2.58E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.10E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	7.36E-03
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.34E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.08E-02
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.49E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.52E-01
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.27E+00
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.86E+04
4152	F-100 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-4.88E+04	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	3.88E-01
4153	F-110 ASPHALT SOLUTION HEATER SDA 150 MAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Benzene		41	5.14E-04
4154	F-120 ASPHALT SOLUTION HEATER SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.25E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Formaldehyde	124	1.37E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Phenol	214	2.94E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Acetaldehyde	335	3.35E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	4.66E-01
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	1.09E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Cadmium	1070	3.11E-06
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	6.23E-06
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Manganese	1160	2.12E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	2.49E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	1.56E-05
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	4.86E-04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	3.00E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equi	1860	1.28E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	8.56E-03
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	1.56E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	3.58E-02
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	6.38E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	5.26E-01
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	2.65E+00
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	2.16E+04
4154	F-120 ASPHALT SOLUTION HEATER	SDA ISOMAX	Chevron refinery fuel gas	C1540708	-5.68E+04	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	4.52E-01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Benzene	41	6.78E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	4.30E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	1.81E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Phenol	214	3.88E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	4.42E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	6.15E+00
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	1.44E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	4.11E-05
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	8.22E-05
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Manganese	1160	2.80E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	3.29E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	2.06E-04
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	6.41E-03
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	3.96E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	1.70E-02
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	1.13E-01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	2.06E+01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	4.73E-01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	9.45E+01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	6.94E+00
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	8.55E+01
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	2.86E+05
4155	F-135 Hot Oil Furnace		Chevron refinery fuel gas	C1530708	-7.50E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	5.96E+00
4156	F-320 NAPHTHA VAPORIZER, H2 PLANT	ISOMAX	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT		Bunker C fuel oil	C1540242	0.00E+00	thou gal/yr	12/31/2011		0	0.00E+00
4157	F-330 NAPHTHA VAPORIZER, H2 PLANT		Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011		0	0.00E+00
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Benzene	41	3.14E-03
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.99E-02
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	8.37E-04
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.80E-03
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	2.05E-03
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.85E+00
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	6.66E-05
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.90E-05
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	3.81E-05
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Manganese	1160	1.29E-03
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.52E-04
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	9.52E-05
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.97E-03
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	1.83E-02
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equi	1860	7.85E-03
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	5.23E-02
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	9.52E+00
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	2.19E-01
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	3.90E+01
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	8.04E+00
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.62E+01
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.32E+05
4158	Hydrogen Plant Preheat Furnace	F-340	Chevron refinery fuel gas	C1540708	-3.47E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	2.76E+00
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Benzene	41	2.19E-03
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.39E-02
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	5.85E-04
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.26E-03
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.43E-03
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	1.99E+00
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	4.65E-05
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.33E-05
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	2.66E-05
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Manganese	1160	9.04E-04
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.06E-04
4159	F410 TKC FEED FURNACE	TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.43E+05	thou cu ft/yr	12/31/2011			

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Benzene		41	2.18E-03
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.38E-02
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	5.82E-04
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Phenol		214	1.25E-03
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.42E-03
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.98E+00
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	4.63E-05
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	1.32E-05
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	2.65E-05
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Manganese		1160	9.00E-04
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.06E-04
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	6.62E-05
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.06E-03
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.27E-02
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	5.46E-03
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	3.64E-02
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	6.62E+00
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.52E-01
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.85E+01
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.23E+00
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.12E+01
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	9.20E+04
4160 F420	TKC FEED FURNACE TKC ISOMAX	Chevron refinery fuel gas	C1540708	-2.41E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.92E+00
4161 F-510	TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011			0	0.00E+00
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Benzene		41	2.66E-03
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.68E-02
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	7.09E-04
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Phenol		214	1.52E-03
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	1.73E-03
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.41E+00
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	5.64E-05
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	1.61E-05
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	3.22E-05
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Manganese		1160	1.10E-03
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.29E-04
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	8.05E-05
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.51E-03
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	1.55E-02
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	6.65E-03
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	4.43E-02
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	8.05E+00
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.85E-01
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.22E+02
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.20E+00
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.37E+01
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.12E+05
4161 F-510	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-2.94E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	2.34E+00
4162 F-520	TKN Furnace/Low-NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011			0	0.00E+00
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Benzene		41	3.56E-03
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	2.25E-02
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	9.48E-04
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Phenol		214	2.04E-03
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	2.32E-03
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	3.22E+00
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	7.54E-05
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Cadmium		1070	2.16E-05
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	4.31E-05
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Manganese		1160	1.47E-03
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.72E-04
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	1.08E-04
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	3.36E-03
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	2.07E-02
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	8.89E-03
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	5.93E-02
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.08E+01
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.48E-01
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.63E+02
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	5.61E+00
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.83E+01
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.50E+05
4162 F-520	TKN Furnace/Low-NOx Burners	Chevron refinery fuel gas	C1540708	-3.93E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	3.13E+00
4163 F-530	TKN Feed Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011			0	0.00E+00
4163 F-530	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	2.17E-02
4163 F-530	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	9.12E-04
4163 F-530	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr	12/31/2011	Phenol		214	1.96E-03
4163 F-530	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr	12/31/2011	Toluene		293	0.00E+00
4163 F-530	TKN Feed Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-3.78E+05	thou cu ft/yr	12/31/2011	Acetaldehyde</			

Printed: AUG 1, 2013

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Cycloparraffins - other/not s	92	1.52E-02
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	6.40E-04
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.37E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.56E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.17E+00
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	5.09E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.45E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	2.91E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Manganese	1160	9.89E-04
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.16E-04
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	7.27E-05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.27E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)	1840	1.40E-02
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	6.00E-03
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	4.00E-02
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	7.27E+00
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.67E-01
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	2.54E+01
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	2.46E+00
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.24E+01
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.01E+05
4164	F-630 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-2.65E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	2.11E+00
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Benzene	41	1.63E-03
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Cycloparraffins - other/not s	92	1.03E-02
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	4.34E-04
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Phenol	214	9.32E-04
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.06E-03
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	1.47E+00
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	3.45E-05
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	9.86E-06
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	1.97E-05
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Manganese	1160	6.71E-04
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	7.89E-05
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	4.93E-05
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	1.54E-03
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)	1840	9.49E-03
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	4.07E-03
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	2.71E-02
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	4.93E+00
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.13E-01
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	1.73E+01
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	1.67E+00
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	3.88E+00
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	6.85E-04
4165	F620 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burn	Chevron refinery fuel gas	C1540708	-1.80E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	1.43E+00
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Benzene	41	2.28E-03
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Cycloparraffins - other/not s	92	1.44E-02
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	6.08E-04
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Phenol	214	1.31E-03
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.48E-03
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	2.07E+00
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	4.83E-05
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Cadmium	1070	1.38E-05
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	2.76E-05
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Manganese	1160	9.39E-04
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.11E-04
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	6.91E-05
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.15E-03
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)	1840	1.33E-02
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	5.70E-03
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	3.80E-02
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	6.91E+00
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.59E-01
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	2.42E+01
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	2.33E+00
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.17E+01
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	9.60E-04
4166	F-610 ISOCRACKER FEED FURNACE	ISOMAX w/Ultra Low NOX Burne	Chevron refinery fuel gas	C1540708	-2.52E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	2.00E+00
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Cycloparraffins - other/not s	92	4.43E-02	
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	5.98E+00	
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	1.75E-02	
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	1.17E-01	
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	4.88E-01	
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	8.70E+01	
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	7.16E+00	
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	3.61E+01	
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	2.95E+05	
4167	F-710 TKC FRACTIONATOR ISOMAX	Chevron refinery fuel gas	C1530708	-7.74E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	6.15E+00	
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Benzene	41	1.46E-02
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Cycloparraffins - other/not s	92	9.22E-02
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Formaldehyde	124	3.88E-03
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Phenol	214	8.33E-03
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Acetaldehyde	335	9.48E-03
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	1.32E+01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Arsenic (all)	1030	3.09E-04
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Cadmium	1070	8.82E-05
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	1.76E-04
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Manganese	1160	6.00E-03
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE	ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	7.06E-04
41										

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.01E+00
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.23E+02
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.49E+01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	7.50E+01
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	6.13E+05
4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low	Chevron refinery fuel gas	C1530708	-1.61E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.28E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Benzene		41	1.27E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	8.02E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Formaldehyde		124	3.38E-03
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Phenol		214	7.26E-03
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Acetaldehyde		335	8.26E-03
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.15E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	2.69E-04
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Cadmium		1070	7.68E-05
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	1.54E-04
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Manganese		1160	5.22E-03
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	6.14E-04
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	3.84E-04
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.20E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	7.39E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	3.17E-02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	2.11E-01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	3.84E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	8.83E-01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.08E+02
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.30E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	6.53E+01
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	5.34E+05
4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Chevron refinery fuel gas	C1520708	-1.40E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.11E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Benzene		41	5.39E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.42E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Formaldehyde		124	3.60E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Phenol		214	1.47E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Toluene		293	1.15E+00
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Acetaldehyde		335	3.60E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.77E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	7.52E-03
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Manganese		1160	4.58E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.63E-03
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	3.27E-04
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	1.13E-02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	3.56E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.35E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	8.99E-01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.63E+02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.76E+00
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.60E+02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	5.52E+01
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.78E+02
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.27E+06
4170	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.96E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	4.74E+01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Benzene		41	4.55E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	2.88E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Formaldehyde		124	3.03E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Phenol		214	1.24E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Toluene		293	9.70E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Acetaldehyde		335	3.03E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	4.03E+01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	6.34E-03
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Manganese		1160	3.86E-02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.38E-03
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	2.76E-04
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	9.51E-03
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	3.00E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.14E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	7.58E-01
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.38E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.17E+00
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.86E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.16E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.34E+02
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.92E+06
4171	F355 REFORMING FURNACE, H2 PLANT	Chevron refinery fuel gas	C1520708	-5.03E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	4.00E+01
4172	ISOMAX COOLING TOWER -E-261	Fresh water	G5005415	-3.37E+07	thou gallo/yr	12/31/2011	Organics (part not spec else		990	5.53E+02
4173	FCC COOLING TOWER 2-710	Fresh water	G5005415	-2.81E+07	thou gallo/yr	12/31/2011	Organics (part not spec else		990	4.62E+02
4187	FCC POLYMER COOLING TOWER E-781	Fresh water	G5005415	-8.64E+05	thou gallo/yr	12/31				

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	2.58E-02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	4.69E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.08E-01
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.36E+02
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.45E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	7.98E+00
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	6.53E+04
4188	F-651 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-1.71E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.36E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Natural gas	C1540189	0.00E+00	therms/yr	12/31/2011			0	0.00E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Benzene		41	6.16E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.90E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.64E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Phenol		214	3.53E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Acetaldehyde		335	4.01E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	5.58E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Arsenic (all)		1030	1.31E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Cadmium		1070	3.73E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	7.47E-06
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	1.18E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Manganese		1160	2.54E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	1.87E-05
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	5.82E-04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	PAH's (non-speciated)		1840	3.59E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.54E-03
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.03E-02
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.87E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.29E-02
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.41E+01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	9.72E-01
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.17E+00
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.59E+04
4189	F-661 Polymer Furnace/Low NOx Burners	Chevron refinery fuel gas	C1540708	-6.81E+04	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	5.41E-01
4191	Alkane Cooling Water Tower	Fresh water	G5005415	-2.28E+06	thou gallo/yr	12/31/2011	Organics (part not spec else		990	3.75E+01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Benzene		41	1.03E-03
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Formaldehyde		124	1.21E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Toluene		293	5.51E-04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Organics (part not spec else		990	9.26E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	4.86E-01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.74E-02
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.27E+01
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.38E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.67E+00
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.98E+04
4192	F-2170 STACK GAS HEATER #1 SRU CAT CRACK.	Natural gas	C1540189	-6.21E+05	therms/yr	12/31/2011	Methane (CH4)		6970	3.08E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Benzene		41	1.23E-03
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Formaldehyde		124	1.45E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Toluene		293	6.57E-04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Organics (part not spec else		990	1.10E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	5.80E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.46E-02
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.70E+01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.10E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	6.76E+00
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.37E+04
4193	F-2270 TAIL GAS HEATER #2 SRU	Natural gas	C1520189	-7.40E+05	therms/yr	12/31/2011	Methane (CH4)		6970	3.67E-01
4193	F-2270 TAIL GAS HEATER #2 SRU	Chevron refinery fuel gas	C1540708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Bunker C fuel oil	C1520242	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Benzene		41	1.15E-03
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Formaldehyde		124	1.35E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Toluene		293	6.12E-04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Organics (part not spec else		990	1.03E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	5.40E-01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.16E-02
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.52E+01
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.87E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	6.30E+00
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.21E+04
4194	F-2370 TAIL GAS HEATER #3 SRU	Natural gas	C1540189	-6.90E+05	therms/yr	12/31/2011	Methane (CH4)		6970	3.42E-01
4226	Hydrotreater for gasoline, jet fuel diesel fuel and	Refinery feedstock - other/not	G5022239	-6.11E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.67E+01
4227	SRU #1 TRAIN	Sulfur	G7055267	-3.45E+04	tons/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.04E+04
4228	SRU #2 TRAIN	Sulfur	G7055267	-4.23E+04	tons/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.35E+04
4229	SRU #3 TRAIN	Sulfur	G7055267	-4.29E+04	tons/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.25E+04
4230	LUBE OIL FILLING AT PACKAGE & GREASE PLANT	Lube oil	G7013419	-2.48E+04	thou gallo/yr	12/31/1997	Particulates (portion of tot		1990	6.78E-03
4233	#1 Jet Hydrotreater	Refinery feedstock - other/not	G5022239	-1.83E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	5.02E+01
4234	NO. 5 NAPHTHA HYDROTREATER	Refinery feedstock - other/not	G5022239	-1.40E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	3.84E+01
4235	Diesel Hydrotreater	Refinery feedstock - other/not	G5022239	-9.37E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	7.70E+00
4236	NO. 4 CRUDE UNIT, 175,000 BPD	Crude oil	G5027089	-7.27E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.99E+02
4237	NO. 5 RHENIFORMER, 23,000 BPD	Refinery feedstock - other/not	G5993239	-7.51E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	3.08E+01
4238	LIQUID PETROLEUM GAS LOADING RACK #4238	LPG	T9872160	-1.58E+05	thou gal/yr	12/31/2011	LPG		160	3.46E+03
4239	MAIN TANK CAR LOADING RACKS #4239	Distillate oil	T9812315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Hydrocarbon - mixtures, other/	T9812318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Crude oil	T9832089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - leaded	T9832128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
4239	MAIN TANK CAR LOADING RACKS #4239	Gasoline - unleaded	T9832551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
4240	ASPHALT TANK TRUCK LOADING RACK	Asphalt	T9811030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
4241	ASPHALT TANK CAR LOADING RACKS 4241	Asphalt	T9711030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.64E+04	million cu/yr	12/31/2011	Ethyl alcohol		105	2.13E+01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.64E+04	million cu/yr	12/31/2011	Methyl alcohol		179	7.65E+02
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.64E+04	million cu/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	8.49E+01
4250	HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY	Hydrogen (gas)	G5026759	-5.64E+04	million cu/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.48E+06
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.05E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.05E+04	thou barre/yr	12/31/2011	Particulates (portion of tot		1990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.05E+04	thou barre/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.05E+04	thou barre/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Refinery feedstock - other/not	G5029239	-1.05E+04	thou barre/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	0.00E+00
4251	Solvent Deasphalting (SDA) Plant	Bunker C fuel oil	G5029242	-4.12E+03	thou gallo/yr	12/31/2011	Organics (part not spec else		990	1.13E+00
4252	TKN ISOCRACKER	Cat reformer fresh feed, refin	G5004342	-1.62E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	4.45E-03
4253	TKC Plant	Cat reformer fresh feed, refin	G5004342	-1.23E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	3.38E-03
4282	Penhex Isomerization Unit	Cat reformer fresh feed, refin	G5004342	-6.87E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.88E-03
4283	NO. 4 CATALYTIC REFORMER, 28,000 BPD	Cat reformer fresh feed, refin	G5004342	-6.63E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.82E-03
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Organics (part not spec else		990	1.48E+02
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Particulates (portion of tot		1990	1.75E+05
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.02E+01
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.12E+02
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	8.92E+02
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.39E+02
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	5.17E+06
4285	FCC Plant	Coke	C5737080	-2.78E+05	tons/yr	12/31/2011	Methane (CH4)		6970	1.51E+02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Benzene		41	1.97E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Arsenic (all)		1030	9.15E-02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Chromium		1090	9.85E-02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Manganese		1160	1.90E+01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Nickel pollutant		1180	1.06E-01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Zinc pollutant		1320	1.69E+01
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	PAH's (non-specified)		1840	2.84E-02
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Particulates (portion of tot		1990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	0.00E+00
4285	FCC Plant	FCC fresh feed, refinery	G5007344	-2.57E+04	thou barre/yr	12/31/2011	Ammonia (NH3) pollutant		6990	4.43E+00
4286	LIGHT ENDS RECOVERY	Refinery feedstock - other/not	G5028239	-1.47E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	4.02E+01
4291	H2SO4 ALKYLATION PLANT, 21,000 BPD	Refinery feedstock - other/not	G5030239	-7.96E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.09E+01
4292	FCC POLYMER PLANT	Refinery feedstock - other/not	G5024239	-2.56E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.05E+01
4315	POINT ORIENT WHARF	Benzene	T8872041	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
4315	POINT ORIENT WHARF	Xylene	T8872307	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
4315	POINT ORIENT WHARF	Distillate oil	T8872315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
4315	POINT ORIENT WHARF	Hydrocarbon - mixtures, other/	T8872318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
4329	RLOP Cooling Tower	Fresh water	G5005415	-1.05E+07	thou gallo/yr	12/31/2011	Organics (part not spec else		990	2.02E+01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Benzene		41	6.60E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	4.18E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.56E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Phenol		214	1.60E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Toluene		293	1.19E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Acetaldehyde		335	5.74E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	5.64E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	4.00E-06
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	2.00E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Manganese		1160	1.80E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	2.00E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	4.00E-05
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.60E-04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	1.42E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.65E-03
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.10E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	2.00E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.60E-02
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.80E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	6.76E-01
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.40E+00
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.78E+04
4330	HNHF Reactor Furnace, F-1610	Chevron refinery fuel gas	C1540708	-7.30E+04	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	5.80E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Benzene		41	6.30E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	3.99E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Formaldehyde		124	1.49E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Phenol		214	1.53E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Toluene		293	1.14E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Acetaldehyde		335	5.48E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DETAIL POLLUTANTS - UNABATED
P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	5.38E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	3.82E-06
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	1.91E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Manganese		1160	1.72E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	1.91E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	3.82E-05
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	2.48E-04
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	1.36E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	1.58E-03
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.05E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.91E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.39E-02
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.54E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	6.45E-01
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	3.25E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.65E+00
4331	LNHF Reactor Furnace, F-1310	Chevron refinery fuel gas	C1540708	-6.97E+04	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	5.54E-01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Benzene		41	2.52E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.60E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	5.96E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Phenol		214	6.12E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Toluene		293	4.55E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	2.19E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.16E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	1.53E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	7.64E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Manganese		1160	6.88E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	7.64E-05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	1.53E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	9.94E-04
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	5.44E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	6.31E-03
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	4.20E-02
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	7.64E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.76E-01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.22E+01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.58E+00
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.30E+01
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.06E+05
4332	Hot Oil Furnace, F-1360	Chevron refinery fuel gas	C1540708	-2.79E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	2.22E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	1.06E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.43E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	4.18E-03
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	2.79E-02
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.17E-01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.47E+01
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.71E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	8.62E+00
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	7.05E+04
4333	TKC Vacuum Furnace, F-1750	Chevron refinery fuel gas	C1540708	-1.85E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.47E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Benzene		41	1.04E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	6.62E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	2.47E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Phenol		214	2.53E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Toluene		293	1.88E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Acetaldehyde		335	9.09E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	8.93E-01
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)		1095	6.33E-06
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant		1110	3.17E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Manganese		1160	2.85E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Nickel pollutant		1180	3.17E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant		1190	6.33E-05
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Zinc pollutant		1320	4.12E-04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	PAH's (non-specified)		1840	2.25E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)		1860	2.61E-03
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)		1870	1.74E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	3.17E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	7.28E-02
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	9.18E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.07E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.38E+00
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.40E+04
4334	LNC Atmos Furnace, F-1200	Chevron refinery fuel gas	C1540708	-1.16E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	9.18E-01
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Benzene		41	1.09E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s		92	6.92E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Formaldehyde		124	2.58E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Phenol		214	2.65E-03
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Toluene		293	1.97E-02
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Acetaldehyde			

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Emissions		Code	lb/day
						Date	Pollutant		
4335	LNC Vacuum Furnace, F-1250	Chevron refinery fuel gas	C1540708	-1.21E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	9.60E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Benzene	41	5.89E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	3.73E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Formaldehyde	124	1.39E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Phenol	214	1.43E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Toluene	293	1.06E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Acetaldehyde	335	5.12E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	5.03E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	3.57E-06
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Copper (all) pollutant	1110	1.79E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Manganese	1160	1.61E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.79E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	3.57E-05
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.32E-04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	1.27E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	1.47E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	9.82E-03
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	1.79E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	4.11E-02
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	5.18E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	6.03E-01
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	3.03E+00
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	2.48E+04
4336	HNC Reactor Furnace, F-1410	Chevron refinery fuel gas	C1540708	-6.52E+04	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	5.18E-01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Benzene	41	1.15E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	7.26E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	2.71E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Phenol	214	2.78E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Toluene	293	2.07E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	9.97E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	9.80E-01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	6.95E-06
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant	1110	3.47E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Manganese	1160	3.13E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	3.47E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	6.95E-05
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	4.52E-04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	2.47E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	2.87E-03
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	1.91E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	3.47E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	7.99E-02
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	1.01E+01
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	1.17E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	5.91E+00
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	4.83E+04
4337	HNC Atmos Furnace, F-1500	Chevron refinery fuel gas	C1540708	-1.27E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	1.01E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Benzene	41	1.68E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	1.07E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Formaldehyde	124	3.98E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Phenol	214	4.08E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Toluene	293	3.04E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Acetaldehyde	335	1.46E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	1.44E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	1.02E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Copper (all) pollutant	1110	5.10E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Manganese	1160	4.59E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	5.10E-05
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	1.02E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	6.63E-04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	3.63E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	4.21E-03
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	2.81E-02
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	5.10E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.17E-01
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	1.48E+01
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	1.72E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	8.67E+00
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	7.09E+04
4338	HNC Vacuum Furnace, F-1550	Chevron refinery fuel gas	C1540708	-1.86E+05	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	1.48E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Benzene	41	5.82E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Cycloparaffins - other/not s	92	3.68E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Formaldehyde	124	1.37E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Phenol	214	1.41E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Toluene	293	1.05E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Acetaldehyde	335	5.06E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Organics (part not spec else	990	4.97E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Chromium (hexavalent)	1095	3.53E-06
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Copper (all) pollutant	1110	1.76E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Manganese	1160	1.59E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Nickel pollutant	1180	1.76E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Mercury (all) pollutant	1190	3.53E-05
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Zinc pollutant	1320	2.29E-04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	PAH's (non-speciated)	1840	1.26E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	PAH's (benzo[a]pyrene equiv)	1860	1.45E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	PAH's (non-carcinogenic)	1870	9.70E-03
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Particulates (portion of tot	1990	1.76E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)	2030	4.05E-02
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	5.11E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	5.95E-01
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	3.00E+00
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	2.45E+04
4339	LNC Reactor Furnace, F-1110	Chevron refinery fuel gas	C1540708	-6.43E+04	thou cu ft/yr	12/31/2011	Methane (CH4)	6970	5.11E-01
4340	Light Neutral Hydrocracker (LNC)	Hydrocarbon - mixtures, other/	G5021318	-6.13E+05	tons/yr	12/31/2011	Organics (part not spec else	990	1.23E+01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4341	Light Neutral Hydrofinisher (LNHF)	Refinery feedstock - other/not	G5022239	-5.10E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.40E+01
4342	Heavy Neutral Hydrocracker (HNC)	Hydrocarbon - mixtures, other/	G5021318	-1.21E+06	tons/yr	12/31/2011	Organics (part not spec else		990	2.43E+01
4343	Heavy Neutral Hydrofinisher (HNHF)	Hydrocarbon - mixtures, other/	G5022318	-3.50E+05	tons/yr	12/31/2011	Organics (part not spec else		990	7.02E+00
4345	Misc.PET REF,Refinery Sour Waste Water No 2NH3-H2S	Waste gases	G5037338	-1.17E+02	million cu/yr	12/31/2011	Hydrogen Sulfide (H2S)		5020	0.00E+00
4345	Misc.PET REF,Refinery Sour Waste Water No 2NH3-H2S	Waste gases	G5037338	-1.17E+02	million cu/yr	12/31/2011	Ammonia (NH3) pollutant		6990	0.00E+00
4346	Gas Recovery Unit (GRU)	Hydrocarbon - mixtures, other/	G5998318	-2.31E+05	tons/yr	12/31/2011	Organics (part not spec else		990	2.35E+01
4348	H2 Recovery Plant	Hydrocarbon - mixtures, other/	G5998318	-5.33E+04	tons/yr	12/31/2011	Organics (part not spec else		990	5.40E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Benzene		41	1.84E-03
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	1.67E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	8.37E-01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	6.42E-02
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.91E+01
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.36E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	9.77E+00
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.88E+04
4349	Furnace F-1650	Process gas - other/not spec	C4840237	-1.02E+05	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	8.09E-01
4350	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Benzene		41	1.77E-04
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Formaldehyde		124	8.50E-03
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Organics (part not spec else		989	1.52E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	1.54E-04
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Particulates (portion of tot		1990	5.73E-02
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.54E-02
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.15E+01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.81E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	9.16E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.37E+03
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Methane (CH4)		6970	1.27E-01
4350	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Ammonia (NH3) pollutant		6990	8.51E-01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Benzene		41	4.75E-03
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Formaldehyde		124	2.36E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Organics (part not spec else		989	4.31E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	PAH's (non-specified)		1840	4.28E-02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Particulates (portion of tot		1990	1.64E+01
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.99E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.18E+03
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.90E+00
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.55E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.06E+06
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Methane (CH4)		6970	2.11E+02
4350	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Ammonia (NH3) pollutant		6990	2.36E+02
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Benzene		41	2.21E-03
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Formaldehyde		124	1.10E+00
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Organics (part not spec else		989	2.01E+00
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	PAH's (non-specified)		1840	1.99E-02
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Particulates (portion of tot		1990	7.64E+00
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Nitrous Oxide (N2O)		2030	9.29E-01
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Nitrogen Oxides (part not sp		2990	1.48E+03
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Sulfur Dioxide (SO2)		3990	2.28E+00
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Carbon Monoxide (CO) polluta		4990	1.19E+02
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Carbon Dioxide, non-biogenic		6960	4.91E+05
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Methane (CH4)		6970	9.81E+01
4350	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Ammonia (NH3) pollutant		6990	1.10E+02
4351	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2011			0	0.00E+00
4351	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Benzene		41	2.56E-02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.33E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.17E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	8.93E-01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.44E+02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.31E+01
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.36E+02
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	5.40E+05
4351	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.13E+01
4352	Gas Turbine with Steam Injection	Diesel fuel	C7120098	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Benzene		41	1.77E-04
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Formaldehyde		124	8.50E-03
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Organics (part not spec else		989	1.52E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	1.54E-04
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Particulates (portion of tot		1990	5.73E-02
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.54E-02
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.15E+01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.81E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	9.16E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.37E+03
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Methane (CH4)		6970	1.27E-01
4352	Gas Turbine with Steam Injection	LPG	C7120160	-9.60E+01	thou gal/yr	12/31/2011	Ammonia (NH3) pollutant		6990	8.51E-01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Benzene		41	4.75E-03
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Formaldehyde		124	2.36E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Organics (part not spec else		989	4.31E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	PAH's (non-specified)		1840	4.28E-02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Particulates (portion of tot		1990	1.64E+01
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.99E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.18E+03
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.90E+00
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.55E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.06E+06
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Methane (CH4)		6970	2.11E+02
4352	Gas Turbine with Steam Injection	Natural gas	C7120189	-3.31E+07	therms/yr	12/31/2011	Ammonia (NH3) pollutant		6990	2.36E+02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Benzene		41	2.21E-03
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Formaldehyde		124	1.10E+00
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Organics (part not spec else		989	2.01E+00
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	PAH's (non-specified)		1840	1.99E-02
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Particulates (portion of tot		1990	7.64E+00
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Nitrous Oxide (N2O)		2030	9.29E-01
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Nitrogen Oxides (part not sp		2990	1.48E+03
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Sulfur Dioxide (SO2)		3990	2.28E+00
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Carbon Monoxide (CO) polluta		4990	1.19E+02
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Carbon Dioxide, non-biogenic		6960	4.91E+05
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Methane (CH4)		6970	9.81E+01
4352	Gas Turbine with Steam Injection	Medium BTU natural gas	C7120841	1.47E+06	thou cu ft/yr	6/25/2012	Ammonia (NH3) pollutant		6990	1.10E+02
4353	Heat Recovery Steam Generator	Natural gas	C7020189	0.00E+00	therms/yr	12/31/2011			0	0.00E+00
4353	Heat Recovery Steam Generator	Gaseous fuels - H2, etc, other	C7020198	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Benzene		41	2.56E-02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Organics (part not spec else		990	2.33E-01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Particulates (portion of tot		1990	1.17E+01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Nitrous Oxide (N2O)		2030	8.93E-01
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	5.44E+02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	6.56E+00
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.36E+02
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	5.40E+05
4353	Heat Recovery Steam Generator	Chevron refinery fuel gas	C7020708	-1.42E+06	thou cu ft/yr	12/31/2011	Methane (CH4)		6970	1.13E+01
4354	Butamer Plant	Paraffins - C3+	G5031052	-8.17E+04	thou gallo/yr	12/31/2011	Organics (part not spec else		990	0.00E+00
4355	Deisobutanizer Plant	Paraffins - C3+	G5031052	-2.83E+05	thou gallo/yr	12/31/2011	Organics (part not spec else		990	0.00E+00
4355	Deisobutanizer Plant	Refinery feedstock - other/not	G5031239	0.00E+00	thou barre/yr	12/31/2011			0	0.00E+00
4356	Tertiary Amyl Methyl Ether Plant	Refinery feedstock - other/not	G5995239	0.00E+00	thou barre/yr	12/31/2011			0	0.00E+00
4360	Perchloroethylene Storage Tank V-1315	Perchloroethylene	T3377210	-5.77E+00	thou gal/yr	12/31/2011	Perchloroethylene		210	0.00E+00
4361	Perc Surge Control Vessel V-591	Perchloroethylene	T4177210	0.00E+00			Perchloroethylene		210	1.61E-03
4361	Perc Surge Control Vessel V-591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4362	Perc Surge Control Vessel V-3591	Reformate	T4177398	1.55E+01	thou gal/yr	10/23/2007	Reformate		398	1.44E-02
4363	Perc Storage Tank V-3592	Perchloroethylene	T4277210	-2.53E+01	thou gal/yr	12/31/2011	Perchloroethylene		210	1.00E-01
4364	Perc Storage Tank V-4091	Perchloroethylene	T4277210	-2.18E+01	thou gal/yr	12/31/2011	Perchloroethylene		210	4.62E-02
4365	Tri-Act 1825 Chemical Tote	Hydrocarbon - mixtures, other/	T4777318	-7.07E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	1.68E-02
4366	Tri-Act 1803 & 1825 Chemical Tote - Power Plant	Hydrocarbon - mixtures, other/	T8277318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
4367	Tri-Act 1803 & 1825 Chemical Tote - RLOP	Hydrocarbon - mixtures, other/	T8277318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
4368	Tri-Act 1803 & 1825 Chemical Tote - SRU	Hydrocarbon - mixtures, other/	T8277318	-3.60E-01	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	6.59E-03
4369	Tri-Act 1803 & 1825 Chemical Tote - LSFO/D&R	Hydrocarbon - mixtures, other/	T8277318	-2.12E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	9.02E-03
4370	Chemical Tote, Custamine CA-066P - FCC	Hydrocarbon - mixtures, other/	T8277318	-1.43E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	8.07E-03
4372	NALCO EC9085A Tote	Amine - other/not spec	T4277021	0.00E+00	thou gal/yr	12/31/2011	Amine - other/not spec		21	0.00E+00
4373	Custamine CA-0660P RO Plant	Water/organics mixture	T4277502	-1.64E+01	thou gal/yr	12/31/2011	Water/organics mixture		502	2.83E-01
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-5.00E+02	thou barre/yr	12/31/2011	Benzene		41	2.33E-02
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-5.00E+02	thou barre/yr	12/31/2011	Toluene		293	6.30E-02
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-5.00E+02	thou barre/yr	12/31/2011	Xylene		307	1.38E-01
4391	NO. 1 OXIDATION POND	Waste water - refin, other/not	G5033300	-5.00E+02	thou barre/yr	12/31/2011	Organics (part not spec else		990	8.22E-01
4391	NO. 1 OXIDATION POND	Fresh water	G5033415	0.00E+00	thou gallo/yr	12/31/2011			0	0.00E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2011	Benzene		41	6.09E-01
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2011	Toluene		293	1.65E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2011	Xylene		307	3.62E+00
4392	Wetland Marsh	Waste water - refin, other/not	G5033300	-1.31E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	2.15E+01
4392	Wetland Marsh	Waste water - other/not spec	G5033443	0.00E+00	thou gallo/yr	12/31/2011			0	0.00E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.20E+04	thou barre/yr	12/31/2011	Benzene		41	2.89E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.20E+04	thou barre/yr	12/31/2011	Toluene		293	7.81E+00
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.20E+04	thou barre/yr	12/31/2011	Xylene		307	1.71E+01
4393	BIO-REACTOR	Waste water - refin, other/not	G5033300	-6.20E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	1.02E+02
4396	Sulfur Truck Loading Racks	Sulfur	G7013267	-1.20E+05	tons/yr	12/31/2011	Particulates (portion of tot		1990	3.28E+00
4403	Unrefined Wax Truck Loading Rack	Paraffins - C3+	TE871052	3.47E+03	thou gal/yr	12/31/1996	Paraffins - C3+		52	2.76E+00
4404	Saturated Refined Wax Truck Loading Rack	Paraffins - C3+	TE871052	1.33E+04	thou gal/yr	12/31/1996	Paraffins - C3+		52	5.34E+00
4405	Heavy Oil Transloading Operations	Waste oil	TE672549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	-4.13E+01	gal/yr	12/31/2010	Glycols		131	6.27E-02
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A131	-4.13E+01	gal/yr	12/31/2010	Organic liquid - other/not s		201	9.20E-03
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	0.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A401	0.00E+00	gal/yr	12/31/2010	Stoddard solvent		401	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	0.00E+00	gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A579	0.00E+00	gal/yr	12/31/2010	Propylene glycol monomethyl		579	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	0.00E+00	gal/yr	12/31/2010	Butyl acetate		48	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52A729	0.00E+00	gal/yr	12/31/2010	2-heptanone		729	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2010	Glycols		131	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52B131	0.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2010	Aromatic hydrocarbons - othe		27	0.00E+00
4410	General Maintenance Paint Booth	Coating/lnk/etc.	SG52C027	0.00E+00	gal/yr	12/31/2010	Glycols		131	0.00E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	-1.05E+04	thou barre/yr	12/31/2011	Benzene		41	5.45E+00
4413	#2a Separator	Waste water - refin, other/not	G5017300	-1.05E+04	thou barre/yr	12/31/2011	Organics (part not spec else		990	2.37E+02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
4414	#1a Separator	Waste water - refin, other/not	G5017300	-7.44E+03	thou barre/yr	12/31/2011	Benzene		41	1.12E+00
4414	#1a Separator	Waste water - refin, other/not	G5017300	-7.44E+03	thou barre/yr	12/31/2011	Organics (part not spec else		990	4.87E+01
4415	Asphalt Tank Truck Loading Racks	Asphalt	T9871030	0.00E+00	thou gal/yr	12/31/2011	Asphalt		30	0.00E+00
4420	Solvent Cleaner-Machine Shop	Specialty cleaner	SF03A076	0.00E+00	gal/yr	12/31/2010	Unknown Pollutant		76	0.00E+00
4420	Solvent Cleaner-Machine Shop	Hydrocarbon - mixtures, other/	SF03A318	0.00E+00	gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
4422	Abrasive Blasting Operating at I&E Shop	Glass beads - abrasive	G4073473	1.30E-01	tons/yr	12/31/2000	Particulates (portion of tot		1990	4.75E-01
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Organics (part not spec else		990	0.00E+00
4423	Pilot Remediation Process	Soil contaminated - organics	G7131540	3.00E+03	tons/yr	1/12/1997	Particulates (portion of tot		1990	0.00E+00
4424	Equipment Painting Area	Coating/Ink/etc.	SG52A048	0.00E+00	gal/yr	12/31/2010	Butyl acetate		48	0.00E+00
4424	Equipment Painting Area	Coating/Ink/etc.	SG52A048	0.00E+00	gal/yr	12/31/2010	Naphtha		188	0.00E+00
4424	Equipment Painting Area	Mineral spirits	SG700184	0.00E+00	gal/yr	12/31/2010	Mineral spirits		184	0.00E+00
4425	H2 SO4 Sump	H2SO4 - other/not spec	G7999146	-2.85E+00	tons/yr	6/1/1998	Sulfuric Acid mist pollutant		1530	0.00E+00
4426	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-5.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	8.90E-02
4427	Cold Cleaner	Amide	SF01A020	0.00E+00	gal/yr	12/31/2010	Amide		20	0.00E+00
4427	Cold Cleaner	Organic liquid - other/not spe	SF01A201	0.00E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	0.00E+00
4428	Cold Cleaner	Organic liquid - other/not spe	SF01A201	-2.50E+01	gal/yr	12/31/2010	Organic liquid - other/not s		201	4.45E-01
4429	#8(NH3-H2S)Plant	Waste gases	G5037338	-2.88E+02	million cu/yr	12/31/2011	Hydrogen Sulfide (H2S)		5020	0.00E+00
4429	#8(NH3-H2S)Plant	Waste gases	G5037338	-2.88E+02	million cu/yr	12/31/2011	Ammonia (NH3) pollutant		6990	0.00E+00
4433	#3H2S Plant	Waste gases	G5998338	-2.66E+02	million cu/yr	12/31/2011	Organics (part not spec else		990	7.29E-02
4434	#4H2S Plant	Waste gases	G5998338	-1.25E+03	million cu/yr	12/31/2011	Organics (part not spec else		990	3.42E-01
4435	#5H2S Plant	Waste gases	G5998338	-1.56E+03	million cu/yr	12/31/2011	Organics (part not spec else		990	4.26E-01
4440	Jet Additive Project Fugitive Sources	Petroleum products - other/not	G9000321	0.00E+00	thou gallo/yr				0	0.00E+00
4940	Chemical Additives Tank D-4940	Organic liquid - other/not spe	T4277201	-2.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	9.81E-02
5101	Tank-Marketing T-101	Lube oil	T4477419	1.85E+04	thou gal/yr	3/31/1997	Lube oil		419	6.22E+01
5103	Tank-Marketing T-103	Lube oil	T4477419	1.28E+04	thou gal/yr	3/31/1997	Lube oil		419	4.88E+01
5105	Tank-Marketing T-105	Lube oil	T4477419	1.12E+04	thou gal/yr	3/31/1997	Lube oil		419	4.50E+01
5107	Tank-Marketing T-107	Lube oil	T4477419	3.26E+02	thou gal/yr	3/31/1997	Lube oil		419	3.99E+00
5108	Tank-Marketing T-108	Lube oil	T4477419	2.51E+02	thou gal/yr	3/31/1997	Lube oil		419	3.81E+00
5109	Tank-Marketing T-109	Lube oil	T4477419	4.98E+02	thou gal/yr	3/31/1997	Lube oil		419	4.39E+00
5110	Tank-Marketing T-110	Lube oil	T4477419	1.33E+03	thou gal/yr	3/31/1997	Lube oil		419	6.34E+00
5112	Tank-Marketing T-112	Lube oil	T4377419	5.80E+01	thou gal/yr	3/31/1997	Lube oil		419	9.01E-01
5113	Tank-Marketing T-113	Lube oil	T4377419	5.00E+00	thou gal/yr	3/31/1997	Lube oil		419	7.77E-01
5115	Tank-Marketing T-115	Lube oil	T4377419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	8.99E-01
5117	Tank-Marketing T-117	Lube oil	T4477419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5118	Tank-Marketing T-118	Lube oil	T4477419	4.60E+01	thou gal/yr	3/31/1997	Lube oil		419	1.51E+00
5119	Tank-Marketing T-119	Lube oil	T4477419	6.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.55E+00
5121	Tank-Marketing T-121	Lube oil	T4477419	5.70E+01	thou gal/yr	3/31/1997	Lube oil		419	2.03E+00
5122	Tank-Marketing T-122	Lube oil	T4477419	6.70E+01	thou gal/yr	3/31/1997	Lube oil		419	1.73E+00
5123	Tank-Marketing T-123	Lube oil	T4477419	9.20E+01	thou gal/yr	3/31/1997	Lube oil		419	1.62E+00
5125	Tank-Marketing T-125	Lube oil	T4377419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	8.26E-01
5126	Tank-Marketing T-126	Lube oil	T4377419	1.04E+02	thou gal/yr	3/31/1997	Lube oil		419	1.01E+00
5127	Tank-Marketing T-127	Lube oil	T4377419	1.92E+02	thou gal/yr	3/31/1997	Lube oil		419	1.22E+00
5128	Tank-Marketing T-128	Lube oil	T4377419	6.40E+01	thou gal/yr	3/31/1997	Lube oil		419	9.15E-01
5129	Tank-Marketing T-129	Lube oil	T4377419	3.20E+01	thou gal/yr	3/31/1997	Lube oil		419	4.33E-01
5130	Tank-Marketing T-130	Lube oil	T4377419	8.00E+01	thou gal/yr	3/31/1997	Lube oil		419	5.46E-01
5131	Tank-Marketing T-131	Lube oil	T4377419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5132	Tank-Marketing T-132	Lube oil	T4377419	8.00E+00	thou gal/yr	3/31/1997	Lube oil		419	3.77E-01
5133	Tank-Marketing T-133	Lube oil	T4377419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5134	Tank-Marketing T-134	Lube oil	T4377419	2.40E+01	thou gal/yr	3/31/1997	Lube oil		419	4.15E-01
5135	Tank-Marketing T-135	Lube oil	T4377419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01
5136	Tank-Marketing T-136	Lube oil	T4377419	1.36E+02	thou gal/yr	3/31/1997	Lube oil		419	6.77E-01
5137	Tank-Marketing T-137	Lube oil	T4377419	1.20E+02	thou gal/yr	3/31/1997	Lube oil		419	6.40E-01
5138	Tank-Marketing T-138	Lube oil	T4377419	4.80E+01	thou gal/yr	3/31/1997	Lube oil		419	4.71E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5139	Tank-Marketing T-139	Lube oil	T43??419	2.60E+01	thou gal/yr	3/31/1997	Lube oil		419	4.19E-01
5140	Tank-Marketing T-140	Lube oil	T43??419	1.30E+01	thou gal/yr	3/31/1997	Lube oil		419	6.16E-04
5201	Tank-Marketing T-201	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5202	Tank-Marketing T-202	Lube oil	T44??419	3.45E+03	thou gal/yr	3/31/1997	Lube oil		419	7.91E-03
5203	Tank-Marketing T-203	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5204	Tank-Marketing T-204	Lube oil	T44??419	1.06E+03	thou gal/yr	3/31/1997	Lube oil		419	7.43E-03
5205	Tank-Marketing T-205	Lube oil	T44??419	1.69E+03	thou gal/yr	3/31/1997	Lube oil		419	6.61E+00
5206	Tank-Marketing T-5206	Lube oil	T44??419	3.62E+03	thou gal/yr	3/31/1997	Lube oil		419	8.74E+00
5207	Tank-Marketing T-207	Lube oil	T44??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	5.05E+00
5208	Tank-Marketing T-208	Lube oil	T44??419	9.09E+02	thou gal/yr	3/31/1997	Lube oil		419	3.54E+00
5209	Tank-Marketing T-209	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.32E+00
5210	Tank-Marketing T-210	Lube oil	T44??419	4.02E+02	thou gal/yr	3/31/1997	Lube oil		419	2.35E+00
5211	Tank-Marketing T-211	Lube oil	T44??419	1.20E+03	thou gal/yr	3/31/1997	Lube oil		419	4.23E+00
5212	Tank-Marketing T-212	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5213	Tank-Marketing T-213	Lube oil	T44??419	2.46E+02	thou gal/yr	3/31/1997	Lube oil		419	1.98E+00
5214	Tank-Marketing T-214	Lube oil	T44??419	1.24E+03	thou gal/yr	3/31/1997	Lube oil		419	4.30E+00
5215	Tank-Marketing T-215	Lube oil	T44??419	9.80E+01	thou gal/yr	3/31/1997	Lube oil		419	1.64E+00
5216	Tank-Marketing T-216	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5217	Tank-Marketing T-217	Lube oil	T43??419	2.77E+02	thou gal/yr	3/31/1997	Lube oil		419	1.41E+00
5218	Tank-Marketing T-218	Lube oil	T43??419	5.99E+02	thou gal/yr	3/31/1997	Lube oil		419	2.17E+00
5219	Tank-Marketing T-219	Lube oil	T43??419	6.84E+02	thou gal/yr	3/31/1997	Lube oil		419	2.37E+00
5220	Tank-Marketing T-220	Lube oil	T43??419	3.49E+03	thou gal/yr	3/31/1997	Lube oil		419	4.43E+00
5221	Tank-Marketing T-221	Lube oil	T43??419	3.36E+02	thou gal/yr	3/31/1997	Lube oil		419	1.38E+00
5222	Tank-Marketing T-222	Lube oil	T43??419	2.49E+02	thou gal/yr	3/31/1997	Lube oil		419	1.17E+00
5223	Tank-Marketing T-223	Lube oil	T43??419	3.07E+02	thou gal/yr	3/31/1997	Lube oil		419	1.31E+00
5224	Tank-Marketing T-224	Lube oil	T43??419	1.41E+02	thou gal/yr	3/31/1997	Lube oil		419	9.20E-01
5227	Tank-Marketing T-227	Lube oil	T43??419	1.25E+03	thou gal/yr	3/31/1997	Lube oil		419	3.58E+00
5228	Tank-Marketing T-228	Lube oil	T43??419	1.28E+02	thou gal/yr	3/31/1997	Lube oil		419	8.90E-01
5229	Tank-Marketing T-229	Lube oil	T44??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5230	Tank-Marketing T-230	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5232	Tank-Marketing T-232	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5233	Tank-Marketing T-233	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5234	Tank-Marketing T-234	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5237	Tank-Marketing T-237	Lube oil	T43??419	1.26E+03	thou gal/yr	3/31/1997	Lube oil		419	1.80E+00
5240	Tank-Marketing T-240	Lube oil	T43??419	1.80E+03	thou gal/yr	3/31/1997	Lube oil		419	2.65E+00
5241	Tank-Marketing T-241	Lube oil	T43??419	2.84E+03	thou gal/yr	3/31/1997	Lube oil		419	4.37E+00
5301	Tank-Marketing T-301	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5302	Tank-Marketing T-302	Lube oil	T43??419	1.50E+02	thou gal/yr	3/31/1997	Lube oil		419	2.92E-01
5303	Tank-Marketing T-303	Lube oil	T43??419	3.60E+02	thou gal/yr	3/31/1997	Lube oil		419	5.50E-01
5304	Tank-Marketing T-304	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	3.95E-01
5305	Tank-Marketing T-305	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.94E-01
5306	Tank-Marketing T-306	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5307	Tank-Marketing T-307	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	8.03E-01
5308	Tank-Marketing T-308	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	7.66E-01
5309	Tank 5309: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5315	Tank 5315: Organic Liquid Storage Tank	Lube oil	T43??419	4.20E+02	thou gal/yr	3/31/1997	Lube oil		419	1.90E-03
5603	Tank-Marketing T-603	Lube oil	T43??419	5.10E+03	thou gal/yr	3/31/1997	Lube oil		419	5.69E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Benzene		41	2.55E-04
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Organics (part not spec else		990	3.46E+01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	4.00E-01
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	9.24E-03

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.72E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.27E-02
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.19E+00
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.90E+03
6010	HIGH LEVEL FLARE,LSFO	Natural gas	C8700189	-1.53E+05	therms/yr	12/31/2011	Methane (CH4)		6970	3.46E+01
6010	HIGH LEVEL FLARE,LSFO	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Benzene		41	2.95E-04
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Organics (part not spec else		990	4.00E+01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	4.62E-01
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.07E-02
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.14E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.63E-02
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	6.00E+00
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	5.66E+03
6012	V-282 SOUTH ISOMAX FLARE	Natural gas	C8700189	-1.77E+05	therms/yr	12/31/2011	Methane (CH4)		6970	4.00E+01
6012	V-282 SOUTH ISOMAX FLARE	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Benzene		41	1.97E-04
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Organics (part not spec else		990	2.68E+01
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	3.09E-01
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	7.14E-03
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.10E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.76E-02
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	4.02E+00
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.79E+03
6013	North Isomax Flare V-281	Natural gas	C8700189	-1.19E+05	therms/yr	12/31/2011	Methane (CH4)		6970	2.68E+01
6013	North Isomax Flare V-281	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
6015	Refinery Waste Gas Flare	Natural gas	C8750189	0.00E+00	therms/yr	12/31/2011			0	0.00E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Benzene		41	2.10E-04
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Organics (part not spec else		990	2.85E+01
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	3.29E-01
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	7.60E-03
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.24E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.87E-02
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	4.27E+00
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.03E+03
6016	FCC Flare V-731	Natural gas	C8700189	-1.26E+05	therms/yr	12/31/2011	Methane (CH4)		6970	2.85E+01
6016	FCC Flare V-731	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Benzene		41	1.25E-04
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Organics (part not spec else		990	1.70E+01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Particulates (portion of tot		1990	1.96E-01
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.52E-03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.33E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.11E-02
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.54E+00
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.40E+03
6019	V-732, Alky-Poly Flare	Natural gas	C8750189	-7.50E+04	therms/yr	12/31/2011	Methane (CH4)		6970	1.70E+01
6019	V-732, Alky-Poly Flare	Chevron refinery fuel gas	C8750708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Benzene		41	2.48E-04
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Organics (part not spec else		990	3.37E+01
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Particulates (portion of tot		1990	3.89E-01
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Nitrous Oxide (N2O)		2030	8.98E-03
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.64E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.21E-02
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.05E+00
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.76E+03
6039	Lube Flare, V-3501	Natural gas	C8700189	-1.49E+05	therms/yr	12/31/2011	Methane (CH4)		6970	3.37E+01
6039	Lube Flare, V-3501	Chevron refinery fuel gas	C8700708	0.00E+00	thou cu ft/yr	12/31/2011			0	0.00E+00
6042	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-02
6045	Sandblaster at Boiler Shop	Glass beads - abrasive	G7109473	0.00E+00	tons/yr	6/1/1998			0	0.00E+00
6046	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-02
6047	Sandblaster at Machine Shop	Glass beads - abrasive	G7109473	-2.00E-01	tons/yr	6/1/1998	Particulates (portion of tot		1990	1.10E-02
6050	MTBE Plant	Olefinic hydrocarbons	G5997195	0.00E+00	tons/yr	12/31/2011			0	0.00E+00
6051	Alky Cooling Tower	Fresh water	G5005415	-1.26E+07	thou gallo/yr	12/31/2011	Organics (part not spec else		990	2.41E+01
6051	Alky Cooling Tower	Fresh water	G5005415	-1.26E+07	thou gallo/yr	12/31/2011	Particulates (portion of tot		1990	1.03E+01
6066	Tank 6066: Process Water Tank <1000ppm (wt) Hydrocarbon	Water/organics mixture	T42??502	0.00E+00	thou gal/yr	12/31/2011	Water/organics mixture		502	0.00E+00
6125	Tank 6125	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	0.00E+00
6200	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6200	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6200	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6200	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6200	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6201	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6201	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6201	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6201	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6202	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6202	Portable Polyethylene Storage Container	Hydrocarbon - mixtures, other/	T43??318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6202	Portable Polyethylene Storage Container	Petroleum products - other/not	T43??321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6202	Portable Polyethylene Storage Container	Oil/water mixture	T43??503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6202	Portable Polyethylene Storage Container	Waste oil	T43??549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6203	Portable Polyethylene Storage Container	Refinery feedstock - other/not	T43??239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00

Printed: AUG 1, 2013

[illegible]

Printed: AUG 1, 2013

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6222	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6222	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6223	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6223	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6223	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6223	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	2.50E-01
6223	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6224	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+		52	0.00E+00
6224	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6224	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6224	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6224	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.41E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	2.94E-02
6224	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6225	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6225	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6225	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6225	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.18E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	2.86E-02
6225	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6226	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6226	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6226	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6226	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	3.02E-02
6226	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6227	Portable Steel Storage	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6227	Portable Steel Storage	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6227	Portable Steel Storage	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6227	Portable Steel Storage	Oil/water mixture	T437?503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	3.02E-02
6227	Portable Steel Storage	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6228	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6228	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6228	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6228	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	3.02E-02
6228	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6229	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6229	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6229	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6229	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.47E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	2.52E-02
6229	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6230	Portable Steel Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6230	Portable Steel Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6230	Portable Steel Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6230	Portable Steel Container	Oil/water mixture	T437?503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	3.02E-02
6230	Portable Steel Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6231	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6231	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6231	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6231	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	3.02E-02
6231	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6232	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6232	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6232	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6232	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	3.02E-02
6232	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6233	Portable Steel Storage Container	Paraffins - C3+	T437?052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+		52	0.00E+00
6233	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6233	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6233	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6233	Portable Steel Storage Container	Oil/water mixture	T437?503	-1.68E+01	thou gal/yr	12/31/2011	Oil/water mixture		503	3.02E-02
6233	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6234	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6234	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6234	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6234	Portable Steel Storage Container	Oil/water mixture	T437?503	-5.04E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	2.64E-02
6234	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6235	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6235	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6235	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6235	Portable Steel Storage Container	Oil/water mixture	T437?503	-2.39E+02	thou gal/yr	12/31/2011	Oil/water mixture		503	1.03E-01
6235	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6236	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6236	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6236	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6236	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6236	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6237	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6237	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6237	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6237	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6237	Portable Steel Storage Container	Waste oil	T437?549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6238	Portable Steel Storage Container	Refinery feedstock - other/not	T437?239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6238	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T437?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6238	Portable Steel Storage Container	Petroleum products - other/not	T437?321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6238	Portable Steel Storage Container	Oil/water mixture	T437?503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
6238	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6239	Portable Steel Storage Container	Refinery feedstock - other/not	T43??7239	0.00E+00	thou gal/yr	12/31/2011	Refinery feedstock - other/n		239	0.00E+00
6239	Portable Steel Storage Container	Hydrocarbon - mixtures, other/	T43??7318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
6239	Portable Steel Storage Container	Petroleum products - other/not	T43??7321	0.00E+00	thou gal/yr	12/31/2011	Petroleum products - other/n		321	0.00E+00
6239	Portable Steel Storage Container	Oil/water mixture	T43??7503	0.00E+00	thou gal/yr	12/31/2011	Oil/water mixture		503	0.00E+00
6239	Portable Steel Storage Container	Waste oil	T43??7549	0.00E+00	thou gal/yr	12/31/2011	Waste oil		549	0.00E+00
6250	Oil Water Separator for DEBRU	Waste water - refin, other/not	G5017300	0.00E+00	thou barre/yr	12/31/2011			0	0.00E+00
7000	Anhydrous Ammonia Loading/Unloading	Ammonia	G7013022	-8.16E+03	tons/yr	12/31/1997	Ammonia (NH3) pollutant		6990	2.48E-02
7001	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7002	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7003	Anhydrous Ammonia Pressurized Vessel	Ammonia	G7014022	-2.72E+03	tons/yr	6/10/1998	Ammonia (NH3) pollutant		6990	8.27E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Benzene		41	2.04E-04
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Formaldehyde		124	1.69E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	3.00E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	1.78E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	1.04E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Cadmium		1070	4.45E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	9.21E-09
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	3.77E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Manganese		1160	5.92E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	7.20E-06
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	1.26E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	1.02E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	9.39E-07
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	5.47E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	6.12E-02
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	6.67E-05
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	6.14E-03
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	6.85E+00
7013	SRU Standby Generator	Diesel fuel	C22BH098	-1.12E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	2.74E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Benzene		41	5.07E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Formaldehyde		124	4.13E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	2.92E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	4.35E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.55E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Cadmium		1070	1.09E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	2.25E-08
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	9.23E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Manganese		1160	1.45E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.76E-05
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	3.08E-07
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	1.19E-02
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	2.30E-06
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.34E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.05E-01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.63E-04
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	2.53E-01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.67E+01
7501	Wharf Fire Water Pump	Diesel fuel	C24AG098	-2.74E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	6.70E-04
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Benzene		41	7.03E-05
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Formaldehyde		124	5.73E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Organics (part not spec else		990	3.83E-03
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Arsenic (all)		1030	6.04E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	3.54E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Cadmium		1070	1.51E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	3.12E-09
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	1.28E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Manganese		1160	2.01E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Nickel pollutant		1180	2.44E-06
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	4.27E-08
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	3.49E-03
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	3.19E-07
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.86E-05
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	4.88E-02
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	2.26E-05
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.06E-02
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	2.32E+00
7507	Diesel Engine, Caterpillar model 3406TA16	Diesel fuel	C24AG098	-3.80E-02	thou gal/yr	12/31/2011	Methane (CH4)		6970	9.29E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Benzene		41	1.29E-04
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Formaldehyde		124	1.06E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Organics (part not spec else		990	7.05E-03
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Arsenic (all)		1030	1.11E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	6.52E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Cadmium		1070	2.78E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	5.75E-09
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	2.36E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Manganese		1160	3.70E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Nickel pollutant		1180	4.50E-06
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	7.86E-08
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	6.42E-03
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	5.87E-07
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.42E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	8.99E-02
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.17E-05
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.96E-02
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.28E+00
7508	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-7.00E-02	thou gal/yr	12/31/2011	Methane (CH4)		6970	1.71E-04
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Benzene		41	1.15E-04

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Formaldehyde		124	9.36E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Organics (part not spec else		990	6.25E-03
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Arsenic (all)		1030	9.85E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	5.78E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Cadmium		1070	2.46E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	5.10E-09
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	2.09E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Manganese		1160	3.28E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Nickel pollutant		1180	3.98E-06
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	6.96E-08
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	5.69E-03
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	PAH's (non-speciated)		1840	5.20E-07
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.03E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	7.97E-02
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.69E-05
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.73E-02
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.79E+00
7509	Diesel Engine, Cummins model 855P310	Diesel fuel	C24AG098	-6.20E-02	thou gal/yr	12/31/2011	Methane (CH4)		6970	1.52E-04
7511	Diesel Engine, Caterpillar model 3406	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Benzene		41	5.31E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Formaldehyde		124	4.33E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	2.89E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	4.56E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.67E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Cadmium		1070	1.14E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	2.36E-08
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	9.67E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Manganese		1160	1.52E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.84E-05
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	3.22E-07
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	2.63E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	PAH's (non-speciated)		1840	2.41E-06
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.40E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	3.69E-01
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.71E-04
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	8.02E-02
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.75E+01
7512	Diesel Engine, Detroit Diesel model 70637600	Diesel fuel	C24AG098	-2.87E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	7.01E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Benzene		41	1.09E-02
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Formaldehyde		124	8.89E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Organics (part not spec else		990	1.42E-02
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Arsenic (all)		1030	9.37E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	5.49E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Cadmium		1070	2.34E-05
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	4.84E-07
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	1.99E-05
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Manganese		1160	3.12E-05
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Nickel pollutant		1180	3.79E-04
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	6.62E-06
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	8.54E-02
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	PAH's (non-speciated)		1840	4.94E-05
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	2.88E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.91E+00
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	3.51E-03
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	5.98E-01
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	3.60E+02
7513	Stormwater Pump Engine, P-302A	Diesel fuel	C24AG098	-5.89E+00	thou gal/yr	12/31/2011	Methane (CH4)		6970	1.44E-02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Benzene		41	1.68E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Formaldehyde		124	1.37E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	2.20E-03
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	1.45E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	8.48E-07
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Cadmium		1070	3.62E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	7.48E-08
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	3.07E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Manganese		1160	4.81E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	5.85E-05
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	1.02E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	1.32E-02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	PAH's (non-speciated)		1840	7.63E-06
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	4.45E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	4.49E-01
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	5.42E-04
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	9.23E-02
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	5.56E+01
7514	Stormwater Pump Engine, P-302B	Diesel fuel	C24AG098	-9.10E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	2.22E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Benzene		41	4.25E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Formaldehyde		124	3.47E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Organics (part not spec else		990	2.32E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Arsenic (all)		1030	3.65E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.14E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Cadmium		1070	9.14E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	1.89E-09
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	7.75E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Manganese		1160	1.22E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.48E-06
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	2.58E-08
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	2.11E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	PAH's (non-speciated)		1840	1.93E-07
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.12E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	2.96E-02
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.37E-05
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	6.43E-03
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.41E+00

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Emissions		Code	lb/day
						Date	Pollutant		
7515	Emergency Diesel Stormwater Pump Engine(P-351A)	Diesel fuel	C24BG098	-2.30E-02	thou gal/yr	12/31/2011	Methane (CH4)	6970	5.62E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Benzene	41	5.17E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Formaldehyde	124	4.22E-04
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Organics (part not spec else	990	2.82E-01
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Arsenic (all)	1030	4.44E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Beryllium (all) pollutant	1040	2.60E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Cadmium	1070	1.11E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Chromium (hexavalent)	1095	2.30E-07
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Lead (all) pollutant	1140	9.42E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Manganese	1160	1.48E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Nickel pollutant	1180	1.80E-04
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Mercury (all) pollutant	1190	3.14E-06
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic	1350	2.57E-01
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	PAH's (non-specified)	1840	2.34E-05
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.37E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	3.59E+00
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	1.67E-03
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	7.81E-01
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.71E+02
7516	Emergency Diesel Stormwater Pump Engine(P-351B)	Diesel fuel	C24BG098	-2.80E+00	thou gal/yr	12/31/2011	Methane (CH4)	6970	6.83E-03
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Benzene	41	3.87E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Formaldehyde	124	3.15E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Organics (part not spec else	990	2.11E-02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Arsenic (all)	1030	3.32E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant	1040	1.95E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Cadmium	1070	8.30E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)	1095	1.72E-08
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Lead (all) pollutant	1140	7.04E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Manganese	1160	1.11E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Nickel pollutant	1180	1.34E-05
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant	1190	2.35E-07
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic	1350	1.92E-02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	PAH's (non-specified)	1840	1.75E-06
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.02E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	2.69E-01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	1.25E-04
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	5.84E-02
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.28E+01
7517	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.09E-01	thou gal/yr	12/31/2011	Methane (CH4)	6970	5.11E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Benzene	41	3.72E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Formaldehyde	124	3.04E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Organics (part not spec else	990	2.03E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Arsenic (all)	1030	3.20E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Beryllium (all) pollutant	1040	1.87E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Cadmium	1070	7.99E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Chromium (hexavalent)	1095	1.65E-07
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Lead (all) pollutant	1140	6.78E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Manganese	1160	1.06E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Nickel pollutant	1180	1.29E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Mercury (all) pollutant	1190	2.26E-06
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic	1350	1.85E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	PAH's (non-specified)	1840	1.69E-05
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)	2030	9.83E-04
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	2.59E+00
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	1.20E-03
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	5.62E-01
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.23E+02
7518	Diesel Engine, Detroit Diesel model 80877800	Diesel fuel	C24AG098	-2.01E+00	thou gal/yr	12/31/2011	Methane (CH4)	6970	4.92E-03
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Benzene	41	3.38E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Formaldehyde	124	2.76E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Organics (part not spec else	990	1.84E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Arsenic (all)	1030	2.91E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant	1040	1.70E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Cadmium	1070	7.27E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)	1095	1.50E-08
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Lead (all) pollutant	1140	6.17E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Manganese	1160	9.68E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Nickel pollutant	1180	1.18E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant	1190	2.06E-07
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic	1350	1.68E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	PAH's (non-specified)	1840	1.53E-06
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)	2030	8.95E-05
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	2.35E-01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	1.09E-04
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	5.11E-02
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic	6960	1.12E+01
7521	Diesel Engine, Cummins model A855C450	Diesel fuel	C24AG098	-1.83E-01	thou gal/yr	12/31/2011	Methane (CH4)	6970	4.47E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Benzene	41	5.90E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Formaldehyde	124	4.81E-05
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Organics (part not spec else	990	2.29E-03
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Arsenic (all)	1030	5.07E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant	1040	2.97E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Cadmium	1070	1.27E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)	1095	2.62E-08
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Lead (all) pollutant	1140	1.07E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Manganese	1160	1.69E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Nickel pollutant	1180	2.05E-05
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant	1190	3.58E-07
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic	1350	1.22E-02
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	PAH's (non-specified)	1840	2.67E-06
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)	2030	1.56E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp	2990	2.31E-01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)	3990	1.90E-04
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta	4990	1.39E-01

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.95E+01
7523	Air Compressor Engine, P-1603	Diesel fuel	C24AG098	-3.19E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	7.80E-04
7530	Gasoline Engine, Hercules model G2300, emergency standby	Gasoline - unleaded	C22AF551	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Benzene		41	1.24E-04
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Formaldehyde		124	1.03E-05
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Organics (part not spec else		990	5.99E-03
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Arsenic (all)		1030	1.08E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	6.33E-08
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Cadmium		1070	2.70E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	5.59E-09
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	2.29E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Manganese		1160	3.60E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Nickel pollutant		1180	4.37E-06
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	7.64E-08
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	6.24E-03
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	5.70E-07
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.32E-05
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	8.74E-02
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.05E-05
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.90E-02
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.16E+00
7531	Diesel Engine, Detroit Diesel model 80637305, emergency stan	Diesel fuel	C22AG098	-6.80E-02	thou gal/yr	12/31/2011	Methane (CH4)		6970	1.66E-04
7534	Plant Protection Standby Generator	Diesel fuel	C22AG098	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Benzene		41	5.20E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Formaldehyde		124	4.24E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	6.56E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	4.47E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.62E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Cadmium		1070	1.12E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	2.31E-08
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	9.47E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Manganese		1160	1.49E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.81E-05
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	3.16E-07
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	3.37E-03
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	2.36E-06
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.37E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.35E-01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.67E-04
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.55E-02
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.72E+01
7535	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.81E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	6.87E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Benzene		41	4.40E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Formaldehyde		124	3.59E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	5.56E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	3.78E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	2.22E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Cadmium		1070	9.45E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	1.96E-08
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	8.02E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Manganese		1160	1.26E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	1.53E-05
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	2.67E-07
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	2.85E-03
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	2.00E-06
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	1.16E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	1.15E-01
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	1.42E-04
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	1.32E-02
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	1.45E+01
7536	Emergency Standby Fire Pump	Diesel fuel	C24AG098	-2.38E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	5.82E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Benzene		41	1.43E-03
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Formaldehyde		124	1.18E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Organics (part not spec else		990	2.02E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Arsenic (all)		1030	1.24E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Beryllium (all) pollutant		1040	7.28E-07
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Cadmium		1070	3.10E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Chromium (hexavalent)		1095	6.42E-08
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Lead (all) pollutant		1140	2.63E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Manganese		1160	4.13E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Nickel pollutant		1180	5.02E-05
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Mercury (all) pollutant		1190	8.77E-07
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Diesel Engine Exhaust Partic		1350	1.18E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	PAH's (non-specified)		1840	6.55E-06
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Nitrous Oxide (N2O)		2030	3.82E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Nitrogen Oxides (part not sp		2990	4.14E-01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Sulfur Dioxide (SO2)		3990	4.65E-04
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Carbon Monoxide (CO) polluta		4990	8.12E-02
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Carbon Dioxide, non-biogenic		6960	4.77E+01
7538	Emergency Standby Diesel Generator Set	Diesel fuel	C22BG098	-7.81E-01	thou gal/yr	12/31/2011	Methane (CH4)		6970	1.91E-03
7539	Emergency Standby FCC Backup Air Compressor	Diesel fuel	C24AG098	0.00E+00	thou gal/yr	12/31/2011			0	0.00E+00
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010	Ethyl alcohol		105	1.66E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010	Methyl ethyl ketone (MEK)		169	3.33E-03
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Coating/Ink/etc.	SG34A169	-5.55E+00	gal/yr	12/31/2010	Organic liquid - other/not s		201	5.55E-04
7601	Quart Line Bottles, One Gallon Jugs, Pails, Quart Case	Methyl ethyl ketone (MEK)	SG700169	-4.00E+00	gal/yr	12/31/2010	Methyl ethyl ketone (MEK)		169	7.35E-02
9047	Tank 6047	Organic liquid - other/not spe	T42??201	0.00E+00	thou gal/yr	12/31/1997	Organic liquid - other/not s		201	0.00E+00
9203	Tank 3203: Organic Liquid Storage Tank (GST-46)	Ketone - other/not spec	T43??090	-5.45E+01	thou gal/yr	12/31/1997	Ketone - other/not spec		90	3.46E-02
9205	Tank 3205: Organic Liquid Storage Tank (Delo 100)	Lube oil	T43??419	-3.51E+00	thou gal/yr	12/31/1997	Lube oil		419	5.24E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
9300	Graymills Cold Cleaner	Hydrocarbon - mixtures, other/	SFO1A318	-1.50E+01	gal/yr	6/1/1998	Hydrocarbon - mixtures, othe		318	2.77E-01
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Benzene		41	4.48E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Toluene		293	1.52E-02
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Xylene		307	1.79E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Ethylbenzene		333	1.05E-03
9304	Non Retail Gasoline Dispensing Facility	Unknown Material	TC000000	1.76E+02	thou gal/yr	1/1/2003	Gasoline - unleaded		551	1.47E+00
9321	Marine Loading Berth #1	Paraffins - C3+	TB877052	-5.95E+05	thou gal/yr	12/31/2011	Paraffins - C3+		52	2.31E+02
9321	Marine Loading Berth #1	Fuel - jet 'A'	TB877158	-7.70E+04	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	1.90E+00
9321	Marine Loading Berth #1	Bunker C fuel oil	TB877242	-7.33E+04	thou gal/yr	12/31/2011	Bunker C fuel oil		242	1.20E-02
9321	Marine Loading Berth #1	Distillate oil	TB877315	-3.35E+04	thou gal/yr	12/31/2011	Distillate oil		315	8.27E-01
9321	Marine Loading Berth #1	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
9321	Marine Loading Berth #1	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
9321	Marine Loading Berth #1	Crude oil	TB877089	-2.66E+05	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
9322	Marine Loading Berth #2	Paraffins - C3+	TB877052	-9.52E+04	thou gal/yr	12/31/2011	Paraffins - C3+		52	3.69E+01
9322	Marine Loading Berth #2	Gasoline - leaded	TB877128	-7.96E+03	thou gal/yr	12/31/2011	Benzene		41	5.89E-01
9322	Marine Loading Berth #2	Gasoline - leaded	TB877128	-7.96E+03	thou gal/yr	12/31/2011	Ethylene dichloride		107	1.00E-02
9322	Marine Loading Berth #2	Gasoline - leaded	TB877128	-7.96E+03	thou gal/yr	12/31/2011	Gasoline - leaded		128	5.47E+01
9322	Marine Loading Berth #2	Gasoline - leaded	TB877128	-7.96E+03	thou gal/yr	12/31/2011	Toluene		293	2.94E+00
9322	Marine Loading Berth #2	Gasoline - leaded	TB877128	-7.96E+03	thou gal/yr	12/31/2011	Xylene		307	6.48E-01
9322	Marine Loading Berth #2	Gasoline - leaded	TB877128	-7.96E+03	thou gal/yr	12/31/2011	Ethylene dibromide		420	3.95E-04
9322	Marine Loading Berth #2	Fuel - jet 'A'	TB877158	-1.98E+05	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	4.87E+00
9322	Marine Loading Berth #2	Methyl alcohol	TB877179	0.00E+00	thou gal/yr	12/31/2011	Methyl alcohol		179	0.00E+00
9322	Marine Loading Berth #2	Organic liquid - other/not spe	TB877201	-8.05E+03	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	2.51E+00
9322	Marine Loading Berth #2	Bunker C fuel oil	TB877242	-8.37E+04	thou gal/yr	12/31/2011	Bunker C fuel oil		242	1.38E-02
9322	Marine Loading Berth #2	Toluene	TB877293	-1.25E+03	thou gal/yr	12/31/2011	Toluene		293	1.04E+00
9322	Marine Loading Berth #2	Distillate oil	TB877315	-1.16E+05	thou gal/yr	12/31/2011	Distillate oil		315	2.87E+00
9322	Marine Loading Berth #2	Lube oil	TB877419	-2.07E+05	thou gal/yr	12/31/2011	Lube oil		419	1.68E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB877551	-1.91E+05	thou gal/yr	12/31/2011	Benzene		41	5.30E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB877551	-1.91E+05	thou gal/yr	12/31/2011	Toluene		293	1.80E+01
9322	Marine Loading Berth #2	Gasoline - unleaded	TB877551	-1.91E+05	thou gal/yr	12/31/2011	Xylene		307	2.12E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB877551	-1.91E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	1.24E+00
9322	Marine Loading Berth #2	Gasoline - unleaded	TB877551	-1.91E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	1.74E+03
9322	Marine Loading Berth #2	Methyl tertiary-butyl ether	TB877628	0.00E+00	thou gal/yr	12/31/2011	Methyl tertiary-butyl ether		628	0.00E+00
9322	Marine Loading Berth #2	Crude oil	TB877089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
9323	Marine Loading Berth #3	Paraffins - C3+	TB877052	-9.16E+04	thou gal/yr	12/31/2011	Paraffins - C3+		52	3.55E+01
9323	Marine Loading Berth #3	Crude oil	TB877089	-6.17E+03	thou gal/yr	12/31/2011	Crude oil		89	2.03E+01
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-9.00E+03	thou gal/yr	12/31/2011	Benzene		41	6.66E-01
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-9.00E+03	thou gal/yr	12/31/2011	Ethylene dichloride		107	1.13E-02
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-9.00E+03	thou gal/yr	12/31/2011	Gasoline - leaded		128	6.19E+01
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-9.00E+03	thou gal/yr	12/31/2011	Toluene		293	3.33E+00
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-9.00E+03	thou gal/yr	12/31/2011	Xylene		307	7.32E-01
9323	Marine Loading Berth #3	Gasoline - leaded	TB877128	-9.00E+03	thou gal/yr	12/31/2011	Ethylene dibromide		420	4.46E-04
9323	Marine Loading Berth #3	Fuel - jet 'A'	TB877158	-7.72E+04	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	1.90E+00
9323	Marine Loading Berth #3	Organic liquid - other/not spe	TB877201	-2.68E+03	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	5.07E+01
9323	Marine Loading Berth #3	Bunker C fuel oil	TB877242	-1.01E+05	thou gal/yr	12/31/2011	Bunker C fuel oil		242	1.65E-02
9323	Marine Loading Berth #3	Toluene	TB877293	-1.78E+03	thou gal/yr	12/31/2011	Toluene		293	1.47E+00
9323	Marine Loading Berth #3	Distillate oil	TB877315	-2.25E+05	thou gal/yr	12/31/2011	Distillate oil		315	5.55E+00
9323	Marine Loading Berth #3	Lube oil	TB877419	0.00E+00	thou gal/yr	12/31/2011	Lube oil		419	0.00E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-4.82E+05	thou gal/yr	12/31/2011	Benzene		41	1.33E+01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-4.82E+05	thou gal/yr	12/31/2011	Toluene		293	4.54E+01
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-4.82E+05	thou gal/yr	12/31/2011	Xylene		307	5.34E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-4.82E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	3.11E+00
9323	Marine Loading Berth #3	Gasoline - unleaded	TB877551	-4.82E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	4.38E+03
9324	Marine Loading Berth #4	Hydrocarbon - mixtures, other/	TB472318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB472551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB472551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB472551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB472551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
9324	Marine Loading Berth #4	Gasoline - unleaded	TB472551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
9324	Marine Loading Berth #4	Bunker C fuel oil	TB877242	0.00E+00	thou gal/yr	12/31/2011	Bunker C fuel oil		242	0.00E+00
9324	Marine Loading Berth #4	Distillate oil	TB877315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
9324	Marine Loading Berth #4	Crude oil	TB877089	-2.77E+06	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
9325	Marine Loading Berth #9	Paraffins - C3+	TB877052	-4.91E+03	thou gal/yr	12/31/2011	Paraffins - C3+		52	9.52E-01
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dichloride		107	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2011	Gasoline - leaded		128	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - leaded	TB877128	0.00E+00	thou gal/yr	12/31/2011	Ethylene dibromide		420	0.00E+00
9325	Marine Loading Berth #9	Fuel - jet 'A'	TB877158	0.00E+00	thou gal/yr	12/31/2011	Fuel - jet 'A'		158	0.00E+00
9325	Marine Loading Berth #9	Bunker C fuel oil	TB877242	-1.25E+05	thou gal/yr	12/31/2011	Bunker C fuel oil		242	2.05E-02
9325	Marine Loading Berth #9	Toluene	TB877293	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Distillate oil	TB877315	-2.93E+03	thou gal/yr	12/31/2011	Distillate oil		315	7.22E-02
9325	Marine Loading Berth #9	Hydrocarbon - mixtures, other/	TB877318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
9325	Marine Loading Berth #9	Lube oil	TB877419	0.00E+00	thou gal/yr	12/31/2011	Lube oil		419	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
9325	Marine Loading Berth #9	Gasoline - unleaded	TB877551	0.00E+00	thou gal/yr	12/31/2011	Gasoline - unleaded		551	0.00E+00
9325	Marine Loading Berth #9	Crude oil	TB877089	0.00E+00	thou gal/yr	12/31/2011	Crude oil		89	0.00E+00
9326	Marine Loading Berth #11	Paraffins - C3+	TB877052	0.00E+00	thou gal/yr	12/31/2011	Paraffins - C3+		52	0.00E+00
9326	Marine Loading Berth #11	Bunker C fuel oil	TB877242	0.00E+00	thou gal/yr	12/31/2011	Bunker C fuel oil		242	0.00E+00
9326	Marine Loading Berth #11	Distillate oil	TB877315	0.00E+00	thou gal/yr	12/31/2011	Distillate oil		315	0.00E+00
32100	Fugitive Sources - Vacuum Producing Systems	Unknown Material	G9030000	0.00E+00			Organics (part not spec else		990	0.00E+00
32101	Fugitive Sources - Process Vessel Depressurization	Unknown Material	G9040000	0.00E+00			Organics (part not spec else		990	6.00E-02

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: AUG 1, 2013

Chevron Products Company (P# 10)

S#	Name	Material	Source Code	ThruPut	Units	Date	Emissions		Code	lb/day
							Pollutant			
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Benzene		41	4.52E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cyclohexane		91	2.96E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylene dichloride		107	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Hexane		148	4.49E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Isooctane		154	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Methyl alcohol		179	5.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Perchloroethylene		210	2.66E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Toluene		293	1.58E+01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Xylene		307	1.77E+01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Cumene		326	3.80E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050000	0.00E+00			Ethylbenzene		333	3.55E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,2,4-trimethylbenzene		385	4.90E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene dibromide		420	1.00E-02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			1,3-butadiene		521	2.20E-01
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ethylene		536	6.81E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Propylene		564	2.72E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Organics (part not spec else		990	9.59E+02
32102	Fugitive Sources - Valves and Flanges	Unknown Material	G9050001	0.00E+00			Ammonia (NH3) pollutant		6990	1.08E+01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Benzene		41	2.47E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cyclohexane		91	1.38E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Hexane		148	1.82E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Isooctane		154	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Methyl alcohol		179	2.91E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Toluene		293	7.90E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Xylene		307	9.43E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Ethylbenzene		333	1.94E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,2,4-trimethylbenzene		385	2.95E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			1,3-butadiene		521	1.00E-02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060000	0.00E+00			Cresol		525	1.26E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ethylene		536	3.40E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Propylene		564	3.20E-01
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Organics (part not spec else		990	5.74E+02
32103	Fugitive Sources - Pumps & Compressor Seals	Unknown Material	G9060001	0.00E+00			Ammonia (NH3) pollutant		6990	9.14E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Benzene		41	1.20E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Hexane		148	2.70E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Methyl ethyl ketone (MEK)		169	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Toluene		293	5.50E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Xylene		307	6.40E-05
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			1,3-butadiene		521	1.60E-06
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Cresol		525	0.00E+00
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ethylene		536	1.70E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Propylene		564	2.10E-04
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Organics (part not spec else		990	2.20E-02
32104	Fugitive Sources - Pressure Relief Valves	Unknown Material	G9070000	0.00E+00			Ammonia (NH3) pollutant		6990	1.30E-04
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Benzene		41	9.00E-03
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Hexane		148	9.10E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Toluene		293	1.64E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Xylene		307	1.65E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cumene		326	9.10E-02
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Ethylbenzene		333	3.70E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,2,4-trimethylbenzene		385	3.10E-01
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			1,3-butadiene		521	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Cresol		525	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Methyl tertiary-butyl ether		628	0.00E+00
32105	Fugitive Sources - Process Drains	Unknown Material	G9080000	0.00E+00			Organics (part not spec else		990	7.36E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Benzene		41	2.99E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cycloparaffins - other/not s		92	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Formaldehyde		124	1.07E-02
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Phenol		214	5.81E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Acetaldehyde		335	1.74E-03
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			1,3-butadiene		521	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Organics (part not spec else		990	1.03E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Arsenic (all)		1030	2.85E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Cadmium		1070	1.57E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Chromium		1090	1.99E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010000	0.00E+00			Magnesium pollutant		1150	0.00E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Manganese		1160	5.41E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nickel pollutant		1180	2.99E-04
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Mercury (all) pollutant		1190	3.70E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Zinc pollutant		1320	4.13E-03
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			PAH's (non-speciated)		1840	9.94E-05
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Particulates (portion of tot		1990	1.08E+00
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Nitrogen Oxides (part not sp		2990	2.45E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Sulfur Dioxide (SO2)		3990	3.32E+01
32110	Process Gas (Combustion) Emissions from Flares and Blowdown	Unknown Material	G9010001	0.00E+00			Carbon Monoxide (CO) polluta		4990	1.33E+02

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery
Chevron Products Company - Current Emission Factors***

AUG 1, 2013 Databank Emission Factors For Specified
Combustion or General Type Sources

Current [C] or Future [F] ? c

PLANT #: 10
Chevron Products Company
841 Chevron Way
Richmond, CA 94802

SOURCE # ('@' for entire plant): @

SOURCE #: 21, 4042LABORATORY RECOVERED OIL TANK, 750 GALLON CAPACITY
SOURCE CODE T42??158 not a C- or G-type source.
SOURCE CODE T42??201 not a C- or G-type source.
SOURCE CODE T42??315 not a C- or G-type source.
SOURCE CODE T42??318 not a C- or G-type source.

SOURCE #: 25, TANK 25: ORGANIC LIQUID STORAGE CONTAINER
SOURCE CODE T421?318 not a C- or G-type source.

SOURCE #: 55, TANK 55
SOURCE CODE T81??315 not a C- or G-type source.
SOURCE CODE T81??551 not a C- or G-type source.

SOURCE #: 200, TANK 200A
SOURCE CODE T441?201 not a C- or G-type source.

SOURCE #: 204, TANK 204
SOURCE CODE T441?315 not a C- or G-type source.

SOURCE #: 223, TANK 223
SOURCE CODE T441?502 not a C- or G-type source.

SOURCE #: 225, TANK 225
SOURCE CODE T441?502 not a C- or G-type source.

SOURCE #: 231, TANK 231
SOURCE CODE T5432158 not a C- or G-type source.
SOURCE CODE T5432293 not a C- or G-type source.
SOURCE CODE T5432503 not a C- or G-type source.
SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 234, TANK 234
SOURCE CODE T441?315 not a C- or G-type source.

SOURCE #: 290, TANK 290
SOURCE CODE T441?315 not a C- or G-type source.

SOURCE #: 291, TANK 291
SOURCE CODE T441?315 not a C- or G-type source.

SOURCE #: 319, TANK 319
SOURCE CODE T441?315 not a C- or G-type source.

SOURCE #: 397, TANK 397
SOURCE CODE T441?318 not a C- or G-type source.

SOURCE #: 399, TANK
SOURCE CODE T54?2315 not a C- or G-type source.
SOURCE CODE T54?2352 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt
SOURCE CODE T54??2422 not a C- or G-type source.

SOURCE #: 401, TANK 401
SOURCE CODE T44??239 not a C- or G-type source.

SOURCE #: 679, TANK 679
SOURCE CODE T5412318 not a C- or G-type source.

SOURCE #: 892, TANK 892: INORGANIC CHEMICAL STORAGE
SOURCE CODE T42??502 not a C- or G-type source.

SOURCE #: 893, TANK 893: WATER STORAGE TANK (NO ORGANICS)
SOURCE CODE T42??502 not a C- or G-type source.

SOURCE #: 900, ORGANIC/WATER MIXTURE STORAGE TANK

Source Code: G5036502 Material Processed: Water/organics mixture
Train: no train

* * * * No emission factors found * * * *

SOURCE #: 901, TANK 901: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T42??416 not a C- or G-type source.

SOURCE #: 902, TANK 902: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T42??416 not a C- or G-type source.
SOURCE CODE T42??419 not a C- or G-type source.

SOURCE #: 953, TANK 953
SOURCE CODE T5432128 not a C- or G-type source.
SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 954, TANK 954
SOURCE CODE T5432128 not a C- or G-type source.
SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 955, TANK 955
SOURCE CODE T5412052 not a C- or G-type source.
SOURCE CODE T5412158 not a C- or G-type source.
SOURCE CODE T5412201 not a C- or G-type source.

SOURCE #: 956, TANK 956
SOURCE CODE T5412052 not a C- or G-type source.
SOURCE CODE T5412158 not a C- or G-type source.

SOURCE #: 957, TANK 957
SOURCE CODE T44??052 not a C- or G-type source.
SOURCE CODE T44??098 not a C- or G-type source.
SOURCE CODE T44??158 not a C- or G-type source.

SOURCE #: 979, TANK 979
SOURCE CODE T44??315 not a C- or G-type source.

SOURCE #: 984, TANK 984
SOURCE CODE T441?315 not a C- or G-type source.

SOURCE #: 990, TANK 990
SOURCE CODE T5432128 not a C- or G-type source.
SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 991, TANK 991

SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 992, STORAGE TANK T-992

SOURCE CODE T54?2128 not a C- or G-type source.

SOURCE CODE T54?2551 not a C- or G-type source.

SOURCE #: 1020, TANK 1020: INORGANIC CHEMICAL STORAGE TANK

SOURCE CODE T44??485 not a C- or G-type source.

SOURCE #: 1052, TANK 1052: ORGANIC LIQUID STORAGE TANK

SOURCE CODE T43??159 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE #: 1287, TANK 1287

SOURCE CODE T5432128 not a C- or G-type source.

SOURCE CODE T5432293 not a C- or G-type source.

SOURCE CODE T5432321 not a C- or G-type source.

SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 1289, TANK 1289

SOURCE CODE T64?2128 not a C- or G-type source.

SOURCE CODE T64?2293 not a C- or G-type source.

SOURCE CODE T64?2318 not a C- or G-type source.

SOURCE #: 1292, TANK 1292

SOURCE CODE T5412098 not a C- or G-type source.

SOURCE CODE T5412158 not a C- or G-type source.

SOURCE CODE T5412684 not a C- or G-type source.

SOURCE #: 1296, TANK 1296

SOURCE CODE T5412128 not a C- or G-type source.

SOURCE CODE T5412551 not a C- or G-type source.

SOURCE #: 1297, TANK 1297: ORGANIC STORAGE TANK

SOURCE CODE T63?2502 not a C- or G-type source.

SOURCE #: 1428, TANK 1428

SOURCE CODE T5412239 not a C- or G-type source.

SOURCE #: 1431, ASPHALT TANK(T-907)

SOURCE CODE T44??030 not a C- or G-type source.

SOURCE #: 1444, TANK 1444

SOURCE CODE T5432128 not a C- or G-type source.

SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 1451, TANK 1451

SOURCE CODE T5412239 not a C- or G-type source.

SOURCE #: 1455, TANK 1455

SOURCE CODE T441?318 not a C- or G-type source.

SOURCE #: 1456, TANK 1456

SOURCE CODE T441?318 not a C- or G-type source.

SOURCE #: 1459, TANK 1459

SOURCE CODE T5432128 not a C- or G-type source.

SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 1488, TANK 1488

SOURCE CODE T54?2089 not a C- or G-type source.

SOURCE CODE T54?2503 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 1489, TANK 1489

SOURCE CODE T5432128 not a C- or G-type source.

SOURCE CODE T5432389 not a C- or G-type source.

SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 1491, TANK 1491

SOURCE CODE T5432052 not a C- or G-type source.

SOURCE CODE T5432103 not a C- or G-type source.

SOURCE CODE T5432179 not a C- or G-type source.

SOURCE CODE T5432293 not a C- or G-type source.

SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 1492, TANK 1492

SOURCE CODE T441?315 not a C- or G-type source.

SOURCE #: 1493, TANK 1493

SOURCE CODE T441?315 not a C- or G-type source.

SOURCE #: 1504, TANK 1504

SOURCE CODE T54?2089 not a C- or G-type source.

SOURCE CODE T54?2318 not a C- or G-type source.

SOURCE #: 1506, TANK 1506

SOURCE CODE T54?2315 not a C- or G-type source.

SOURCE #: 1507, TANK 910

SOURCE CODE T44??392 not a C- or G-type source.

SOURCE #: 1514, TANK 1514

SOURCE CODE T5432128 not a C- or G-type source.

SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 1518, TANK 1518

SOURCE CODE T5432158 not a C- or G-type source.

SOURCE #: 1622, LPG TANK, # 1622

SOURCE CODE T34??160 not a C- or G-type source.

SOURCE #: 1623, TANK 1623 (SPHERICAL PRESSURE TANK)

SOURCE CODE T34??052 not a C- or G-type source.

SOURCE #: 1633, TANK 1633

SOURCE CODE T6432128 not a C- or G-type source.

SOURCE CODE T6432551 not a C- or G-type source.

SOURCE #: 1634, TANK 1634 (JET A)

SOURCE CODE T6412158 not a C- or G-type source.

SOURCE #: 1635, TANK 1635 ORGANIC LIQUID STORAGE TANK

SOURCE CODE T64?2128 not a C- or G-type source.

SOURCE CODE T64?2158 not a C- or G-type source.

SOURCE CODE T64?2551 not a C- or G-type source.

SOURCE #: 1636, TANK 1636

SOURCE CODE T441?315 not a C- or G-type source.

SOURCE #: 1637, TANK 1637

SOURCE CODE T6H32128 not a C- or G-type source.

SOURCE CODE T6H32551 not a C- or G-type source.

SOURCE #: 1645, TANK 1645

SOURCE CODE T643?128 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt
 SOURCE CODE T643?551 not a C- or G-type source.

SOURCE #: 1653, TANK 1653
 SOURCE CODE T441?158 not a C- or G-type source.
 SOURCE CODE T441?315 not a C- or G-type source.
 SOURCE CODE T441?492 not a C- or G-type source.

SOURCE #: 1687, TANK 1687
 SOURCE CODE T5432128 not a C- or G-type source.
 SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 1688, TANK 1688
 SOURCE CODE T5432551 not a C- or G-type source.

SOURCE #: 1798, TANK 1798
 SOURCE CODE T5422158 not a C- or G-type source.
 SOURCE CODE T5422315 not a C- or G-type source.

SOURCE #: 1799, TANK 1799
 SOURCE CODE T54?2089 not a C- or G-type source.
 SOURCE CODE T54?2158 not a C- or G-type source.

SOURCE #: 1821, TANK 1821 FRESH SULFURIC ACID TANK

Source Code: G5999146 Material Processed: H2S04 - other/not spec
 Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Particulates (portio	1990	2.00E-05	Specific	5			07-31-95

SOURCE #: 1825, TANK 1825
 SOURCE CODE T42??201 not a C- or G-type source.

SOURCE #: 1828, TANK 1828
 SOURCE CODE T344?052 not a C- or G-type source.
 SOURCE CODE T344?209 not a C- or G-type source.
 SOURCE CODE T344?416 not a C- or G-type source.

SOURCE #: 1843, TANK 1843
 SOURCE CODE T5412052 not a C- or G-type source.

SOURCE #: 1894, TANK 1894: PHOSPHORIC ACID STORAGE TANK

Source Code: G5999217 Material Processed: Phosphoric acid
 Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Particulates (portio	1990	2.00E-05	Specific	5			07-31-95

SOURCE #: 1899, TANK 1899
 SOURCE CODE T5412315 not a C- or G-type source.

SOURCE #: 1908, ASPHALT TANK (T-908)
 SOURCE CODE T44??030 not a C- or G-type source.

SOURCE #: 1909, TANK 1909
 SOURCE CODE T43??201 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 1910, TANK 1910
SOURCE CODE T43??201 not a C- or G-type source.

SOURCE #: 1911, TANK 1911
SOURCE CODE T43??201 not a C- or G-type source.
SOURCE CODE T44??030 not a C- or G-type source.

SOURCE #: 1966, TANK 1966
SOURCE CODE T5432158 not a C- or G-type source.

SOURCE #: 2520, WASTEWATER/MEA STORAGE TANK
SOURCE CODE T44??106 not a C- or G-type source.
SOURCE CODE T44??300 not a C- or G-type source.

SOURCE #: 2540, TANK 2540: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T44??664 not a C- or G-type source.

SOURCE #: 2903, TANK 903: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T42??416 not a C- or G-type source.
SOURCE CODE T42??419 not a C- or G-type source.

SOURCE #: 2917, ASPHALT TANK (T-917)
SOURCE CODE T44??030 not a C- or G-type source.

SOURCE #: 2918, ASPHALT TANK (T-918)
SOURCE CODE T44??030 not a C- or G-type source.

SOURCE #: 2921, ASPHALT TANK (T-921)
SOURCE CODE T43??030 not a C- or G-type source.

SOURCE #: 3038, TANK 3038 (SPHERICAL PRESSURE TANK)
SOURCE CODE T34??052 not a C- or G-type source.
SOURCE CODE T34??209 not a C- or G-type source.

SOURCE #: 3050, TANK 3050 SPHERE
SOURCE CODE T344?417 not a C- or G-type source.

SOURCE #: 3066, TANK 3066
SOURCE CODE T344?052 not a C- or G-type source.

SOURCE #: 3071, TANK 3071
SOURCE CODE T54?2128 not a C- or G-type source.
SOURCE CODE T54?2551 not a C- or G-type source.

SOURCE #: 3072, TANK 3072
SOURCE CODE T54?2551 not a C- or G-type source.

SOURCE #: 3073, TANK 3073, EXTERNAL FLOATING ROOF STORAGE TANK W/PRIMARY AND
SOURCE CODE T54?2052 not a C- or G-type source.
SOURCE CODE T54?2128 not a C- or G-type source.
SOURCE CODE T54?2551 not a C- or G-type source.

SOURCE #: 3074, TANK 3074
SOURCE CODE T54?2315 not a C- or G-type source.

SOURCE #: 3075, EXTERNAL FLOATING ROOF STORAGE TANK W/PRIMARY & SECONDARY SE
SOURCE CODE T54??128 not a C- or G-type source.
SOURCE CODE T54??551 not a C- or G-type source.

SOURCE #: 3076, TANK T3076
SOURCE CODE T54?2089 not a C- or G-type source.
SOURCE CODE T54?2318 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 3100, W.G. SEALS INC. COMPRESSOR SHOE PRIMARY SEAL AND WEATHERGUAR
SOURCE CODE T54?2089 not a C- or G-type source.
SOURCE CODE T54?2242 not a C- or G-type source.
SOURCE CODE T54?2315 not a C- or G-type source.

SOURCE #: 3101, TANK 3101
SOURCE CODE T5432089 not a C- or G-type source.
SOURCE CODE T5432392 not a C- or G-type source.
SOURCE CODE T5432394 not a C- or G-type source.

SOURCE #: 3102, TANK 3102
SOURCE CODE T5432089 not a C- or G-type source.
SOURCE CODE T5432318 not a C- or G-type source.

SOURCE #: 3103, TANK 3103
SOURCE CODE T5432089 not a C- or G-type source.

SOURCE #: 3104, TANK 3104
SOURCE CODE T5432089 not a C- or G-type source.

SOURCE #: 3105, TANK 3105
SOURCE CODE T5432089 not a C- or G-type source.

SOURCE #: 3106, TANK 3106
SOURCE CODE T5432089 not a C- or G-type source.

SOURCE #: 3107, TANK 3107
SOURCE CODE T54?2089 not a C- or G-type source.

SOURCE #: 3110, DESALTER EFFLUENT SURGE TANK A
SOURCE CODE T43??089 not a C- or G-type source.

SOURCE #: 3111, DESALTER EFFLUENT SURGE TANK B
SOURCE CODE T43??089 not a C- or G-type source.

SOURCE #: 3126, TANK 3126
SOURCE CODE T5432188 not a C- or G-type source.
SOURCE CODE T5432503 not a C- or G-type source.

SOURCE #: 3127, TANK 3127
SOURCE CODE T5412503 not a C- or G-type source.

SOURCE #: 3128, TANK 3128
SOURCE CODE T54?2027 not a C- or G-type source.
SOURCE CODE T54?2502 not a C- or G-type source.

SOURCE #: 3129, TANK 3129
SOURCE CODE T5412158 not a C- or G-type source.

SOURCE #: 3132, TANK 3132
SOURCE CODE T54?2315 not a C- or G-type source.

SOURCE #: 3133, TANK 3133
SOURCE CODE T5412158 not a C- or G-type source.
SOURCE CODE T5412551 not a C- or G-type source.
SOURCE CODE T5412680 not a C- or G-type source.

SOURCE #: 3134, TANK 3134
SOURCE CODE T5412315 not a C- or G-type source.
SOURCE CODE T5412551 not a C- or G-type source.
SOURCE CODE T5412680 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 3138, TANK 3138

SOURCE CODE T5412394 not a C- or G-type source.

SOURCE #: 3139, TANK 3139

SOURCE CODE T5422394 not a C- or G-type source.

SOURCE #: 3141, SULFUR STORAGE TANK 3141

Source Code: G7014267

Material Processed: Sulfur

Train: /,A43,

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur or Sulfur com	1830	1.43E-02	Specific	5		BGY	07-29-80
Hydrogen Sulfide (H2	5020	2.50E-01	Specific	5		BGY	07-29-80
Sulfur Dioxide (SO2)	3990	4.00E-01	General	8			07-29-80

SOURCE #: 3142, TANK 3142

SOURCE CODE T441?239 not a C- or G-type source.

SOURCE #: 3144, TANK 3144

SOURCE CODE T5432503 not a C- or G-type source.

SOURCE #: 3145, TANK 3145, SPHERE

SOURCE CODE T3H3?052 not a C- or G-type source.

SOURCE #: 3146, TANK 3146: 20% AQUEOUS AMMONIA

SOURCE CODE T44??201 not a C- or G-type source.

SOURCE #: 3147, TANK 3147: ORGANIC LIQUID STORAGE TANK

SOURCE CODE T64?2485 not a C- or G-type source.

SOURCE #: 3148, TANK 3148: ORGANIC LIQUID STORAGE TANK

SOURCE CODE T43??485 not a C- or G-type source.

SOURCE #: 3157, LUBE OIL TANK

SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3158, LUBE OIL TANK

SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3159, LUBE OIL TANK

SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3160, TANK 3160: ORGANIC LIQUID STORAGE TANK

SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3161, TANK LUBE OIL

SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3162, TANK LUBE OIL

SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3163, TANK LUBE OIL

SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3164, TANK LUBE OIL

SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3165, TANK LUBE OIL

SOURCE CODE T44??419 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 3166, TANK LUBE OIL
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3167, TANK LUBE OIL
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3168, TANK LUBE OIL
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3169, ORGANIC LIQUID STORAGE TANK, LUBE OIL PRODUCTS
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3170, LUBE OIL TANK
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3171, LUBE OIL TANK
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3172, LUBE OIL TANK
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 3179, TANK 3179: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T44??315 not a C- or G-type source.

SOURCE #: 3180, TANK
SOURCE CODE T54??2052 not a C- or G-type source.
SOURCE CODE T54??2103 not a C- or G-type source.
SOURCE CODE T54??2128 not a C- or G-type source.
SOURCE CODE T54??2318 not a C- or G-type source.
SOURCE CODE T54??2389 not a C- or G-type source.
SOURCE CODE T54??2551 not a C- or G-type source.

SOURCE #: 3182, TANK 3182: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T64??2419 not a C- or G-type source.

SOURCE #: 3185, TANK 3185 (PREVIOUSLY T-982)
SOURCE CODE T54??2158 not a C- or G-type source.

SOURCE #: 3186, GAS OIL TANK
SOURCE CODE T44??201 not a C- or G-type source.

SOURCE #: 3189, GASOLINE COMPONENT AND DIESEL TANK
SOURCE CODE T55??2103 not a C- or G-type source.
SOURCE CODE T55??2158 not a C- or G-type source.
SOURCE CODE T55??2315 not a C- or G-type source.
SOURCE CODE T55??2318 not a C- or G-type source.
SOURCE CODE T55??2394 not a C- or G-type source.
SOURCE CODE T55??2551 not a C- or G-type source.
SOURCE CODE T55??2680 not a C- or G-type source.

SOURCE #: 3190, STORAGE TANK
SOURCE CODE T54??2103 not a C- or G-type source.
SOURCE CODE T54??2158 not a C- or G-type source.

SOURCE #: 3191, STORAGE TANK
SOURCE CODE T54??2103 not a C- or G-type source.
SOURCE CODE T54??2128 not a C- or G-type source.
SOURCE CODE T54??2188 not a C- or G-type source.
SOURCE CODE T54??2395 not a C- or G-type source.
SOURCE CODE T54??2551 not a C- or G-type source.
SOURCE CODE T54??2628 not a C- or G-type source.
SOURCE CODE T54??2662 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 3192, DESALTER EFFLUENT SKIM TANK
SOURCE CODE T3H??089 not a C- or G-type source.

SOURCE #: 3193, GASOLINE COMPONENT TANK
SOURCE CODE T54?2103 not a C- or G-type source.
SOURCE CODE T54?2154 not a C- or G-type source.
SOURCE CODE T54?2315 not a C- or G-type source.
SOURCE CODE T54?2389 not a C- or G-type source.
SOURCE CODE T54?2394 not a C- or G-type source.
SOURCE CODE T54?2551 not a C- or G-type source.

SOURCE #: 3194, STORAGE TANK T-3194
SOURCE CODE T54?2318 not a C- or G-type source.
SOURCE CODE T54?2394 not a C- or G-type source.

SOURCE #: 3195, T-3195 WAXY HEAVY NEUTRAL STORAGE TANK
SOURCE CODE T54??098 not a C- or G-type source.
SOURCE CODE T54??315 not a C- or G-type source.
SOURCE CODE T54??419 not a C- or G-type source.

SOURCE #: 3196, GASOLINE COMPONENTS TANK
SOURCE CODE T54?2103 not a C- or G-type source.
SOURCE CODE T54?2201 not a C- or G-type source.
SOURCE CODE T54?2315 not a C- or G-type source.
SOURCE CODE T54?2394 not a C- or G-type source.
SOURCE CODE T54?2503 not a C- or G-type source.
SOURCE CODE T54?2628 not a C- or G-type source.

SOURCE #: 3197, GASOLINE COMPONENT TANK
SOURCE CODE T55?2103 not a C- or G-type source.
SOURCE CODE T55?2188 not a C- or G-type source.
SOURCE CODE T55?2315 not a C- or G-type source.
SOURCE CODE T55?2394 not a C- or G-type source.

SOURCE #: 3198, 3198 TANK; ORGANIC LIQUID STORAGE TANK
SOURCE CODE T543?158 not a C- or G-type source.
SOURCE CODE T543?293 not a C- or G-type source.
SOURCE CODE T543?315 not a C- or G-type source.

SOURCE #: 3200, 4 CRUDE UNIT DESALTER WATER TREATMENT UNIT

Source Code: G5012300 Material Processed: Waste water - refin, other
Train: /,A6020,

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	8.00E+00		General	6			10-01-77

SOURCE #: 3201, TANK 3201: WHOLE ALKYLATE
SOURCE CODE T54?2103 not a C- or G-type source.
SOURCE CODE T54?2389 not a C- or G-type source.

SOURCE #: 3202, TANK 3202: METHANOL
SOURCE CODE T54?2179 not a C- or G-type source.
SOURCE CODE T54?2188 not a C- or G-type source.
SOURCE CODE T54?2315 not a C- or G-type source.
SOURCE CODE T54?2321 not a C- or G-type source.

SOURCE #: 3204, TANK 3204: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T42??419 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 3207, BUTANE SPHERE: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T34??416 not a C- or G-type source.

SOURCE #: 3208, PROPANE SPHERE: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T34??417 not a C- or G-type source.

SOURCE #: 3211, SPHERE
SOURCE CODE T34??416 not a C- or G-type source.

SOURCE #: 3212, SPHERE
SOURCE CODE T34??417 not a C- or G-type source.

SOURCE #: 3213, TANK 3213: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T54?2098 not a C- or G-type source.
SOURCE CODE T54?2158 not a C- or G-type source.
SOURCE CODE T54?2419 not a C- or G-type source.
SOURCE CODE T54?2551 not a C- or G-type source.

SOURCE #: 3214, TANK 3214: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T5332128 not a C- or G-type source.
SOURCE CODE T5332551 not a C- or G-type source.

SOURCE #: 3215, TANK 3215: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T54?2315 not a C- or G-type source.

SOURCE #: 3216, TANK 3216: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T44??315 not a C- or G-type source.

SOURCE #: 3220, 400 TANK ORGANIC LIQUID STORAGE TANK
SOURCE CODE T54?2128 not a C- or G-type source.
SOURCE CODE T54?2318 not a C- or G-type source.

SOURCE #: 3225, ORGANIC LIQUID STORAGE TANK
SOURCE CODE T54?2128 not a C- or G-type source.
SOURCE CODE T54?2318 not a C- or G-type source.
SOURCE CODE T54?2503 not a C- or G-type source.
SOURCE CODE T54?2551 not a C- or G-type source.

SOURCE #: 3226, SULFUR STORAGE TANK (FIXED ROOF)

Source Code: G7014267 Material Processed: Sulfur
Train: /,A43,

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Particulates (portio	1990	1.43E-02	Specific	2			05-13-04
Sulfur Dioxide (SO2)	3990	4.00E-01	Specific	5			05-13-04
Hydrogen Sulfide (H2	5020	2.50E-01	Specific	2			05-13-04

SOURCE #: 3232, TANK 3232 - PROPYLENE TETRAMER STORAGE TANK
SOURCE CODE T44??842 not a C- or G-type source.

SOURCE #: 3310, TANK 3310: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 3910, LPG TANK; # 3910
SOURCE CODE T34??160 not a C- or G-type source.

SOURCE #: 3911, LPG TANK, # 3911
SOURCE CODE T34??160 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 4038, #4 RHENIFORMER, F-3550

Source Code: C1530708

Fuel Burned: Chevron refinery fuel gas

Train: /,P40,P41,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	4.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4039, #4 RHENIFORMER, F-3560

Source Code: C1530708

Fuel Burned: Chevron refinery fuel gas

Train: /,P40,P41,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	4.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08

P10 - Chevron_Product_Current_Emissions_Factors.txt

Carbon Dioxide, non-	6960	1.39E+02	General	7	HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6	JHL	11-03-95

SOURCE #: 4040, #4 RHENIFORMER, F-3570

Source Code: C1530708 Fuel Burned: Chevron refinery fuel gas
Train: /,P40,P41,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	4.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4041, F3580, #4 RHENIFORMER

Source Code: C1540708 Fuel Burned: Chevron refinery fuel gas
Train: /,P40,P41,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	4.10E-02	Specific	4	2	BGY	07-01-02

P10 - Chevron_Product_Current_Emissions_Factors.txt

Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont			
Nitrous Oxide (N2O)	2030	2.30E-04	General	7	HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7	HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7	HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6	JHL	11-03-95

SOURCE #: 4042, #5 RHENIFORMER F550 W/36 ULTRA LOW NOX BURNERS

Source Code: C1530708 Fuel Burned: Chevron refinery fuel gas
Train: /,P42,P43,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	4.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4043, F560, #5 RHENIFORMER

Source Code: C1530708 Fuel Burned: Chevron refinery fuel gas
Train: /,P42,P43,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94

P10 - Chevron_Product_Current_Emissions_Factors.txt

PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	4.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4044, #5 RHENIF F570

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,P42,P43,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	4.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4045, #5 RHENIF F580

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,P42,P43,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90

P10 - Chevron_Product_Current_Emissions_Factors.txt

Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	4.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4059, #1 JHT FURNACE #247

Source Code: C1530708

Fuel Burned: Chevron refinery fuel gas

Train: /,P47,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	3.50E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4060, #1 JHT FURNACE #210A&B

Source Code: C1530708

Fuel Burned: Chevron refinery fuel gas

Train: /,P48,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90

P10 - Chevron_Product_Current_Emissions_Factors.txt

Manganese	1160	1.36E-06	Specific	1	BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1	BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1	BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1	BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1	BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1	BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1	BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6	JAT	11-30-90
Nitrogen Oxides (par	2990	3.50E-02	Specific	4	2 BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont			
Nitrous Oxide (N2O)	2030	2.30E-04	General	7	HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7	HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7	HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6	JHL	11-03-95

SOURCE #: 4061, #5 NAPH HYDROTREATER F410

Source Code: C1530708

Fuel Burned: Chevron refinery fuel gas

Train: /,P49,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	5.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4062, #5 NAPH HYDROTREATER F447

Source Code: C1530708

Fuel Burned: Chevron refinery fuel gas

Train: /,P49,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90

P10 - Chevron_Product_Current_Emissions_Factors.txt

Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	5.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4068, VGO DESULFURIZER F-1610

Source Code: C1530708

Fuel Burned: Chevron refinery fuel gas

Train: /,P55,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	1.62E-01	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4069, VGO F1660

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,P56,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90

P10 - Chevron_Product_Current_Emissions_Factors.txt

Phenol	214	1.89E-06	Specific	1	BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1	BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6	JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1	BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1	BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1	BN	09-04-90
Manganese	1160	1.36E-06	Specific	1	BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1	BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1	BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1	BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1	BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1	BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1	BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6	JAT	11-30-90
Nitrogen Oxides (par	2990	1.97E-01	Specific	4	2 BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont			
Nitrous Oxide (N2O)	2030	2.30E-04	General	7	HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7	HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7	HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6	JHL	11-03-95

SOURCE #: 4070, #4 CRUDE UNIT F 1100A

Source Code: C1520188 Fuel Burned: Naphtha
Train: /,P57,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Nitrogen Oxides (par	2990	3.04E+00	Specific	4	2	BGY	07-01-02
Organics (part not s	990	1.00E+00	General	6			12-05-77
Particulates (portio	1990	2.00E+00	General	6			12-05-77
Nitrous Oxide (N2O)	2030	1.80E-01	General	7		HIL	03-15-08
Methane (CH4)	6970	5.00E-01	General	7		HIL	03-15-08
Carbon Monoxide (CO)	4990	5.00E+00	General	6			12-05-77
Carbon Dioxide, non-	6960	2.15E+04	General	7		HIL	03-10-08

Source Code: C1520708 Fuel Burned: Chevron refinery fuel gas
Train: /,P57,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.80E-02	Specific	4	2	BGY	07-01-02

P10 - Chevron_Product_Current_Emissions_Factors.txt

Sulfur Dioxide (SO2)	3990	2.70E-02	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4071, #4 CRUDE UNIT F1100B

Source Code: C1520188 Fuel Burned: Naphtha
Train: /,P58,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Nitrogen Oxides (par	2990	3.04E+00	Specific	4	2	BGY	07-01-02
Organics (part not s	990	1.00E+00	General	6			12-05-77
Particulates (portio	1990	2.00E+00	General	6			12-05-77
Nitrous Oxide (N2O)	2030	1.80E-01	General	7		HIL	03-15-08
Methane (CH4)	6970	5.00E-01	General	7		HIL	03-15-08
Carbon Monoxide (CO)	4990	5.00E+00	General	6			12-05-77
Carbon Dioxide, non-	6960	2.15E+04	General	7		HIL	03-10-08

Source Code: C1520708 Fuel Burned: Chevron refinery fuel gas
Train: /,P58,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.80E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	2.70E-02	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4072, #4 CRUDE UNIT F1160

Source Code: C1520188 Fuel Burned: Naphtha
Train: /,P59,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
----------------	-----------	--------------------------------	---------	------------	------------	------	-----------

P10 - Chevron_Product_Current_Emissions_Factors.txt

Pollutant Name	Code	Emiss. Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Nitrogen Oxides (par	2990	3.04E+00	Specific	4	2	BGY	07-01-02
Organics (part not s	990	1.00E+00	General	6			12-05-77
Particulates (portio	1990	2.00E+00	General	6			12-05-77
Nitrous Oxide (N2O)	2030	1.80E-01	General	7		HIL	03-15-08
Methane (CH4)	6970	5.00E-01	General	7		HIL	03-15-08
Carbon Monoxide (CO)	4990	5.00E+00	General	6			12-05-77
Carbon Dioxide, non-	6960	2.15E+04	General	7		HIL	03-10-08

Source Code: C1520708

Fuel Burned: Chevron refinery fuel gas

Train: /,P59,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.80E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	2.70E-02	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4073, LSF0 COOLING TOWER

Source Code: G5005415

Material Processed: Fresh water

Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gallo	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	6.00E-03	General	8			06-11-78

SOURCE #: 4076, 3 CAT COOLING TOWER E460

Source Code: G5005415

Material Processed: Fresh water

Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gallo	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	6.00E-03	General	8			06-11-78

SOURCE #: 4107, HEAT TREATING FURNACE NO. 1 BOILER SHOP

P10 - Chevron_Product_Current_Emissions_Factors.txt

Source Code: C1550189

Fuel Burned: Natural gas

Train: /,P90,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Formaldehyde	124	7.50E-05	General	6		JAT	10-14-09
Toluene	293	3.40E-06	General	6		JAT	10-14-09
Organics (part not s	990	5.72E-03	General	6		JAT	10-14-09
Particulates (portio	1990	3.00E-03	General	6			04-25-85
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	1.40E-01	General	6			04-25-85
Carbon Monoxide (CO)	4990	3.50E-02	General	6			04-25-85
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08
Methane (CH4)	6970	1.90E-03	General	7		HIL	03-15-08
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				

SOURCE #: 4129, 800# STM BLR #1 #IPP

Source Code: C1130708

Fuel Burned: Chevron refinery fuel gas

Train: /,P98,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		BN	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	9.80E-06	Specific	1		BN	09-06-90
Phenol	214	6.00E-07	Specific	1		BN	09-06-90
Toluene	293	1.19E-04	Specific	1		BN	09-06-90
Acetaldehyde	335	2.88E-05	Specific	1		BN	09-06-90
Organics (part not s	990	2.84E-03	Specific	6		BN	11-30-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-06-90
Copper (all) polluta	1110	2.00E-07	Specific	1		BN	09-06-90
Mercury (all) pollut	1190	3.00E-07	Specific	1		BN	09-06-90
Zinc pollutant	1320	1.70E-06	Specific	1		BN	09-06-90
PAH's (non-speciated	1840	1.05E-05	Specific	1		BN	09-06-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	9.99E-03	Specific	6		BN	11-30-90
Nitrogen Oxides (par	2990	3.50E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-06-95

SOURCE #: 4131, 800# STM BLR #3 #1PP

Source Code: C1130708

Fuel Burned: Chevron refinery fuel gas

Train: /,P99,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		BN	11-30-90
Formaldehyde	124	9.80E-06	Specific	1		BN	09-06-90
Phenol	214	6.00E-07	Specific	1		BN	09-06-90
Toluene	293	1.19E-04	Specific	1		BN	09-06-90

P10 - Chevron_Product_Current_Emissions_Factors.txt

Acetaldehyde	335	2.88E-05	Specific	1	BN	09-06-90
Organics (part not s	990	2.84E-03	Specific	6	BN	11-30-90
Chromium (hexavalent	1095	4.00E-08	Specific	1	BN	09-06-90
Copper (all) polluta	1110	2.00E-07	Specific	1	BN	09-06-90
Mercury (all) pollut	1190	3.00E-07	Specific	1	BN	09-06-90
Zinc pollutant	1320	1.70E-06	Specific	1	BN	09-06-90
PAH's (non-speciated	1840	1.05E-05	Specific	1	BN	09-06-90
Particulates (portio	1990	9.99E-03	Specific	6	BN	11-30-90
Nitrogen Oxides (par	2990	3.50E-02	Specific	4	2 BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont			
Nitrous Oxide (N2O)	2030	2.30E-04	General	7	HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7	HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7	HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6	JHL	11-06-95

SOURCE #: 4132, 800# STM BLR #4 #1 PP

Source Code: C1130708

Fuel Burned: Chevron refinery fuel gas

Train: /,P99,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		BN	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	9.80E-06	Specific	1		BN	09-06-90
Phenol	214	6.00E-07	Specific	1		BN	09-06-90
Toluene	293	1.19E-04	Specific	1		BN	09-06-90
Acetaldehyde	335	2.88E-05	Specific	1		BN	09-06-90
Organics (part not s	990	2.84E-03	Specific	6		BN	11-30-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-06-90
Copper (all) polluta	1110	2.00E-07	Specific	1		BN	09-06-90
Mercury (all) pollut	1190	3.00E-07	Specific	1		BN	09-06-90
Zinc pollutant	1320	1.70E-06	Specific	1		BN	09-06-90
PAH's (non-speciated	1840	1.05E-05	Specific	1		BN	09-06-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	9.99E-03	Specific	6		BN	11-30-90
Nitrogen Oxides (par	2990	3.50E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-06-95

SOURCE #: 4133, 800# STEAM BLR #5 #1PP

Source Code: C1130708

Fuel Burned: Chevron refinery fuel gas

Train: /,P100,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		BN	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	9.80E-06	Specific	1		BN	09-06-90
Phenol	214	6.00E-07	Specific	1		BN	09-06-90
Toluene	293	1.19E-04	Specific	1		BN	09-06-90
Acetaldehyde	335	2.88E-05	Specific	1		BN	09-06-90
Organics (part not s	990	2.84E-03	Specific	6		BN	11-30-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-06-90

P10 - Chevron_Product_Current_Emissions_Factors.txt

Copper (all) polluta	1110	2.00E-07	Specific	1	BN	09-06-90
Mercury (all) pollut	1190	3.00E-07	Specific	1	BN	09-06-90
Zinc pollutant	1320	1.70E-06	Specific	1	BN	09-06-90
PAH's (non-speciated	1840	1.05E-05	Specific	1	BN	09-06-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1	BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1	BN	04-07-94
Particulates (portio	1990	9.99E-03	Specific	6	BN	11-30-90
Nitrogen Oxides (par	2990	3.50E-02	Specific	4	2 BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont			
Nitrous Oxide (N2O)	2030	2.30E-04	General	7	HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7	HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7	HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6	JHL	11-06-95

SOURCE #: 4135, 800# STM BLR #7 #1 PP

Source Code: C1120708

Fuel Burned: Chevron refinery fuel gas

Train: /,P101,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		BN	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	9.80E-06	Specific	1		BN	09-06-90
Phenol	214	6.00E-07	Specific	1		BN	09-06-90
Toluene	293	1.19E-04	Specific	1		BN	09-06-90
Acetaldehyde	335	2.88E-05	Specific	1		BN	09-06-90
Organics (part not s	990	2.84E-03	Specific	6		BN	11-30-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-06-90
Copper (all) polluta	1110	2.00E-07	Specific	1		BN	09-06-90
Mercury (all) pollut	1190	3.00E-07	Specific	1		BN	09-06-90
Zinc pollutant	1320	1.70E-06	Specific	1		BN	09-06-90
PAH's (non-speciated	1840	1.05E-05	Specific	1		BN	09-06-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	9.99E-03	Specific	6		BN	11-30-90
Nitrogen Oxides (par	2990	3.50E-02	Specific	4	2 BGY		07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-06-95

SOURCE #: 4148, #13 SEPARATOR

Source Code: G5017300

Material Processed: Waste water - refin, other

Train: /,A32105,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	5.00E-02	Specific	8			04-05-85

SOURCE #: 4152, F-100 ASPHALT SOLUTION HEATER SDA ISOMAX

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,P109,

Pol. Emiss. Factor

Basis Repl.

P10 - Chevron_Product_Current_Emissions_Factors.txt

Pollutant Name	Code	lb/thou cu ft	EF File	Code	Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	4.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4153, F-110 ASPHALT SOLUTION HEATER SDA 150 MAX

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,P110,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrogen Oxides (par	2990	1.80E-01	General	6		JHL	11-03-95
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08

SOURCE #: 4154, F-120 ASPHALT SOLUTION HEATER SDA ISOMAX

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

P10 - Chevron_Product_Current_Emissions_Factors.txt

Train: /,P111,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	4.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4155, F-135 HOT OIL FURNACE

Source Code: C1530708

Fuel Burned: Chevron refinery fuel gas

Train: /,P112,P113,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	4.60E-02	Specific	4	2	BGY	07-01-02
Carbon Monoxide (CO)	4990	4.16E-02	Specific	5		GDS	09-07-04
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08

SOURCE #: 4156, F-320 NAPHTHA VAPORIZER, H2 PLANT ISOMAX

Source Code: C1540708
Train: /,P114,

Fuel Burned: Chevron refinery fuel gas

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Nitrogen Oxides (par	2990	1.97E-01	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Benzene	41	3.30E-06	General	6		JHL	11-03-95
Organics (part not s	990	3.00E-03	General	6		JHL	11-03-95
PAH's (benzo[a]pyren	1860	6.20E-06	General	7		JHL	11-03-95
Particulates (portio	1990	1.00E-02	General	6		JHL	11-03-95
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08

SOURCE #: 4157, F-330 NAPHTHA VAPORIZER, H2 PLANT

Source Code: C1540242
Train: /,P115,

Fuel Burned: Bunker C fuel oil

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	7.25E+01	F27 S Cont				
Benzene	41	1.80E-02	General	7		JAT	10-09-87
Formaldehyde	124	6.16E-02	General	7		JAT	10-14-87
Organics (part not s	990	9.38E-01	General	6		JAT	10-14-87
PAH's (non-speciated	1840	1.28E-03	General	6		JAT	10-19-87
Particulates (portio	1990	6.00E+00	General	6		JAT	10-19-87
Nitrous Oxide (N2O)	2030	2.08E-01	General	7		HIL	03-15-08
Nitrogen Oxides (par	2990	5.50E+01	General	6			12-05-77
Carbon Monoxide (CO)	4990	5.00E+00	General	6			12-05-77
Carbon Dioxide, non-	6960	2.60E+04	General	7		HIL	03-06-08
Methane (CH4)	6970	2.25E-01	General	7		HIL	03-15-08
Nickel pollutant	1180	1.92E-01	Fuels Data				
Arsenic (all)	1030	2.88E-03	Fuels Data				
Beryllium (all) poll	1040	6.40E-04	Fuels Data				
Cadmium	1070	2.38E-03	Fuels Data				
Chromium (hexavalent	1095	2.30E-05	Fuels Data				
Lead (all) pollutant	1140	4.26E-03	Fuels Data				
Manganese	1160	3.95E-03	Fuels Data				
Mercury (all) pollut	1190	4.80E-04	Fuels Data				

Source Code: C1540708
Train: /,P115,

Fuel Burned: Chevron refinery fuel gas

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Benzene	41	3.30E-06	General	6		JHL	11-03-95
Organics (part not s	990	3.00E-03	General	6		JHL	11-03-95
PAH's (benzo[a]pyren	1860	6.20E-06	General	7		JHL	11-03-95
Particulates (portio	1990	1.00E-02	General	6		JHL	11-03-95
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Nitrogen Oxides (par	2990	1.80E-01	General	6		JHL	11-03-95
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

P10 - Chevron_Product_Current_Emissions_Factors.txt

Carbon Dioxide, non-	6960	1.39E+02	General	7	HIL	03-06-08
Methane (CH4)	6970	2.90E-03	General	7	HIL	03-15-08

SOURCE #: 4158, HYDROGEN PLANT PREHEAT FURNACE F-340

Source Code: C1540708 Fuel Burned: Chevron refinery fuel gas
Train: /,P116,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	4.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	8.44E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4159, F410 TKC FEED FURNACE TKC ISOMAX

Source Code: C1540708 Fuel Burned: Chevron refinery fuel gas
Train: /,P117,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.80E-02	Specific	4	2	BGY	07-01-02

P10 - Chevron_Product_Current_Emissions_Factors.txt

Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont			
Nitrous Oxide (N2O)	2030	2.30E-04	General	7	HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7	HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7	HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6	JHL	11-03-95

SOURCE #: 4160, F420 TKC FEED FURNACE TKC ISOMAX

Source Code: C1540708 Fuel Burned: Chevron refinery fuel gas
Train: /,P117,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.80E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4161, F-510 TKN FEED FURNACE/LOW NOX BURNERS

Source Code: C1540189 Fuel Burned: Natural gas
Train: /,P311,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Formaldehyde	124	7.50E-05	General	6		JAT	10-14-09
Toluene	293	3.40E-06	General	6		JAT	10-14-09
Organics (part not s	990	5.72E-03	General	6		JAT	10-14-09
Particulates (portio	1990	3.00E-03	General	6			04-25-85
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	1.40E-01	General	6			04-25-85
Carbon Monoxide (CO)	4990	3.50E-02	General	6			04-25-85
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08
Methane (CH4)	6970	1.90E-03	General	7		HIL	03-15-08
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				

Source Code: C1540708 Fuel Burned: Chevron refinery fuel gas
Train: /,P311,

P10 - Chevron_Product_Current_Emissions_Factors.txt

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	1.51E-01	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	5.21E-03	Fuels Data				
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08

SOURCE #: 4162, F-520 TKN FURNACE/LOW-NOX BURNERS

Source Code: C1540189

Fuel Burned: Natural gas

Train: /,P311,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Formaldehyde	124	7.50E-05	General	6		JAT	10-14-09
Toluene	293	3.40E-06	General	6		JAT	10-14-09
Organics (part not s	990	5.72E-03	General	6		JAT	10-14-09
Particulates (portio	1990	3.00E-03	General	6			04-25-85
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	1.40E-01	General	6			04-25-85
Carbon Monoxide (CO)	4990	3.50E-02	General	6			04-25-85
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08
Methane (CH4)	6970	1.90E-03	General	7		HIL	03-15-08
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,P311,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90

P10 - Chevron_Product_Current_Emissions_Factors.txt

Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	1.51E-01	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	5.21E-03	Fuels Data				
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08

SOURCE #: 4163, F-530 TKN FEED FURNACE/LOW NOX BURNERS

Source Code: C1540189

Fuel Burned: Natural gas

Train: /,P311,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Formaldehyde	124	7.50E-05	General	6		JAT	10-14-09
Toluene	293	3.40E-06	General	6		JAT	10-14-09
Organics (part not s	990	5.72E-03	General	6		JAT	10-14-09
Particulates (portio	1990	3.00E-03	General	6			04-25-85
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	1.40E-01	General	6			04-25-85
Carbon Monoxide (CO)	4990	3.50E-02	General	6			04-25-85
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08
Methane (CH4)	6970	1.90E-03	General	7		HIL	03-15-08
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,P311,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-24-90
Phenol	214	1.89E-06	Specific	1		BN	09-24-90
Toluene	293	0.00E+00	Specific			SLW	09-25-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-24-90
Organics (part not s	990	2.82E-03	Specific	6	2	HIL	03-26-08
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-24-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-24-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-24-90
Manganese	1160	1.36E-06	Specific	1		BN	09-24-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-24-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-24-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-24-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-24-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Nitrogen Oxides (par	2990	1.51E-01	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	5.21E-03	Fuels Data				

P10 - Chevron_Product_Current_Emissions_Factors.txt

Methane (CH4)	6970	2.90E-03	General	7	HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7	HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6	JHL	11-03-95
Nitrous Oxide (N2O)	2030	2.30E-04	General	7	HIL	03-15-08

SOURCE #: 4164, F-630 ISOCRACKER FEED FURNACE ISOMAX W/ULTRA LOW NOX BURN

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,P119,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	3.50E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4165, F620 ISOCRACKER FEED FURNACE ISOMAX W/ULTRA LOW NOX BURN

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,P119,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94

P10 - Chevron_Product_Current_Emissions_Factors.txt

Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	3.50E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4166, F-610 ISOCRACKER FEED FURNACE ISOMAX W/ULTRA LOW NOX BURNE

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,P119,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	3.50E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4167, F-710 TKC FRACTIONATOR ISOMAX

Source Code: C1530708

Fuel Burned: Chevron refinery fuel gas

Train: /,P120,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-11-94
Organics (part not s	990	2.82E-03	Specific	6	2	HIL	03-26-08
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-11-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-11-94
Nitrogen Oxides (par	2990	4.10E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4168, F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX W/ULTRA LOW

P10 - Chevron_Product_Current_Emissions_Factors.txt

Source Code: C1530708

Fuel Burned: Chevron refinery fuel gas

Train: /,P121,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.80E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4169, F-731 ISOCRACKER REBOILER ISOMAX W/ULTRA LOW NOX BURNERS

Source Code: C1520708

Fuel Burned: Chevron refinery fuel gas

Train: /,P122,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.80E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 4170, F355 REFORMING FURNACE, H2 PLANT

Source Code: C1520708 Fuel Burned: Chevron refinery fuel gas
Train: /,A260,P123,P124,P125,P126,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	2.20E-06	Specific	1		BN	09-05-90
Phenol	214	9.00E-07	Specific	1		BN	09-05-90
Toluene	293	7.04E-05	Specific	1		BN	09-05-90
Acetaldehyde	335	2.20E-06	Specific	1		BN	09-05-90
Organics (part not s	990	2.92E-03	Specific	6		JAT	11-30-90
Copper (all) polluta	1110	4.60E-07	Specific	1		BN	09-05-90
Manganese	1160	2.80E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.00E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	2.00E-08	Specific	1		BN	09-05-90
Zinc pollutant	1320	6.90E-07	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	2.18E-05	Specific	1		BN	09-05-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.20E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4171, F355 REFORMING FURNACE, H2 PLANT

Source Code: C1520708 Fuel Burned: Chevron refinery fuel gas
Train: /,P127,P128,P129,P130,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	2.20E-06	Specific	1		BN	09-05-90
Phenol	214	9.00E-07	Specific	1		BN	09-05-90
Toluene	293	7.04E-05	Specific	1		BN	09-05-90
Acetaldehyde	335	2.20E-06	Specific	1		BN	09-05-90
Organics (part not s	990	2.92E-03	Specific	6		JAT	11-30-90
Copper (all) polluta	1110	4.60E-07	Specific	1		BN	09-05-90
Manganese	1160	2.80E-06	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.00E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	2.00E-08	Specific	1		BN	09-05-90
Zinc pollutant	1320	6.90E-07	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	2.18E-05	Specific	1		BN	09-05-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.80E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	8.44E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08

P10 - Chevron_Product_Current_Emissions_Factors.txt
Carbon Monoxide (CO) 4990 1.70E-02 General 6 JHL 11-03-95

SOURCE #: 4172, ISOMAX COOLING TOWER -E-261

Source Code: G5005415 Material Processed: Fresh water
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou gallo	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	6.00E-03	General	8				06-11-78

SOURCE #: 4173, FCC COOLING TOWER 2-710

Source Code: G5005415 Material Processed: Fresh water
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou gallo	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	6.00E-03	General	8				06-11-78

SOURCE #: 4187, FCC POLYMER COOLING TOWER E-781

Source Code: G5005415 Material Processed: Fresh water
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou gallo	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	6.00E-03	General	8				06-11-78

SOURCE #: 4188, F-651 POLYMER FURNACE/LOW NOX BURNERS

Source Code: C1540189 Fuel Burned: Natural gas
Train: ,/,P312,

Pollutant Name	Pol. Code	Emiss. lb/thou cu ft	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7			JAT	11-20-87
Formaldehyde	124	7.50E-05	General	6			JAT	10-14-09
Toluene	293	3.40E-06	General	6			JAT	10-14-09
Organics (part not s	990	5.72E-03	General	6			JAT	10-14-09
Particulates (portio	1990	3.00E-03	General	6				04-25-85
Nitrous Oxide (N2O)	2030	2.31E-04	General	7			HIL	03-12-08
Nitrogen Oxides (par	2990	1.40E-01	General	6				04-25-85
Carbon Monoxide (CO)	4990	3.50E-02	General	6				04-25-85
Carbon Dioxide, non-	6960	1.22E+02	General	7			HIL	02-28-08
Methane (CH4)	6970	1.90E-03	General	7			HIL	03-15-08
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data					

Source Code: C1540708 Fuel Burned: Chevron refinery fuel gas
Train: ,/,P312,

Pollutant Name	Pol. Code	Emiss. lb/thou cu ft	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
----------------	-----------	----------------------	--------	---------	------------	------------	------	-----------

P10 - Chevron_Product_Current_Emissions_Factors.txt

Benzene	41	3.30E-06	Specific	7	JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1	BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1	BN	09-04-90
Phenol	214	1.89E-06	Specific	1	BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1	BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6	JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1	BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1	BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1	BN	09-04-90
Manganese	1160	1.36E-06	Specific	1	BN	09-05-90
Nickel pollutant	1180	1.60E-07	Specific	1	BN	09-05-90
Mercury (all) pollut	1190	1.00E-07	Specific	1	BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1	BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1	BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1	BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1	BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6	JAT	11-30-90
Nitrogen Oxides (par	2990	2.90E-01	Specific	4	2 BGY	07-01-02
Sulfur Dioxide (SO2)	3990	5.21E-03	Fuels Data			
Methane (CH4)	6970	2.90E-03	General	7	HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7	HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6	JHL	11-03-95
Nitrous Oxide (N2O)	2030	2.30E-04	General	7	HIL	03-15-08

SOURCE #: 4189, F-661 POLYMER FURNACE/LOW NOX BURNERS

Source Code: C1540189

Fuel Burned: Natural gas

Train: ,/,P313,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Formaldehyde	124	7.50E-05	General	6		JAT	10-14-09
Toluene	293	3.40E-06	General	6		JAT	10-14-09
Organics (part not s	990	5.72E-03	General	6		JAT	10-14-09
Particulates (portio	1990	3.00E-03	General	6			04-25-85
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	1.40E-01	General	6			04-25-85
Carbon Monoxide (CO)	4990	3.50E-02	General	6			04-25-85
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08
Methane (CH4)	6970	1.90E-03	General	7		HIL	03-15-08
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: ,/,P313,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	8.80E-07	Specific	1		BN	09-04-90
Phenol	214	1.89E-06	Specific	1		BN	09-04-90
Acetaldehyde	335	2.15E-06	Specific	1		BN	09-04-90
Organics (part not s	990	2.99E-03	Specific	6		JAT	11-30-90
Arsenic (all)	1030	7.00E-08	Specific	1		BN	09-05-90
Cadmium	1070	2.00E-08	Specific	1		BN	09-05-90
Chromium (hexavalent	1095	4.00E-08	Specific	1		BN	09-04-90
Copper (all) polluta	1110	6.30E-07	Specific	1		BN	09-05-90
Manganese	1160	1.36E-06	Specific	1		BN	09-05-90

P10 - Chevron_Product_Current_Emissions_Factors.txt

Mercury (all) pollut	1190	1.00E-07	Specific	1		BN	09-04-90
Zinc pollutant	1320	3.12E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	1.93E-05	Specific	1		BN	09-04-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.90E-01	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	5.21E-03	Fuels Data				
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08

SOURCE #: 4191, ALKANE COOLING WATER TOWER

Source Code: G5005415 Material Processed: Fresh water
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gallo	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	6.00E-03	General	8			06-11-78

SOURCE #: 4192, F-2170 STACK GAS HEATER #1 SRU CAT CRACK.

Source Code: C1540189 Fuel Burned: Natural gas
Train: ,A20,/,P151,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.70E-02	F27 S Cont				
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Formaldehyde	124	7.50E-05	General	6		JAT	10-14-09
Toluene	293	3.40E-06	General	6		JAT	10-14-09
Organics (part not s	990	5.72E-03	General	6		JAT	10-14-09
Particulates (portio	1990	3.00E-03	General	6			04-25-85
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	1.40E-01	General	6			04-25-85
Carbon Monoxide (CO)	4990	3.50E-02	General	6			04-25-85
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08
Methane (CH4)	6970	1.90E-03	General	7		HIL	03-15-08

SOURCE #: 4193, F-2270 TAIL GAS HEATER #2 SRU

Source Code: C1520189 Fuel Burned: Natural gas
Train: ,A21,/,P152,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Formaldehyde	124	7.50E-05	General	6		JAT	10-14-09
Toluene	293	3.40E-06	General	6		JAT	10-14-09
Organics (part not s	990	5.72E-03	General	6		JAT	10-14-09
Particulates (portio	1990	3.00E-03	General	6			04-25-85
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	1.40E-01	General	6			04-25-85
Carbon Monoxide (CO)	4990	3.50E-02	General	6			04-25-85
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08

P10 - Chevron_Product_Current_Emissions_Factors.txt

Methane (CH4) 6970 1.90E-03 General 7 HIL 03-15-08
Sulfur Dioxide (SO2) 3990 5.68E-04 Fuels Data

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: ,A21,,P152,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-11-94
Organics (part not s	990	2.82E-03	Specific	6	2	HIL	03-26-08
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-11-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-11-94
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrogen Oxides (par	2990	1.80E-01	General	6		JHL	11-03-95
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08

SOURCE #: 4194, F-2370 TAIL GAS HEATER #3 SRU

Source Code: C1520242

Fuel Burned: Bunker C fuel oil

Train: ,A22,,P153,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	7.25E+01	F27 S Cont				
Benzene	41	1.80E-02	General	7		JAT	10-09-87
Formaldehyde	124	6.16E-02	General	7		JAT	10-14-87
Organics (part not s	990	9.38E-01	General	6		JAT	10-14-87
PAH's (non-speciated	1840	1.28E-03	General	6		JAT	10-19-87
Particulates (portio	1990	6.00E+00	General	6		JAT	10-19-87
Nitrous Oxide (N2O)	2030	2.08E-01	General	7		HIL	03-15-08
Nitrogen Oxides (par	2990	5.50E+01	General	6			12-05-77
Carbon Monoxide (CO)	4990	5.00E+00	General	6			12-05-77
Carbon Dioxide, non-	6960	2.60E+04	General	7		HIL	03-06-08
Methane (CH4)	6970	2.25E-01	General	7		HIL	03-15-08
Nickel pollutant	1180	1.92E-01	Fuels Data				
Arsenic (all)	1030	2.88E-03	Fuels Data				
Beryllium (all) poll	1040	6.40E-04	Fuels Data				
Cadmium	1070	2.38E-03	Fuels Data				
Chromium (hexavalent	1095	2.30E-05	Fuels Data				
Lead (all) pollutant	1140	4.26E-03	Fuels Data				
Manganese	1160	3.95E-03	Fuels Data				
Mercury (all) pollut	1190	4.80E-04	Fuels Data				

Source Code: C1540189

Fuel Burned: Natural gas

Train: ,A22,,P153,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.70E-02	F27 S Cont				
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Formaldehyde	124	7.50E-05	General	6		JAT	10-14-09
Toluene	293	3.40E-06	General	6		JAT	10-14-09
Organics (part not s	990	5.72E-03	General	6		JAT	10-14-09
Particulates (portio	1990	3.00E-03	General	6			04-25-85

P10 - Chevron_Product_Current_Emissions_Factors.txt

Nitrous Oxide (N2O)	2030	2.31E-04	General	7	HIL	03-12-08
Nitrogen Oxides (par	2990	1.40E-01	General	6		04-25-85
Carbon Monoxide (CO)	4990	3.50E-02	General	6		04-25-85
Carbon Dioxide, non-	6960	1.22E+02	General	7	HIL	02-28-08
Methane (CH4)	6970	1.90E-03	General	7	HIL	03-15-08

SOURCE #: 4226, HYDROTREATER FOR GASOLINE, JET FUEL DIESEL FUEL AND

Source Code: G5022239 Material Processed: Refinery feedstock - other
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/thou barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E+00	General	8			07-29-80

SOURCE #: 4227, SRU #1 TRAIN

Source Code: G7055267 Material Processed: Sulfur
Train: /,A20,

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	1.10E+02	Specific	67		DMB	12-31-10

SOURCE #: 4228, SRU #2 TRAIN

Source Code: G7055267 Material Processed: Sulfur
Train: /,A21,

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	1.17E+02	Specific	67		DMB	12-31-10

SOURCE #: 4229, SRU #3 TRAIN

Source Code: G7055267 Material Processed: Sulfur
Train: /,A22,

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	1.06E+02	Specific	67		DMB	12-31-10

SOURCE #: 4230, LUBE OIL FILLING AT PACKAGE & GREASE PLANT

Source Code: G7013419 Material Processed: Lube oil
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gallo	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Particulates (portio	1990	1.00E-04	General	8			12-15-81

SOURCE #: 4233, #1 JET HYDROTREATER

P10 - Chevron_Product_Current_Emissions_Factors.txt

Source Code: G5022239 Material Processed: Refinery feedstock - other
Train: /,S6015,A6020,

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E+00		General	8			07-29-80

SOURCE #: 4234, NO. 5 NAPHTHA HYDROTREATER

Source Code: G5022239 Material Processed: Refinery feedstock - other
Train: /,S6015,A6020,

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E+00		General	8			07-29-80

SOURCE #: 4235, DIESEL HYDROTREATER

Source Code: G5022239 Material Processed: Refinery feedstock - other
Train: /,S6015,

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	3.00E-01		Specific	5			07-23-92

SOURCE #: 4236, NO. 4 CRUDE UNIT, 175,000 BPD

Source Code: G5027089 Material Processed: Crude oil
Train: /,S6015,A6020,

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E+00		General	8			04-03-85

SOURCE #: 4237, NO. 5 RHENIFORMER, 23,000 BPD

Source Code: G5993239 Material Processed: Refinery feedstock - other
Train: /,S6015,A6020,

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.50E+00		General	8			07-29-80

SOURCE #: 4238, LIQUID PETROLEUM GAS LOADING RACK #4238
SOURCE CODE T98?2160 not a C- or G-type source.

SOURCE #: 4239, MAIN TANK CAR LOADING RACKS #4239
SOURCE CODE T9812315 not a C- or G-type source.
SOURCE CODE T9812318 not a C- or G-type source.
SOURCE CODE T9832089 not a C- or G-type source.
SOURCE CODE T9832128 not a C- or G-type source.
SOURCE CODE T9832551 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 4240, ASPHALT TANK TRUCK LOADING RACK
SOURCE CODE T9811030 not a C- or G-type source.

SOURCE #: 4241, ASPHALT TANK CAR LOADING RACKS 4241
SOURCE CODE T9711030 not a C- or G-type source.

SOURCE #: 4250, HYDROGEN MANUFACTURING PLANT, 150 MM SCF/DAY

Source Code: G5026759 Material Processed: Hydrogen (gas)
Train: /,A261,A262,

Pollutant Name	Pol. Code	Emiss. Factor lb/million cu	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Ethyl alcohol	105	1.38E-01	Specific	2		BGY	07-15-99
Methyl alcohol	179	4.95E+00	Specific	2		BGY	07-20-98
Carbon Monoxide (CO)	4990	5.50E-01	Specific	2		BGY	07-15-99
Carbon Dioxide, non-	6960	2.90E+04	Specific	5	2	HIL	03-10-08

SOURCE #: 4251, SOLVENT DEASPHALTING (SDA) PLANT

Source Code: G5029239 Material Processed: Refinery feedstock - other
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/thou barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	0.00E+00	Specific				
Particulates (portio	1990	0.00E+00	Specific	4			
Nitrogen Oxides (par	2990	0.00E+00	Specific				
Sulfur Dioxide (SO2)	3990	0.00E+00	Specific				
Carbon Monoxide (CO)	4990	0.00E+00	Specific				

Source Code: G5029242 Material Processed: Bunker C fuel oil
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gallo	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E-01	General	8			04-03-85

SOURCE #: 4252, TKN ISOCRACKER

Source Code: G5004342 Material Processed: Cat reformer fresh feed, r
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/thou barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E-04	General	8			02-03-84

SOURCE #: 4253, TKN PLANT

Source Code: G5004342 Material Processed: Cat reformer fresh feed, r
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/thou barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
----------------	-----------	-----------------------------	---------	------------	------------	------	-----------

P10 - Chevron_Product_Current_Emissions_Factors.txt

Pollutant Name	Pol. Code	Emiss. Factor lb/thou barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E-04	General	8			02-03-84

SOURCE #: 4282, PENHEX ISOMERIZATION UNIT

Source Code: G5004342 Material Processed: Cat reformer fresh feed, r
Train: /,S6015,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E-04	General	8			02-03-84

SOURCE #: 4283, NO. 4 CATALYTIC REFORMER, 28,000 BPD

Source Code: G5004342 Material Processed: Cat reformer fresh feed, r
Train: /,S6015,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E-04	General	8			02-03-84

SOURCE #: 4285, FCC PLANT

Source Code: C5737080 Fuel Burned: Coke
Train: /,A14,

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.94E-01	Specific	5		BGY	01-09-97
Particulates (portio	1990	2.30E+02	Specific	2	2	GDS	11-18-10
Nitrogen Oxides (par	2990	6.72E-01	Specific	67	2	GDS	08-10-10
Sulfur Dioxide (SO2)	3990	1.17E+00	Specific	67	2	GDS	08-10-10
Carbon Monoxide (CO)	4990	3.13E-01	Specific	67	2	GDS	08-10-10
Carbon Dioxide, non-	6960	6.79E+03	General	7		HIL	03-06-08
Methane (CH4)	6970	1.98E-01	General	7		HIL	03-15-08
Nitrous Oxide (N2O)	2030	3.96E-02	General	7		HIL	03-15-08

Source Code: G5007344 Material Processed: FCC fresh feed, refinery
Train: /,A14,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	2.80E-03	Specific	1		BN	07-25-90
Arsenic (all)	1030	1.30E-03	Specific	1		BN	07-25-90
Chromium	1090	1.40E-03	Specific	1		BN	07-25-90
Manganese	1160	2.70E-01	Specific	1		BN	07-25-90
Nickel pollutant	1180	1.50E-03	Specific	1		BN	07-25-90
Zinc pollutant	1320	2.40E-01	Specific	1		BN	07-25-90
PAH's (non-speciated	1840	4.04E-04	Specific	1		BN	07-25-90
Particulates (portio	1990	0.00E+00	Specific	1	2	GDS	08-10-10
Nitrogen Oxides (par	2990	0.00E+00	Specific	5		BGY	08-17-94
Sulfur Dioxide (SO2)	3990	0.00E+00	Specific	5		BGY	08-17-94
Ammonia (NH3) pollut	6990	6.30E-02	Specific	1		BN	07-25-90

SOURCE #: 4286, LIGHT ENDS RECOVERY

Source Code: G5028239 Material Processed: Refinery feedstock - other
Train: /,S6016,

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E+00		General	8			07-29-80

SOURCE #: 4291, H2SO4 ALKYLATION PLANT, 21,000 BPD

Source Code: G5030239 Material Processed: Refinery feedstock - other
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	5.00E-01		General	8			08-12-88

SOURCE #: 4292, FCC POLYMER PLANT

Source Code: G5024239 Material Processed: Refinery feedstock - other
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.50E+00		General	8		ESW	03-27-95

SOURCE #: 4315, POINT ORIENT WHARF

SOURCE CODE TB8?2041 not a C- or G-type source.
SOURCE CODE TB8?2307 not a C- or G-type source.
SOURCE CODE TB8?2315 not a C- or G-type source.
SOURCE CODE TB8?2318 not a C- or G-type source.

SOURCE #: 4329, RLOP COOLING TOWER

Source Code: G5005415 Material Processed: Fresh water
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor gallo	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	7.00E-04		Specific	7			02-22-84

SOURCE #: 4330, HNHF REACTOR FURNACE, F-1610

Source Code: C1540708 Fuel Burned: Chevron refinery fuel gas
Train: /,A65,

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06		Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05		Specific	1		BN	04-07-94
Formaldehyde	124	7.79E-05		Specific	1		BN	09-05-90
Phenol	214	8.00E-06		Specific	1		BN	09-05-90
Toluene	293	5.95E-05		Specific	1		BN	09-05-90

P10 - Chevron_Product_Current_Emissions_Factors.txt

Acetaldehyde	335	2.87E-05	Specific	1		BN	09-05-90
Organics (part not s	990	2.82E-03	Specific	6		JAT	11-30-90
Chromium (hexavalent	1095	2.00E-08	Specific	1		BN	09-05-90
Copper (all) polluta	1110	1.00E-07	Specific	1		BN	09-05-90
Manganese	1160	9.00E-07	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.00E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	2.00E-07	Specific	1		BN	09-05-90
Zinc pollutant	1320	1.30E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	7.12E-05	Specific	1		BN	09-05-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.90E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4331, LNHF REACTOR FURNACE, F-1310

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,A65,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	7.79E-05	Specific	1		BN	09-05-90
Phenol	214	8.00E-06	Specific	1		BN	09-05-90
Toluene	293	5.95E-05	Specific	1		BN	09-05-90
Acetaldehyde	335	2.87E-05	Specific	1		BN	09-05-90
Organics (part not s	990	2.82E-03	Specific	6		JAT	11-30-90
Chromium (hexavalent	1095	2.00E-08	Specific	1		BN	09-05-90
Copper (all) polluta	1110	1.00E-07	Specific	1		BN	09-05-90
Manganese	1160	9.00E-07	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.00E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	2.00E-07	Specific	1		BN	09-05-90
Zinc pollutant	1320	1.30E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	7.12E-05	Specific	1		BN	09-05-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.90E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4332, HOT OIL FURNACE, F-1360

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,A65,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94

P10 - Chevron_Product_Current_Emissions_Factors.txt

Formaldehyde	124	7.79E-05	Specific	1	BN	09-05-90
Phenol	214	8.00E-06	Specific	1	BN	09-05-90
Toluene	293	5.95E-05	Specific	1	BN	09-05-90
Acetaldehyde	335	2.87E-05	Specific	1	BN	09-05-90
Organics (part not s	990	2.82E-03	Specific	6	JAT	11-30-90
Chromium (hexavalent	1095	2.00E-08	Specific	1	BN	09-05-90
Copper (all) polluta	1110	1.00E-07	Specific	1	BN	09-05-90
Manganese	1160	9.00E-07	Specific	1	BN	09-05-90
Nickel pollutant	1180	1.00E-07	Specific	1	BN	09-05-90
Mercury (all) pollut	1190	2.00E-07	Specific	1	BN	09-05-90
Zinc pollutant	1320	1.30E-06	Specific	1	BN	09-05-90
PAH's (non-speciated	1840	7.12E-05	Specific	1	BN	09-05-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1	BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1	BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6	JAT	11-30-90
Nitrogen Oxides (par	2990	2.90E-02	Specific	4	2 BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont			
Nitrous Oxide (N2O)	2030	2.30E-04	General	7	HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7	HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7	HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6	JHL	11-03-95

SOURCE #: 4333, TKC VACUUM FURNACE, F-1750

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,A66,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Organics (part not s	990	2.82E-03	Specific	6	2	HIL	03-26-08
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Nitrogen Oxides (par	2990	2.90E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4334, LNC ATMOS FURNACE, F-1200

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,A66,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	7.79E-05	Specific	1		BN	09-05-90
Phenol	214	8.00E-06	Specific	1		BN	09-05-90
Toluene	293	5.95E-05	Specific	1		BN	09-05-90
Acetaldehyde	335	2.87E-05	Specific	1		BN	09-05-90
Organics (part not s	990	2.82E-03	Specific	6		JAT	11-30-90
Chromium (hexavalent	1095	2.00E-08	Specific	1		BN	09-05-90
Copper (all) polluta	1110	1.00E-07	Specific	1		BN	09-05-90
Manganese	1160	9.00E-07	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.00E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	2.00E-07	Specific	1		BN	09-05-90

P10 - Chevron_Product_Current_Emissions_Factors.txt

Zinc pollutant	1320	1.30E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	7.12E-05	Specific	1		BN	09-05-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.90E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4335, LNC VACUUM FURNACE, F-1250

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,A66,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	7.79E-05	Specific	1		BN	09-05-90
Phenol	214	8.00E-06	Specific	1		BN	09-05-90
Toluene	293	5.95E-05	Specific	1		BN	09-05-90
Acetaldehyde	335	2.87E-05	Specific	1		BN	09-05-90
Organics (part not s	990	2.82E-03	Specific	6		JAT	11-30-90
Chromium (hexavalent	1095	2.00E-08	Specific	1		BN	09-05-90
Copper (all) polluta	1110	1.00E-07	Specific	1		BN	09-05-90
Manganese	1160	9.00E-07	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.00E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	2.00E-07	Specific	1		BN	09-05-90
Zinc pollutant	1320	1.30E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	7.12E-05	Specific	1		BN	09-05-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.90E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4336, HNC REACTOR FURNACE, F-1410

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,A67,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	7.79E-05	Specific	1		BN	09-05-90
Phenol	214	8.00E-06	Specific	1		BN	09-05-90
Toluene	293	5.95E-05	Specific	1		BN	09-05-90
Acetaldehyde	335	2.87E-05	Specific	1		BN	09-05-90
Organics (part not s	990	2.82E-03	Specific	6		JAT	11-30-90
Chromium (hexavalent	1095	2.00E-08	Specific	1		BN	09-05-90
Copper (all) polluta	1110	1.00E-07	Specific	1		BN	09-05-90

P10 - Chevron_Product_Current_Emissions_Factors.txt

Manganese	1160	9.00E-07	Specific	1	BN	09-05-90
Nickel pollutant	1180	1.00E-07	Specific	1	BN	09-05-90
Mercury (all) pollut	1190	2.00E-07	Specific	1	BN	09-05-90
Zinc pollutant	1320	1.30E-06	Specific	1	BN	09-05-90
PAH's (non-speciated	1840	7.12E-05	Specific	1	BN	09-05-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1	BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1	BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6	JAT	11-30-90
Nitrogen Oxides (par	2990	2.90E-02	Specific	4	2 BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont			
Nitrous Oxide (N2O)	2030	2.30E-04	General	7	HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7	HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7	HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6	JHL	11-03-95

SOURCE #: 4337, HNC ATMOS FURNACE, F-1500

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,A67,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	7.79E-05	Specific	1		BN	09-05-90
Phenol	214	8.00E-06	Specific	1		BN	09-05-90
Toluene	293	5.95E-05	Specific	1		BN	09-05-90
Acetaldehyde	335	2.87E-05	Specific	1		BN	09-05-90
Organics (part not s	990	2.82E-03	Specific	6		JAT	11-30-90
Chromium (hexavalent	1095	2.00E-08	Specific	1		BN	09-05-90
Copper (all) polluta	1110	1.00E-07	Specific	1		BN	09-05-90
Manganese	1160	9.00E-07	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.00E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	2.00E-07	Specific	1		BN	09-05-90
Zinc pollutant	1320	1.30E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	7.12E-05	Specific	1		BN	09-05-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.90E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4338, HNC VACUUM FURNACE, F-1550

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,A67,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	7.79E-05	Specific	1		BN	09-05-90
Phenol	214	8.00E-06	Specific	1		BN	09-05-90
Toluene	293	5.95E-05	Specific	1		BN	09-05-90
Acetaldehyde	335	2.87E-05	Specific	1		BN	09-05-90

P10 - Chevron_Product_Current_Emissions_Factors.txt

Pollutant Name	Code	Emiss. Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	2.82E-03	Specific	6		JAT	11-30-90
Chromium (hexavalent	1095	2.00E-08	Specific	1		BN	09-05-90
Copper (all) polluta	1110	1.00E-07	Specific	1		BN	09-05-90
Manganese	1160	9.00E-07	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.00E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	2.00E-07	Specific	1		BN	09-05-90
Zinc pollutant	1320	1.30E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	7.12E-05	Specific	1		BN	09-05-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.90E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4339, LNC REACTOR FURNACE, F-1110

Source Code: C1540708

Fuel Burned: Chevron refinery fuel gas

Train: /,A67,

Pollutant Name	Pol. Code	Emiss. Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.30E-06	Specific	7		JAT	11-30-90
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-07-94
Formaldehyde	124	7.79E-05	Specific	1		BN	09-05-90
Phenol	214	8.00E-06	Specific	1		BN	09-05-90
Toluene	293	5.95E-05	Specific	1		BN	09-05-90
Acetaldehyde	335	2.87E-05	Specific	1		BN	09-05-90
Organics (part not s	990	2.82E-03	Specific	6		JAT	11-30-90
Chromium (hexavalent	1095	2.00E-08	Specific	1		BN	09-05-90
Copper (all) polluta	1110	1.00E-07	Specific	1		BN	09-05-90
Manganese	1160	9.00E-07	Specific	1		BN	09-05-90
Nickel pollutant	1180	1.00E-07	Specific	1		BN	09-05-90
Mercury (all) pollut	1190	2.00E-07	Specific	1		BN	09-05-90
Zinc pollutant	1320	1.30E-06	Specific	1		BN	09-05-90
PAH's (non-speciated	1840	7.12E-05	Specific	1		BN	09-05-90
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-07-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-07-94
Particulates (portio	1990	1.00E-02	Specific	6		JAT	11-30-90
Nitrogen Oxides (par	2990	2.90E-02	Specific	4	2	BGY	07-01-02
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Carbon Monoxide (CO)	4990	1.70E-02	General	6		JHL	11-03-95

SOURCE #: 4340, LIGHT NEUTRAL HYDROCRACKER (LNC)

Source Code: G5021318

Material Processed: Hydrocarbon - mixtures, ot

Train: /,A-6039,

Pollutant Name	Pol. Code	Emiss. Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	7.32E-03	General	8			08-12-88

SOURCE #: 4341, LIGHT NEUTRAL HYDROFINISHER (LNHF)

Source Code: G5022239 Material Processed: Refinery feedstock - other
Train: /,A-6039,

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E+00		General	8			07-29-80

SOURCE #: 4342, HEAVY NEUTRAL HYDROCRACKER (HNC)

Source Code: G5021318 Material Processed: Hydrocarbon - mixtures, ot
Train: /,A-6039,

Pollutant Name	Pol. Code	Emiss. lb/tons	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	7.32E-03		General	8			08-12-88

SOURCE #: 4343, HEAVY NEUTRAL HYDROFINISHER (HNHF)

Source Code: G5022318 Material Processed: Hydrocarbon - mixtures, ot
Train: /,A-6039,

Pollutant Name	Pol. Code	Emiss. lb/tons	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	7.32E-03		General	8			08-12-88

SOURCE #: 4345, MISC.PET REF, REFINERY SOUR WASTE WATER NO 2NH3-H2S

Source Code: G5037338 Material Processed: Waste gases
Train: /,P218,P131,P132,

Pollutant Name	Pol. Code	Emiss. lb/million cu	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Hydrogen Sulfide (H2	5020	0.00E+00		Specific	5	2	DMB	07-28-11
Ammonia (NH3) pollut	6990	0.00E+00		Specific	5	2	DMB	07-28-11

SOURCE #: 4346, GAS RECOVERY UNIT (GRU)

Source Code: G5998318 Material Processed: Hydrocarbon - mixtures, ot
Train: /,A-6039,

Pollutant Name	Pol. Code	Emiss. lb/tons	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	3.70E-02		Specific	5		BGY	08-17-94

SOURCE #: 4348, H2 RECOVERY PLANT

Source Code: G5998318 Material Processed: Hydrocarbon - mixtures, ot
Train: /,A-6039,

Pollutant Name	Pol. Code	Emiss. lb/tons	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
----------------	-----------	----------------	--------	---------	------------	------------	------	-----------

P10 - Chevron_Product_Current_Emissions_Factors.txt

Organics (part not s	990	3.70E-02	Specific	8	1	DMB	08-09-11
----------------------	-----	----------	----------	---	---	-----	----------

SOURCE #: 4349, FURNACE F-1650

Source Code: C4840237 Fuel Burned: Process gas - other/not spec
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	8.44E-03	F27 S Cont				
Benzene	41	6.60E-06	General	7		JAT	11-20-87
Organics (part not s	990	5.99E-03	General	8		JAT	11-20-87
Particulates (portio	1990	3.00E-03	General	8			06-17-86
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Nitrogen Oxides (par	2990	1.40E-01	General	8			06-17-86
Carbon Monoxide (CO)	4990	3.50E-02	General	8			06-17-86
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08

SOURCE #: 4350, GAS TURBINE WITH STEAM INJECTION

Source Code: C7120098 Fuel Burned: Diesel fuel
Train: /,S4351,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	2.27E-02	Specific	7		CSA	03-11-93
Formaldehyde	124	5.51E-02	Specific	7		CSA	03-11-93
Organics (part not s	989	1.18E+00	Specific	3		CSA	03-11-93
PAH's (non-speciated	1840	3.06E-03	Specific	7		CSA	03-11-93
Particulates (portio	1990	5.24E+00	Specific	3		CSA	03-11-93
Nitrogen Oxides (par	2990	5.34E+01	Specific	5	2	CSA	03-11-93
Carbon Monoxide (CO)	4990	4.02E+00	Specific	3		CSA	03-11-93
Methane (CH4)	6970	1.12E+00	Specific	8	2	ESW	03-12-93
Ammonia (NH3) pollut	6990	3.96E+00	Specific	5	2	CSA	03-11-93
Sulfur Dioxide (SO2)	3990	2.02E+00	F27 S Cont				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	04-03-08
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	04-03-08

Source Code: C7120160 Fuel Burned: LPG
Train: /,S4351,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.74E-04	Specific	8		CSA	03-11-93
Formaldehyde	124	3.23E-02	Specific	8		CSA	03-11-93
Organics (part not s	989	5.80E-01	Specific	8		CSA	03-11-93
PAH's (non-speciated	1840	5.87E-04	Specific	8		CSA	03-11-93
Particulates (portio	1990	2.18E-01	Specific	3		CSA	03-11-93
Nitrogen Oxides (par	2990	4.36E+01	Specific	8	2	CSA	03-11-93
Carbon Monoxide (CO)	4990	3.48E+00	Specific	8		CSA	03-11-93
Ammonia (NH3) pollut	6990	3.24E+00	Specific	8	2	CSA	03-11-93
Sulfur Dioxide (SO2)	3990	1.45E+00	F27 S Cont				
Nitrous Oxide (N2O)	2030	9.67E-02	General	7		HIL	03-15-08
Methane (CH4)	6970	4.84E-01	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.28E+04	General	7		HIL	03-06-08

P10 - Chevron_Product_Current_Emissions_Factors.txt

Source Code: C7120189
Train: /,S4351,

Fuel Burned: Natural gas

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	5.50E-07	Specific	7		CSA	03-11-93
Formaldehyde	124	2.73E-04	Specific	1		CSA	03-11-93
Organics (part not s	989	5.00E-04	Specific	3		CSA	03-11-93
PAH's (non-speciated	1840	4.96E-06	Specific	1		CSA	03-11-93
Particulates (portio	1990	1.90E-03	Specific	3		CSA	03-11-93
Nitrogen Oxides (par	2990	3.68E-01	Specific	5	2	CSA	03-11-93
Carbon Monoxide (CO)	4990	2.96E-02	Specific	3		CSA	03-11-93
Methane (CH4)	6970	2.44E-02	Specific	8	2	ESW	03-12-93
Ammonia (NH3) pollut	6990	2.74E-02	Specific	5	2	CSA	03-11-93
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08

Source Code: C7120841
Train: /,S4351,

Fuel Burned: Medium BTU natural gas

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	5.50E-07	Specific	8	2	DMB	06-26-12
Formaldehyde	124	2.73E-04	Specific	8	2	DMB	06-26-12
Organics (part not s	989	5.00E-04	Specific	8	1	DMB	06-26-12
PAH's (non-speciated	1840	4.96E-06	Specific	8	2	DMB	06-26-12
Particulates (portio	1990	1.90E-03	Specific	8	2	DMB	06-26-12
Nitrous Oxide (N2O)	2030	2.31E-04	Specific	8	2	DMB	06-26-12
Nitrogen Oxides (par	2990	3.68E-01	Specific	8	2	DMB	06-26-12
Sulfur Dioxide (SO2)	3990	5.68E-04	Specific	8	2	DMB	06-26-12
Carbon Monoxide (CO)	4990	2.96E-02	Specific	8	2	DMB	06-26-12
Carbon Dioxide, non-	6960	1.22E+02	Specific	8	2	DMB	06-26-12
Methane (CH4)	6970	2.44E-02	Specific	8	2	DMB	06-26-12
Ammonia (NH3) pollut	6990	2.74E-02	Specific	8	2	DMB	06-26-12

SOURCE #: 4351, HEAT RECOVERY STEAM GENERATOR

Source Code: C7020189
Train: ,S4350/,A70,

Fuel Burned: Natural gas

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	5.50E-07	Specific	7		CSA	03-11-93
Formaldehyde	124	2.73E-04	Specific	1		CSA	03-11-93
Organics (part not s	989	5.00E-04	Specific	3		CSA	03-11-93
PAH's (non-speciated	1840	4.96E-06	Specific	1		CSA	03-11-93
Particulates (portio	1990	1.90E-03	Specific	3		CSA	03-11-93
Nitrogen Oxides (par	2990	3.68E-01	Specific	5	2	CSA	03-11-93
Carbon Monoxide (CO)	4990	2.96E-02	Specific	3		CSA	03-11-93
Methane (CH4)	6970	9.26E-04	Specific	8	2	ESW	03-12-93
Ammonia (NH3) pollut	6990	2.74E-02	Specific	5	2	CSA	03-11-93
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08

P10 - Chevron_Product_Current_Emissions_Factors.txt

Source Code: C7020198

Fuel Burned: Gaseous fuels - H2, etc, other/no

Train: ,S4350,,A70,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	4.95E-06	Specific	7		CSA	03-11-93
Formaldehyde	124	2.97E-04	Specific	1		CSA	03-11-93
Organics (part not s	989	4.19E-03	Specific	3		CSA	03-11-93
PAH's (non-speciated	1840	5.39E-06	Specific	1		CSA	03-11-93
Particulates (portio	1990	2.00E-03	Specific	3		CSA	03-11-93
Nitrogen Oxides (par	2990	4.00E-01	Specific	5	2	CSA	03-11-93
Carbon Monoxide (CO)	4990	7.50E-02	Specific	3		CSA	03-11-93
Ammonia (NH3) pollut	6990	2.97E-02	Specific	5	2	CSA	03-11-93
Sulfur Dioxide (SO2)	3990	2.70E-02	F27 S Cont				
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	03-06-08
Methane (CH4)	6970	1.90E-03	General	7		HIL	03-15-08
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-15-08

Source Code: C7020708

Fuel Burned: Chevron refinery fuel gas

Train: ,S4350,,A70,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	3.38E-03	F27 S Cont				
Benzene	41	6.60E-06	General	6		JHL	11-03-95
Organics (part not s	990	5.99E-03	General	6		JHL	11-03-95
Particulates (portio	1990	3.00E-03	General	6		JHL	11-03-95
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Nitrogen Oxides (par	2990	1.40E-01	General	6		JHL	11-03-95
Carbon Monoxide (CO)	4990	3.50E-02	General	6		JHL	11-03-95
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08

SOURCE #: 4352, GAS TURBINE WITH STEAM INJECTION

Source Code: C7120098

Fuel Burned: Diesel fuel

Train: /,S4353,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	2.27E-02	Specific	7		CSA	03-11-93
Formaldehyde	124	5.51E-02	Specific	7		CSA	03-11-93
Organics (part not s	989	1.18E+00	Specific	3		CSA	03-11-93
PAH's (non-speciated	1840	3.06E-03	Specific	7		CSA	03-11-93
Particulates (portio	1990	5.24E+00	Specific	3		CSA	03-11-93
Nitrogen Oxides (par	2990	5.34E+01	Specific	5	2	CSA	03-11-93
Carbon Monoxide (CO)	4990	4.02E+00	Specific	3		CSA	03-11-93
Methane (CH4)	6970	1.12E+00	Specific	8	2	ESW	03-12-93
Ammonia (NH3) pollut	6990	3.96E+00	Specific	5	2	CSA	03-11-93
Sulfur Dioxide (SO2)	3990	2.02E+00	F27 S Cont				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	04-03-08
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	04-03-08

Source Code: C7120160

Fuel Burned: LPG

Train: /,S4353,

P10 - Chevron_Product_Current_Emissions_Factors.txt

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.74E-04	Specific	8		CSA	03-11-93
Formaldehyde	124	3.23E-02	Specific	8		CSA	03-11-93
Organics (part not s	989	5.80E-01	Specific	8		CSA	03-11-93
PAH's (non-speciated	1840	5.87E-04	Specific	8		CSA	03-11-93
Particulates (portio	1990	2.18E-01	Specific	3		CSA	03-11-93
Nitrogen Oxides (par	2990	4.36E+01	Specific	8	2	CSA	03-11-93
Carbon Monoxide (CO)	4990	3.48E+00	Specific	8		CSA	03-11-93
Ammonia (NH3) pollut	6990	3.24E+00	Specific	8	2	CSA	03-11-93
Sulfur Dioxide (SO2)	3990	1.45E-02	F27 S Cont				
Nitrous Oxide (N2O)	2030	9.67E-02	General	7		HIL	03-15-08
Methane (CH4)	6970	4.84E-01	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.28E+04	General	7		HIL	03-06-08

Source Code: C7120189

Fuel Burned: Natural gas

Train: /,S4353,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	5.50E-07	Specific	7		CSA	03-11-93
Formaldehyde	124	2.73E-04	Specific	1		CSA	03-11-93
Organics (part not s	989	5.00E-04	Specific	3		CSA	03-11-93
PAH's (non-speciated	1840	4.96E-06	Specific	1		CSA	03-11-93
Particulates (portio	1990	1.90E-03	Specific	3		CSA	03-11-93
Nitrogen Oxides (par	2990	3.68E-01	Specific	5	2	CSA	03-11-93
Carbon Monoxide (CO)	4990	2.96E-02	Specific	3		CSA	03-11-93
Methane (CH4)	6970	2.44E-02	Specific	8	2	ESW	03-12-93
Ammonia (NH3) pollut	6990	2.74E-02	Specific	5	2	CSA	03-11-93
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08

Source Code: C7120841

Fuel Burned: Medium BTU natural gas

Train: /,S4353,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	5.50E-07	Specific	8	2	DMB	06-26-12
Formaldehyde	124	2.73E-04	Specific	8	2	DMB	06-26-12
Organics (part not s	989	5.00E-04	Specific	8	1	DMB	06-26-12
PAH's (non-speciated	1840	4.96E-06	Specific	8	2	DMB	06-26-12
Particulates (portio	1990	1.90E-03	Specific	8	2	DMB	06-26-12
Nitrous Oxide (N2O)	2030	2.31E-04	Specific	8	2	DMB	06-26-12
Nitrogen Oxides (par	2990	3.68E-01	Specific	8	2	DMB	06-26-12
Sulfur Dioxide (SO2)	3990	5.68E-04	Specific	8	2	DMB	06-26-12
Carbon Monoxide (CO)	4990	2.96E-02	Specific	8	2	DMB	06-26-12
Carbon Dioxide, non-	6960	1.22E+02	Specific	8	2	DMB	06-26-12
Methane (CH4)	6970	2.44E-02	Specific	8	2	DMB	06-26-12
Ammonia (NH3) pollut	6990	2.74E-02	Specific	8	2	DMB	06-26-12

SOURCE #: 4353, HEAT RECOVERY STEAM GENERATOR

Source Code: C7020189

Fuel Burned: Natural gas

Train: ,S4352,,A71,

Pol. Emiss. Factor

Basis Repl.

P10 - Chevron_Product_Current_Emissions_Factors.txt

Pollutant Name	Code	lb/thou cu ft	EF File	Code	Code	Empl	Eff. Date
Benzene	41	5.50E-07	Specific	7		CSA	03-11-93
Formaldehyde	124	2.73E-04	Specific	1		CSA	03-11-93
Organics (part not s	989	5.00E-04	Specific	3		CSA	03-11-93
PAH's (non-speciated	1840	4.96E-06	Specific	1		CSA	03-11-93
Particulates (portio	1990	1.90E-03	Specific	3		CSA	03-11-93
Nitrogen Oxides (par	2990	3.68E-01	Specific	5	2	CSA	03-11-93
Carbon Monoxide (CO)	4990	2.96E-02	Specific	3		CSA	03-11-93
Methane (CH4)	6970	9.26E-04	Specific	8	2	ESW	03-12-93
Ammonia (NH3) pollut	6990	2.74E-02	Specific	5	2	CSA	03-11-93
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08

Source Code: C7020198

Fuel Burned: Gaseous fuels - H2, etc, other/no

Train: ,S4352,,A71,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	4.95E-06	Specific	7		CSA	03-11-93
Formaldehyde	124	2.97E-04	Specific	1		CSA	03-11-93
Organics (part not s	989	4.19E-03	Specific	3		CSA	03-11-93
PAH's (non-speciated	1840	5.39E-06	Specific	1		CSA	03-11-93
Particulates (portio	1990	2.00E-03	Specific	3		CSA	03-11-93
Nitrogen Oxides (par	2990	4.00E-01	Specific	5	2	CSA	03-11-93
Carbon Monoxide (CO)	4990	7.50E-02	Specific	3		CSA	03-11-93
Ammonia (NH3) pollut	6990	2.97E-02	Specific	5	2	CSA	03-11-93
Sulfur Dioxide (SO2)	3990	2.70E-02	F27 S Cont				
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	03-06-08
Methane (CH4)	6970	1.90E-03	General	7		HIL	03-15-08
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-15-08

Source Code: C7020708

Fuel Burned: Chevron refinery fuel gas

Train: ,S4352,,A71,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	1.69E-03	F27 S Cont				
Benzene	41	6.60E-06	General	6		JHL	11-03-95
Organics (part not s	990	5.99E-03	General	6		JHL	11-03-95
Particulates (portio	1990	3.00E-03	General	6		JHL	11-03-95
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Nitrogen Oxides (par	2990	1.40E-01	General	6		JHL	11-03-95
Carbon Monoxide (CO)	4990	3.50E-02	General	6		JHL	11-03-95
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08

SOURCE #: 4354, BUTAMER PLANT

Source Code: G5031052

Material Processed: Paraffins - C3+

Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gallo	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	0.00E+00	Specific	5	1	DMB	07-28-11

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 4355, DEISOBUTANIZER PLANT

Source Code: G5031052 Material Processed: Paraffins - C3+
Train: /,A6007,

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor gallo	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	0.00E+00		Specific	5	1	DMB	07-28-11

Source Code: G5031239 Material Processed: Refinery feedstock - other
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	2.21E+00		Specific	4			10-23-92

SOURCE #: 4356, TERTIARY AMYL METHYL ETHER PLANT

Source Code: G5995239 Material Processed: Refinery feedstock - other
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.73E+00		Specific	4			10-23-92

SOURCE #: 4360, PERCHLORETHYLENE STORAGE TANK V-1315

SOURCE CODE T33??210 not a C- or G-type source.

SOURCE #: 4361, PERC SURGE CONTROL VESSEL V-591

SOURCE CODE T41??210 not a C- or G-type source.

SOURCE CODE T41??398 not a C- or G-type source.

SOURCE #: 4362, PERC SURGE CONTROL VESSEL V-3591

SOURCE CODE T41??398 not a C- or G-type source.

SOURCE #: 4363, PERC STORAGE TANK V-3592

SOURCE CODE T42??210 not a C- or G-type source.

SOURCE #: 4364, PERC STORAGE TANK V-4091

SOURCE CODE T42??210 not a C- or G-type source.

SOURCE #: 4365, TRI-ACT 1825 CHEMICAL TOTE

SOURCE CODE T4???318 not a C- or G-type source.

SOURCE #: 4366, TRI-ACT 1803 & 1825 CHEMICAL TOTE - POWER PLANT

SOURCE CODE T82??318 not a C- or G-type source.

SOURCE #: 4367, TRI-ACT 1803 & 1825 CHEMICAL TOTE - RLOP

SOURCE CODE T82??318 not a C- or G-type source.

SOURCE #: 4368, TRI-ACT 1803 & 1825 CHEMICAL TOTE - SRU

SOURCE CODE T82??318 not a C- or G-type source.

SOURCE #: 4369, TRI-ACT 1803 & 1825 CHEMICAL TOTE - LSF0/D&R

SOURCE CODE T82??318 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 4370, CHEMICAL TOTE, CUSTAMINE CA-066P - FCC

SOURCE CODE T82??318 not a C- or G-type source.

SOURCE #: 4372, NALCO EC9085A TOTE

SOURCE CODE T42??021 not a C- or G-type source.

SOURCE #: 4373, CUSTAMINE CA-0660P RO PLANT

SOURCE CODE T42??502 not a C- or G-type source.

SOURCE #: 4374, FIXED ROOF TANK, 400GALLON CAPACITY, CHEMICAL TOTE, FLOCCULENT

SOURCE CODE T42??502 not a C- or G-type source.

SOURCE #: 4391, NO. 1 OXIDATION POND

Source Code: G5033300

Material Processed: Waste water - refin, other

Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	1.70E-02		Specific	5		JAT	08-15-88
Toluene	293	4.60E-02		Specific	5		JAT	08-15-88
Xylene	307	1.01E-01		Specific	5		JAT	08-15-88
Organics (part not s	990	6.00E-01		Specific	8		JHL	02-09-93

Source Code: G5033415

Material Processed: Fresh water

Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor gallo	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	2.12E-01		Specific	8	1	DMB	08-09-11

SOURCE #: 4392, WETLAND MARSH

Source Code: G5033300

Material Processed: Waste water - refin, other

Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	1.70E-02		Specific	5		JAT	08-15-88
Toluene	293	4.60E-02		Specific	5		JAT	08-15-88
Xylene	307	1.01E-01		Specific	5		JAT	08-15-88
Organics (part not s	990	6.00E-01		Specific	8		JHL	02-09-93

Source Code: G5033443

Material Processed: Waste water - other/not sp

Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor gallo	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	2.12E-01		Specific	8	1	DMB	08-09-11

SOURCE #: 4393, BIO-REACTOR

Source Code: G5033300

Material Processed: Waste water - refin, other

Train: no train

P10 - Chevron_Product_Current_Emissions_Factors.txt

Pollutant Name	Pol. Emiss. Factor Code lb/thou barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41 1.70E-02	Specific	5		JAT	08-15-88
Toluene	293 4.60E-02	Specific	5		JAT	08-15-88
Xylene	307 1.01E-01	Specific	5		JAT	08-15-88
Organics (part not s	990 6.00E-01	Specific	8		JHL	02-09-93

SOURCE #: 4396, SULFUR TRUCK LOADING RACKS

Source Code: G7013267 Material Processed: Sulfur
Train: /,A43,

Pollutant Name	Pol. Emiss. Factor Code lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Particulates (portio	1990 1.00E-02	General	8		AC	09-28-88

SOURCE #: 4403, UNREFINED WAX TRUCK LOADING RACK
SOURCE CODE TE8?1052 not a C- or G-type source.

SOURCE #: 4404, SATURATED REFINED WAX TRUCK LOADING RACK
SOURCE CODE TE8?1052 not a C- or G-type source.

SOURCE #: 4405, HEAVY OIL TRANSLOADING OPERATIONS
SOURCE CODE TE6?2549 not a C- or G-type source.

SOURCE #: 4410, GENERAL MAINTENANCE PAINT BOOTH
SOURCE CODE SG52A131 not a C- or G-type source.
SOURCE CODE SG52A401 not a C- or G-type source.
SOURCE CODE SG52A579 not a C- or G-type source.
SOURCE CODE SG52A729 not a C- or G-type source.
SOURCE CODE SG52B131 not a C- or G-type source.
SOURCE CODE SG52C027 not a C- or G-type source.

SOURCE #: 4413, #2A SEPARATOR

Source Code: G5017300 Material Processed: Waste water - refin, other
Train: no train

Pollutant Name	Pol. Emiss. Factor Code lb/thou barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41 1.89E-01	Specific	7		JAT	08-12-88
Organics (part not s	990 8.21E+00	Specific	7		JAT	08-12-88

SOURCE #: 4414, #1A SEPARATOR

Source Code: G5017300 Material Processed: Waste water - refin, other
Train: no train

Pollutant Name	Pol. Emiss. Factor Code lb/thou barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41 5.50E-02	Specific	7		JAT	08-12-88
Organics (part not s	990 2.39E+00	Specific	7		JAT	08-12-88

SOURCE #: 4415, ASPHALT TANK TRUCK LOADING RACKS
SOURCE CODE T98?1030 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 4420, SOLVENT CLEANER-MACHINE SHOP
 SOURCE CODE SF03A076 not a C- or G-type source.
 SOURCE CODE SF03A318 not a C- or G-type source.

SOURCE #: 4422, ABRASIVE BLASTING OPERATING AT I&E SHOP

Source Code: G4073473 Material Processed: Glass beads - abrasive
 Train: /,A4422,

Pollutant Name	Pol. Code	Emiss. lb/tons	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Particulates (portio	1990	1.33E+03		Specific	5			02-07-90

SOURCE #: 4423, PILOT REMEDIATION PROCESS

Source Code: G7131540 Material Processed: Soil contaminated - organi
 Train: no train

Pollutant Name	Pol. Code	Emiss. lb/tons	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	0.00E+00		Specific	5			01-12-97
Particulates (portio	1990	0.00E+00		Specific	5			01-12-97

SOURCE #: 4424, EQUIPMENT PAINTING AREA
 SOURCE CODE SG52A048 not a C- or G-type source.
 SOURCE CODE SG700184 not a C- or G-type source.

SOURCE #: 4425, H2 S04 SUMP

Source Code: G7999146 Material Processed: H2S04 - other/not spec
 Train: no train

Pollutant Name	Pol. Code	Emiss. lb/tons	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfuric Acid mist p	1530	0.00E+00		Specific	5			05-28-93

SOURCE #: 4426, COLD CLEANER
 SOURCE CODE SF01A201 not a C- or G-type source.

SOURCE #: 4427, COLD CLEANER
 SOURCE CODE SF01A020 not a C- or G-type source.
 SOURCE CODE SF01A201 not a C- or G-type source.

SOURCE #: 4428, COLD CLEANER
 SOURCE CODE SF01A201 not a C- or G-type source.

SOURCE #: 4429, #8(NH3-H2S)PLANT

Source Code: G5037338 Material Processed: Waste gases
 Train: /,A4429,

Pollutant Name	Pol. Code	Emiss. lb/million cu	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Hydrogen Sulfide (H2	5020	0.00E+00		Specific	5	2	DMB	07-28-11
Ammonia (NH3) pollut	6990	0.00E+00		Specific	5	2	DMB	07-28-11

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 4433, #3H2S PLANT

Source Code: G5998338 Material Processed: Waste gases
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/million cu	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E-01		General	8			07-29-80

SOURCE #: 4434, #4H2S PLANT

Source Code: G5998338 Material Processed: Waste gases
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/million cu	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	1.00E-01		General	8			07-29-80

SOURCE #: 4435, #5H2S PLANT

Source Code: G5998338 Material Processed: Waste gases
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou gallo	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	5.60E-01		Specific	7			06-24-10

SOURCE #: 4440, JET ADDITIVE PROJECT FUGITIVE SOURCES

Source Code: G9000321 Material Processed: Petroleum products - other
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou gallo	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	5.60E-01		Specific	7			06-24-10

SOURCE #: 4940, CHEMICAL ADDITIVES TANK D-4940
SOURCE CODE T42??201 not a C- or G-type source.

SOURCE #: 5101, TANK-MARKETING T-101
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5103, TANK-MARKETING T-103
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5105, TANK-MARKETING T-105
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5107, TANK-MARKETING T-107
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5108, TANK-MARKETING T-108
SOURCE CODE T44??419 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 5109, TANK-MARKETING T-109
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5110, TANK-MARKETING T-110
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5112, TANK-MARKETING T-112
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5113, TANK-MARKETING T-113
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5115, TANK-MARKETING T-115
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5117, TANK-MARKETING T-117
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5118, TANK-MARKETING T-118
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5119, TANK-MARKETING T-119
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5121, TANK-MARKETING T-121
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5122, TANK-MARKETING T-122
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5123, TANK-MARKETING T-123
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5125, TANK-MARKETING T-125
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5126, TANK-MARKETING T-126
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5127, TANK-MARKETING T-127
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5128, TANK-MARKETING T-128
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5129, TANK-MARKETING T-129
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5130, TANK-MARKETING T-130
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5131, TANK-MARKETING T-131
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5132, TANK-MARKETING T-132
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5133, TANK-MARKETING T-133
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5134, TANK-MARKETING T-134
SOURCE CODE T43??419 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 5135, TANK-MARKETING T-135
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5136, TANK-MARKETING T-136
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5137, TANK-MARKETING T-137
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5138, TANK-MARKETING T-138
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5139, TANK-MARKETING T-139
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5140, TANK-MARKETING T-140
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5201, TANK-MARKETING T-201
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5202, TANK-MARKETING T-202
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5203, TANK-MARKETING T-203
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5204, TANK-MARKETING T-204
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5205, TANK-MARKETING T-205
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5206, TANK-MARKETING T-5206
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5207, TANK-MARKETING T-207
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5208, TANK-MARKETING T-208
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5209, TANK-MARKETING T-209
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5210, TANK-MARKETING T-210
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5211, TANK-MARKETING T-211
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5212, TANK-MARKETING T-212
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5213, TANK-MARKETING T-213
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5214, TANK-MARKETING T-214
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5215, TANK-MARKETING T-215
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5216, TANK-MARKETING T-216
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5217, TANK-MARKETING T-217
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5218, TANK-MARKETING T-218
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5219, TANK-MARKETING T-219
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5220, TANK-MARKETING T-220
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5221, TANK-MARKETING T-221
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5222, TANK-MARKETING T-222
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5223, TANK-MARKETING T-223
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5224, TANK-MARKETING T-224
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5227, TANK-MARKETING T-227
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5228, TANK-MARKETING T-228
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5229, TANK-MARKETING T-229
SOURCE CODE T44??419 not a C- or G-type source.

SOURCE #: 5230, TANK-MARKETING T-230
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5232, TANK-MARKETING T-232
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5233, TANK-MARKETING T-233
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5234, TANK-MARKETING T-234
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5237, TANK-MARKETING T-237
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5240, TANK-MARKETING T-240
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5241, TANK-MARKETING T-241
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5301, TANK-MARKETING T-301
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5302, TANK-MARKETING T-302
SOURCE CODE T43??419 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 5303, TANK-MARKETING T-303
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5304, TANK-MARKETING T-304
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5305, TANK-MARKETING T-305
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5306, TANK-MARKETING T-306
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5307, TANK-MARKETING T-307
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5308, TANK-MARKETING T-308
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5309, TANK 5309: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5315, TANK 5315: ORGANIC LIQUID STORAGE TANK
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 5603, TANK-MARKETING T-603
SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 6010, HIGH LEVEL FLARE,LSFO

Source Code: C8700189 Fuel Burned: Natural gas
Train: ,A6020,,P93,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Organics (part not s	990	8.66E-01	General	5		HIL	12-31-06
Particulates (portio	1990	1.00E-02	General	5		HIL	12-31-06
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	6.80E-02	General	5		HIL	12-31-06
Carbon Monoxide (CO)	4990	1.30E-01	General	5		HIL	12-31-06
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08
Methane (CH4)	6970	8.66E-01	General	5		HIL	03-12-08
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				

Source Code: C8700708 Fuel Burned: Chevron refinery fuel gas
Train: ,A6020,,P93,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-11-94
Organics (part not s	990	7.29E-01	Specific	4	2	HIL	12-10-07
PAH's (benzo[al]pyren	1860	8.25E-06	Specific	1		BN	04-11-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-11-94
Particulates (portio	1990	1.86E-02	Specific	5	2	HIL	12-10-07
Nitrogen Oxides (par	2990	1.27E-01	Specific	5	2	HIL	12-10-07
Sulfur Dioxide (SO2)	3990	1.33E+00	Specific	4	2	HIL	12-10-07
Carbon Monoxide (CO)	4990	1.09E-01	Specific	5	2	HIL	12-10-07
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08

P10 - Chevron_Product_Current_Emissions_Factors.txt
Carbon Dioxide, non- 6960 1.39E+02 General 7 HIL 03-06-08

SOURCE #: 6012, V-282 SOUTH ISOMAX FLARE

Source Code: C8700189 Fuel Burned: Natural gas
Train: /,P131,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Organics (part not s	990	8.66E-01	General	5		HIL	12-31-06
Particulates (portio	1990	1.00E-02	General	5		HIL	12-31-06
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	6.80E-02	General	5		HIL	12-31-06
Carbon Monoxide (CO)	4990	1.30E-01	General	5		HIL	12-31-06
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08
Methane (CH4)	6970	8.66E-01	General	5		HIL	03-12-08
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				

Source Code: C8700708 Fuel Burned: Chevron refinery fuel gas
Train: /,P131,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-11-94
Organics (part not s	990	1.44E+00	Specific	4	2	HIL	12-10-07
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-11-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-11-94
Particulates (portio	1990	1.18E-02	Specific	5	2	HIL	12-10-07
Nitrogen Oxides (par	2990	7.99E-02	Specific	5	2	HIL	12-10-07
Sulfur Dioxide (SO2)	3990	2.75E+00	Specific	4	2	HIL	12-10-07
Carbon Monoxide (CO)	4990	2.15E-01	Specific	5	2	HIL	12-10-07
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08

SOURCE #: 6013, NORTH ISOMAX FLARE V-281

Source Code: C8700189 Fuel Burned: Natural gas
Train: /,P132,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Organics (part not s	990	8.66E-01	General	5		HIL	12-31-06
Particulates (portio	1990	1.00E-02	General	5		HIL	12-31-06
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	6.80E-02	General	5		HIL	12-31-06
Carbon Monoxide (CO)	4990	1.30E-01	General	5		HIL	12-31-06
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08
Methane (CH4)	6970	8.66E-01	General	5		HIL	03-12-08
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				

Source Code: C8700708 Fuel Burned: Chevron refinery fuel gas
Train: /,P132,

P10 - Chevron_Product_Current_Emissions_Factors.txt

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Cycloparaffins - oth	92	2.09E-05	Specific	1	2	BN	04-11-94
Organics (part not s	990	5.09E-01	Specific	4	2	HIL	12-10-07
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1	2	BN	04-11-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1	2	BN	04-11-94
Particulates (portio	1990	1.05E-02	Specific	5	2	HIL	12-10-07
Nitrogen Oxides (par	2990	7.14E-02	Specific	5	2	HIL	12-10-07
Sulfur Dioxide (SO2)	3990	5.16E+00	Specific	4	2	HIL	12-10-07
Carbon Monoxide (CO)	4990	7.63E-02	Specific	5	2	HIL	12-10-07
Benzene	41	6.60E-06	General	6		JHL	11-03-95
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08

SOURCE #: 6015, REFINERY WASTE GAS FLARE

Source Code: C8750189 Fuel Burned: Natural gas
Train: ,S4233,S4234,S4235,S4236,S4237,S4282,S4283,/ ,P6015,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Organics (part not s	990	8.66E-01	General	5		HIL	12-31-06
Particulates (portio	1990	1.00E-02	General	5		HIL	12-31-06
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	6.80E-02	General	5		HIL	12-31-06
Carbon Monoxide (CO)	4990	1.30E-01	General	5		HIL	12-31-06
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08
Methane (CH4)	6970	8.66E-01	General	5		HIL	03-12-08
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				

SOURCE #: 6016, FCC FLARE V-731

Source Code: C8700189 Fuel Burned: Natural gas
Train: ,S4286,/ ,P134,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Organics (part not s	990	8.66E-01	General	5		HIL	12-31-06
Particulates (portio	1990	1.00E-02	General	5		HIL	12-31-06
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	6.80E-02	General	5		HIL	12-31-06
Carbon Monoxide (CO)	4990	1.30E-01	General	5		HIL	12-31-06
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08
Methane (CH4)	6970	8.66E-01	General	5		HIL	03-12-08
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				

Source Code: C8700708 Fuel Burned: Chevron refinery fuel gas
Train: ,S4286,/ ,P134,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-11-94
Organics (part not s	990	1.38E+00	Specific	4	2	HIL	12-10-07

P10 - Chevron_Product_Current_Emissions_Factors.txt

PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-11-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-11-94
Particulates (portio	1990	2.27E-02	Specific	4	2	HIL	12-10-07
Nitrogen Oxides (par	2990	1.54E-01	Specific	4	2	HIL	12-10-07
Sulfur Dioxide (SO2)	3990	1.28E+00	Specific	4	2	HIL	12-10-07
Carbon Monoxide (CO)	4990	2.07E-01	Specific	4	2	HIL	12-10-07
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08

SOURCE #: 6019, V-732, ALKY-POLY FLARE

Source Code: C8750189 Fuel Burned: Natural gas
Train: /,P149,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Organics (part not s	990	8.66E-01	General	5		HIL	12-31-06
Particulates (portio	1990	1.00E-02	General	5		HIL	12-31-06
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	6.80E-02	General	5		HIL	12-31-06
Carbon Monoxide (CO)	4990	1.30E-01	General	5		HIL	12-31-06
Carbon Dioxide, non-	6960	1.22E+02	General	7		HIL	02-28-08
Methane (CH4)	6970	8.66E-01	General	5		HIL	03-12-08
Sulfur Dioxide (SO2)	3990	5.68E-04	Fuels Data				

Source Code: C8750708 Fuel Burned: Chevron refinery fuel gas
Train: /,P149,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Cycloparaffins - oth	92	2.09E-05	Specific	1		BN	04-11-94
Organics (part not s	990	2.33E+00	Specific	4	2	HIL	12-10-07
PAH's (benzo[a]pyren	1860	8.25E-06	Specific	1		BN	04-11-94
PAH's (non-carcinoge	1870	5.50E-05	Specific	1		BN	04-11-94
Particulates (portio	1990	2.43E-02	Specific	5	2	HIL	12-10-07
Nitrogen Oxides (par	2990	1.65E-01	Specific	5	2	HIL	12-10-07
Sulfur Dioxide (SO2)	3990	2.47E-02	Specific	4	2	HIL	12-10-07
Carbon Monoxide (CO)	4990	3.49E-01	Specific	5	2	HIL	12-10-07
Nitrous Oxide (N2O)	2030	2.30E-04	General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03	General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02	General	7		HIL	03-06-08

SOURCE #: 6039, LUBE FLARE, V-3501

Source Code: C8700189 Fuel Burned: Natural gas
Train: /,P218,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou cu ft	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	6.38E-06	General	7		JAT	11-20-87
Organics (part not s	990	8.66E-01	General	5		HIL	12-31-06
Particulates (portio	1990	1.00E-02	General	5		HIL	12-31-06
Nitrous Oxide (N2O)	2030	2.31E-04	General	7		HIL	03-12-08
Nitrogen Oxides (par	2990	6.80E-02	General	5		HIL	12-31-06
Carbon Monoxide (CO)	4990	1.30E-01	General	5		HIL	12-31-06

P10 - Chevron_Product_Current_Emissions_Factors.txt
Carbon Dioxide, non- 6960 1.22E+02 General 7 HIL 02-28-08
Methane (CH4) 6970 8.66E-01 General 5 HIL 03-12-08
Sulfur Dioxide (SO2) 3990 5.68E-04 Fuels Data

Source Code: C8700708 Fuel Burned: Chevron refinery fuel gas
Train: /,P218,

Pollutant Name	Pol. Code	Emiss. lb/thou cu ft	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Cycloparaffins - oth	92	2.09E-05		Specific	1		BN	04-11-94
Organics (part not s	990	1.41E+00		Specific	4	2	HIL	12-10-07
PAH's (benzo[a]pyren	1860	8.25E-06		Specific	1		BN	04-11-94
PAH's (non-carcinoge	1870	5.50E-05		Specific	1		BN	04-11-94
Particulates (portio	1990	1.51E-02		Specific	5	2	HIL	12-10-07
Nitrogen Oxides (par	2990	1.03E-01		Specific	5	2	HIL	12-10-07
Sulfur Dioxide (SO2)	3990	2.02E+01		Specific	4	2	HIL	12-10-07
Carbon Monoxide (CO)	4990	2.11E-01		Specific	5	2	HIL	12-10-07
Nitrous Oxide (N2O)	2030	2.30E-04		General	7		HIL	03-15-08
Methane (CH4)	6970	2.90E-03		General	7		HIL	03-15-08
Carbon Dioxide, non-	6960	1.39E+02		General	7		HIL	03-06-08

SOURCE #: 6042, SANDBLASTER AT MACHINE SHOP

Source Code: G7109473 Material Processed: Glass beads - abrasive
Train: /,A6042,

Pollutant Name	Pol. Code	Emiss. lb/tons	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Particulates (portio	1990	2.00E+01		Specific	7			01-15-91

SOURCE #: 6045, SANDBLASTER AT BOILER SHOP

Source Code: G7109473 Material Processed: Glass beads - abrasive
Train: /,A6045,

Pollutant Name	Pol. Code	Emiss. lb/tons	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Particulates (portio	1990	2.00E+01		Specific	7			01-15-91

SOURCE #: 6046, SANDBLASTER AT MACHINE SHOP

Source Code: G7109473 Material Processed: Glass beads - abrasive
Train: /,A6046,

Pollutant Name	Pol. Code	Emiss. lb/tons	Factor	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Particulates (portio	1990	2.00E+01		Specific	7			01-15-91

SOURCE #: 6047, SANDBLASTER AT MACHINE SHOP

Source Code: G7109473 Material Processed: Glass beads - abrasive
Train: /,A6047,

Pol. Emiss. Factor Basis Repl.

P10 - Chevron_Product_Current_Emissions_Factors.txt

Pollutant Name	Code	lb/tons	EF File	Code	Code	Empl	Eff. Date
Particulates (portio	1990	2.00E+01	Specific	7			01-15-91

SOURCE #: 6050, MTBE PLANT

Source Code: G5997195 Material Processed: Olefinic hydrocarbons
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/tons	Factor EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	3.00E-02	Specific	6			05-06-91
Particulates (portio	1990	2.30E-05	Specific	6			05-06-91
Nitrogen Oxides (par	2990	3.00E-04	Specific	6			05-06-91
Sulfur Dioxide (SO2)	3990	5.00E-05	Specific	6			05-06-91
Carbon Monoxide (CO)	4990	1.10E-04	Specific	6			05-06-91

SOURCE #: 6051, ALKY COOLING TOWER

Source Code: G5005415 Material Processed: Fresh water
Train: no train

Pollutant Name	Pol. Code	Emiss. lb/thou gallo	Factor EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	7.00E-04	Specific	6			10-30-91
Particulates (portio	1990	3.00E-04	Specific	4			10-30-91

SOURCE #: 6066, TANK 6066: PROCESS WATER TANK <1000PPM (WT) HYDROCARBON
SOURCE CODE T42??502 not a C- or G-type source.

SOURCE #: 6125, TANK 6125
SOURCE CODE T42??201 not a C- or G-type source.

SOURCE #: 6200, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??503 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6201, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??503 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6202, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??503 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6203, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6204, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6205, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6206, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6207, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6208, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6209, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6210, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6211, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6212, PORTABLE POLYETHYLENE STORGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6213, PORTABLE POLYETHYLENE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6214, PORTABLE POLYETHYLENE STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6215, PORTABEL POLYETHYLENE STORAGE CONTAINER

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6216, PORTABLE POLYETHYLENE STORAGE CONTAINER

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6217, PORTABLE POLYETHYLENE SOTRAGE CONTAINER

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6218, PORTABLE POLYETHYLENE STORAGE CONTAINER

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6219, PORTABLE POLYETHYLENE STORAGE CONTAINER

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6220, PORTABLE STEEL STORAGE CONTAINER

SOURCE CODE T43??052 not a C- or G-type source.

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6221, PORTABLE STEEL STORAGE CONTAINER

SOURCE CODE T43??052 not a C- or G-type source.

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6222, PORTABLE STEEL STORAGE CONTAINER

SOURCE CODE T43??052 not a C- or G-type source.

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6223, PORTABLE STEEL STORAGE CONTAINER

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??503 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6224, PORTABLE STEEL STORAGE CONTAINER

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE CODE T43??052 not a C- or G-type source.
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??503 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6225, PORTABLE STEEL STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??503 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6226, PORTABLE STEEL STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??503 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6227, PORTABLE STEEL STORAGE
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??503 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6228, PORTABLE STEEL STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??503 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6229, PORTABLE STEEL STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??503 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6230, PORTABLE STEEL CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??503 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6231, PORTABLE STEEL STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??503 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6232, PORTABLE STEEL STORAGE CONTAINER
SOURCE CODE T43??239 not a C- or G-type source.
SOURCE CODE T43??318 not a C- or G-type source.
SOURCE CODE T43??321 not a C- or G-type source.
SOURCE CODE T43??503 not a C- or G-type source.
SOURCE CODE T43??549 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 6233, PORTABLE STEEL STORAGE CONTAINER

SOURCE CODE T43??052 not a C- or G-type source.

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??503 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6234, PORTABLE STEEL STORAGE CONTAINER

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??503 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6235, PORTABLE STEEL STORAGE CONTAINER

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??503 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6236, PORTABLE STEEL STORAGE CONTAINER

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??503 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6237, PORTABLE STEEL STORAGE CONTAINER

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??503 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6238, PORTABLE STEEL STORAGE CONTAINER

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??503 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6239, PORTABLE STEEL STORAGE CONTAINER

SOURCE CODE T43??239 not a C- or G-type source.

SOURCE CODE T43??318 not a C- or G-type source.

SOURCE CODE T43??321 not a C- or G-type source.

SOURCE CODE T43??503 not a C- or G-type source.

SOURCE CODE T43??549 not a C- or G-type source.

SOURCE #: 6250, OIL WATER SEPARATOR FOR DEBRU

Source Code: G5017300

Material Processed: Waste water - refin, other

Train: /,A630,

Pollutant Name	Pol. Code	Emiss. lb/thou	Factor barre	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	4.72E-01	Specific	7				07-14-95

SOURCE #: 7000, ANHYDROUS AMMONIA LOADING/UNLOADING

P10 - Chevron_Product_Current_Emissions_Factors.txt

Source Code: G7013022

Material Processed: Ammonia

Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Ammonia (NH3) pollut	6990	1.11E-03	Specific	8			

SOURCE #: 7001, ANHYDROUS AMMONIA PRESSURIZED VESSEL

Source Code: G7014022

Material Processed: Ammonia

Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Ammonia (NH3) pollut	6990	1.11E-03	Specific	8			

SOURCE #: 7002, ANHYDROUS AMMONIA PRESSURIZED VESSEL

Source Code: G7014022

Material Processed: Ammonia

Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Ammonia (NH3) pollut	6990	1.11E-03	Specific	8			

SOURCE #: 7003, ANHYDROUS AMMONIA PRESSURIZED VESSEL

Source Code: G7014022

Material Processed: Ammonia

Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Ammonia (NH3) pollut	6990	1.11E-03	Specific	8			

SOURCE #: 7013, SRU STANDBY GENERATOR

Source Code: C22BH098

Fuel Burned: Diesel fuel

Train: /,P7013,

IC Engine bhp: 750.0

Max. Fuel Rate, Q: 3.700E-02 thou gals/hr

EF, g/hp-hr = (EF, lbs/thou gals)*(453.6 g/lb)*(Q, thou gals/hr) / (bhp)

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.66E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		HIL	04-15-09
Organics (part not s	990	9.78E+00	CARB/EPA C				
Diesel Engine Exhaust	1350	3.33E+00	CARB/EPA C				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	1.99E+02	CARB/EPA C				
Carbon Monoxide (CO)	4990	2.00E+01	CARB/EPA C				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08

P10 - Chevron_Product_Current_Emissions_Factors.txt

Methane (CH4)	6970	8.92E-01	General	7	HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data			
Arsenic (all)	1030	5.80E-04	Fuels Data			
Beryllium (all) pollut	1040	3.40E-04	Fuels Data			
Cadmium	1070	1.45E-03	Fuels Data			
Chromium (hexavalent	1095	3.00E-05	Fuels Data			
Lead (all) pollutant	1140	1.23E-03	Fuels Data			
Manganese	1160	1.93E-03	Fuels Data			
Mercury (all) pollut	1190	4.10E-04	Fuels Data			

SOURCE #: 7501, WHARF FIRE WATER PUMP

Source Code: C24AG098 Fuel Burned: Diesel fuel
Train: /,P7534,

IC Engine bhp: 538.0 Max. Fuel Rate, Q: 2.990E-02 thou gals/hr
EF, g/hp-hr = (EF, lbs/thou gals)*(453.6 g/lb)*(Q, thou gals/hr) / (bhp)

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	3.89E+01	EPA tier f				
Diesel Engine Exhaust	1350	1.59E+01	EPA tier f				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	2.74E+02	EPA tier f				
Carbon Monoxide (CO)	4990	3.37E+02	EPA tier f				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) pollut	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7507, DIESEL ENGINE, CATERPILLAR MODEL 3406TA16

Source Code: C24AG098 Fuel Burned: Diesel fuel
Train: /,P7539,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	3.68E+01	General	6		JAT	10-13-87
Diesel Engine Exhaust	1350	3.35E+01	General	6		JAT	10-13-87
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	4.69E+02	General	6			12-05-77
Carbon Monoxide (CO)	4990	1.02E+02	General	6			12-05-77
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				

P10 - Chevron_Product_Current_Emissions_Factors.txt

Arsenic (all)	1030	5.80E-04	Fuels Data
Beryllium (all) poll	1040	3.40E-04	Fuels Data
Cadmium	1070	1.45E-03	Fuels Data
Chromium (hexavalent	1095	3.00E-05	Fuels Data
Lead (all) pollutant	1140	1.23E-03	Fuels Data
Manganese	1160	1.93E-03	Fuels Data
Mercury (all) pollut	1190	4.10E-04	Fuels Data

SOURCE #: 7508, DIESEL ENGINE, CUMMINS MODEL 855P310

Source Code: C24AG098 Fuel Burned: Diesel fuel
Train: /,P7540,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	3.68E+01	General	6		JAT	10-13-87
Diesel Engine Exhaust	1350	3.35E+01	General	6		JAT	10-13-87
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	4.69E+02	General	6			12-05-77
Carbon Monoxide (CO)	4990	1.02E+02	General	6			12-05-77
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) poll	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7509, DIESEL ENGINE, CUMMINS MODEL 855P310

Source Code: C24AG098 Fuel Burned: Diesel fuel
Train: /,P7541,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	3.68E+01	General	6		JAT	10-13-87
Diesel Engine Exhaust	1350	3.35E+01	General	6		JAT	10-13-87
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	4.69E+02	General	6			12-05-77
Carbon Monoxide (CO)	4990	1.02E+02	General	6			12-05-77
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) poll	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				

P10 - Chevron_Product_Current_Emissions_Factors.txt

Manganese 1160 1.93E-03 Fuels Data
Mercury (all) pollut 1190 4.10E-04 Fuels Data

SOURCE #: 7511, DIESEL ENGINE, CATERPILLAR MODEL 3406

Source Code: C24AG098 Fuel Burned: Diesel fuel
Train: /,P7542,

IC Engine bhp: 482.0 Max. Fuel Rate, Q: 3.505E-02 thou gals/hr
EF, g/hp-hr = (EF, lbs/thou gals)*(453.6 g/lb)*(Q, thou gals/hr) / (bhp)

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	2.30E+00	CARB/EPA C				
Diesel Engine Exhaust	1350	9.10E+00	CARB/EPA C				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	2.00E+02	CARB/EPA C				
Carbon Monoxide (CO)	4990	8.10E+01	CARB/EPA C				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) pollut	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7512, DIESEL ENGINE, DETROIT DIESEL MODEL 70637600

Source Code: C24AG098 Fuel Burned: Diesel fuel
Train: /,P7543,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	3.68E+01	General	6		JAT	10-13-87
Diesel Engine Exhaust	1350	3.35E+01	General	6		JAT	10-13-87
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	4.69E+02	General	6			12-05-77
Carbon Monoxide (CO)	4990	1.02E+02	General	6			12-05-77
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) pollut	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 7513, STORMWATER PUMP ENGINE, P-302A

Source Code: C24AG098 Fuel Burned: Diesel fuel
Train: /,A7513,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	8.82E-01	Specific	1	2	XC	09-16-08
Diesel Engine Exhaus	1350	5.29E+00	Specific	1	2	XC	09-16-08
Nitrogen Oxides (par	2990	1.80E+02	Specific	1	2	XC	09-16-08
Carbon Monoxide (CO)	4990	3.70E+01	Specific	1	2	XC	09-16-08
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Nickel pollutant	1180	2.35E-02	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Manganese	1160	1.93E-03	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) poll	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				

SOURCE #: 7514, STORMWATER PUMP ENGINE, P-302B

Source Code: C24AG098 Fuel Burned: Diesel fuel
Train: /,A7514,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	8.82E-01	Specific	1	2	XC	09-16-08
Diesel Engine Exhaus	1350	5.29E+00	Specific	1	2	XC	09-16-08
Nitrogen Oxides (par	2990	1.80E+02	Specific	1	2	XC	09-16-08
Carbon Monoxide (CO)	4990	3.70E+01	Specific	1	2	XC	09-16-08
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Nickel pollutant	1180	2.35E-02	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Manganese	1160	1.93E-03	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) poll	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				

SOURCE #: 7515, EMERGENCY DIESEL STORMWATER PUMP ENGINE(P-351A)

Source Code: C24BG098 Fuel Burned: Diesel fuel

P10 - Chevron_Product_Current_Emissions_Factors.txt

Train: /,P7546,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	3.68E+01	General	6		JAT	10-13-87
Diesel Engine Exhaust	1350	3.35E+01	General	6		JAT	10-13-87
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	4.69E+02	General	6			12-05-77
Carbon Monoxide (CO)	4990	1.02E+02	General	6			12-05-77
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) pollut	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7516, EMERGENCY DIESEL STORMWATER PUMP ENGINE(P-351B)

Source Code: C24BG098

Fuel Burned: Diesel fuel

Train: /,P7547,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	3.68E+01	General	6		JAT	10-13-87
Diesel Engine Exhaust	1350	3.35E+01	General	6		JAT	10-13-87
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	4.69E+02	General	6			12-05-77
Carbon Monoxide (CO)	4990	1.02E+02	General	6			12-05-77
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) pollut	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7517, DIESEL ENGINE, DETROIT DIESEL MODEL 80877800

Source Code: C24AG098

Fuel Burned: Diesel fuel

Train: /,A7517,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
----------------	-----------	-------------------------------	---------	------------	------------	------	-----------

P10 - Chevron_Product_Current_Emissions_Factors.txt

Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont			
Benzene	41	6.75E-01	General	7	JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7	JAT	10-13-87
Organics (part not s	990	3.68E+01	General	6	JAT	10-13-87
Diesel Engine Exhaus	1350	3.35E+01	General	6	JAT	10-13-87
PAH's (non-speciated	1840	3.06E-03	General	7	JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7	HIL	02-28-08
Nitrogen Oxides (par	2990	4.69E+02	General	6		12-05-77
Carbon Monoxide (CO)	4990	1.02E+02	General	6		12-05-77
Carbon Dioxide, non-	6960	2.23E+04	General	7	HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7	HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data			
Arsenic (all)	1030	5.80E-04	Fuels Data			
Beryllium (all) poll	1040	3.40E-04	Fuels Data			
Cadmium	1070	1.45E-03	Fuels Data			
Chromium (hexavalent	1095	3.00E-05	Fuels Data			
Lead (all) pollutant	1140	1.23E-03	Fuels Data			
Manganese	1160	1.93E-03	Fuels Data			
Mercury (all) pollut	1190	4.10E-04	Fuels Data			

SOURCE #: 7518, DIESEL ENGINE, DETROIT DIESEL MODEL 80877800

Source Code: C24AG098

Fuel Burned: Diesel fuel

Train: /,A7518,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	3.68E+01	General	6		JAT	10-13-87
Diesel Engine Exhaus	1350	3.35E+01	General	6		JAT	10-13-87
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	4.69E+02	General	6			12-05-77
Carbon Monoxide (CO)	4990	1.02E+02	General	6			12-05-77
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) poll	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7521, DIESEL ENGINE, CUMMINS MODEL A855C450

Source Code: C24AG098

Fuel Burned: Diesel fuel

Train: /,A7521,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	3.68E+01	General	6		JAT	10-13-87
Diesel Engine Exhaus	1350	3.35E+01	General	6		JAT	10-13-87

P10 - Chevron_Product_Current_Emissions_Factors.txt

PAH's (non-speciated	1840	3.06E-03	General	7	JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7	HIL	02-28-08
Nitrogen Oxides (par	2990	4.69E+02	General	6		12-05-77
Carbon Monoxide (CO)	4990	1.02E+02	General	6		12-05-77
Carbon Dioxide, non-	6960	2.23E+04	General	7	HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7	HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data			
Arsenic (all)	1030	5.80E-04	Fuels Data			
Beryllium (all) poll	1040	3.40E-04	Fuels Data			
Cadmium	1070	1.45E-03	Fuels Data			
Chromium (hexavalent	1095	3.00E-05	Fuels Data			
Lead (all) pollutant	1140	1.23E-03	Fuels Data			
Manganese	1160	1.93E-03	Fuels Data			
Mercury (all) pollut	1190	4.10E-04	Fuels Data			

SOURCE #: 7523, AIR COMPRESSOR ENGINE, P-1603

Source Code: C24AG098 Fuel Burned: Diesel fuel
Train: /,A7523,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	2.62E+00	Specific	1	2	XC	09-16-08
Diesel Engine Exhaus	1350	1.40E+01	Specific	1	2	XC	09-16-08
Nitrogen Oxides (par	2990	2.64E+02	Specific	1	2	XC	09-16-08
Carbon Monoxide (CO)	4990	1.59E+02	Specific	1	2	XC	09-16-08
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Nickel pollutant	1180	2.35E-02	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Manganese	1160	1.93E-03	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) poll	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				

SOURCE #: 7530, GASOLINE ENGINE, HERCULES MODEL G2300, EMERGENCY STANDBY

Source Code: C22AF551 Fuel Burned: Gasoline - unleaded
Train: /,P7556,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	8.61E+01	General	7		HIL	06-15-06
Particulates (portio	1990	1.34E+00	General	7		HIL	06-15-06
Nitrous Oxide (N2O)	2030	1.60E-01	General	7		HIL	03-15-08
Nitrogen Oxides (par	2990	1.88E+02	General	7		HIL	06-15-06
Carbon Monoxide (CO)	4990	2.40E+03	General	7		HIL	06-15-06
Carbon Dioxide, non-	6960	1.96E+04	General	7		HIL	03-06-08
Methane (CH4)	6970	8.06E-01	General	7		HIL	03-15-08
Sulfur Dioxide (SO2)	3990	4.35E+00	Fuels Data				

SOURCE #: 7531, DIESEL ENGINE, DETROIT DIESEL MODEL 80637305, EMERGENCY STAN

Source Code: C22AG098

Fuel Burned: Diesel fuel

Train: /,P7557,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.66E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		HIL	04-15-09
Organics (part not s	990	3.22E+01	General	6		JAT	10-13-87
Diesel Engine Exhaus	1350	3.35E+01	General	6		JAT	10-13-87
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	4.69E+02	General	6			12-05-77
Carbon Monoxide (CO)	4990	1.02E+02	General	6			12-05-77
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) poll	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7534, PLANT PROTECTION STANDBY GENERATOR

Source Code: C22AG098

Fuel Burned: Diesel fuel

Train: /,P85,

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	3.07E+00	Specific	9	2	RDC	12-03-07
Diesel Engine Exhaus	1350	2.25E+00	Specific	9	2	RDC	12-03-07
Nitrogen Oxides (par	2990	5.65E+01	Specific	9	2	RDC	12-03-07
Carbon Monoxide (CO)	4990	5.03E+01	Specific	9		RDC	12-03-07
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.66E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		HIL	04-15-09
Nickel pollutant	1180	2.35E-02	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Manganese	1160	1.93E-03	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) poll	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				

SOURCE #: 7535, EMERGENCY STANDBY FIRE PUMP

Source Code: C24AG098

Fuel Burned: Diesel fuel

Train: /,P86,

P10 - Chevron_Product_Current_Emissions_Factors.txt

IC Engine bhp: 479.0 Max. Fuel Rate, Q: 2.340E-02 thou gals/hr
 EF, g/hp-hr = (EF, lbs/thou gals)*(453.6 g/lb)*(Q, thou gals/hr) / (bhp)

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	8.52E+00	CARB/EPA C				
Diesel Engine Exhaust	1350	4.38E+00	CARB/EPA C				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	1.76E+02	CARB/EPA C				
Carbon Monoxide (CO)	4990	2.02E+01	CARB/EPA C				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) pollut	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7536, EMERGENCY STANDBY FIRE PUMP

Source Code: C24AG098 Fuel Burned: Diesel fuel
 Train: /,P87,

IC Engine bhp: 479.0 Max. Fuel Rate, Q: 2.340E-02 thou gals/hr
 EF, g/hp-hr = (EF, lbs/thou gals)*(453.6 g/lb)*(Q, thou gals/hr) / (bhp)

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	8.52E+00	CARB/EPA C				
Diesel Engine Exhaust	1350	4.38E+00	CARB/EPA C				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	1.76E+02	CARB/EPA C				
Carbon Monoxide (CO)	4990	2.02E+01	CARB/EPA C				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) pollut	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7538, EMERGENCY STANDBY DIESEL GENERATOR SET

Source Code: C22BG098 Fuel Burned: Diesel fuel
 Train: /,P89,

P10 - Chevron_Product_Current_Emissions_Factors.txt

IC Engine bhp: 2328.0 Max. Fuel Rate, Q: 1.110E-01 thou gals/hr
 EF, g/hp-hr = (EF, lbs/thou gals)*(453.6 g/lb)*(Q, thou gals/hr) / (bhp)

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.66E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		HIL	04-15-09
Organics (part not s	990	9.45E+00	CARB/EPA C				
Diesel Engine Exhaust	1350	5.52E+00	CARB/EPA C				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	1.93E+02	CARB/EPA C				
Carbon Monoxide (CO)	4990	3.79E+01	CARB/EPA C				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) poll	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7539, EMERGENCY STANDBY FCC BACKUP AIR COMPRESSOR

Source Code: C24AG098 Fuel Burned: Diesel fuel
 Train: /,A7539,

IC Engine bhp: 440.0 Max. Fuel Rate, Q: 2.300E-02 thou gals/hr
 EF, g/hp-hr = (EF, lbs/thou gals)*(453.6 g/lb)*(Q, thou gals/hr) / (bhp)

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	5.60E+00	EPA tier f				
Diesel Engine Exhaust	1350	6.33E+00	EPA tier f				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	1.20E+02	EPA tier f				
Carbon Monoxide (CO)	4990	1.10E+02	EPA tier f				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) poll	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7541, EMERGENCY STANDBY DIESEL FIRE PUMP ENGINE

Source Code: C24BG098 Fuel Burned: Diesel fuel

P10 - Chevron_Product_Current_Emissions_Factors.txt

Train: /,P158,

IC Engine bhp: 700.0 Max. Fuel Rate, Q: 3.800E-02 thou gals/hr
 EF, g/hp-hr = (EF, lbs/thou gals)*(453.6 g/lb)*(Q, thou gals/hr) / (bhp)

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	5.33E+00	CARB/EPA C				
Diesel Engine Exhaust	1350	4.54E+00	CARB/EPA C				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	1.15E+02	CARB/EPA C				
Carbon Monoxide (CO)	4990	7.27E+01	CARB/EPA C				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) pollut	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7542, EMERGENCY STANDBY DIESEL FIRE PUMP ENGINE

Source Code: C24BG098 Fuel Burned: Diesel fuel
 Train: /,P162,

IC Engine bhp: 700.0 Max. Fuel Rate, Q: 3.800E-02 thou gals/hr
 EF, g/hp-hr = (EF, lbs/thou gals)*(453.6 g/lb)*(Q, thou gals/hr) / (bhp)

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gals	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Sulfur Dioxide (SO2)	3990	2.18E-01	F27 S Cont				
Benzene	41	6.75E-01	General	7		JAT	10-09-87
Formaldehyde	124	5.51E-02	General	7		JAT	10-13-87
Organics (part not s	990	5.33E+00	CARB/EPA C				
Diesel Engine Exhaust	1350	4.54E+00	CARB/EPA C				
PAH's (non-speciated	1840	3.06E-03	General	7		JAT	10-13-87
Nitrous Oxide (N2O)	2030	1.78E-01	General	7		HIL	02-28-08
Nitrogen Oxides (par	2990	1.15E+02	CARB/EPA C				
Carbon Monoxide (CO)	4990	7.27E+01	CARB/EPA C				
Carbon Dioxide, non-	6960	2.23E+04	General	7		HIL	02-28-08
Methane (CH4)	6970	8.92E-01	General	7		HIL	02-28-08
Nickel pollutant	1180	2.35E-02	Fuels Data				
Arsenic (all)	1030	5.80E-04	Fuels Data				
Beryllium (all) pollut	1040	3.40E-04	Fuels Data				
Cadmium	1070	1.45E-03	Fuels Data				
Chromium (hexavalent	1095	3.00E-05	Fuels Data				
Lead (all) pollutant	1140	1.23E-03	Fuels Data				
Manganese	1160	1.93E-03	Fuels Data				
Mercury (all) pollut	1190	4.10E-04	Fuels Data				

SOURCE #: 7601, QUART LINE BOTTLES, ONE GALLON JUGS, PAILS, QUART CASE
 SOURCE CODE SG34A169 not a C- or G-type source.

SOURCE CODE SG700169 not a C- or G-type source.

SOURCE #: 9047, TANK 6047

SOURCE CODE T42??201 not a C- or G-type source.

SOURCE #: 9203, TANK 3203: ORGANIC LIQUID STORAGE TANK (GST-46)

SOURCE CODE T43??090 not a C- or G-type source.

SOURCE #: 9205, TANK 3205: ORGANIC LIQUID STORAGE TANK (DELO 100)

SOURCE CODE T43??419 not a C- or G-type source.

SOURCE #: 9300, GRAYMILLS COLD CLEANER

SOURCE CODE SF01A318 not a C- or G-type source.

SOURCE #: 9304, NON RETAIL GASOLINE DISPENSING FACILITY

SOURCE CODE TC000000 not a C- or G-type source.

SOURCE #: 9321, MARINE LOADING BERTH #1

SOURCE CODE TB8??052 not a C- or G-type source.

SOURCE CODE TB8??158 not a C- or G-type source.

SOURCE CODE TB8??242 not a C- or G-type source.

SOURCE CODE TB8??315 not a C- or G-type source.

SOURCE CODE TB8??551 not a C- or G-type source.

SOURCE CODE TF8??089 not a C- or G-type source.

SOURCE #: 9322, MARINE LOADING BERTH #2

SOURCE CODE TB8??052 not a C- or G-type source.

SOURCE CODE TB8??128 not a C- or G-type source.

SOURCE CODE TB8??158 not a C- or G-type source.

SOURCE CODE TB8??179 not a C- or G-type source.

SOURCE CODE TB8??201 not a C- or G-type source.

SOURCE CODE TB8??242 not a C- or G-type source.

SOURCE CODE TB8??293 not a C- or G-type source.

SOURCE CODE TB8??315 not a C- or G-type source.

SOURCE CODE TB8??419 not a C- or G-type source.

SOURCE CODE TB8??551 not a C- or G-type source.

SOURCE CODE TB8??628 not a C- or G-type source.

SOURCE CODE TF8??089 not a C- or G-type source.

SOURCE #: 9323, MARINE LOADING BERTH #3

SOURCE CODE TB8??052 not a C- or G-type source.

SOURCE CODE TB8??089 not a C- or G-type source.

SOURCE CODE TB8??128 not a C- or G-type source.

SOURCE CODE TB8??158 not a C- or G-type source.

SOURCE CODE TB8??201 not a C- or G-type source.

SOURCE CODE TB8??242 not a C- or G-type source.

SOURCE CODE TB8??293 not a C- or G-type source.

SOURCE CODE TB8??315 not a C- or G-type source.

SOURCE CODE TB8??419 not a C- or G-type source.

SOURCE CODE TB8??551 not a C- or G-type source.

SOURCE #: 9324, MARINE LOADING BERTH #4

SOURCE CODE TB4??2318 not a C- or G-type source.

SOURCE CODE TB4??2551 not a C- or G-type source.

SOURCE CODE TB8??242 not a C- or G-type source.

SOURCE CODE TB8??315 not a C- or G-type source.

SOURCE CODE TF8??089 not a C- or G-type source.

SOURCE #: 9325, MARINE LOADING BERTH #9

SOURCE CODE TB8??052 not a C- or G-type source.

SOURCE CODE TB8??128 not a C- or G-type source.

SOURCE CODE TB8??158 not a C- or G-type source.

SOURCE CODE TB8??242 not a C- or G-type source.

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE CODE TB8??293 not a C- or G-type source.
 SOURCE CODE TB8??315 not a C- or G-type source.
 SOURCE CODE TB8??318 not a C- or G-type source.
 SOURCE CODE TB8??419 not a C- or G-type source.
 SOURCE CODE TB8??551 not a C- or G-type source.
 SOURCE CODE TF8??089 not a C- or G-type source.

SOURCE #: 9326, MARINE LOADING BERTH #11

SOURCE CODE TB8??052 not a C- or G-type source.
 SOURCE CODE TB8??242 not a C- or G-type source.
 SOURCE CODE TB8??315 not a C- or G-type source.

SOURCE #: 32100, FUGITIVE SOURCES - VACUUM PRODUCING SYSTEMS

Source Code: G9030000 Material Processed: material unknown
 Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/day	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	0.00E+00	Specific	7	2	BRK	12-31-12

SOURCE #: 32101, FUGITIVE SOURCES - PROCESS VESSEL DEPRESSURIZATION

Source Code: G9040000 Material Processed: material unknown
 Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/day	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Organics (part not s	990	5.40E-02	Specific	7	2	BRK	12-31-12

SOURCE #: 32102, FUGITIVE SOURCES - VALVES AND FLANGES

Source Code: G9050000 Material Processed: material unknown
 Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/day	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	3.47E+00	Specific	4	2	BRK	12-31-12
Cyclohexane	91	2.10E+00	Specific	7	2	BRK	12-31-12
Ethylene dichloride	107	0.00E+00	Specific	7	2	BRK	12-31-12
Hexane	148	3.21E+00	Specific	4	2	GDS	12-31-12
Isooctane	154	0.00E+00	Specific	7	2	GDS	12-31-12
Methyl ethyl ketone	169	0.00E+00	Specific	7	2	BRK	12-31-12
Methyl alcohol	179	4.70E-02	Specific	4	2	BRK	12-31-12
Perchloroethylene	210	2.66E-01	Specific	4	2	BRK	12-31-12
Toluene	293	1.20E+01	Specific	4	2	BRK	12-31-12
Xylene	307	1.38E+01	Specific	4	2	GDS	12-31-12
Cumene	326	3.20E-01	Specific	4	2	GDS	12-31-12
Ethylbenzene	333	2.75E+00	Specific	4	2	GDS	12-31-12

Source Code: G9050001 Material Processed: material unknown
 Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/day	EF File	Basis Code	Repl. Code	Empl	Eff. Date
1,2,4-trimethylbenze	385	3.98E+00	Specific	4	2	BRK	12-31-12

P10 - Chevron_Product_Current_Emissions_Factors.txt

Ethylene dibromide	420	1.00E-02	Specific	4	2	BRK	12-31-12
1,3-butadiene	521	9.50E-02	Specific	4	2	BRK	12-31-12
Ethylene	536	3.43E+00	Specific	4	2	BRK	12-31-12
Propylene	564	2.11E+00	Specific	4	2	BRK	12-31-12
Methyl tertiary-buty	628	0.00E+00	Specific	7	2	BRK	12-31-12
Organics (part not s	990	7.98E+02	Specific	4	2	BRK	12-31-12
Ammonia (NH3) pollut	6990	8.55E+00	Specific	4	2	BRK	12-31-12

SOURCE #: 32103, FUGITIVE SOURCES - PUMPS & COMPRESSOR SEALS

Source Code: G9060000 Material Processed: material unknown
Train: /

Pollutant Name	Pol. Code	Emiss. Factor lb/day	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	2.47E+00	Specific	4	2	BRK	12-31-12
Cyclohexane	91	1.38E+00	Specific	7	2	BRK	12-31-12
Hexane	148	1.82E+00	Specific	4	2	BRK	12-31-12
Isooctane	154	0.00E+00	Specific	7	2	BRK	12-31-12
Methyl ethyl ketone	169	0.00E+00	Specific	7	2	BRK	12-31-12
Methyl alcohol	179	2.90E-02	Specific	7	2	BRK	12-31-12
Toluene	293	7.93E+00	Specific	4	2	BRK	12-31-12
Xylene	307	9.43E+00	Specific	4	2	BRK	12-31-12
Ethylbenzene	333	1.93E+00	Specific	4	2	BRK	12-31-12
1,2,4-trimethylbenze	385	2.94E+00	Specific	4	2	BRK	12-31-12
1,3-butadiene	521	1.00E-02	Specific		2	BRK	12-31-12
Cresol	525	1.25E-01	Specific	4	2	BRK	12-31-12

Source Code: G9060001 Material Processed: material unknown
Train: /

Pollutant Name	Pol. Code	Emiss. Factor lb/day	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Ethylene	536	3.90E-01	Specific	4	2	BRK	12-31-12
Propylene	564	3.26E-01	Specific	4	2	BRK	12-31-12
Methyl tertiary-buty	628	0.00E+00	Specific	7	2	BRK	12-31-12
Organics (part not s	990	5.68E+02	Specific	4	2	BRK	12-31-12
Ammonia (NH3) pollut	6990	9.13E+00	Specific	4	2	BRK	12-31-12

SOURCE #: 32104, FUGITIVE SOURCES - PRESSURE RELIEF VALVES

Source Code: G9070000 Material Processed: material unknown
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/day	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	1.20E-05	Specific	4	2	BRK	12-31-12
Hexane	148	2.70E-05	Specific	7	2	BRK	12-31-12
Methyl ethyl ketone	169	0.00E+00	Specific	7	2	BRK	12-31-12
Toluene	293	5.50E-05	Specific	7	2	BRK	12-31-12
Xylene	307	6.40E-05	Specific	7	2	BRK	12-31-12
1,3-butadiene	521	1.60E-06	Specific	7	2	BRK	12-31-12
Cresol	525	0.00E+00	Specific	7	2	BRK	12-31-12
Ethylene	536	1.70E-04	Specific	7	2	BRK	12-31-12
Propylene	564	2.10E-04	Specific	7	2	BRK	12-31-12
Organics (part not s	990	4.80E-02	Specific	4	2	BRK	12-31-12
Ammonia (NH3) pollut	6990	1.30E-04	Specific	7	2	BRK	12-31-12

P10 - Chevron_Product_Current_Emissions_Factors.txt

SOURCE #: 32105, FUGITIVE SOURCES - PROCESS DRAINS

Source Code: G9080000 Material Processed: material unknown
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/day	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	7.00E-03	Specific	4	2	GDS	12-31-12
Cycloparaffins - oth	92	0.00E+00	Specific	4	2	BRK	12-31-12
Hexane	148	9.08E-01	Specific	4	2	BRK	12-31-12
Toluene	293	1.64E+00	Specific	4	2	BRK	12-31-12
Xylene	307	1.64E+00	Specific	4	2	BRK	12-31-12
Cumene	326	9.10E-02	Specific	4	2	BRK	12-31-12
Ethylbenzene	333	3.74E-01	Specific	4	2	GDS	12-31-12
1,2,4-trimethylbenze	385	3.11E-01	Specific	4	2	BRK	12-31-12
1,3-butadiene	521	0.00E+00	Specific		2	BRK	12-31-12
Cresol	525	0.00E+00	Specific	7	2	BRK	12-31-12
Methyl tertiary-buty	628	0.00E+00	Specific	7	2	BRK	12-31-12
Organics (part not s	990	7.35E+01	Specific	4	2	BRK	12-31-12

SOURCE #: 32110, PROCESS GAS (COMBUSTION) EMISSIONS FROM FLARES AND BLOWDOWN

Source Code: G9010000 Material Processed: material unknown
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/day	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Benzene	41	4.42E-05	Specific	4	2	BRK	12-31-12
Cycloparaffins - oth	92	0.00E+00	Specific	7	2	BRK	12-31-12
Formaldehyde	124	1.58E-03	Specific	4	2	BRK	12-31-12
Phenol	214	8.60E-05	Specific	4	2	BRK	12-31-12
Acetaldehyde	335	2.58E-04	Specific	4	2	BRK	12-31-12
1,3-butadiene	521	0.00E+00	Specific	7	2	BRK	12-31-12
Organics (part not s	990	1.29E+01	Specific	4	2	BRK	12-31-12
Arsenic (all)	1030	4.21E-06	Specific	4	2	BRK	12-31-12
Cadmium	1070	2.32E-05	Specific	7	2	BRK	12-31-12
Chromium	1090	2.95E-05	Specific	7	2	BRK	12-31-12
Magnesium pollutant	1150	0.00E+00	Specific	7	2	BRK	12-31-12

Source Code: G9010001 Material Processed: material unknown
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/day	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Manganese	1160	8.00E-06	Specific	4	2	BRK	12-31-12
Nickel pollutant	1180	4.42E-05	Specific	7	2	BRK	12-31-12
Mercury (all) pollut	1190	5.47E-06	Specific	4	2	BRK	12-31-12
Zinc pollutant	1320	6.10E-04	Specific	4	2	BRK	12-31-12
PAH's (non-speciated	1840	1.47E-05	Specific	4	2	BRK	12-31-12
Particulates (portio	1990	1.60E-01	Specific	4	2	BRK	12-31-12
Nitrogen Oxides (par	2990	1.90E+00	Specific	4	2	BRK	12-31-12
Sulfur Dioxide (SO2)	3990	3.14E+01	Specific	4	2	BRK	12-31-12
Carbon Monoxide (CO)	4990	1.04E+01	Specific	7	2	BRK	12-31-12

SOURCE #: -73, SELECTIVE CATALYTIC REDUCTION SYSTEM

P10 - Chevron_Product_Current_Emissions_Factors.txt

Source Code: G7043471 Material Processed: Ammonium hydroxide
Train: /,P221,

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Ammonia (NH3) pollut	6990	1.20E+01	General	5		JHL	11-09-99

SOURCE #: -72, SELECTIVE CATALYTIC REDUCTION SYSTEM

Source Code: G7043471 Material Processed: Ammonium hydroxide
Train: /,P220,

Pollutant Name	Pol. Code	Emiss. Factor lb/tons	EF File	Basis Code	Repl. Code	Empl	Eff. Date
Ammonia (NH3) pollut	6990	1.20E+01	General	5		JHL	11-09-99

PLANT #:

6 - List databank abatement multipliers used to calculate emissions
for a specific plant and abatement device

E - End

Type Option Number: 6

AUG 1, 2013 Databank abatement multiplier for specified P # and A #

PLANT #: 10
Chevron Products Company
841 Chevron Way
Richmond, CA 94802

Abatement Device # ('@' for entire plant): @

ABATEMENT DEVICE #: 14, FCC ELECTROSTATIC PRECIPITATOR
ADC: 24 Single Stage Electrostatic Precipitator
Train: ,S4285,/,P133,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
1990	1990	Particulates (portio	1.00E-02	Specific		09-27-85
4990	4990	Carbon Monoxide (CO)	1.00E+00	Specific		03-09-81
3990	3990	Sulfur Dioxide (SO2)	1.00E+00	Specific		03-09-81
2990	2990	Nitrogen Oxides (par	1.00E+00	Specific		03-09-81
990	990	Organics (part not s	1.00E+00	Specific		03-09-81

ABATEMENT DEVICE #: 20, TAIL GAS UNIT FOR 2100 PLT-SRV #1 TRAM
ADC: 48 Absorption and Regeneration
Train: ,S4227,/,S4192,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date

P10 - Chevron_Product_Current_Emissions_Factors.txt

-----	-----	-----	-----	-----	-----	-----
3990	3990	Sulfur Dioxide (SO2)	1.00E-02	General	8	10-17-77

ABATEMENT DEVICE #: 21, TAIL GAS UNIT FOR 2200 PLT-SRV #2 TRAIN
 ADC: 48 Absorption and Regeneration
 Train: ,S4228,/,S4193,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
3990	3990	Sulfur Dioxide (SO2)	1.00E-02	General	8	10-17-77

ABATEMENT DEVICE #: 22, TAIL GAS UNIT FOR 2300 PLT SRV #3 TRAIN
 ADC: 48 Absorption and Regeneration
 Train: ,S4229,/,S4194,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
3990	3990	Sulfur Dioxide (SO2)	1.00E-02	General	8	10-17-77

ABATEMENT DEVICE #: 37, ASPHALT LOADING RACK MIST ELIMINATOR D&T
 ADC: 39 Fibrous Packed Scrubber
 Train: ,S2921,S4240,S4415,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
1530	1530	Sulfuric Acid mist p	1.00E-02	General	8	10-17-77

ABATEMENT DEVICE #: 43, SULFUR TANKS AND LOADING RACKS VENT WATER SCRUBBER
 ADC: 46 Venturi Scrubber
 Train: ,S3141,S3226,S4396,/,A44,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
1990	1990	Particulates (portio	5.00E-02	Specific	4	08-17-83

ABATEMENT DEVICE #: 44, SULFUR TANKS VENT CAUSTIC SCRUBBER
 ADC: 46 Venturi Scrubber
 Train: ,A43,/,P193,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
3990	3990	Sulfur Dioxide (SO2)	3.00E-02	Specific	1	10-18-99
5020	5020	Hydrogen Sulfide (H2	2.00E-02	Specific	1	10-18-99
1990	1990	Particulates (portio	3.00E-03	General	8	10-17-77

ABATEMENT DEVICE #: 65, HYDROFINISHER SCR UNIT
 ADC: 66 Selective Catalytic Reduction (SCR)
 Train: ,S4330,S4331,S4332,/,P215,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----

P10 - Chevron_Product_Current_Emissions_Factors.txt
 2990 2990 Nitrogen Oxides (par 3.00E-01 Specific 3 08-01-85

ABATEMENT DEVICE #: 66, TKC SCR UNIT
 ADC: 66 Selective Catalytic Reduction (SCR)
 Train: ,S4333,S4334,S4335,/,P216,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
2990	2990	Nitrogen Oxides (par	3.00E-01	Specific	3	08-01-85

ABATEMENT DEVICE #: 67, HYDROCRACKER SCR UNIT
 ADC: 66 Selective Catalytic Reduction (SCR)
 Train: ,S4336,S4337,S4338,S4339,/,P217,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
2990	2990	Nitrogen Oxides (par	3.00E-01	Specific	3	08-01-85

ABATEMENT DEVICE #: 70, CO/HC CATALYST
 ADC: 72 Oxidation Catalyst
 Train: ,S4351,/,A72,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-01	Specific		09-05-91
4990	4990	Carbon Monoxide (CO)	2.00E-01	Specific		09-05-91
970	970	Methane (obsolete)	5.00E-01	Specific	3	03-12-93
6990	6990	Ammonia (NH3) pollut	1.00E+00	Specific	5	03-12-93
6970	6970	Methane (CH4)	5.00E-01	Specific		03-12-08
990	6960	Carbon Dioxide, non-	1.40E+00	General	4	04-15-09

ABATEMENT DEVICE #: 71, CO/HC CATALYST
 ADC: 72 Oxidation Catalyst
 Train: ,S4353,/,A73,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-01	Specific		09-05-91
4990	4990	Carbon Monoxide (CO)	2.00E-01	Specific		09-05-91
6970	6970	Methane (CH4)	5.00E-01	Specific	3	03-12-93
6990	6990	Ammonia (NH3) pollut	1.00E+00	Specific	5	03-12-93
990	6960	Carbon Dioxide, non-	1.40E+00	General	4	04-15-09

ABATEMENT DEVICE #: 72, SCR NOX REDUCTION CATALYST
 ADC: 66 Selective Catalytic Reduction (SCR)
 Train: ,A70,/,P220,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
2990	2990	Nitrogen Oxides (par	1.00E-01	Specific		09-05-91

ABATEMENT DEVICE #: 73, SCR NOX REDUCTION CATALYST

P10 - Chevron_Product_Current_Emissions_Factors.txt

ADC: 66 Selective Catalytic Reduction (SCR)

Train: ,A71,/,P221,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
2990	2990	Nitrogen Oxides (par	1.00E-01	Specific		09-05-91

ABATEMENT DEVICE #: 260, HYDROGEN PLANT A TRAIN SCR SYSTEM

ADC: 66 Selective Catalytic Reduction (SCR)

Train: ,S4170,/,P260,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
2990	2990	Nitrogen Oxides (par	8.00E-02	Specific	3	12-01-98

ABATEMENT DEVICE #: 261, SCRUBBER FOR DE-AERATOR VENT METHANOL

ADC: 44 Packed Bed Scrubber

Train: ,S4250,/,P261,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	02-10-98
1990	1990	Particulates (portio	1.00E-01	General	8	10-17-77
3990	3990	Sulfur Dioxide (SO2)	1.00E-01	General	8	10-17-77

ABATEMENT DEVICE #: 262, SCRUBBER FOR DE-AERATOR VENT

ADC: 44 Packed Bed Scrubber

Train: ,S4250,/,P262,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	02-10-98
1990	1990	Particulates (portio	1.00E-01	General	8	10-17-77
3990	3990	Sulfur Dioxide (SO2)	1.00E-01	General	8	10-17-77

ABATEMENT DEVICE #: 620, THERMAL OXIDIZER

ADC: 06 Afterburner

Train: ,S32103,/,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-02	Specific	3	12-09-92
6970	6970	Methane (CH4)	5.00E-02	Specific	3	03-12-08
1990	1990	Particulates (portio	1.00E-01	General	8	10-17-77
990	6960	Carbon Dioxide, non-	2.52E+00	General	4	04-15-09

ABATEMENT DEVICE #: 622, THERMAL OXIDIZER

ADC: 06 Afterburner

Train: ,S32103,/,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-------------	--------------	---------------------	--------------------------	--------------------	-------	-------------------

P10 - Chevron_Product_Current_Emissions_Factors.txt

990	990	Organics (part not s	5.00E-02	Specific	3	12-09-92
6970	6970	Methane (CH4)	5.00E-02	Specific	3	03-12-08
1990	1990	Particulates (portio	1.00E-01	General	8	10-17-77
990	6960	Carbon Dioxide, non-	2.52E+00	General	4	04-15-09

ABATEMENT DEVICE #: 623, THERMAL OXIDIZER FOR #21 PUMP STATION PUMPS & COMP
 ADC: 06 Afterburner
 Train: ,S32103,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-02	Specific	3	12-09-92
6970	6970	Methane (CH4)	5.00E-02	Specific	3	03-12-08
1990	1990	Particulates (portio	1.00E-01	General	8	10-17-77
990	6960	Carbon Dioxide, non-	2.52E+00	General	4	04-15-09

ABATEMENT DEVICE #: 624, THERMAL OXIDIZER FOR #17 PUMP STATION PUMPS & COMP
 ADC: 06 Afterburner
 Train: ,S32103,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-02	Specific	3	12-09-92
6970	6970	Methane (CH4)	5.00E-02	Specific	3	03-12-08
1990	1990	Particulates (portio	1.00E-01	General	8	10-17-77
990	6960	Carbon Dioxide, non-	2.52E+00	General	4	04-15-09

ABATEMENT DEVICE #: 627, THERMAL OXIDIZER
 ADC: 06 Afterburner
 Train: ,S32103,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-02	Specific	3	08-23-00
6970	6970	Methane (CH4)	5.00E-02	Specific	3	03-12-08
1990	1990	Particulates (portio	1.00E-01	General	8	10-17-77
990	6960	Carbon Dioxide, non-	2.52E+00	General	4	04-15-09

ABATEMENT DEVICE #: 628, THERMAL OXIDIZER
 ADC: 06 Afterburner
 Train: ,S32103,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-02	Specific	3	08-23-00
6970	6970	Methane (CH4)	5.00E-02	Specific	3	03-12-08
1990	1990	Particulates (portio	1.00E-01	General	8	10-17-77
990	6960	Carbon Dioxide, non-	2.52E+00	General	4	04-15-09

ABATEMENT DEVICE #: 630, CARBON ABATEMENT CONTAINERS
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6250,/,A631,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-------------	--------------	---------------------	--------------------------	--------------------	-------	-------------------

In	Out	Pollutant Descript.	Multiplier	Type	Basis	Date
990	990	Organics (part not s	5.00E-02	Specific	3	

ABATEMENT DEVICE #: 631, CARBON ABATEMENT CONTAINERS
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,A630,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-02	Specific	3	

ABATEMENT DEVICE #: 900, MARINE LOADING THERMAL OXIDIZER
 ADC: 04 Flare
 Train: ,S9321,S9322,S9323,S9324,S9325,/,P255,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-02	Specific	4	12-12-89
6970	6970	Methane (CH4)	5.00E-02	Specific	4	03-12-08
990	6960	Carbon Dioxide, non-	2.77E+00	General	4	04-15-09

ABATEMENT DEVICE #: 917, #17 PUMP STATION CARBON
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: no train

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-02	General	8	10-17-77

ABATEMENT DEVICE #: 918, #18 PUMP STATION CARBON
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S3073,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-02	General	8	10-17-77

ABATEMENT DEVICE #: 919, #21 PUMP STATION CARBON
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: no train

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-02	General	8	10-17-77

ABATEMENT DEVICE #: 922, COMPARATOR BLDG. - PROTO TANK CARBON
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: no train

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date

P10 - Chevron_Product_Current_Emissions_Factors.txt

-----	-----	-----	-----	-----	-----	-----
990	990	Organics (part not s	5.00E-02	General	8	10-17-77

ABATEMENT DEVICE #: 4241, MIST ELIMINATOR SCRUBBER
 ADC: 39 Fibrous Packed Scrubber
 Train: ,S4241,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
2990	2990	Nitrogen Oxides (par	2.00E-02	Specific	7	07-03-90
3990	3990	Sulfur Dioxide (SO2)	2.00E-02	Specific	7	07-03-90
1530	1530	Sulfuric Acid mist p	1.00E-02	General	8	10-17-77

ABATEMENT DEVICE #: 4360, TWO CARBON CANISTERS IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S4360,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
990	990	Organics (part not s	4.05E-02	Specific	3	03-09-07

ABATEMENT DEVICE #: 4363, TWO CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S4363,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
990	990	Organics (part not s	4.05E-02	Specific	3	03-09-07

ABATEMENT DEVICE #: 4364, TWO CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S4364,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
990	990	Organics (part not s	4.05E-02	Specific	3	03-09-07

ABATEMENT DEVICE #: 4405, VAPOR BALANCE SYSTEM
 ADC: 59 Vapor Recovery, Balance System
 Train: ,S4405,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
990	990	Organics (part not s	4.00E-02	Specific	6	08-19-03

ABATEMENT DEVICE #: 4422, SANDBLASTER DUST COLLECTOR
 ADC: 11 Baghouse, Shaking
 Train: ,S4422,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----

P10 - Chevron_Product_Current_Emissions_Factors.txt
 1990 1990 Particulates (portio 1.00E-02 Specific 3 02-07-90

ABATEMENT DEVICE #: 4429, TEMPORARY ODOR CONTROL SCRUBBER
 ADC: 47 Scrubber
 Train: ,S4429,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
5020	5020	Hydrogen Sulfide (H2	5.00E-02	Specific	8	02-01-03
6990	6990	Ammonia (NH3) pollut	5.00E-02	Specific	8	02-01-03
1990	1990	Particulates (portio	1.00E-01	General	8	10-17-77

ABATEMENT DEVICE #: 6007, CAUSTIC SCRUBBER: PEN-HEX ISOMERIZATION
 ADC: 44 Packed Bed Scrubber
 Train: ,S4355,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
451	451	Dry cleaning solvent	1.00E-03	Specific	3	10-01-01
1990	1990	Particulates (portio	1.00E-01	General	8	10-17-77
3990	3990	Sulfur Dioxide (SO2)	1.00E-01	General	8	10-17-77

ABATEMENT DEVICE #: 6012, SOUTH ISOMAX FLARE
 ADC: 04 Flare
 Train: ,S4238,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
160	160	LPG	2.00E-02	Specific	4	11-02-10
6970	6970	Methane (CH4)	1.00E-02	General	8	03-12-08
990	6960	Carbon Dioxide, non-	2.77E+00	General	4	04-15-09

ABATEMENT DEVICE #: 6020, FLARE GAS RECOVERY COMPRESSOR SYSTEM
 ADC: 61 Compression/Refrigeration Vapor Recovery
 Train: ,S4233,S4234,S4236,S4237,S3200,/,S6010,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-03	Specific		12-10-90

ABATEMENT DEVICE #: 6042, SANDBLASTER DUST COLLECTOR
 ADC: 12 Baghouse, Simple
 Train: ,S6042,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
1990	1990	Particulates (portio	1.00E-02	Specific	3	01-15-91

ABATEMENT DEVICE #: 6045, SANDBLASTER DUST COLLECTOR
 ADC: 12 Baghouse, Simple
 Train: ,S6045,/

P10 - Chevron_Product_Current_Emissions_Factors.txt

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
1990	1990	Particulates (portio	1.00E-02	Specific	8	01-15-91

ABATEMENT DEVICE #: 6046, SANDBLASTER DUST COLLECTOR
 ADC: 12 Baghouse, Simple
 Train: ,S6046,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
1990	1990	Particulates (portio	1.00E-02	Specific	3	01-15-91

ABATEMENT DEVICE #: 6047, SANDBLASTER DUST COLLECTOR
 ADC: 12 Baghouse, Simple
 Train: ,S6047,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
1990	1990	Particulates (portio	1.00E-02	Specific	3	01-15-91

ABATEMENT DEVICE #: 6200, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6200,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6201, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6201,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	2.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6202, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6202,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6203, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6203,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date

P10 - Chevron_Product_Current_Emissions_Factors.txt
 990 990 Organics (part not s 1.00E-02 Specific 3 08-26-93

ABATEMENT DEVICE #: 6204, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6204,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6205, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6205,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6206, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6206,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-25-03

ABATEMENT DEVICE #: 6207, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6207,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6208, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6208,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6209, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6209,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6210, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6210,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	2.00E-02	Specific		08-26-93

ABATEMENT DEVICE #: 6211, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6211,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6212, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6212,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	9.70E-01	Specific		08-26-93

ABATEMENT DEVICE #: 6213, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6213,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6214, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6214,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6215, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6215,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6216, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6216,/

P10 - Chevron_Product_Current_Emissions_Factors.txt

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6217, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6217,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6218, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6218,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6219, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6219,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6220, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6220,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6221, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6221,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6222, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6222,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

P10 - Chevron_Product_Current_Emissions_Factors.txt

-----	-----	-----	-----	-----	-----	-----
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6223, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6223,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6224, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6224,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6225, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6225,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6226, TWO VAPOR PHASE CARBN CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6226,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6227, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6227,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6228, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6228,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
-----	-----	-----	-----	-----	-----	-----
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

P10 - Chevron_Product_Current_Emissions_Factors.txt

ABATEMENT DEVICE #: 6229, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6229,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6230, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6230,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6231, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6231,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6232, TWO CARBON CANISTERS IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6232,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	06-01-94

ABATEMENT DEVICE #: 6233, TWO CARBON CAINSTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6233,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	06-01-94

ABATEMENT DEVICE #: 6234, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S6234,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6235, TWO VAPOR PHASE CARBON CANISTER IN SERIES
 ADC: 56 Adsorption, Activated Carbon/Charcoal

Train: ,S6235,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6236, TWO CARBON CANISTERS IN SERIES

ADC: 56 Adsorption, Activated Carbon/Charcoal

Train: ,S6236,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	06-01-94

ABATEMENT DEVICE #: 6237, TWO VAPOR PHASE CARBON CANISTER IN SERIES

ADC: 56 Adsorption, Activated Carbon/Charcoal

Train: ,S6237,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6238, TWO VAPOR PHASE CARBON CANISTER IN SERIES

ADC: 56 Adsorption, Activated Carbon/Charcoal

Train: ,S6238,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 6239, TWO VAPOR PHASE CARBON CANISTER IN SERIES

ADC: 56 Adsorption, Activated Carbon/Charcoal

Train: ,S6239,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	Specific	3	08-26-93

ABATEMENT DEVICE #: 7513, DESCRIPTION NOT AVAILABLE

ADC: 69 Catalyzed Diesel Particulate Filter

Train: ,S7513,/,P7544,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
1990	1990	Particulates (portio	1.50E-01	Specific	9	07-24-08
4990	4990	Carbon Monoxide (CO)	4.00E-01	General	5	05-24-05
990	990	Organics (part not s	5.00E-01	General	5	05-24-05
6970	6970	Methane (CH4)	5.00E-01	General	5	03-12-08
990	6960	Carbon Dioxide, non-	1.40E+00	General	4	04-15-09

ABATEMENT DEVICE #: 7514, DESCRIPTION NOT AVAILABLE

P10 - Chevron_Product_Current_Emissions_Factors.txt

ADC: 69 Catalyzed Diesel Particulate Filter

Train: ,S7514,,P7545,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
1990	1990	Particulates (portio	1.50E-01	Specific	9	07-24-08
4990	4990	Carbon Monoxide (CO)	4.00E-01	General	5	05-24-05
990	990	Organics (part not s	5.00E-01	General	5	05-24-05
6970	6970	Methane (CH4)	5.00E-01	General	5	03-12-08
990	6960	Carbon Dioxide, non-	1.40E+00	General	4	04-15-09

ABATEMENT DEVICE #: 7517, DESCRIPTION NOT AVAILABLE

ADC: 69 Catalyzed Diesel Particulate Filter

Train: ,S7517,,P7548,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-01	Specific	5	07-21-10
1990	1990	Particulates (portio	1.50E-01	Specific	9	07-21-10
4990	4990	Carbon Monoxide (CO)	4.00E-01	Specific	5	07-21-10
6970	6970	Methane (CH4)	5.00E-01	General	5	03-12-08
990	6960	Carbon Dioxide, non-	1.40E+00	General	4	04-15-09

ABATEMENT DEVICE #: 7518, DESCRIPTION NOT AVAILABLE

ADC: 69 Catalyzed Diesel Particulate Filter

Train: ,S7518,,P7549,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-01	Specific	5	07-21-10
1990	1990	Particulates (portio	1.50E-01	Specific	9	07-21-10
4990	4990	Carbon Monoxide (CO)	4.00E-01	Specific	5	07-21-10
6970	6970	Methane (CH4)	5.00E-01	General	5	03-12-08
990	6960	Carbon Dioxide, non-	1.40E+00	General	4	04-15-09

ABATEMENT DEVICE #: 7521, DESCRIPTION NOT AVAILABLE

ADC: 69 Catalyzed Diesel Particulate Filter

Train: ,S7521,,P7550,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-01	Specific	5	07-21-10
1990	1990	Particulates (portio	1.50E-01	Specific	9	07-21-10
4990	4990	Carbon Monoxide (CO)	4.00E-01	Specific	5	07-21-10
6970	6970	Methane (CH4)	5.00E-01	General	5	03-12-08
990	6960	Carbon Dioxide, non-	1.40E+00	General	4	04-15-09

ABATEMENT DEVICE #: 7523, DESCRIPTION NOT AVAILABLE

ADC: 69 Catalyzed Diesel Particulate Filter

Train: ,S7523,,P7552,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
1990	1990	Particulates (portio	1.50E-01	Specific	9	07-24-08

P10 - Chevron_Product_Current_Emissions_Factors.txt

4990	4990	Carbon Monoxide (CO)	4.00E-01	General	5	05-24-05
990	990	Organics (part not s	5.00E-01	General	5	05-24-05
6970	6970	Methane (CH4)	5.00E-01	General	5	03-12-08
990	6960	Carbon Dioxide, non-	1.40E+00	General	4	04-15-09

ABATEMENT DEVICE #: 7539, DESCRIPTION NOT AVAILABLE
 ADC: 69 Catalyzed Diesel Particulate Filter
 Train: ,S7539,/ ,P156,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
1990	1990	Particulates (portio	1.50E-01	Specific	3	03-12-09
4990	4990	Carbon Monoxide (CO)	4.00E-01	General	5	05-24-05
990	990	Organics (part not s	5.00E-01	General	5	05-24-05
6970	6970	Methane (CH4)	5.00E-01	General	5	03-12-08
990	6960	Carbon Dioxide, non-	1.40E+00	General	4	04-15-09

ABATEMENT DEVICE #: 32105, 2 CARBON CANISTERS-OUTFALL BASIN #13 SEP
 ADC: 56 Adsorption, Activated Carbon/Charcoal
 Train: ,S4148,/

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-01	Specific	3	08-04-08

ABATEMENT DEVICE #: -6039, LUBE FLARE, V-3501
 ADC: 04 Flare
 Train: ,S4340,S4341,S4342,S4343,S4345,S4346,S4348,/ ,P218,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	5.00E-02	Specific	2	08-01-85
6970	6970	Methane (CH4)	5.00E-02	Specific	2	03-12-08
990	6960	Carbon Dioxide, non-	2.77E+00	General	4	04-15-09

ABATEMENT DEVICE #: -6019, V-732 H2SO4 ALKY FLARE
 ADC: 04 Flare
 Train: ,S4291,/ ,P149,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	General	8	10-17-77
6970	6970	Methane (CH4)	1.00E-02	General	8	03-12-08
990	6960	Carbon Dioxide, non-	2.77E+00	General	4	04-15-09

ABATEMENT DEVICE #: -6016, V-731 FCC FLARE
 ADC: 04 Flare
 Train: ,S4285,/ ,P134,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	General	8	10-17-77
6970	6970	Methane (CH4)	1.00E-02	General	8	03-12-08

P10 - Chevron_Product_Current_Emissions_Factors.txt
 990 6960 Carbon Dioxide, non- 2.77E+00 General 4 04-15-09

ABATEMENT DEVICE #: -6013, V-281 NORTH ISOMAX FLARE

ADC: 04 Flare

Train: ,S4252,S4253,/,P132,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	General	8	10-17-77
6970	6970	Methane (CH4)	1.00E-02	General	8	03-12-08
990	6960	Carbon Dioxide, non-	2.77E+00	General	4	04-15-09

ABATEMENT DEVICE #: -6012, V-282 SOUTH ISAMAX FLARE

ADC: 04 Flare

Train: ,S4250,S4251,/,P131,

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	General	8	10-17-77
6970	6970	Methane (CH4)	1.00E-02	General	8	03-12-08
990	6960	Carbon Dioxide, non-	2.77E+00	General	4	04-15-09

ABATEMENT DEVICE #: -6010, LSF0 HIGHLEVEL FLARE

ADC: 04 Flare

Train: ,S4233,S4234,S4235,S4236,S4237,S4279,S4280,S4281, /

PCode In	PCode Out	Pollutant Descript.	Ab. Factor Multiplier	Ab. Factor Type	Basis	Effective Date
990	990	Organics (part not s	1.00E-02	General	8	10-17-77
6970	6970	Methane (CH4)	1.00E-02	General	8	03-12-08
990	6960	Carbon Dioxide, non-	2.77E+00	General	4	04-15-09

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Abated Criteria Pollutant Emissions
for Calendar Year 2008***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 CRITERIA POLLUTANTS - ABATEI
 P/O APPROVED (2005)

Printed: OCT 21, 201

Chevron Inc (P# 72)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	4.94E+01	thou gal/yr	12/31/2007		0	0.1	0	0	0
10	#2 Diesel Fuel	Distillate oil	T8H1?315	5.76E+04	thou gal/yr	12/31/2008		0	330.6	0	0	0
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	1.32E+04	thou gal/yr	12/31/2008		0	1.1	0	0	0
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.96E+05	thou gal/yr	12/31/2008		0	35.6	0	0	0
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	3.91E+01	thou gal/yr	12/31/2007		0	0.1	0	0	0
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006		0	0.2	0	0	0
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008		0	0	0	0	0
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005		0	0	0	0	0

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Unabated Criteria Pollutant Emissions
for Calendar Year 2008***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 CRITERIA POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: OCT 21, 2013

Chevron Inc (P# 72)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->				
								Org	NOx	SO2	CO	
5	Gasoline Storage Tank T-5	Avgas	T6472662	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	0
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T8317201	4.94E+01	thou gal/yr	12/31/2007	0	0.1	0	0	0	0
10	#2 Diesel Fuel	Distillate oil	T8H17315	5.76E+04	thou gal/yr	12/31/2008	0	330.6	0	0	0	0
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H17318	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	0
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T9837105	1.32E+04	thou gal/yr	12/31/2008	0	105.7	0	0	0	0
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T9837551	1.96E+05	thou gal/yr	12/31/2008	0	3556.1	0	0	0	0
18	New Ethanol Storage Tank	Ethyl alcohol	T6472105	3.91E+01	thou gal/yr	12/31/2007	0	0.1	0	0	0	0
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T2377662	6.63E+03	thou gal/yr	12/31/2006	0	23.6	0	0	0	0
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T6472662	0.00E+00	thou gal/yr	12/31/2008	0	0	0	0	0	0
21	Gasoline Storage Tank T-6	Avgas	T6472662	0.00E+00	thou gal/yr	10/15/2005	0	0	0	0	0	0

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Abated Criteria Pollutant Emissions
for Calendar Year 2009***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 CRITERIA POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: OCT 21, 2013

Chevron Inc (P# 72)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
5	Gasoline Storage Tank T-5	Avgas	T6H72662	5.18E+04	thou gal/yr	12/31/2009		0	2.9	0	0
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T8317201	4.94E+01	thou gal/yr	12/31/2007		0	0.1	0	0
10	#2 Diesel Fuel	Distillate oil	T8H17315	9.67E+02	thou gal/yr	12/31/2009		0	0.1	0	0
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H17318	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T9837105	1.66E+04	thou gal/yr	12/31/2009		0	1.3	0	0
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T9837551	1.88E+05	thou gal/yr	12/31/2009		0	34	0	0
18	New Ethanol Storage Tank	Ethyl alcohol	T6472105	3.91E+01	thou gal/yr	12/31/2007		0	0.1	0	0
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T2377662	6.63E+03	thou gal/yr	12/31/2006		0	0.2	0	0
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T6472662	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0
21	Gasoline Storage Tank T-6	Avgas	T6472662	0.00E+00	thou gal/yr	12/31/2009		0	0	0	0

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Unabated Criteria Pollutant Emissions
for Calendar Year 2009***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 CRITERIA POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: OCT 21, 2013

Chevron Inc (P# 72)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
5	Gasoline Storage Tank T-5	Avgas	T6H72662	5.18E+04	thou gal/yr	12/31/2009	0	2.9	0	0	0
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T8317201	4.94E+01	thou gal/yr	12/31/2007	0	0.1	0	0	0
10	#2 Diesel Fuel	Distillate oil	T8H17315	9.67E+02	thou gal/yr	12/31/2009	0	0.1	0	0	0
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H17318	0.00E+00	thou gal/yr	12/31/2009	0	0	0	0	0
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T9837105	1.66E+04	thou gal/yr	12/31/2009	0	132.5	0	0	0
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T9837551	1.88E+05	thou gal/yr	12/31/2009	0	3398	0	0	0
18	New Ethanol Storage Tank	Ethyl alcohol	T6472105	3.91E+01	thou gal/yr	12/31/2007	0	0.1	0	0	0
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T2377662	6.63E+03	thou gal/yr	12/31/2006	0	23.6	0	0	0
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T6472662	0.00E+00	thou gal/yr	12/31/2009	0	0	0	0	0
21	Gasoline Storage Tank T-6	Avgas	T6472662	0.00E+00	thou gal/yr	12/31/2009	0	0	0	0	0

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Abated Criteria Pollutant Emissions
for Calendar Year 2010***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 CRITERIA POLLUTANTS - ABATEE
 P/O APPROVED (2011)

Printed: OCT 21, 2011

Chevron Inc (P# 72)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009		0	2.9	0	0
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	4.94E+01	thou gal/yr	12/31/2007		0	0.1	0	0
10	#2 Diesel Fuel	Distillate oil	T8H1?315	2.00E+01	thou gal/yr	12/31/2010		0	0	0	0
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	2.04E+04	thou gal/yr	12/31/2010		0	1.6	0	0
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.83E+05	thou gal/yr	12/31/2010		0	33.1	0	0
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	3.91E+01	thou gal/yr	12/31/2007		0	0.1	0	0
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Unabated Criteria Pollutant Emissions
for Calendar Year 2010***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 CRITERIA POLLUTANTS - UNABATEC
 P/O APPROVED (2011)

Printed: OCT 21, 201:

Chevron Inc (P# 72)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009		0	2.9	0	0
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	4.94E+01	thou gal/yr	12/31/2007		0	0.1	0	0
10	#2 Diesel Fuel	Distillate oil	T8H1?315	2.00E+01	thou gal/yr	12/31/2010		0	0	0	0
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	2.04E+04	thou gal/yr	12/31/2010		0	163.4	0	0
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.83E+05	thou gal/yr	12/31/2010		0	3310.9	0	0
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	3.91E+01	thou gal/yr	12/31/2007		0	0.1	0	0
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010		0	0	0	0

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Abated Criteria Pollutant Emissions
for Calendar Year 2011***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 CRITERIA POLLUTANTS - ABATEE
 P/O APPROVED (2012)

Printed: OCT 21, 201:

Chevron Inc (P# 72)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011		0	2.8	0	0
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	5.19E+01	thou gal/yr	12/31/2011		0	0.1	0	0
10	#2 Diesel Fuel	Distillate oil	T8H1?315	3.48E+00	thou gal/yr	12/31/2011		0	0	0	0
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	2.24E+04	thou gal/yr	12/31/2011		0	1.8	0	0
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	2.00E+05	thou gal/yr	12/31/2011		0	36.3	0	0
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	2.24E+04	thou gal/yr	12/31/2011		0	0.5	0	0
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011		0	0.2	0	0
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Unabated Criteria Pollutant Emissions
for Calendar Year 2011***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 CRITERIA POLLUTANTS - UNABATEC
 P/O APPROVED (2012)

Printed: OCT 21, 201:

Chevron Inc (P# 72)

S#	Name	Material	SourceCode	ThruPut	Units	Date	PM	<----- Emissions in lbs/day ----->			
								Org	NOx	SO2	CO
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011		0	2.8	0	0
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	5.19E+01	thou gal/yr	12/31/2011		0	0.1	0	0
10	#2 Diesel Fuel	Distillate oil	T8H1?315	3.48E+00	thou gal/yr	12/31/2011		0	0	0	0
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	2.24E+04	thou gal/yr	12/31/2011		0	179.2	0	0
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	2.00E+05	thou gal/yr	12/31/2011		0	3625.7	0	0
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	2.24E+04	thou gal/yr	12/31/2011		0	0.5	0	0
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011		0	0.2	0	0
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011		0	0	0	0

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery
Chevron Marketing Terminal - Abated Detailed Pollutant Emissions
for Calendar Year 2008***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2009)

Printed: OCT 21, 2013

Chevron Inc (P# 72)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Cyclohexane		91	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Hexane		148	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Tetra-Ethyl Lead (TEL)		422	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Avgas		662	0.00E+00
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	4.94E+01	thou gal/yr	12/31/2007	Organic liquid - other/not s		201	8.91E-02
10	#2 Diesel Fuel	Distillate oil	T8H1?315	5.76E+04	thou gal/yr	12/31/2008	Distillate oil		315	3.31E+02
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	1.32E+04	thou gal/yr	12/31/2008	Ethyl alcohol		105	1.06E+00
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.96E+05	thou gal/yr	12/31/2008	Benzene		41	1.07E-01
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.96E+05	thou gal/yr	12/31/2008	Toluene		293	3.63E-01
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.96E+05	thou gal/yr	12/31/2008	Xylene		307	4.27E-02
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.96E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	2.49E-02
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.96E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	3.50E+01
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	3.91E+01	thou gal/yr	12/31/2007	Ethyl alcohol		105	1.36E-01
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Benzene		41	1.16E-02
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Cyclohexane		91	5.66E-03
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Hexane		148	1.18E-02
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Toluene		293	3.30E-02
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Xylene		307	4.11E-02
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Ethylbenzene		333	9.44E-03
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Tetra-Ethyl Lead (TEL)		422	4.72E-03
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Avgas		662	1.19E-01
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Cyclohexane		91	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Hexane		148	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Tetra-Ethyl Lead (TEL)		422	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Avgas		662	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Benzene		41	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Cyclohexane		91	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Hexane		148	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Toluene		293	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Xylene		307	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Ethylbenzene		333	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Tetra-Ethyl Lead (TEL)		422	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Avgas		662	0.00E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Unabated Detailed Pollutant Emissions
for Calendar Year 2008***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2009)

Printed: OCT 21, 2013

Chevron Inc (P# 72)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Cyclohexane		91	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Hexane		148	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Tetra-Ethyl Lead (TEL)		422	0.00E+00
5	Gasoline Storage Tank T-5	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Avgas		662	0.00E+00
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	4.94E+01	thou gal/yr	12/31/2007	Organic liquid - other/not s		201	8.91E-02
10	#2 Diesel Fuel	Distillate oil	T8H1?315	5.76E+04	thou gal/yr	12/31/2008	Distillate oil		315	3.31E+02
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2008	Hydrocarbon - mixtures, othe		318	0.00E+00
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	1.32E+04	thou gal/yr	12/31/2008	Ethyl alcohol		105	1.06E+02
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.96E+05	thou gal/yr	12/31/2008	Benzene		41	1.07E+01
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.96E+05	thou gal/yr	12/31/2008	Toluene		293	3.63E+01
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.96E+05	thou gal/yr	12/31/2008	Xylene		307	4.27E+00
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.96E+05	thou gal/yr	12/31/2008	Ethylbenzene		333	2.49E+00
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.96E+05	thou gal/yr	12/31/2008	Gasoline - unleaded		551	3.50E+03
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	3.91E+01	thou gal/yr	12/31/2007	Ethyl alcohol		105	1.36E-01
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Benzene		41	1.16E+00
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Cyclohexane		91	5.66E-01
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Hexane		148	1.18E+00
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Toluene		293	3.30E+00
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Xylene		307	4.11E+00
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Ethylbenzene		333	9.44E-01
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Tetra-Ethyl Lead (TEL)		422	4.72E-01
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Avgas		662	1.19E+01
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Benzene		41	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Cyclohexane		91	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Hexane		148	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Toluene		293	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Xylene		307	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Ethylbenzene		333	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Tetra-Ethyl Lead (TEL)		422	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2008	Avgas		662	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Benzene		41	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Cyclohexane		91	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Hexane		148	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Toluene		293	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Xylene		307	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Ethylbenzene		333	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Tetra-Ethyl Lead (TEL)		422	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	10/15/2005	Avgas		662	0.00E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery
Chevron Marketing Terminal - Abated Detailed Pollutant Emissions
for Calendar Year 2009***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2010)

Printed: OCT 21, 2013

Chevron Inc (P# 72)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Benzene		41	1.41E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Cyclohexane		91	6.89E-02
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Hexane		148	1.44E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Toluene		293	4.02E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Xylene		307	5.00E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Ethylbenzene		333	1.15E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Tetra-Ethyl Lead (TEL)		422	5.74E-02
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Avgas		662	1.44E+00
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	4.94E+01	thou gal/yr	12/31/2007	Organic liquid - other/not s		201	8.91E-02
10	#2 Diesel Fuel	Distillate oil	T8H1?315	9.67E+02	thou gal/yr	12/31/2009	Distillate oil		315	9.59E-02
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe		318	0.00E+00
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	1.66E+04	thou gal/yr	12/31/2009	Ethyl alcohol		105	1.33E+00
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.88E+05	thou gal/yr	12/31/2009	Benzene		41	1.02E-01
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.88E+05	thou gal/yr	12/31/2009	Toluene		293	3.47E-01
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.88E+05	thou gal/yr	12/31/2009	Xylene		307	4.08E-02
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.88E+05	thou gal/yr	12/31/2009	Ethylbenzene		333	2.38E-02
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.88E+05	thou gal/yr	12/31/2009	Gasoline - unleaded		551	3.35E+01
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	3.91E+01	thou gal/yr	12/31/2007	Ethyl alcohol		105	1.36E-01
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Benzene		41	1.16E-02
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Cyclohexane		91	5.66E-03
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Hexane		148	1.18E-02
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Toluene		293	3.30E-02
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Xylene		307	4.11E-02
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Ethylbenzene		333	9.44E-03
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Tetra-Ethyl Lead (TEL)		422	4.72E-03
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Avgas		662	1.19E-01
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Cyclohexane		91	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Hexane		148	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Tetra-Ethyl Lead (TEL)		422	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Avgas		662	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Benzene		41	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Cyclohexane		91	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Hexane		148	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Toluene		293	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Xylene		307	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene		333	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Tetra-Ethyl Lead (TEL)		422	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Avgas		662	0.00E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Unabated Detailed Pollutant Emissions
for Calendar Year 2009***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2010)

Printed: OCT 21, 2013

Chevron Inc (P# 72)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Benzene	41	1.41E-01	
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Cyclohexane	91	6.89E-02	
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Hexane	148	1.44E-01	
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Toluene	293	4.02E-01	
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Xylene	307	5.00E-01	
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Ethylbenzene	333	1.15E-01	
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Tetra-Ethyl Lead (TEL)	422	5.74E-02	
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Avgas	662	1.44E+00	
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	4.94E+01	thou gal/yr	12/31/2007	Organic liquid - other/not s	201	8.91E-02	
10	#2 Diesel Fuel	Distillate oil	T8H1?315	9.67E+02	thou gal/yr	12/31/2009	Distillate oil	315	9.59E-02	
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2009	Hydrocarbon - mixtures, othe	318	0.00E+00	
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	1.66E+04	thou gal/yr	12/31/2009	Ethyl alcohol	105	1.33E+02	
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.88E+05	thou gal/yr	12/31/2009	Benzene	41	1.02E+01	
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.88E+05	thou gal/yr	12/31/2009	Toluene	293	3.47E+01	
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.88E+05	thou gal/yr	12/31/2009	Xylene	307	4.08E+00	
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.88E+05	thou gal/yr	12/31/2009	Ethylbenzene	333	2.38E+00	
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.88E+05	thou gal/yr	12/31/2009	Gasoline - unleaded	551	3.35E+03	
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	3.91E+01	thou gal/yr	12/31/2007	Ethyl alcohol	105	1.36E-01	
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Benzene	41	1.16E+00	
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Cyclohexane	91	5.66E-01	
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Hexane	148	1.18E+00	
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Toluene	293	3.30E+00	
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Xylene	307	4.11E+00	
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Ethylbenzene	333	9.44E-01	
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Tetra-Ethyl Lead (TEL)	422	4.72E-01	
19	Aviation Gasoline Transmix Temporary Storage Tank	Avgas	T23??662	6.63E+03	thou gal/yr	12/31/2006	Avgas	662	1.19E+01	
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Benzene	41	0.00E+00	
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Cyclohexane	91	0.00E+00	
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Hexane	148	0.00E+00	
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Toluene	293	0.00E+00	
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Xylene	307	0.00E+00	
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene	333	0.00E+00	
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Tetra-Ethyl Lead (TEL)	422	0.00E+00	
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Avgas	662	0.00E+00	
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Benzene	41	0.00E+00	
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Cyclohexane	91	0.00E+00	
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Hexane	148	0.00E+00	
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Toluene	293	0.00E+00	
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Xylene	307	0.00E+00	
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Ethylbenzene	333	0.00E+00	
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Tetra-Ethyl Lead (TEL)	422	0.00E+00	
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2009	Avgas	662	0.00E+00	

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Abated Detailed Pollutant Emissions
for Calendar Year 2010***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2011)

Printed: OCT 21, 2013

Chevron Inc (P# 72)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Benzene		41	1.41E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Cyclohexane		91	6.89E-02
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Hexane		148	1.44E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Toluene		293	4.02E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Xylene		307	5.00E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Ethylbenzene		333	1.15E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Tetra-Ethyl Lead (TEL)		422	5.74E-02
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Avgas		662	1.44E+00
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	4.94E+01	thou gal/yr	12/31/2007	Organic liquid - other/not s		201	8.91E-02
10	#2 Diesel Fuel	Distillate oil	T8H1?315	2.00E+01	thou gal/yr	12/31/2010	Distillate oil		315	1.48E-02
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	2.04E+04	thou gal/yr	12/31/2010	Ethyl alcohol		105	1.63E+00
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.83E+05	thou gal/yr	12/31/2010	Benzene		41	9.93E-02
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.83E+05	thou gal/yr	12/31/2010	Toluene		293	3.38E-01
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.83E+05	thou gal/yr	12/31/2010	Xylene		307	3.97E-02
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.83E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	2.32E-02
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.83E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	3.26E+01
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	3.91E+01	thou gal/yr	12/31/2007	Ethyl alcohol		105	1.36E-01
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Cyclohexane		91	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Hexane		148	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Tetra-Ethyl Lead (TEL)		422	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Avgas		662	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Cyclohexane		91	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Hexane		148	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Tetra-Ethyl Lead (TEL)		422	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Avgas		662	0.00E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Unabated Detailed Pollutant Emissions
for Calendar Year 2010***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2011)

Printed: OCT 21, 2013

Chevron Inc (P# 72)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Benzene		41	1.41E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Cyclohexane		91	6.89E-02
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Hexane		148	1.44E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Toluene		293	4.02E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Xylene		307	5.00E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Ethylbenzene		333	1.15E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Tetra-Ethyl Lead (TEL)		422	5.74E-02
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	5.18E+04	thou gal/yr	12/31/2009	Avgas		662	1.44E+00
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	4.94E+01	thou gal/yr	12/31/2007	Organic liquid - other/not s		201	8.91E-02
10	#2 Diesel Fuel	Distillate oil	T8H1?315	2.00E+01	thou gal/yr	12/31/2010	Distillate oil		315	1.48E-02
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2010	Hydrocarbon - mixtures, othe		318	0.00E+00
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	2.04E+04	thou gal/yr	12/31/2010	Ethyl alcohol		105	1.63E+02
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.83E+05	thou gal/yr	12/31/2010	Benzene		41	9.93E+00
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.83E+05	thou gal/yr	12/31/2010	Toluene		293	3.38E+01
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.83E+05	thou gal/yr	12/31/2010	Xylene		307	3.97E+00
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.83E+05	thou gal/yr	12/31/2010	Ethylbenzene		333	2.32E+00
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	1.83E+05	thou gal/yr	12/31/2010	Gasoline - unleaded		551	3.26E+03
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	3.91E+01	thou gal/yr	12/31/2007	Ethyl alcohol		105	1.36E-01
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Cyclohexane		91	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Hexane		148	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Tetra-Ethyl Lead (TEL)		422	0.00E+00
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Avgas		662	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Benzene		41	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Cyclohexane		91	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Hexane		148	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Toluene		293	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Xylene		307	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Ethylbenzene		333	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Tetra-Ethyl Lead (TEL)		422	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2010	Avgas		662	0.00E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Abated Detailed Pollutant Emissions
for Calendar Year 2011***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 P/O APPROVED (2012)

Printed: OCT 21, 2013

Chevron Inc (P# 72)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Benzene		41	1.37E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Cyclohexane		91	6.69E-02
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Hexane		148	1.39E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Toluene		293	3.90E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Xylene		307	4.85E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	1.12E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Tetra-Ethyl Lead (TEL)		422	5.58E-02
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Avgas		662	1.40E+00
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	5.19E+01	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	9.14E-02
10	#2 Diesel Fuel	Distillate oil	T8H1?315	3.48E+00	thou gal/yr	12/31/2011	Distillate oil		315	1.17E-02
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	2.24E+04	thou gal/yr	12/31/2011	Ethyl alcohol		105	1.79E+00
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	2.00E+05	thou gal/yr	12/31/2011	Benzene		41	1.09E-01
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	2.00E+05	thou gal/yr	12/31/2011	Toluene		293	3.70E-01
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	2.00E+05	thou gal/yr	12/31/2011	Xylene		307	4.35E-02
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	2.00E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	2.54E-02
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	2.00E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	3.57E+01
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	2.24E+04	thou gal/yr	12/31/2011	Ethyl alcohol		105	5.15E-01
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Benzene		41	8.47E-03
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Cyclohexane		91	4.15E-03
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Hexane		148	8.65E-03
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Toluene		293	2.42E-02
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Xylene		307	3.01E-02
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Ethylbenzene		333	6.92E-03
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Tetra-Ethyl Lead (TEL)		422	3.46E-03
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Avgas		662	8.70E-02
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Cyclohexane		91	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Hexane		148	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Tetra-Ethyl Lead (TEL)		422	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Avgas		662	0.00E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery***

***Chevron Marketing Terminal - Unabated Detailed Pollutant Emissions
for Calendar Year 2011***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - UNABATED
 P/O APPROVED (2012)

Printed: OCT 21, 2013

Chevron Inc (P# 72)

S#	Name	Material	Source Code	ThruPut	Units	Date	<----- Emissions ----->		Code	lb/day
							Pollutant			
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Benzene		41	1.37E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Cyclohexane		91	6.69E-02
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Hexane		148	1.39E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Toluene		293	3.90E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Xylene		307	4.85E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Ethylbenzene		333	1.12E-01
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Tetra-Ethyl Lead (TEL)		422	5.58E-02
5	Gasoline Storage Tank T-5	Avgas	T6H?2662	4.98E+04	thou gal/yr	12/31/2011	Avgas		662	1.40E+00
9	GASOLINE ADDITIVE TANK - Techroline	Organic liquid - other/not spe	T831?201	5.19E+01	thou gal/yr	12/31/2011	Organic liquid - other/not s		201	9.14E-02
10	#2 Diesel Fuel	Distillate oil	T8H1?315	3.48E+00	thou gal/yr	12/31/2011	Distillate oil		315	1.17E-02
10	#2 Diesel Fuel	Hydrocarbon - mixtures, other/	T8H1?318	0.00E+00	thou gal/yr	12/31/2011	Hydrocarbon - mixtures, othe		318	0.00E+00
13	Gasoline and Ethanol Unloading and Blending	Ethyl alcohol	T983?105	2.24E+04	thou gal/yr	12/31/2011	Ethyl alcohol		105	1.79E+02
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	2.00E+05	thou gal/yr	12/31/2011	Benzene		41	1.09E+01
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	2.00E+05	thou gal/yr	12/31/2011	Toluene		293	3.70E+01
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	2.00E+05	thou gal/yr	12/31/2011	Xylene		307	4.35E+00
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	2.00E+05	thou gal/yr	12/31/2011	Ethylbenzene		333	2.54E+00
13	Gasoline and Ethanol Unloading and Blending	Gasoline - unleaded	T983?551	2.00E+05	thou gal/yr	12/31/2011	Gasoline - unleaded		551	3.57E+03
18	New Ethanol Storage Tank	Ethyl alcohol	T64?2105	2.24E+04	thou gal/yr	12/31/2011	Ethyl alcohol		105	5.15E-01
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Benzene		41	8.47E-03
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Cyclohexane		91	4.15E-03
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Hexane		148	8.65E-03
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Toluene		293	2.42E-02
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Xylene		307	3.01E-02
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Ethylbenzene		333	6.92E-03
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Tetra-Ethyl Lead (TEL)		422	3.46E-03
20	Aviation Gasoline Transmix Storage Tank T-7	Avgas	T64?2662	3.69E+01	thou gal/yr	12/31/2011	Avgas		662	8.70E-02
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Benzene		41	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Cyclohexane		91	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Hexane		148	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Toluene		293	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Xylene		307	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Ethylbenzene		333	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Tetra-Ethyl Lead (TEL)		422	0.00E+00
21	Gasoline Storage Tank T-6	Avgas	T64?2662	0.00E+00	thou gal/yr	12/31/2011	Avgas		662	0.00E+00

***Bay Area Air Quality Management District
Emission Inventory for the Chevron Richmond Refinery
Chevron Products Company - Current Emission Factors***

3. P72 - Chevron_Terminal_Current_Emission_Factors.txt

PLANT #: 72
Chevron Inc
155 Castro Street
Richmond, CA 94802

SOURCE # ('@' for entire plant): @

SOURCE #: 5, GASOLINE STORAGE TANK T-5
SOURCE CODE T6H?2662 not a C- or G-type source.

SOURCE #: 9, GASOLINE ADDITIVE TANK - TECHROLINE
SOURCE CODE T831?201 not a C- or G-type source.

SOURCE #: 10, #2 DIESEL FUEL
SOURCE CODE T8H1?315 not a C- or G-type source.
SOURCE CODE T8H1?318 not a C- or G-type source.

SOURCE #: 13, GASOLINE AND ETHANOL UNLOADING AND BLENDING
SOURCE CODE T983?105 not a C- or G-type source.
SOURCE CODE T983?551 not a C- or G-type source.

SOURCE #: 18, NEW ETHANOL STORAGE TANK
SOURCE CODE T64?2105 not a C- or G-type source.

SOURCE #: 20, AVIATION GASOLINE TRANSMIX STORAGE TANK T-7
SOURCE CODE T64?2662 not a C- or G-type source.

SOURCE #: 21, GASOLINE STORAGE TANK T-6
SOURCE CODE T64?2662 not a C- or G-type source.

SOURCE #: 22, TEMP SINGLE PASS HEAT EXCHANGER & CHILLER

Source Code: G7106321 Material Processed: Petroleum products - other
Train: no train

Pollutant Name	Pol. Code	Emiss. Factor lb/thou gallo	EF File	Basis Code	Repl. Code	Empl Eff. Date
Organics (part not s	990	1.22E-02	Specific			

APPENDIX 4.3 - HRA

HRA: Air Dispersion Modeling and Health Risk
Assessment Methodologies

APPENDIX 4.3

HRA: AIR DISPERSION MODELING AND HEALTH RISK ASSESSMENT METHODOLOGIES

This document describes the methods and results of a health risk assessment (HRA) that evaluates potential public health effects from toxic air contaminant (TAC) emissions generated by the operation associated with the Modernization Project. TACs are compounds designated by the California's Environmental Protection Agency's (Cal/EPA) Office of Health Hazard Assessment (OEHHA) as known or suspected to cause adverse health effects after short-term (acute) or long-term (chronic) exposure. In addition to naming certain chemicals as TACs, OEHHA also provides information that allows the prediction of health impacts associated with the public's potential exposure to TACs. This information is used in an HRA as described in this section to estimate the potential public health impacts resulting from TAC emissions from the Modernization Project.

In addition to evaluating TACs, this HRA also predicts the ambient air concentrations of particulate matter less than 2.5 microns in diameter (PM_{2.5}) and carbon monoxide (CO) to evaluate consistency with Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act (CEQA) thresholds for these chemicals. The methods used to estimate PM_{2.5} and CO emissions are described elsewhere, and will not be discussed further in this appendix. While the methods used to estimate TAC emissions are also discussed elsewhere, they are described here in more detail, as the specific TACs emitted from various processes strongly impact the results of the HRA.

The HRA process was designed to evaluate the health impacts of the Modernization Project, and to ensure that the Project scenario that resulted in the greatest health impacts was also evaluated. As will be discussed below, the emissions associated with marine traffic had the greatest impacts on the unmitigated health impacts. Accordingly, the Project scenario with the greatest marine traffic, the Lightest Crude Blend, was analyzed in addition to the Modernization Project Crude Blend scenario. Each of these scenarios was analyzed with and without project design features.¹

¹ The Project Design Features include upgrades to the SUEZMAX ships, and the installation of a single tank dome on tank 1491. The emissions reductions from the upgrades to the SUEZMAX ships was incorporated into the HRAs conducted for the cases with Project Design Features. However, the emissions reductions stemming from the

The HRA evaluated the incremental health effects associated with the:

- Project Crude Blend with Maximum Hydrogen Plant Production, 93% Utilization Scenario without Project Design Features;
- Project Crude Blend with Maximum Hydrogen Plant Production, 93% Utilization Scenario with Project Design Features
- Project Crude Blend with Maximum Hydrogen Plant Production, 100% Utilization Scenario without Project Design Features;
- Project Crude Blend with Maximum Hydrogen Plant Production, 100% Utilization Scenario with Project Design Features
- Lightest Crude Blend with Maximum Hydrogen Production, 93% Utilization Scenario without Project Design Features
- Lightest Crude Blend with Maximum Hydrogen Production, 93% Utilization Scenario with Project Design Features
- Lightest Crude Blend with Maximum Hydrogen Production, 100% Utilization Scenario without Project Design Features
- Lightest Crude Blend with Maximum Hydrogen Production, 100% Utilization Scenario with Project Design Features

The determination of health risks in this HRA required the calculation of average exposures to chemicals depending on the type of health impact analyzed for. Cancer risks require the evaluation of a 70-year average exposure for residents, and a 40-year average exposure for workers. Maximum annual emission rates during project operation were conservatively used to determine chronic non-cancer effects, given that the chronic exposure period for non-cancer effects is assumed to be approximately 12% of a 70-year lifetime, or 8 or more years (OEHHA, 2002). Maximum 1-hour emission rates were used to determine the acute hazard index (HI) because the acute exposure period is 1 hour for most TACs.

The extended period of analysis (up to 70 years for cancer risk) required predictions of the future operational characteristics of the proposed emission sources. Although Refinery Operations sources are assumed to operate in the future as they operate today, transportation sources, such as marine vessels and

installation of the single tank dome was conservatively not included in the HRAs with Project Design Features. This was because the tanks were modeled at the closest location to the residents. Were the emissions reductions modeled at this location, the reduction in health impacts would be overestimated.

trucks are assumed to have lower emissions in the future than they do today due to existing laws that require cleaner engines over time. Three important factors that would affect future emissions from transportation Project sources and that were integrated into the analysis are reductions in emissions due to:

- a) the incidental phase-in of cleaner vehicles or equipment due to normal fleet turnover;
- b) the future phase-in of cleaner fuels as required by existing regulations or agreements;
- c) the future phase-in of cleaner engines as required by existing regulations or agreements.

The HRA analyzed Project emissions and potential human exposure to carcinogens during the 70-year period from 2016 through 2085. In order to ensure that the incremental Modernization Project health impacts were not minimized as a result of cleaner fuels and engines that would result independent of the Modernization Project, the Baseline is based on the same 70-year period from 2016 through 2085.

Concentrations in the air are calculated from TAC emissions using air dispersion modeling. Air dispersion modeling is the mathematical estimation of pollutant impacts from emissions sources within a study area. Information on factors that impact the fate and transport of pollutants in the atmosphere including: meteorological conditions, site configuration, emission release characteristics, and surrounding terrain, are used in the dispersion model. Once concentrations are calculated using air dispersion modeling, the risks are calculated using information on how much air people breathe and the toxicity of the chemical considered. The resulting cancer risks and chronic and acute HI, as described above, are compared to the BAAQMD CEQA thresholds to assess significance.

The incremental carcinogenic and non-carcinogenic inhalation health risks from the Modernization Project were determined through dispersion modeling of the Modernization Project TAC emissions and applying OEHHA toxicity factors to the predicted TAC concentrations consistent with the BAAQMD (2010a) and OEHHA Hot Spots Guidance (OEHHA, 2003).

This HRA was prepared in accordance with the Recommended Methods for Screening and Modeling Local Risks and Hazards (BAAQMD, 2012). In general, the Protocol follows the methodology for preparing Tier 1 risk assessments described in The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2003). Prior to development of the HRA, the general approach and project-specific decisions were discussed with and reviewed by the BAAQMD prior to implementation.

1.1 OVERVIEW OF HEALTH RISK ASSESSMENT

Health risk assessments are used to estimate whether current or future chemical exposures will pose health risks to a broad population, such as a city or a community. Scientific methods used in health risk assessment cannot be used to link individual illnesses to past chemical exposures, nor can health risk assessments and epidemiologic studies prove that a specific toxic substance caused an individual's illness. In general, three types of health impacts are evaluated: cancer risk, chronic (long-term) health impacts, and acute (short-term) health impacts.

Consistent with OEHHA guidance, all chemicals that are emitted from the Modernization Project, and have toxicity values provided by OEHHA (OEHHA, 2014), were evaluated. The list of TACs evaluated in this assessment is contained in Table A4.3-HRA-1.

Individuals can be exposed to chemicals that are emitted into the air several different ways. They can breathe the air, and the chemicals in the air may remain in their lungs or may be absorbed into their bloodstream via the lungs. Chemicals in the air can be deposited on the ground and may come into contact through the skin (this is known as "dermal exposure") because an individual may touch the chemical that has deposited to the ground. The chemical may come into contact with food that an individual eats or may be ingested because it gets on the fingers of an individual. This is known as "oral exposure." Finally, infants can come into chemicals that may contaminate its mother's milk. OEHHA has designated which chemicals may result in risks from dermal, oral, and mothers' milk pathways. Only certain chemicals are recognized by OEHHA to have potential impacts by the oral, dermal or mother's milk routes. These chemicals are specified in the OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines: Technical Support Document for Exposure Assessment and Stochastic Analysis, Appendix E (OEHHA, 2012).

OEHHA Hot Spots Guidance (OEHHA, 2003, 2012) requires the evaluation of non-inhalation exposure pathways, referred to as a multi-pathway analysis, in risk assessments prepared to meet the 2010 BAAQMD CEQA Guidelines. Selection of the additional pathways for a multi-pathway analysis is specific to the chemical and land use designations in the area impacted by the facility.

Multi-pathway factors which represent the mathematical combination of the toxicity values and exposure parameters specific to this HRA can be generated to estimate health risks for the multi-pathway exposures by combining with the air modeling results.

Table A4.3-HRA-1
Carcinogenic, Chronic and Acute Noncarcinogenic Toxicity Values
Chevron Modernization Project
Richmond, California

Chemical	Cancer Potency Factor ^a	Chronic Reference Exposure Level ^a	Acute Reference Exposure Level ^a
	([mg/kg-day] ⁻¹)	(µg/m ³)	(µg/m ³)
DPM	1.1	5	--
1,2-Dichloroethane	0.072	400	--
1,3-Butadiene	0.6	2.0	660
Acetaldehyde	0.01	140	470
Acrolein	--	0.35	2.5
Ammonia	--	200	3200
Arsenic	12	0.015	0.2
Benzene	0.1	60	1300
Benzo(a)anthracene	0.39	--	--
Benzo(a)pyrene	3.9	--	--
Benzo(b)fluoranthene	0.39	--	--
Benzo(k)fluoranthene	0.39	--	--
Beryllium	8.4	0.007	--
Cadmium	15	0.02	--
Carbon disulfide	--	800	6200
Chlorine	--	0.2	210
chlorobenzene	--	1,000	--
Chloroform	0.019	300	150
Chromium (VI)	510	0.2	--
Chrysene	0.039	--	--
Copper	--	--	100
Cresols	--	600	--
Cyanide	--	9	340
Cyanide Compounds	--	9	340
Dibenz(a,h)anthracene	4.1	--	--
Diethanolamine	--	3	--
Ethylbenzene	0.0087	2,000	--
Ethylene Dibromide	0.25	1	--
Formaldehyde	0.021	9	55
Hexane	--	7,000	--
Hydrogen chloride	--	9	2100
Hydrogen sulfide	--	10	42
Indeno(1,2,3-cd)pyrene	0.4	--	--
Lead	0.042	--	--
Manganese	--	0.09	--
Mercury	--	0.03	0.6
Methanol	--	4,000	28,000
Methyl Ethyl Ketone	--	--	13,000
Methyl tert-Butyl Ether	0.0018	8,000	--
m-Xylene	--	700	22,000
Naphthalene	0.12	9	--
Nickel	0.91	0.014	0.2
o-Xylene	--	700	22000
Perchloroethylene	0.021	35	20000
Phenol	--	200	5,800
Polychlorinated dioxins/furans	130,000	0.00004	--
Propylene	--	3,000.0	--
Propylene glycol monomethyl	--	7,000	--
Selenium	--	20	--
Silicon	--	3	--
Styrene	--	900	21000
Sulfate	--	--	120
Sulfuric acid	--	1	120
Toluene	--	300	37,000
Vanadium	--	--	30
Xylenes	--	700	22,000

Note:

1. Values presented in this table reflect values used in this analysis. A dash "--" implies that this chemical does not have an associated potency factor or reference exposure level.

Abbreviations:

mg/kg-day]-1: per milligram per kilogram-day

µg/m³: micrograms per cubic meter

ARB: Air Resources Board

DPM: Diesel Particulate Matter

HI: Hazard Index

OEHHA: Office of Environmental Health Hazard Assessment

References:

^a Office of Environmental Health Hazard Assessment (OEHHA). 2013. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. August.

The HRA process requires the completion of four general steps to estimate health impact results: (1) quantify project-generated TAC emissions; (2) identify ground-level receptor locations that may be affected by the emissions (including both a regular grid of receptors and any additional sensitive receptor locations such as schools, hospitals, convalescent homes, and/or daycare centers); (3) perform dispersion modeling analyses to estimate ambient TAC concentrations at each receptor location; and (4) use established methods to estimate potential health effects at each receptor location.

The first step in an HRA is to identify the TACs that are being emitted from a source, and quantifying the amount of chemicals emitted from each location. For sources of emissions that have not yet been constructed, like those associated with the Modernization Project, engineers use information about similar sources to estimate emissions, and locations of emissions. Once the identity and location of the sources of TAC emissions are known, the next step is to determine how it moves away from the sources into the ambient air.

For sources of emissions that have not yet been constructed, engineers use computer models to estimate the amount of pollutant at different distances from the source. Computer models use mathematical equations that represent the processes that occur when a facility releases a pollutant and also the movement of pollutants through the air. Factors such as distance from the source to exposed persons, wind speed and direction, and smokestack height affect these estimates.

The final step in an air pathway exposure assessment is to estimate the amounts each person inhales. To do this, scientists combine estimates of breathing rates and lifespan of an average person with estimates of the amount of pollutant in the air that person breathes. The exposure assessment also considers how much pollutant may reach the individual through contact with the skin or through ingestion.

Toxic air pollutants can cause health problems by interfering with normal body functions. Most commonly they change chemical reactions within individual cells, the building blocks of living things. These changes can kill cells, impair cell function, or re-direct cell activity. The results can be damaged organs, birth defects when the cells of an unborn child are damaged, or cancer that develops when cells begin to grow at an uncontrolled rate.

The dose-response relationship for a specific pollutant describes the association between exposure and the observed response (health effect). In other words, it estimates how different levels of exposure to a pollutant change the likelihood

and severity of health effects. Scientists use results of animal and human studies to establish dose-response relationships.

In the absence of clear evidence to the contrary, United States Environmental Protection Agency (EPA) and OEHHA assume that there are no exposures that have "zero risk"—even a very low exposure to a cancer-causing pollutant can increase the risk of cancer (albeit a small amount). EPA and OEHHA also assume that the relationship between dose and response is a straight line—for each unit of increase in exposure (dose), there is an increase in cancer response.

For non-cancer causing chemicals, a dose may exist below the minimum health effect level for which no adverse effects occur. EPA and OEHHA typically assume that at low doses the body's natural protective mechanisms repair any damage caused by the pollutant, so there is no ill effect at low doses. However, for some substances, non-cancer effects may occur at low doses. The dose-response relationship (the response occurring with increasing dose) varies with pollutant, individual sensitivity, and type of health effect.

Risk assessment results are presented as calculated cancer risks and non-cancer hazards during the risk characterization step. Cancer risk estimates represent the probability of cancer (presented as a probability per million people) related to potential exposures to pollutants evaluated in the HRA. Non-cancer hazards are represented as the ratio between the estimated dose (i.e., intake of chemical) and chemical-specific reference exposure level developed and approved by Cal/EPA for a specific health endpoint (e.g., eye or lung irritation). The cancer risk or non-cancer HI estimate is then compared to a threshold level that is intended to be protective of public health. This comparison aids the Lead Agency in prescribing appropriate actions to mitigate risks, if needed. If cancer risk estimates exceed the significance level, then all feasible mitigation must be applied to the project.

1.1.1 Quantification of Project TAC Emissions

The major sources of emissions of TACs from Refinery Operations are stationary sources, such as furnaces and process units used to heat, chemically modify, and separate crude oil and purchased gas oils feedstock to the Facility into marketable products such as gasoline, diesel, jet fuel, and lubricants. Refinery Operations also generate fugitive emissions from tanks and process components, such as pumps and flanges on pipelines. Emissions are also generated from combustion sources involved in the transportation of feedstocks brought into and marketable products transported from the Facility. Transportation-related combustion air emissions sources include vessels associated with marine shipping, locomotives associated with rail transport and trucks associated with bringing materials into and out of the Facility.

The quantification of TAC emissions generated by the Project is described in several other appendices to the *Section 4.3, Air Quality* of this Environmental Impact Report (EIR), and tables quantifying TAC emissions are contained in this appendix. Estimation of Refinery Operations emissions in *Appendix 4.3-OP*. Emissions associated with shipping feedstock to and products from the Facility are described in *Appendix 4.3-SHP*, and emissions associated with material transport to and from the Facility by rail and truck are discussed in *Appendix 4.3-TRANS*. The methodology used to estimate TAC emissions for each of these sources is also briefly described here.

Due to the fact that the rail activities were small relative to the large railyard operation adjacent to the Facility, and that the emissions associated with rail activities were small relative to the emissions associated with shipping, risks from incremental rail activities were not quantitatively evaluated in this HRA.

1.1.1.1 Estimation of TAC Emissions

Potential TAC emissions associated with Modernization Project operations were evaluated by comparing TAC emissions for a range of future scenarios with Baseline emission levels. Modernization Project TAC emissions were calculated by using an analysis tool called a Unit Rate Model (URM)² developed by independent petroleum refinery experts retained by the City. The URM estimates how Facility operations change when the Facility refines heavier or lighter crude oil blends, crude and purchased gas oil with higher and lower sulfur content, and operates at higher or lower utilization levels than during 2008-2010. In consultations with the BAAQMD, the URM results were used to scale Baseline Refinery Operations, shipping and truck and rail emission levels to generate TAC emissions for each future scenario evaluated in this EIR. If the throughput for a certain Facility processing unit increased from Baseline utilization levels by 20% in a scenario, for example, Baseline TAC emissions for that unit were increased by 20%, if the unit were not modified as a result of the Modernization Project. If the unit were modified as a result of the Modernization Project, emissions for the modified source were estimated consistent with the methods used in the BAAQMD Engineering Evaluation for the Modernization Project.

² The URM also responds to the writ, which directed the City to evaluate whether the Modernization Project would enable the Facility to refine different types and volumes of crude oil, and to evaluate potential emission consequences that might be associated with any such use. As discussed below, and in more detail in *Appendix 4.3-URM*, the URM was used to evaluate Facility operations, and operational limitations related to physical and permit constraints, for a range of very heavy, very light, high sulfur and utilization rates ranging from 93% (higher than the 2008-2010 utilization rate of approximately 89%) up to 100% (the theoretical maximum level that, in practice, cannot feasibly be sustained).

This proportional scaling is generally true for most sources, but it is not true for every source. For example, there are small emissions from joints (called flanges) and pumps along piping at the Facility. These very small emissions sources are accounted for in the BAAQMD Emissions Inventory (EI), as aggregated emissions sources associated with groups of piping racks. These small emissions would occur if the piping has material in it, and do not increase if more material is transported through piping. As a result, the emissions associated with piping joints and pumps do not increase with increased refinery throughput. Similarly, emissions from tanks used to hold crude oil and refined products in the Facility do not increase proportionally with throughput. Small emissions from tanks come from the seals around the tanks, and, similar to the case with piping, emissions result from the storage (and not throughput) of crude oil and refined products. Some of the emissions from the tanks are associated with the fact that stored material is pumped in and out of a tank. Those emissions increase with increasing throughput. Finally, some process units are not expected to change process rates as a result of the Modernization Project. An example of this is the electricity generating units. The Modernization Project includes additional electricity generation in the new hydrogen plant. Accordingly, the existing electrical generating units are not expected to increase electricity production as a result of the Modernization Project. This is fully described in *Appendix 4.3-OP*.

The emissions from Refinery Operations, shipping and trucking are described below. The total TAC incremental emissions for all Project scenarios that were analyzed in this HRA are shown in Table A4.3-HRA-2.

1.1.1.2 Refinery Operations

The methods used to estimate emissions are fully described in *Appendix 4.3-OP*, and summarized here.

The methods of emissions analysis for operations were developed based on BAAQMD, California Air Resources Board (CARB), and EPA guidance, BAAQMD engineering evaluation of project components, and extensive consultation with BAAQMD staff. The methods presented in this appendix reflect the outcome of these meetings with the BAAQMD, and reflect the results of the consensus formed between the City of Richmond's consultants, and the BAAQMD.

After reviewing available regulatory reporting and tracking studies, for purposes of this EIR and in consultation with the BAAQMD, the BAAQMD EI was determined to provide the most comprehensive ongoing framework for understanding Refinery Operations emissions, and for evaluating Modernization Project emissions. In determining the TAC emissions, all chemicals for which data were available from the BAAQMD EI and which were included in BAAQMD's Regulation 2, Rule 5 methodology for evaluating TACs from new stationary sources

TABLE A4.3-HRA-2 FACILITY TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURES

Chemical	Baseline	Emissions (lbs/year)				Change in Emissions (lbs/year)			
		Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Acetaldehyde ^{a,b}	201.0	1,062.7	1,068.2	1,061.8	1,068.0	861.6	867.2	860.8	867.0
Ammonia ^{a,d,e}	228,220.5	300,788.9	300,937.9	300,803.7	300,948.6	72,568.4	72,717.4	72,583.2	72,728.1
Antimony ^{b,c}	0.3	8.0	8.0	8.0	8.0	7.6	7.6	7.6	7.6
Arsenic ^{a,b,e}	2.2	16.4	16.5	16.4	16.5	14.2	14.3	14.2	14.3
Benzene ^{a,b,d}	18,279.7	19,258.1	19,429.0	19,349.3	19,495.0	978.4	1,149.3	1,069.6	1,215.2
Benzo(a)anthracene ^{a,b,c}	0.0	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3
Benzo(a)pyrene ^{a,b,h}	240.2	182.2	193.5	183.7	192.8	(58.0)	(46.8)	(56.5)	(47.5)
Benzo(b)fluoranthene ^{a,b,c}	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Benzo(k)fluoranthene ^{a,b,c}	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Beryllium ^{a,f}	0.0	0.0	0.0	0.0	0.0	–	–	–	–
Bromine & Compounds ^e	–	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1,3-butadiene ^{a,d}	65.7	71.3	71.3	71.3	71.3	5.6	5.6	5.6	5.6
Biphenyl ^d	–	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
Butane ^d	–	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5
Methyl ethyl ketone ^{a,f}	91.6	91.6	91.6	91.6	91.6	–	–	–	–

TABLE A4.3-HRA-2 FACILITY TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURES

Chemical	Emissions (lbs/year)					Change in Emissions (lbs/year)			
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Butyl acetate ^f	3.8	3.8	3.8	3.8	3.8	-	-	-	-
Cadmium ^{a,b}	0.9	11.0	11.0	11.0	11.0	10.1	10.1	10.1	10.1
Carbon disulfide ^{a,i}	2,909.2	2,908.5	2,908.5	2,846.3	2,908.5	(0.7)	(0.7)	(62.9)	(0.7)
Chlorine ^{a,e}	1.9	2.9	3.0	3.0	3.1	0.9	1.1	1.1	1.2
Chlorobenzene	1.3	1.6	1.7	1.7	1.8	0.3	0.5	0.4	0.5
Chloroform ^{a,e}	-	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9
Chromium	0.4	0.4	0.4	0.4	0.4	0.0	0.1	0.0	0.1
Chromium (hex) ^a	0.8	0.8	0.9	0.8	0.9	0.0	0.1	0.1	0.1
Chrysene ^{a,b,c}	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Copper compounds ^{a,b,e}	9.1	101.1	101.1	101.0	101.1	92.0	92.1	91.9	92.1
Cumene ^d	125.9	141.1	142.8	142.1	143.6	15.2	16.9	16.2	17.7
Cyclohexane	537.5	540.3	543.6	542.2	544.9	2.9	6.1	4.7	7.5
1,2-Dibromoethane ^{a,f}	1.1	1.1	1.1	1.1	1.1	-	-	-	-
Diesel Particulate Matter ^{r,a}	19,056.1	19,238.6	20,586.2	20,858.6	21,731.4	182.5	1,530.1	1,802.5	2,675.3
Diethanolamine ^{a,d}	38.3	1,645.9	1,648.8	1,647.6	1,650.0	1,607.6	1,610.5	1,609.2	1,611.7

TABLE A4.3-HRA-2 FACILITY TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURES

Chemical	Baseline	Emissions (lbs/year)				Change in Emissions (lbs/year)			
		Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Ethane ^d	-	2,629.8	2,629.8	2,629.8	2,629.8	2,629.8	2,629.8	2,629.8	2,629.8
Ethanol	620.3	578.2	621.9	602.9	639.7	(42.1)	1.6	(17.4)	19.4
Ethanolamine	40.9	43.6	46.8	45.4	48.0	2.7	5.9	4.5	7.1
Ethylene ^d	2,445.0	3,894.4	3,894.4	3,894.4	3,894.4	1,449.5	1,449.5	1,449.5	1,449.5
Ethylbenzene ^{ab,c,d}	1,340.8	1,741.0	1,771.5	1,757.9	1,783.9	400.3	430.7	417.1	443.1
Formaldehyde ^{a,b}	1,345.7	3,019.8	3,029.0	3,017.8	3,029.1	1,674.1	1,683.3	1,672.1	1,683.4
N-Hexane ^{a,d}	10,259.5	10,834.7	11,246.1	11,067.8	11,414.4	575.2	986.6	808.3	1,154.9
Cyanide Compounds ^{a,e}	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hydrogen Sulfide ^{a,d}	1,013.3	9,756.1	9,838.5	9,623.3	9,850.7	8,742.8	8,825.1	8,610.0	8,837.3
Indeno(1,2,3-cd)pyrene ^{a,b,c}	0.0	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0
Lead compounds ^{a,b,c,e}	3.0	44.7	44.8	44.8	44.9	41.8	41.9	41.8	41.9
Tetra-Ethyl Lead	35.7	38.0	40.8	39.6	41.9	2.4	5.1	3.9	6.2
Manganese Compounds ^{a,b}	120.4	179.3	186.6	179.4	186.5	58.9	66.1	59.0	66.0
Mercury Compounds ^{a,b,e}	3.0	7.0	7.2	7.1	7.2	4.0	4.2	4.0	4.2
Methanol ^{a,h}	2,892.9	6.5	6.5	6.5	6.5	(2,886.4)	(2,886.4)	(2,886.4)	(2,886.4)

TABLE A4.3-HRA-2 FACILITY TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURES

Chemical	Emissions (lbs/year)					Change in Emissions (lbs/year)			
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
2-heptanone ^f	2.6	2.6	2.6	2.6	2.6	-	-	-	-
Cresols ^{a,d}	0.4	6.9	6.9	6.9	6.9	6.5	6.5	6.5	6.5
Naphthalene ^{a,b,c,d}	4.5	93.2	93.5	93.4	93.6	88.7	89.0	88.9	89.1
Nickel Compounds ^{a,b,e}	33.1	121.9	124.5	123.5	125.7	88.8	91.4	90.4	92.6
Polycyclic Aromatic Compounds ^{b,h}	645.4	496.0	528.1	499.4	526.4	(149.4)	(117.4)	(146.0)	(119.0)
Phenol ^{a,b,d}	53.0	160.9	164.0	161.1	163.9	107.9	111.0	108.1	110.9
Propane ^d	-	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4
Propylene glycol monomethyl ^{a,f}	1.3	1.3	1.3	1.3	1.3	-	-	-	-
Propylene ^{a,d}	1,563.0	2,190.2	2,201.3	2,198.2	2,207.0	627.2	638.2	635.2	644.0
Selenium ^{a,b,c}	3.7	86.9	86.9	86.8	86.9	83.2	83.2	83.0	83.2
Silicon	30.7	38.5	41.5	40.7	43.0	7.9	10.8	10.0	12.3
Sulfate	1,522.6	1,912.7	2,058.2	2,018.0	2,134.3	390.1	535.6	495.5	611.7
Sulfuric Acid Mist ^{a,i}	52,873.1	8,510.6	8,510.7	8,345.1	8,510.8	(44,362.6)	(44,362.4)	(44,528.0)	(44,362.3)
Perchloroethylene ^a	26.4	26.5	26.7	26.6	26.7	0.1	0.3	0.2	0.4

TABLE A4.3-HRA-2 FACILITY TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURES

Chemical	Baseline	Emissions (lbs/year)				Change in Emissions (lbs/year)			
		Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Toluene ^{a,b,d}	24,649.9	26,610.0	27,569.4	27,147.7	27,959.0	1,960.2	2,919.6	2,497.8	3,309.2
1,2,4-trimethylbenzene ^d	884.5	952.7	952.7	952.7	952.7	68.3	68.3	68.3	68.3
Vanadium	63.1	79.3	85.3	83.6	88.5	16.2	22.2	20.5	25.4
Xylene ^{a,b,c,d}	16,194.1	17,372.4	17,522.9	17,456.9	17,584.6	1,178.3	1,328.8	1,262.8	1,390.5
2,2,4-trimethylpentane ^d	3,230.6	3,334.4	3,449.8	3,399.6	3,496.9	103.8	219.2	169.0	266.3
Zinc Compounds ^{b,e}	135.8	381.6	390.5	381.8	390.2	245.8	254.8	246.1	254.5
Amine – Other ^f	6.3	6.3	6.3	6.3	6.3	–	–	–	–
Avgas ^g	810.3	864.7	926.6	899.6	951.8	54.4	116.3	89.3	141.5
Bunker C Fuel Oil ^g	0.8	0.9	1.0	0.9	1.0	0.1	0.1	0.1	0.2
Cycloparaffins – Other ^{b,h}	608.4	459.3	487.8	463.0	486.0	(149.1)	(120.6)	(145.4)	(122.4)
Diesel Oil ^g	3,544.2	3,782.0	4,052.7	3,934.9	4,163.1	237.8	508.5	390.8	618.9
Fuel - Jet 'A' ^g	7,675.2	8,190.3	8,776.5	8,521.5	9,015.6	515.0	1,101.2	846.3	1,340.4
Gas Oil ^g	3,533.2	3,770.3	4,040.1	3,922.8	4,150.2	237.1	506.9	389.6	617.0
Glycols ^f	7.6	7.6	7.6	7.6	7.6	–	–	–	–
Ketone - Other/	12.6	13.5	14.4	14.0	14.8	0.9	1.8	1.4	2.2

TABLE A4.3-HRA-2 FACILITY TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURES

Chemical	Baseline	Emissions (lbs/year)				Change in Emissions (lbs/year)			
		Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
not spec ^g									
Liquefied Petroleum Gas ^f	13,273.8	13,273.8	13,273.8	13,273.8	13,273.8	-	-	-	-
Mineral Spirits ^f	17.9	17.9	17.9	17.9	17.9	-	-	-	-
Oil – Non-Fuel, Other ^f	4,343.5	4,343.5	4,343.5	4,343.5	4,343.5	-	-	-	-
Oil/Water Mixture ^g	12,405.9	13,172.5	14,045.1	13,665.6	14,401.1	766.6	1,639.1	1,259.7	1,995.1
Organic Liquid – Other ^g	9,206.7	9,819.2	10,516.3	10,213.1	10,800.7	612.5	1,309.6	1,006.4	1,594.0
Polycyclic Aromatic Hydrocarbons (non- carcinogenic) ^{b,h}	1,601.1	1,208.7	1,283.6	1,218.4	1,279.0	(392.4)	(317.5)	(382.7)	(322.1)
Paraffins – C3+ ^g	4,534.7	4,549.2	4,565.7	4,558.5	4,572.4	14.5	31.0	23.8	37.7
Petroleum Products – Other ^g	1,387.0	1,480.1	1,586.0	1,540.0	1,629.3	93.1	199.0	152.9	242.2
Refinery Feedstock – Other ^g	6,593.7	7,036.1	7,539.6	7,320.6	7,745.1	442.4	945.9	727.0	1,151.4
Reformate ^f	10.5	10.5	10.5	10.5	10.5	-	-	-	-
Stoddard Solvent ^f	5.2	5.2	5.2	5.2	5.2	-	-	-	-
Sulfur or Sulfur Compounds	1,501.5	1,602.3	1,716.9	1,667.1	1,763.7	100.8	215.4	165.6	262.2
Wastewater – Refin, Other ^g	2,284.9	2,438.2	2,612.7	2,536.8	2,683.9	153.3	327.8	251.9	399.0

TABLE A4.3-HRA-2 FACILITY TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURES

Chemical	Baseline	Emissions (lbs/year)				Change in Emissions (lbs/year)			
		Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Water/Organics Mixture ^a	559.1	559.1	559.2	559.2	559.2	0.1	0.1	0.1	0.2

Note: lbs/year = pounds per year, SRU = sulfur recovery unit; ICR = Information Collection Request

^a These chemicals [shaded] were evaluated in the HRA (either cancer risk, chronic non-cancer hazard, or acute non-cancer hazard). All but hydrogen sulfide are included in BAAQMD Regulation 2, Rule 5, but hydrogen sulfide has a California Ambient Air Quality Standard.

^b These chemicals are associated with refinery fuel gas combustion.

^c These chemicals are only listed as combustion TACs in the Engineering Evaluation (i.e., for the replacement hydrogen plant and the SRU); hence, the large increase in emissions. They are not listed as combustion TACs in the Baseline EI for TACs.

^d These chemicals are associated with fugitive emissions from equipment leaks in the Engineering Evaluation.

^e These chemicals are associated with the new hydrogen plant cooling water tower in the Engineering Evaluation.

^f These chemicals are only associated with emergency diesel engines, maintenance operations, and equipment fugitives, none of which scale with throughput or are otherwise affected by the project. A small amount of 1,2-dibromoethane was listed in the EI as part of “gasoline – leaded emissions from storage tanks”; this speciation profile was replaced with the EPA’s ICR speciation profile for reformulated gasoline, at the direction of the BAAQMD.

^g These chemicals are unspciated emissions from storage tanks, as listed in the BAAQMD EI. At the BAAQMD’s direction, any such material with Project (93% Utilization Scenario) incremental emissions greater than 1,000 lbs/year was speciated with the EPA’s ICR profile for reformulated gasoline. This included unleaded gasoline, lube oil, “other hydrocarbons,” alkylate, crude oil, leaded gasoline, naphtha, and distillate oil.

^h These chemicals decrease with the Modernization Project because they were largely associated with the existing hydrogen plant in the EI, much more than any other sources, and were either not included in the Engineering Evaluation for the replacement hydrogen plant or had significantly lower emission factors.

ⁱ Carbon disulfide and sulfuric acid mist decrease with the Modernization Project due to improvements in the SRU.

Source: *Appendices 4.3-OP, 4.3-SHP, and 4.3-TRANS.*

(BAAQMD, 2010c) or had quantitative toxicity information published by OEHHA (2014), were included in the HRA.

The major sources of emissions of TACs from the Refinery Operations are stationary facilities, such as furnaces and process units used to heat, treat, and separate crude and gas oils into marketable products such as gasoline, diesel, jet fuel, and lubricants. In addition, the Refinery Operations generate emissions from tanks and process components, and emissions from transportation, including shipping, and to a lesser extent, rail and trucking. The locations of major operations, and therefore major sources of emissions, at the Facility are highlighted in Figure A4.3-HRA-1.

Emissions from the Refinery Operations vary with overall utilization: greater utilization results in greater emissions from process units at the Facility, as more fuel is required to process more feedstock. Emissions from the Refinery Operations also vary based on the utilization of specific process units, which vary, in some cases, based on the type of feedstock. Higher sulfur feedstocks require greater use of the hydrogen plant and the sulfur recovery unit (SRU). These higher unit utilization levels translate into greater emissions from these units. As described earlier, some emissions sources, such as small leaks from joints in piping, do not increase with increased throughput.

The Baseline TAC emissions were based on the BAAQMD EI. The BAAQMD EI contains information on chemical emissions for each Refinery Operations source. In some cases, the information is presented for individual chemicals, such as benzene and toluene. In other cases, the emissions information is presented for groups of chemicals, such as “crude oil” or “av gas.” The ultimate use of the TACs EI is to evaluate the impact of chemical emissions on public health. While there is information on the public health impacts of individual chemicals, there is little information on the public health impacts of blends of chemicals. Accordingly, a methodology was needed to split the groups of chemicals found in the BAAQMD EI into individual chemicals.

The BAAQMD specified that groups of chemicals be characterized as individual chemicals using the EPA Refinery Information Collection Request (ICR) document (RTI, 2011). Most groups of chemicals in the BAAQMD EI were from vapor emissions from liquids being held in tanks at the Facility. Therefore, speciation profiles of vapor emissions were required. Although the EPA ICR document provided liquid speciation profiles for a number of materials, the only vapor speciation profile available was for reformulated gasoline. Reformulated gasoline contains a higher proportion of TACs in the liquid phase than other materials listed in the EPA ICR document. As a result, the vapor emissions of reformulated

gas would also contain a higher proportion of TACs than other materials listed in the EPA ICR document. This is more fully described in *Appendix 4.3-OP*.

To be conservative, as agreed with the BAAQMD, the speciation profile for reformulated gas vapors was used to identify the chemical species in all groups of chemicals listed in the EI with emissions greater than 1,000 pounds per year (lbs/year) increase between Baseline and Modernization Project (93% Utilization with maximum hydrogen plant usage) emissions. This accounted for more than 90% of groups of chemical emissions and included unleaded gasoline, lube oil, “other hydrocarbon mixtures,” alkylate, crude oil, leaded gasoline (leaded av gas), naphtha, and distillate oil. The use of the reformulated gasoline vapor speciation profile to these 90% of the groups of chemicals results in a conservative estimate of TAC emissions. No speciation profile was used for the balance of the groups of chemical emissions.

The incremental TAC emissions for all of the Modernization Project cases of Refinery Operations for which HRAs were conducted are shown in Table A4.3-HRA-3. Table A4.3-HRA-3 contains all of the TACs from the BAAQMD TAC EI split into individual chemical constituents as described above. The rows that contains chemicals for which either the BAAQMD or OEHHA has assigned quantitative health effects information, and are therefore included in the health risk assessment, are highlighted. Some of the chemicals, such as benzo(a)anthracene, appear in the project inventories, but not in the Baseline inventory. This is because the BAAQMD Engineering evaluation included benzo(a)anthracene as a TAC resulting from combustion, whereas the BAAQMD TAC EI did not. Other chemicals, such as 1,3-butadiene, do not appear to change with project scenario. This is because the bulk of the 1,3-butadiene is associated with small leaks from the joints and pumps in the new piping for the hydrogen plant. Some chemicals, such as benzo[a]pyrene are reduced, because they are listed in the BAAQMD EI as being emitted from the old hydrogen plant, but are not considered to be emitted by the new hydrogen plant. As noted earlier, the emissions that result from these small leaks are independent of Facility throughput. As described in the footnotes to the table, there are other chemicals associated with fugitive emissions or other sources, such as emergency generator usage, whose emissions do not scale with the Modernization Project.

1.1.1.3 Shipping

The Facility imports crude oil, gas oil and some blendstocks and exports a portion of its refined products and some gas oil, blendstocks, and base oils via ships and barges. This waterborne transport includes self-propelled ocean-going vessels (OGVs – i.e., tanker ships) and vessels that are not self-propelled (i.e., barges) that dock at the Long Wharf and either unload and/or load liquid materials over the dock. Both the OGVs and barges require assistance from



2/23/2014 C:\Users\mhowley\Documents\ArcGIS\Projects\A4.3-OP1_Large_Refinery_Sources\101\A4.3-OP1_Large_Refinery_Sources.mxd
Source: Chevron (T38 r1 and T6C)

Figure A4.3-HRA-1
Chevron Refinery Modernization Project EIR
Large Refinery Air Emission Sources

TABLE A4.3-HRA-3 REFINERY OPERATIONS TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURE

Chemical	Emissions (lbs/year)					Change in Emissions (lbs/year)			
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Acetaldehyde ^{a,b}	201.0	1,062.7	1,068.2	1,061.8	1,068.0	861.6	867.2	860.8	867.0
Ammonia ^{a,d,e}	228,006.8	300,520.5	300,649.1	300,520.5	300,649.1	72,513.7	72,642.3	72,513.7	72,642.3
Antimony ^{b,c}	0.3	8.0	8.0	8.0	8.0	7.6	7.6	7.6	7.6
Arsenic ^{a,b,e}	2.1	16.3	16.4	16.3	16.4	14.2	14.3	14.2	14.3
Benzene ^{a,b,d}	18,225.0	19,189.3	19,355.0	19,276.7	19,418.2	964.3	1,130.0	1,051.8	1,193.3
Benzo(a)anthracene ^{a,b,c}	-	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3
Benzo(a)pyrene ^{a,b,h}	240.2	182.2	193.5	183.7	192.8	-58.0	-46.7	-56.5	-47.4
Benzo(b)fluoranthene ^{a,b,c}	-	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Benzo(k)fluoranthene ^{a,b,c}	-	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
Beryllium ^{a, f}	0.0	0.0	0.0	0.0	0.0	-	-	-	-
Bromine & Compounds ^e	-	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
1,3-butadiene ^{a,d}	65.7	71.3	71.3	71.3	71.3	5.6	5.6	5.6	5.6
Biphenyl ^d	-	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
Butane ^d	-	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5
Methyl Ethyl Ketone ^{a, f}	91.6	91.6	91.6	91.6	91.6	-	-	-	-
Butyl Acetate ^f	3.8	3.8	3.8	3.8	3.8	-	-	-	-

TABLE A4.3-HRA-3 REFINERY OPERATIONS TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURE

Chemical	Emissions (lbs/year)					Change in Emissions (lbs/year)			
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Cadmium ^{a,b}	0.8	10.8	10.9	10.8	10.9	10.0	10.1	10.0	10.0
Carbon Disulfide ^{a,i}	2,909.2	2,908.5	2,908.5	2,846.3	2,908.5	-0.7	-0.7	-62.9	-0.7
Chlorine ^{a,e}	-	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Chloroform ^{a,e}	-	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9
Chromium	0.4	0.4	0.4	0.4	0.4	-	-	-	-
Chromium (hex) ^a	0.8	0.8	0.9	0.8	0.9	0.0	0.1	0.0	0.1
Chrysene ^{a,b,c}	0.0	0.0	0.0	0.0	0.0	-	-	-	-
Copper Compounds ^{a,b,e}	8.9	100.9	100.9	100.7	100.9	92.0	92.0	91.8	92.0
Cumene ^d	125.9	141.1	142.8	142.1	143.6	15.2	16.9	16.2	17.7
Cyclohexane	537.5	540.3	543.6	542.2	544.9	2.9	6.1	4.7	7.5
1,2-Dibromoethane ^{a,f}	1.1	1.1	1.1	1.1	1.1	-	-	-	-
Diesel Particulate Matter ^a	581.0	581.0	581.0	581.0	581.0	-	-	-	-
Diethanolamine ^{a,d}	38.3	1,645.9	1,648.8	1,647.6	1,650.0	1,607.6	1,610.5	1,609.2	1,611.7
Ethane ^d	-	2,629.8	2,629.8	2,629.8	2,629.8	2,629.8	2,629.8	2,629.8	2,629.8
Ethanol	620.3	578.2	621.9	602.9	639.7	-42.1	1.6	-17.4	19.4
Ethanolamine	40.9	43.6	46.7	45.4	48.0	2.7	5.9	4.5	7.1

TABLE A4.3-HRA-3 REFINERY OPERATIONS TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURE

Chemical	Emissions (lbs/year)					Change in Emissions (lbs/year)			
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Ethylene ^d	2,445.0	3,894.4	3,894.4	3,894.4	3,894.4	1,449.5	1,449.5	1,449.5	1,449.5
Ethylbenzene ^{a,b,c,d}	1,339.0	1,738.8	1,769.1	1,755.5	1,781.4	399.8	430.1	416.5	442.4
Formaldehyde ^{a,b}	1,343.2	3,016.6	3,025.6	3,014.5	3,025.5	1,673.4	1,682.4	1,671.3	1,682.3
N-Hexane ^{a,d}	10,219.2	10,784.1	11,191.7	11,014.4	11,357.9	564.9	972.4	795.2	1,138.7
Cyanide Compounds ^{a,e}	0.0	0.0	0.0	0.0	0.0	–	–	–	–
Hydrogen Sulfide ^{a,d}	1,013.3	9,756.1	9,838.5	9,623.3	9,850.7	8,742.7	8,825.1	8,610.0	8,837.3
Indeno(1,2,3-cd)pyrene ^{a,b,c}	–	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0
Lead Compounds ^{a,b,c,e}	1.9	43.4	43.4	43.3	43.4	41.5	41.5	41.4	41.5
Tetra-Ethyl Lead	35.7	38.0	40.8	39.6	41.9	2.4	5.1	3.9	6.2
Manganese Compounds ^{a,b}	120.4	179.3	186.6	179.4	186.5	58.9	66.1	59.0	66.0
Mercury Compounds ^{a,b,e}	3.0	7.0	7.2	7.1	7.2	4.0	4.2	4.0	4.2
Methanol ^{a,h}	2,892.9	6.5	6.5	6.5	6.5	-2,886.4	-2,886.4	-2,886.4	-2,886.4
2-heptanone ^f	2.6	2.6	2.6	2.6	2.6	–	–	–	–
Cresols ^{a,d}	0.4	6.9	6.9	6.9	6.9	6.5	6.5	6.5	6.5
Naphthalene ^{a,b,c,d}	2.7	91.0	91.1	91.0	91.1	88.2	88.3	88.3	88.4

TABLE A4.3-HRA-3 REFINERY OPERATIONS TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURE

Chemical	Emissions (lbs/year)					Change in Emissions (lbs/year)			
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Nickel Compounds ^{a,b,e}	8.3	90.8	91.1	90.7	91.0	82.5	82.7	82.4	82.7
Polycyclic Aromatic Compounds ^{b,h}	645.4	496.0	528.1	499.4	526.4	-149.4	-117.4	-146.0	-119.0
Phenol ^{a,b,d}	53.0	160.9	164.0	161.1	163.9	107.9	111.0	108.1	110.9
Propane ^d	–	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4
Propylene Glycol Monomethyl ^{a,f}	1.3	1.3	1.3	1.3	1.3	–	–	–	–
Propylene ^{a,d}	1,447.5	2,045.0	2,045.0	2,045.0	2,045.0	597.6	597.6	597.6	597.6
Selenium ^{a,b,c}	3.7	86.8	86.8	86.7	86.8	83.1	83.1	83.0	83.1
Sulfuric Acid Mist ^{a,i}	52,873.1	8,510.6	8,510.7	8,345.1	8,510.8	-44,362.5	-44,362.4	-44,528.0	-44,362.3
Perchloroethylene ^a	26.4	26.5	26.7	26.6	26.7	0.1	0.3	0.2	0.4
Toluene ^{a,b,d}	24,595.4	26,541.6	27,495.8	27,075.5	27,882.6	1,946.2	2,900.4	2,480.1	3,287.3
1,2,4-trimethylbenzene ^d	884.5	952.7	952.7	952.7	952.7	68.3	68.3	68.3	68.3
Xylene ^{a,b,c,d}	16,166.2	17,337.4	17,485.2	17,420.0	17,545.5	1,171.2	1,319.0	1,253.8	1,379.3
2,2,4-trimethylpentane ^d	3,230.6	3,334.4	3,449.8	3,399.6	3,496.8	103.8	219.2	169.0	266.2
Zinc Compounds ^{b,e}	135.7	381.6	390.5	381.8	390.2	245.8	254.7	246.0	254.5
Amine – Other ^f	6.3	6.3	6.3	6.3	6.3	–	–	–	–

TABLE A4.3-HRA-3 REFINERY OPERATIONS TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURE

Chemical	Emissions (lbs/year)					Change in Emissions (lbs/year)			
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Avgas ^g	810.3	864.7	926.6	899.6	951.8	54.4	116.3	89.3	141.5
Bunker C Fuel Oil ^g	0.8	0.9	1.0	0.9	1.0	0.1	0.1	0.1	0.2
Cycloparaffins – Other ^{b,h}	608.4	459.3	487.8	463.0	486.0	-149.1	-120.6	-145.4	-122.4
Diesel Oil ^g	3,544.2	3,782.0	4,052.7	3,934.9	4,163.1	237.8	508.5	390.8	618.9
Fuel – Jet 'A' ^g	7,675.2	8,190.3	8,776.5	8,521.5	9,015.6	515.0	1,101.2	846.3	1,340.4
Gas Oil ^g	3,533.2	3,770.3	4,040.1	3,922.8	4,150.2	237.1	506.9	389.6	617.0
Glycols ^f	7.6	7.6	7.6	7.6	7.6	-	-	-	-
Ketone – Other/Not Spec ^g	12.6	13.5	14.4	14.0	14.8	0.8	1.8	1.4	2.2
Liquified Petroleum Gas ^f	13,273.8	13,273.8	13,273.8	13,273.8	13,273.8	-	-	-	-
Mineral Spirits ^f	17.9	17.9	17.9	17.9	17.9	-	-	-	-
Oil - Non-Fuel, Other ^f	4,343.5	4,343.5	4,343.5	4,343.5	4,343.5	-	-	-	-
Oil/Water Mixture ^g	12,405.9	13,172.5	14,045.1	13,665.6	14,401.1	766.6	1,639.1	1,259.7	1,995.1
Organic Liquid – Other ^g	9,206.7	9,819.2	10,516.3	10,213.1	10,800.7	612.5	1,309.6	1,006.4	1,594.0
Polycyclic Aromatic Hydrocarbons (Non-Carcinogenic) ^{b,h}	1,601.1	1,208.7	1,283.6	1,218.4	1,278.9	-392.4	-317.4	-382.7	-322.1

TABLE A4.3-HRA-3 REFINERY OPERATIONS TAC EMISSIONS AND CHANGE FROM BASELINE BY SCENARIO, WITH PROJECT DESIGN FEATURE

Chemical	Emissions (lbs/year)					Change in Emissions (lbs/year)			
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Paraffins – C3+ ^a	4,534.7	4,549.2	4,565.7	4,558.5	4,572.4	14.5	30.9	23.8	37.7
Petroleum Products – Other ^a	1,387.0	1,480.1	1,586.0	1,540.0	1,629.3	93.1	199.0	152.9	242.2
Refinery Feedstock – Other ^a	6,593.7	7,036.1	7,539.6	7,320.6	7,745.1	442.4	945.9	726.9	1,151.4
Reformate ^f	10.5	10.5	10.5	10.5	10.5	-	-	-	-
Stoddard Solvent ^f	5.2	5.2	5.2	5.2	5.2	-	-	-	-
Sulfur or Sulfur Compounds	1,501.5	1,602.3	1,716.9	1,667.1	1,763.7	100.8	215.4	165.6	262.2
Waste Water – Refin, Other ^a	2,284.9	2,438.2	2,612.7	2,536.8	2,683.9	153.3	327.8	251.9	399.0
Water/Organics Mixture ^a	559.1	559.1	559.2	559.1	559.2	0.1	0.1	0.1	0.1

^a These chemicals [shaded] were evaluated in the HRA (either cancer risk, chronic non-cancer hazard, or acute non-cancer hazard). All but hydrogen sulfide are included in BAAQMD Regulation 2, Rule 5, but hydrogen sulfide has a California Ambient Air Quality Standard.

^b These chemicals are associated with refinery fuel gas combustion.

^c These chemicals are only listed as combustion TACs in the Engineering Evaluation (i.e., for the replacement hydrogen plant and the SRU), hence the large increase in emissions. They are not listed as combustion TACs in the Baseline EI for TACs.

^d These chemicals are associated with fugitive emissions from equipment leaks in the Engineering Evaluation.

^e These chemicals are associated with the new hydrogen plant cooling water tower in the Engineering Evaluation.

^f These chemicals are only associated with emergency diesel engines, maintenance operations, and equipment fugitives, none of which scale with throughput or are otherwise affected by the project. A small amount of 1,2-dibromoethane was listed in the EI as part of “gasoline – leaded emissions from storage tanks; this speciation profile was replaced with the EPA’s ICR speciation profile for reformulated gasoline, at the direction of the BAAQMD.

⁹These chemicals are unspciated emissions from storage tanks, as listed in the BAAQMD EI. At the BAAQMD's direction, any such material with Project (93% Utilization Scenario) incremental emissions greater than 1,000 lbs/year was speciated with the EPA's ICR profile for reformulated gasoline. This included unleaded gasoline, lube oil, "other hydrocarbons", alkylate, crude oil, leaded gasoline, naphtha, and distillate oil.

¹⁰These chemicals decrease with the Modernization Project because they were largely associated with the existing hydrogen plant in the EI, much more than any other sources, and were either not included in the Engineering Evaluation for the replacement hydrogen plant or had significantly lower emission factors.

¹¹Carbon disulfide and sulfuric acid mist decrease with the Modernization Project due to improvements in the SRU.

Source: *Appendix 4.3-OP*.

smaller ships called tugs (also called harbor craft). The OGVs, barges, and tugs utilize engines fueled by fossil fuels to perform their operations; thus emit TACs as part of their routine operation at the Long Wharf. The amount of material transported to and from the Facility via marine shipping determines how many vessels call at the Long Wharf, and in turn, the emissions from shipping activities. OGVs, barges and tugboats emit diesel particulate matter (DPM). OGVs also emit some TACs that are found in the volatile organic compounds emitted from boiler operation.

Total crude and gas oil volumes for the Modernization Project were estimated using the URM, as described in *Appendix 4.3-URM*. The feedstock volumes are dependent on the crude blend and refinery utilization rate, which was also determined by the URM.

The HRA analyzed Project emissions and potential human exposure to carcinogens during the 70-year period from 2016 through 2085. In order to ensure that the incremental Modernization Project health impacts were not minimized as a result of cleaner fuels and engines that would result independent of the Modernization Project, the Baseline is based on the same 70-year period from 2016 through 2085.

TAC emissions were estimated for any shipping activity that occurs within the HRA boundary (i.e., within 5 nautical miles of the Long Wharf) and comprehensively includes emissions from transit, maneuvering, and at-berth activities. The TAC emissions inventory includes chemicals emitted from sources that are included for consideration in HRAs consistent with BAAQMD Regulation 2, Rule 5, or have quantitative toxicity information provided by OEHHA (OEHHA 2014). The Baseline and Project TAC inventory for evaluation in the HRA from shipping are contained in Table A4.3-HRA-4.

1.1.1.4 Trucking

The methods used to estimate trucking emissions are more fully described in *Appendix 4.3-TRANS*, with a summary provided here. The Modernization Project includes on-road mobile emission-generating sources such as trucks delivering propane and other chemicals and removing sulfur, sodium bisulfite, products, and solid and hazardous wastes from the Facility. TAC emissions from on-road worker vehicles associated with operations were not included as the increase in workers (i.e., 29 additional workers) and associated increases in worker vehicle trips and emissions due to the Modernization Project are assumed to be negligible.

Trucking emissions for the Modernization Project are impacted both by the increase in emissions that would result from the change from baseline utilization

TABLE A4.3-HRA-4 SHIPPING TAC EMISSIONS, WITH PROJECT DESIGN FEATURES

Chemical	Emissions (lbs/year)					Change in Emissions (lbs/year)			
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Ammonia	213.7	268.4	288.9	283.2	299.5	54.8	75.2	69.5	85.9
Arsenic	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Benzene	54.7	68.8	74.0	72.6	76.7	14.0	19.3	17.8	22.0
Cadmium	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Chlorine	1.9	2.4	2.6	2.6	2.7	0.5	0.7	0.6	0.8
Chlorobenzene	1.3	1.6	1.7	1.7	1.8	0.3	0.4	0.4	0.5
Copper	0.2	0.2	0.2	0.2	0.2	0.0	0.1	0.1	0.1
DPM	18,474.5	18,656.9	20,004.4	20,276.9	21,149.7	182.4	1,530.0	1,802.4	2,675.2
Ethylbenzene	1.8	2.2	2.4	2.4	2.5	0.5	0.6	0.6	0.7
Formaldehyde	2.5	3.2	3.4	3.4	3.6	0.6	0.9	0.8	1.0
Isomers of Xylene	8.6	10.8	11.6	11.4	12.1	2.2	3.0	2.8	3.5
Lead	1.1	1.4	1.5	1.5	1.5	0.3	0.4	0.4	0.4
Manganese	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
m-Xylene	11.4	14.3	15.4	15.1	16.0	2.9	4.0	3.7	4.6
Naphthalene	1.8	2.2	2.4	2.4	2.5	0.5	0.6	0.6	0.7

TABLE A4.3-HRA-4 SHIPPING TAC EMISSIONS, WITH PROJECT DESIGN FEATURES

Chemical	Emissions (lbs/year)					Change in Emissions (lbs/year)			
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
n-Hexane	40.3	50.6	54.5	53.4	56.5	10.3	14.2	13.1	16.2
Nickel	24.7	31.1	33.5	32.8	34.7	6.3	8.7	8.1	9.9
o-Xylene	7.9	9.9	10.6	10.4	11.0	2.0	2.8	2.6	3.2
Propene	115.6	145.2	156.2	153.2	162.0	29.6	40.7	37.6	46.4
Selenium	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Silicon	30.7	38.5	41.5	40.7	43.0	7.9	10.8	10.0	12.3
Sulfate	1,522.6	1,912.7	2,058.2	2,018.0	2,134.3	390.1	535.6	495.5	611.7
Toluene	54.5	68.4	73.7	72.2	76.4	14.0	19.2	17.7	21.9
Vanadium	63.1	79.3	85.3	83.6	88.5	16.2	22.2	20.5	25.4

Source: *Appendix 4.3-SHP*.

to a reasonably foreseeable utilization, and by the processing of a wider variety of fuels, as sulfur produced by the Facility is removed by trucking. Therefore, the processing of higher-sulfur fuels would result in more trucks transporting sulfur away from the Facility.

On-road mobile emissions were estimated using methods consistent with CalEEMod™, using emission factors from CARB's EMFAC2011 database. EMFAC is California's model for estimating emissions from on-road vehicles operating in California, and EMFAC2011 is the latest version of that model. The data required to estimate on-road mobile emissions include: trip counts and trip lengths, fuel type, fleet mix, model years, and travel speeds. The emissions calculated for trucks include running, idling, brake wear, and tire wear emissions. The truck startup emissions were not quantified because EMFAC2011 does not provide startup emission factors for diesel trucks.

For annual TAC emissions estimation, the baseline period emissions were estimated using 2010 emission factors with baseline activity data. The baseline was adjusted by projecting actual baseline emissions to the year 2016. Modernization Project emissions were estimated for year 2016. Modernization Project annual emissions were conservatively estimated for the year 2016 because each subsequent year would have lower emissions from on-road mobile sources than 2016 due to cleaner fleets in subsequent years. This method provides a conservative estimate of future emissions from trucking, and the health impacts associated with trucking. The TAC associated with trucking is DPM.

DPM emissions were calculated for on-road trucks from on-site delivery locations to the highway ramps. The number of Modernization Project-related trucks on highways is very small relative to highway background traffic; because of this, their emissions would not have a significant health impact on the sensitive population located along the highways. Accordingly, receptors that are exposed only due to their proximity to a highway that may be used by trucks going to and from the Richmond facility were not included in the HRA. The TAC inventory does include Modernization Project-related truck emissions associated with travel along Richmond Parkway, Castro Street, and the highway ramps taken by the vehicles to get on or off the highways.

On-road mobile sources do not have emission factors specifically for DPM in the CARB's emission factor databases (EMFAC). DPM is a subset of particulate matter less than 10 microns in diameter (PM_{10}). PM_{10} engine exhaust emissions from on-site on-road vehicles that were calculated for the CAP inventory for on-site sources were used as conservative, surrogate estimates for DPM. TAC estimates for trucking are shown in Table A4.3-HRA-5.

TABLE A4.3-HRA-5 TRUCKING AND RAIL TAC EMISSIONS

		Emissions (tons/year)				Change in Emissions (tons/year)			
Chemical	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization Scenario
Trucking DPM	0.06	0.09	0.09	0.08	0.08	0.02	0.03	0.01	0.02
Rail DPM	0.51	0.55	0.59	0.57	0.61	0.04	0.08	0.06	0.10

Source: *Appendix 4.3-TRANS*.

1.2 USE OF A DATABASE TO COMBINE EMISSIONS, EXPOSURE, AND TOXICITY INFORMATION CALCULATE RISKS

Risk assessments conducted to the standards required by the BAAQMD and OEHHA may involve sizeable data sets in order to thoroughly analyze the impacts from a large project, like the Modernization Project. In the case of the Modernization Project, over 50 TACs are emitted from over 150 different sources associated with the Project, including Refinery Operations and shipping. In order to carefully analyze impacts on the community, the evaluation was conducted at over 8000 locations in the community. In order to evaluate large data sets some type of database is typically programmed to allow for efficient calculations.

The Hotspots Analysis and Reporting Program (HARP) is a tool that assists with the programmatic requirements of the Air Toxics "Hot Spots" Program. The Air Toxics "Hot Spots" Program has the same risk assessment requirements as does the BAAQMD for CEQA. HARP is a single integrated software package that can be used by the air pollution control and air quality management districts (districts), facility operators, and other parties to promote statewide consistency, efficiency, and cost-effective development of health risk assessments. While HARP is a useful tool, it does not permit the analysis of data sets as large as that required for the Modernization Project. In addition, HARP does not allow the evaluation of time-changing activities, such as construction, which operate only 10 hours in a 24-hour day. Finally, HARP does not incorporate the childhood cancer sensitivity factors required for use by the BAAQMD.

In order to analyze the large dataset required for the Modernization Project, ENVIRON, the City's Consultants, programmed a Microsoft Access 2010 database to mimic the functions of HARP for the inhalation pathway. The non-inhalation pathways were evaluated in a separate Microsoft Access database. The resulting programmed Microsoft Access database used to mimic the inhalation pathway of HARP is called the Super Automated Risk Assessment Database (SARAD). The City's Consultants, have used forms of this database for years to analyze risks for permitting projects and CEQA projects. The Microsoft Access database used for the multi-pathway analysis then scaled the inhalation risks and chronic hazards by the multi-pathway scaling factors derived from HARP version 1.4f to estimate chronic hazards in the SARADs for each multi-pathway chemical.

SARAD calculates the health impacts that someone could experience as a result of the project at each of 8000 locations in the community for a variety of potentially exposed populations: a child, a worker, or an adult resident. SARAD does this by using information on emissions from each source that changes as a result of the Modernization Project, information on how the chemical moves in the air from the source to the receptor, information on the breathing rates of each exposed population, and information on the toxicity of the chemical. At each receptor, SARAD allows the addition of the concentrations of each chemical

that results from each source. It then calculates the health impacts that result from each chemical and sums the health impacts across chemicals. The result is an estimate of health impacts at every location for every type of exposed population.

Attachment 3 to this appendix describes the evaluation conducted to show equivalence between SARAD and HARP to confirm that the results from SARAD are the same as would result if HARP could be used for this evaluation.

Attachment 4 to this appendix contains the emission rate by source group and dispersion factor by source group at the maximum exposed individual (MEI) locations.

1.3 EVALUATION OF NON-INHALATION EXPOSURE PATHWAYS

There are two types of exposures in addition to airborne exposure that need to be considered in this HRA: evaluation of lead for noncancer impacts, and the evaluation of multipath exposure for airborne emissions.

1.3.1 Noncancer Impacts of Lead

Lead is unique among TACs in several ways. First, children are particularly susceptible to levels of lead in their blood due to exposure to lead. Second, the chronic noncancer effects are related to blood lead levels as opposed to ambient air concentrations. These blood lead levels reflect current and past exposure from a number of sources; air emissions may only be a small part of the total exposure. Third, OEHHA did not identify a threshold level for acute or chronic non-cancer health effects due to exposure to lead air concentrations. Recognizing the unique aspects of lead risks, OEHHA developed special risk management guidelines.

The potential cancer health effects of lead were evaluated in the health risk assessment using the cancer potency factor recommended by OEHHA/CARB. OEHHA/CARB does not have a chronic reference exposure level for evaluation of the non-cancer effects of lead. Instead the potential non-cancer health effects of lead were evaluated using the screening methodology recommended by the CARB in their 2001 document “Risk Management Guidelines for New, Modified, and Existing Sources of Lead” (“2001 CARB Guidelines”).

The 2001 CARB Guidelines provides a simplified, screening-level approach to evaluate non-cancer risks using the neurodevelopmental risk as a surrogate. The simplified approach uses a 30-day maximum off-site concentration to determine a maximum exposure area (MEA), which is the area surrounding the maximum

off-site concentration (equivalent to the size of a square area with side lengths of 1 kilometer). Using this simplified approach, the CARB derived recommended risk management levels for assessing non-cancer risks. The risk management levels take into account both direct exposures from the facility (project) and exposure due to background concentrations in the environment.

Although the approach is conservative, meaning that a project that passes the screening level criteria is unlikely to pose a health risk; it is not conservative enough to be used for a source in a high exposure area. To determine if the source is in a high exposure area, an evaluation of the census tracts within the MEA is conducted. If the MEA does not overlap with any census tract where the median year of construction for housing is 1960 or earlier and more than 30 percent of the population has an income less than 1.25 times the poverty level; then it is not considered a high exposure area. The median year of construction for housing in Richmond is 1962. The median year within the MEA is unknown.

The CARB recommended risk management levels are as follows:

Lead Permitting Levels		Hot Spots Program Levels	
T-BACT trigger level	Emissions $\geq$ 1 pound per month	Notification level ¹	Maximum off-site air concentration $\geq$ 0.30 $\mu\text{g}/\text{m}^3$
Approvable level ¹	Maximum off-site air concentration $\leq$ 0.30 $\mu\text{g}/\text{m}^3$	Significant risk level ¹	Maximum off-site air concentration $\geq$ 0.30 $\mu\text{g}/\text{m}^3$
Permit denial level ¹	Maximum off-site air concentration $\geq$ 0.55 $\mu\text{g}/\text{m}^3$	Unreasonable risk level ¹	Maximum off-site air concentration $\geq$ 0.55 $\mu\text{g}/\text{m}^3$ ^a

Note: $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

^a Not applicable to high exposure areas.

The maximum incremental off-site lead ambient air concentration is 0.0002 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), far below the 0.30 $\mu\text{g}/\text{m}^3$ recommended risk management level for notification and significant risk. This means that the project is unlikely to pose a health risk to off-site population due to the non-cancer health effects of lead.

It should be noted that the screening-level approach used to develop the risk management levels was based on a blood lead level of concern of 10 micrograms per deciliter ($\mu\text{g}/\text{dl}$). More recently, the Centers for Disease Control and Prevention has recommended a reference level of 5 $\mu\text{g}/\text{dl}$ to identify children

with a blood lead level that is much higher than most children's levels. However, the maximum concentration is orders of magnitude below the approvable level, therefore, the project is unlikely to pose a health risk to off-site populations due to the non-cancer health effects of lead.

1.3.2 Assessment of Multi-Pathway Non-Inhalation Pathways

OEHHA Hot Spots Guidance (OEHHA, 2003) requires the evaluation of non-inhalation exposure pathways, referred to as a multi-pathway analysis, in risk assessments prepared to meet the 2010 BAAQMD CEQA Guidelines. Selection of the additional pathways for a multi-pathway analysis is specific to the chemical and land use designations in the area impacted by the facility. As shown on Table A4.3-HRA-6, the chemicals that are emitted from the refinery and shipping activities at the Facility and must be evaluated in a multi-pathway analysis are: arsenic, beryllium, cadmium, chromium (VI), lead, mercury, nickel, and polycyclic aromatic hydrocarbons (PAHs) including benzo(a)pyrene, b(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

HARP version 1.4f developed by CARB was used to generate multi-pathway scaling factors. These factors were then used to scale the inhalation risks and hazard quotients (HQs) calculated in SARADs for the multi-path chemicals to estimate cancer risks and non-cancer chronic hazards from the multi-pathway exposures. Consistent with the recommendations in the OEHHA Hot Spots Guidance for conducting a multi-pathway analysis, a 70-year resident was conservatively assumed to be exposed to Facility emissions via inhalation, dermal contact with soil, incidental ingestion of soil, ingestion of homegrown produce, and ingestion of mother's milk. Because the operational emissions are primarily coming out of stationery sources that have various pollution control devices the default deposition rate of 0.02 meters per second for controlled sources was used to generate the multi-pathway scaling factors in HARP. The HARP health value database, which reflects the updates in the CARB consolidated health value table (OEHHA, 2014), was used. Unit air concentrations for all multi-pathway chemicals identified above were assumed in this analysis in HARP.

Since the Facility is located in an urban area with no agricultural areas (e.g., cattle grazing areas) in the vicinity, this multipath assessment does not include an evaluation of potential exposures via ingestion of meat, milk, or eggs. However, potential exposures to chemicals in homegrown produce were evaluated for a resident in this HRA because it is possible that residents in the area may have small vegetables gardens exclusively for personal use.

Ingestion of fish is not considered a complete exposure pathway for residents. A portion of the San Francisco Bay lies in the immediate area of the Facility.

Evaluation of potential impacts on fish that inhabit the San Francisco Bay is not recommended. Specifically, OEHHA states that “although regional air contaminants depositing into the ocean, bays and estuaries are a significant problem, the risks predicted from a single source are relatively insignificant due to tidal flows and dilution” (OEHHA, 2012).

HARP allows a user to select from a series of exposure analysis methods. Each method in HARP utilizes exposure assumptions differently, depending on the requirements of a specific regulation (i.e., compliance with CARB’s Air Toxics Hot Spots Program) or project need (i.e., provide point estimates for risk management decisions). That is, HARP will select the dominant pathway(s) and assign exposure assumptions depending on the exposure analysis method identified by the user. For this HRA, each exposure analysis method selected is described below.

1.3.2.1 Resident

Consistent with HARP and OEHHA Hot Spots Guidance (OEHHA, 2003), cancer risks for residential populations were calculated using the Derived (Adjusted) Analysis Method. This method applies high-end exposure assumptions to the two dominant exposure pathways for each chemical. The remaining pathways are evaluated using average exposure assumptions. If inhalation is one of the two dominant exposure pathways, then it is evaluated using the 80th percentile breathing rate (302 L/kg-day).

As required in OEHHA Hot Spots Guidance (OEHHA, 2003) and BAAQMD Health Risk Screening Analysis Guidelines (BAAQMD, 2010a) for preparing a Tier 1 risk assessment under AB2588, it was assumed that a resident may be exposed to Facility emissions for their entire lifetime (70 years). Cancer risks estimated assuming a residential exposure duration of 70 years are used by State and local agencies for risk management and public notification purposes. Specifically, OEHHA Hot Spots Guidance states that “Lifetime or 70-year exposure is the historical benchmark for comparing facility impacts on receptors for evaluating the effectiveness of air pollution control measures (OEHHA, 2003).” Use of the 70-year exposure duration in risk assessments is intended to produce a hypothetical estimate of risk that does not underestimate risks and that can be viewed as an upper-bound estimate.

As discussed previously, it was assumed that individuals residing in the vicinity of the Facility may ingest produce obtained from vegetable gardens grown at their homes. Ingestion of homegrown produce is estimated by applying a default parameter of 5.2%. This value reflects the percentage of total produce ingested by individuals in an urban setting that is homegrown, and is comprised of root and leafy vegetables.

The Derived (OEHHA) Analysis method was used to calculate chronic non-cancer HIs for the resident. This method, as previously noted, utilizes high-end exposure assumptions to the two dominant pathways for each chemical. The remaining pathways are evaluated using average exposure assumptions.

To generate the cancer risk multi-pathway scaling factors, the derived (adjusted) method and default exposure settings for a 70-year resident as recommended in the OEHHA Hot Spots Guidance and BAAQMD Health Risk Screening Analysis Guidelines (BAAQMD, 2010a) were used in HARP. This receptor population represents the most conservative exposures among all receptor populations evaluated for the Project. ENVIRON conducted two sets of analysis in HARP to calculate cancer risks for each of the multi-pathway chemicals for: (1) inhalation pathway only; and (2) all non-inhalation pathways identified above. The methodologies and equations used in HARP to estimate chemical concentrations in each medium, doses and cancer risks for each exposure pathway are consistent with the recommendations in the Hot Spots Guidance. The cancer risk multi-pathway scaling factors for each of the multi-pathway chemicals were then derived based on cancer risk results from the two sets of analysis using the following equation:

$$\text{Cancer Risk Multipathway Factors} = \frac{\text{All Pathway Risk} - \text{Inhalation Cancer Risk}}{\text{Inhalation Cancer Risk}}$$

As shown in the equation above, because the inhalation pathway risk is subtracted from the all pathway risk, the cancer risk multi-pathway scaling factor derived from this method does not reflect the scaling between the inhalation pathway risk and the all pathway risk. Instead the scaling factor reflects the scaling between the inhalation pathway risk and the non-inhalation multi-pathway risk.

Similarly, to generate the non-cancer chronic HQ multi-pathway scaling factors, the derived (OEHHA) method and default exposure settings for a resident as recommended in the OEHHA Hot Spots Guidance were used in HARP. ENVIRON conducted two sets of analysis in HARP to calculate the non-cancer chronic HQs for each of the multi-pathway chemicals for: (1) inhalation pathway only; and (2) all non-inhalation pathways identified above. The equations used in HARP to estimate chemical concentrations in each medium, doses and non-cancer hazards for each exposure pathway are consistent with the methodology recommended in the Hot Spots Guidance. The chronic HQ multi-pathway scaling factors for each of the multi-pathway chemicals were then derived using the maximum all-pathway chronic HQ among all target organs over the maximum inhalation chronic HQ among all target organs using the following equation:

Chronic HQ Multipathway Factors

$$= \frac{\text{Max All Pathway Chronic HQ} - \text{Inhalation Max Chronic HQ}}{\text{Inhalation Chronic HQ}}$$

As shown in the equation above, because the maximum inhalation pathway chronic HQ is subtracted from the all pathway maximum chronic HQ, the chronic HQ multi-pathway scaling factor derived from this method does not reflect the scaling between the maximum inhalation pathway chronic HQ and the maximum all pathway chronic HQ. Instead the scaling factor reflects the scaling between the maximum inhalation pathway chronic HQ and the maximum non-inhalation multi-pathway chronic HQ.

The derived “cancer risk multi-pathway scaling factors” and the “chronic HQ multi-pathway scaling factors” were then imported to a separate multi-pathway database” to estimate cancer risks and chronic HQs for the multi-pathway exposures by applying these scaling factors to the calculated inhalation risks and chronic HQs in the SARADs for each multi-pathway chemical accordingly using the following equation:

Multipathway Cancer Risk

$$= \text{Inhalation Cancer Risk} \times \text{Cancer Risk Multipathway Scaling Factor}$$

Multipathway Chronic HQ

$$= \text{Inhalation Chronic HQ} \times \text{Chronic HQ Multipathway Scaling Factor}$$

As shown on Tables A4.3-HRA 7 through 10, the non-inhalation pathway estimated incremental cancer risks for a 70-year lifetime resident at the maximally exposed individual resident location are negative for the Refinery Operations sources and 0.0004 in 1 million for the shipping sources, respectively. The multi-pathway risks from refinery sources are reduced because of the reduction of benzo[a]pyrene as a result of the Modernization Project. The estimated incremental chronic HIs at the MEI location³ are 0.1 for the refinery sources and 0.0005 for the shipping sources, respectively. Therefore, the cancer risks and non-cancer hazards associated with the multi-pathway exposures are small compared to the thresholds for cancer risks and non-cancer chronic hazards.

³ This is a worker location at the quarry area.

Table A4.3-HRA-6
HARP-Calculated Multipath Scaling Factors¹
Chevron Modernization Project
Richmond, California

Chemical	CASRN	Cancer Risk Multi-Pathway Scaling Factor	Chronic HQ Multi-Pathway Scaling Factor
Arsenic	7440-38-2	3.76	39.03
Benzo(a)anthracene	56-55-3	28.85	--
Benzo(a)pyrene	50-32-8	28.85	--
Benzo(b)fluoranthene	205-99-2	28.85	--
Benzo(k)fluoranthene	207-08-9	28.85	--
Cadmium	7440-43-9	--	0.49
Chromium (hex)	18540-29-9	0.01	--
Chrysene	218-01-9	28.85	--
Dibenz(a,h)anthracene	53-70-3	9.33	--
Indeno(1,2,3-cd)pyrene	193-39-5	28.85	--
Lead compounds	7439-92-1	3.28	--
Mercury Compounds	7439-97-6	--	5.67

Notes:

CASRN = Chemical Abstracts Services registry number

¹ The multi-pathway scaling factors were calculated using the following equations:

Cancer Risk Multi-Pathway Scaling Factors = (All-Pathway Cancer Risk - Inhalation Only Cancer Risk) / Inhalation Only Cancer Risk

Chronic HQ Multi-Pathway Scaling Factors = (Max All-Pathway HQ - Max Inhalation Only HQ) / Max Inhalation Only HQ

Table A4.3-HRA-7
Incremental Cancer Risk at MEIR¹ - Refinery
Chevron Modernization Project
Richmond, California

Chemical	CASRN	Incremental Inhalation Cancer Risk (in a Million)	Cancer Risk Multi-Pathway Scaling Factor	Incremental Multi-Pathway Cancer Risk (in a Million)
1,3-butadiene	106-99-0	3.4E-02		
Acetaldehyde	75-07-0	5.8E-04		
Arsenic	7440-38-2	1.2E-02	3.76	4.4E-02
Benzene	71-43-2	3.4E-01		
Benzo(a)anthracene	56-55-3	9.1E-06	28.85	2.6E-04
Benzo(a)pyrene	50-32-8	-4.6E-02	28.85	-1.3E+00
Benzo(b)fluoranthene	205-99-2	1.1E-05	28.85	3.3E-04
Benzo(k)fluoranthene	207-08-9	6.6E-06	28.85	1.9E-04
Cadmium	7440-43-9	1.0E-02		
Chloroform	67-66-3	4.0E-04		
Chromium (hex)	18540-29-9	1.6E-03	0.011	1.8E-05
Chrysene	218-01-9	8.5E-08	28.85	2.5E-06
Ethylbenzene	100-41-4	9.8E-03		
Formaldehyde	50-00-0	2.5E-03		
Indeno(1,2,3-cd)pyrene	193-39-5	2.7E-05	28.85	7.9E-04
Lead compounds	7439-92-1	1.2E-04	3.28	3.9E-04
Naphthalene	91-20-3	7.2E-02		
Nickel Compounds	7440-02-0	5.1E-03		
Perchloroethylene	127-18-4	8.2E-05		
Total Incremental Cancer Risk (in a million)		0.44	--	-1.28

Notes:

¹ At receptor location R7013 (UTMx = 552,950, UTM_y = 4,198,200).

CASRN = Chemical Abstracts Services registry number

MEIR = Maximally-exposed individual resident

Table A4.3-HRA-8
Incremental Chronic HI at MEI¹ - Refinery
Chevron Modernization Project
Richmond, California

Chemical	CASRN	Incremental Inhalation Chronic HQ (unitless)	Chronic HQ Multi-Pathway Scaling Factor	Incremental Multi-Pathway Chronic HQ (unitless) ²
1,3-butadiene	106-99-0	3.4E-06		
Acetaldehyde	75-07-0	1.6E-05		
Ammonia	7664-41-7	9.8E-04		
Arsenic	7440-38-2	2.5E-03	39	9.8E-02
Benzene	71-43-2	5.2E-05		
Cadmium	7440-43-9	1.3E-03	0.49	6.6E-04
Carbon disulfide	75-15-0	3.9E-07		
Chlorine	7782-50-5	1.2E-06		
Chloroform	67-66-3	5.8E-08		
Chromium (hex)	18540-29-9	3.7E-07		
Cresols	1319-77-3	1.3E-08		
Cyanide Compounds	74-90-8	5.4E-10		
Diethanolamine	111-42-2	1.0E-03		
Ethylbenzene	100-41-4	5.4E-07		
Formaldehyde	50-00-0	4.9E-04		
Hydrogen Sulfide	7783-06-4	9.8E-04		
Manganese Compounds	7439-96-5	2.0E-03		
Mercury Compounds	7439-97-6	3.6E-04	5.7	2.0E-03
Methanol	67-56-1	-3.5E-06		
Naphthalene	91-20-3	1.3E-05		
N-Hexane	110-54-3	3.4E-07		
Nickel Compounds	7440-02-0	1.6E-02		
Perchloroethylene	127-18-4	3.3E-08		
Phenol	108-95-2	1.2E-06		
Propylene	115-07-1	2.5E-07		
Selenium	7782-49-2	1.1E-05		
Sulfuric Acid mist	7664-93-9	-3.3E-02		
Toluene	108-88-3	3.3E-05		
Xylene	1330-20-7	4.6E-06		
Total Incremental HI (unitless)		-0.008	--	0.10

Notes:

¹ At receptor location R6942 (UTMx = 552,400, UTMx = 4,199,320), a worker location.

² The emissions and multi-pathway scaling factors used to estimate the noncancer chronic hazards for this location were conservatively based on assumptions for a 70-year resident.

CASRN = Chemical Abstracts Services registry number

HI = Hazard index

HQ = Hazard quotient

MEI = Maximally-exposed individual

Table A4.3-HRA-9
Incremental Cancer Risk at MEIR - Shipping
Chevron Modernization Project
Richmond, California

Chemical	CASRN	Cancer Risk Multi-Pathway Scaling Factor	Incremental Inhalation Cancer Risk (in a Million)	Incremental Multi-Pathway Cancer Risk (in a Million)
Arsenic	7440-38-2	3.8	1.1E-04	4.0E-04
benzene	71-43-2		7.0E-04	
Cadmium	7440-43-9		1.9E-04	
Diesel PM	9901		3.4E+00	
ethylbenzene	100-41-4		2.0E-06	
formaldehyde	50-00-0		6.8E-06	
Lead	7439-92-1	3.3	5.9E-06	1.9E-05
naphthalene	91-20-3		2.7E-05	
Nickel	7440-02-0		2.9E-03	
Total Incremental Cancer Risk (in a million)			3.4	0.0004

Notes:

¹ At receptor location R7013 (UTMx = 552,950, UTM_y = 4,198,200).

CASRN = Chemical Abstracts Services registry number

MEIR = Maximally-exposed individual resident

Table A4.3-HRA-10
Incremental Chronic HI at MEI¹ - Shipping
Chevron Modernization Project
Richmond, California

Chemical	CASRN	Chronic HQ Multi-Pathway Scaling Factor ²	Incremental Inhalation Chronic HQ (unitless)	Incremental Multi-Pathway Chronic HQ (unitless)
Ammonium	7664-41-7		2.9E-07	
Arsenic	7440-38-2	39	1.2E-06	4.9E-05
benzene	71-43-2		2.5E-07	
Cadmium	7440-43-9	0.49	1.3E-06	6.7E-07
Chlorine atom	7782-50-5		2.6E-06	
chlorobenzene	108-90-7		3.4E-10	
Diesel PM	9901		2.1E-05	
ethylbenzene	100-41-4		2.4E-10	
formaldehyde	50-00-0		7.6E-08	
isomers of xylene	1330-20-7		3.3E-09	
m-xylene	108-38-3		4.4E-09	
naphthalene	91-20-3		5.4E-08	
n-hexane	110-54-3		1.6E-09	
Nickel	7440-02-0		4.8E-04	
o-xylene	95-47-6		3.0E-09	
propene	115-07-1		1.0E-08	
Selenium	7782-49-2		9.4E-10	
Silicon	1175		2.8E-06	
toluene	108-88-3		4.9E-08	
Total Incremental HI (unitless)			0.0005	0.00005

Notes:

¹ At receptor location R6942 (UTMx = 552,400, UTM_y = 4,199,320), a worker location.

² The emissions and multi-pathway scaling factors used to estimate the noncancer chronic hazards for this location were conservatively based on assumptions for a 70-year resident.

CASRN = Chemical Abstracts Services registry number

HI = Hazard index

HQ = Hazard quotient

MEI = Maximally-exposed individual

1.4 ESTIMATING AIR CONCENTRATIONS USING AIR DISPERSION MODELING

In order to estimate risks, ambient air concentrations resulting from the Modernization Project must be evaluated. This is done by simulating the dispersion of emissions into the air using a mathematical simulation, called air dispersion modeling. Details on the methodologies used to estimate TAC, PM_{2.5} and CO concentrations in the ambient air to be used in the Modernization Project health risk assessment are discussed below.

1.4.1 Model Selection and Options

The regulatory default mode of the EPA's state-of-the-art regulatory air dispersion model AERMOD (version 12345) ⁴ was used to estimate TAC, PM_{2.5} and CO concentrations at all receptor locations. AERMOD is appropriate for use in estimating ground-level ambient air concentrations resulting from non-reactive buoyant emissions from sources located in simple or complex terrain. This analysis was conducted using AERMOD in the regulatory default mode, which includes the following modeling control options:

- adjusting stack heights for stack-tip downwash,
- using upper-bound concentration estimates for sources influenced by building downwash,
- incorporating the effects of elevated terrain,
- employing the calms processing routine, and
- employing the missing data processing routine.

Air dispersion models such as AERMOD require a variety of inputs such as source parameters (including emission rates), meteorological parameters, topographic information, and receptor parameters.

Operational (Refinery Operations, trucking, and shipping) emissions sources were evaluated in similar but separate air dispersion model runs, due to the temporal difference in the emissions. These models share the same terrain data, meteorological data, and sensitive receptor locations, but differ in source types,

⁴ On November 9, 2005, the EPA promulgated final revisions to the federal Guideline on Air Quality Models, in which they recommended that AERMOD be used for dispersion modeling evaluations of criteria air pollutant and toxic air pollutant emissions from typical industrial facilities. The model can be downloaded at: http://www.epa.gov/scram001/dispersion_prefrec.htm

locations and parameters. The parameters used in the three model runs are described in the sections below.

1.4.2 Modeled Receptor Locations

Receptor locations specify where the model will provide air concentration estimates. Consistent with the BAAQMD's recommendations (BAAQMD, 2012), this analysis estimated TAC concentrations at potential sensitive receptor locations including "people—children, adults, and seniors—occupying or residing in:

- Residential dwellings, including apartments, houses, condominiums;
- Schools, colleges, and universities;
- Daycares;
- Hospitals; and
- Senior-care facilities."

BAAQMD CEQA Guidance (BAAQMD, 2012) requires sensitive receptors within Modernization Project "radius of impact," which is typically 1,000 feet surrounding the Facility boundary to be evaluated. Moreover, the Guidance indicates that locations where "people reside for long periods should [also] be considered sensitive, residential receptors", and should be included in the CEQA analysis. Because of the size and nature of the Modernization Project, the receptors included in this analysis extend beyond the radius of impact and beyond the definition of sensitive receptors indicated in the Guidance. Modeling input files, which include a complete list of the receptors are provided in Attachment 1 and shown in Figure A4.3-HRA-2, and details on modeled receptors are provided below.

1.4.2.1 Coarse Receptor Grid

As shown in Figure A4.3-HRA-2, receptors were modeled at each point defined by a receptor grid with 200 meter by 200 meter spacing ("coarse grid"), on a 12-kilometer by 12-kilometer modeling domain. The type of receptor (e.g., residential or worker) evaluated at each location in the coarse grid was assigned based on land use.

1.4.2.2 Residents

Concentrations at points in a "fine grid" of receptors spaced 50-m apart were modeled over several residential areas in the vicinity of the Facility. The residential communities covered by the fine grids include Point Richmond, Atchison Village, Santa Fe, Iron Triangle, Shields-Reid, central and downtown Richmond, and North Richmond. In addition, potential residential receptors at the Point San Pablo Yacht Harbor are covered by the fine grid. Other residential

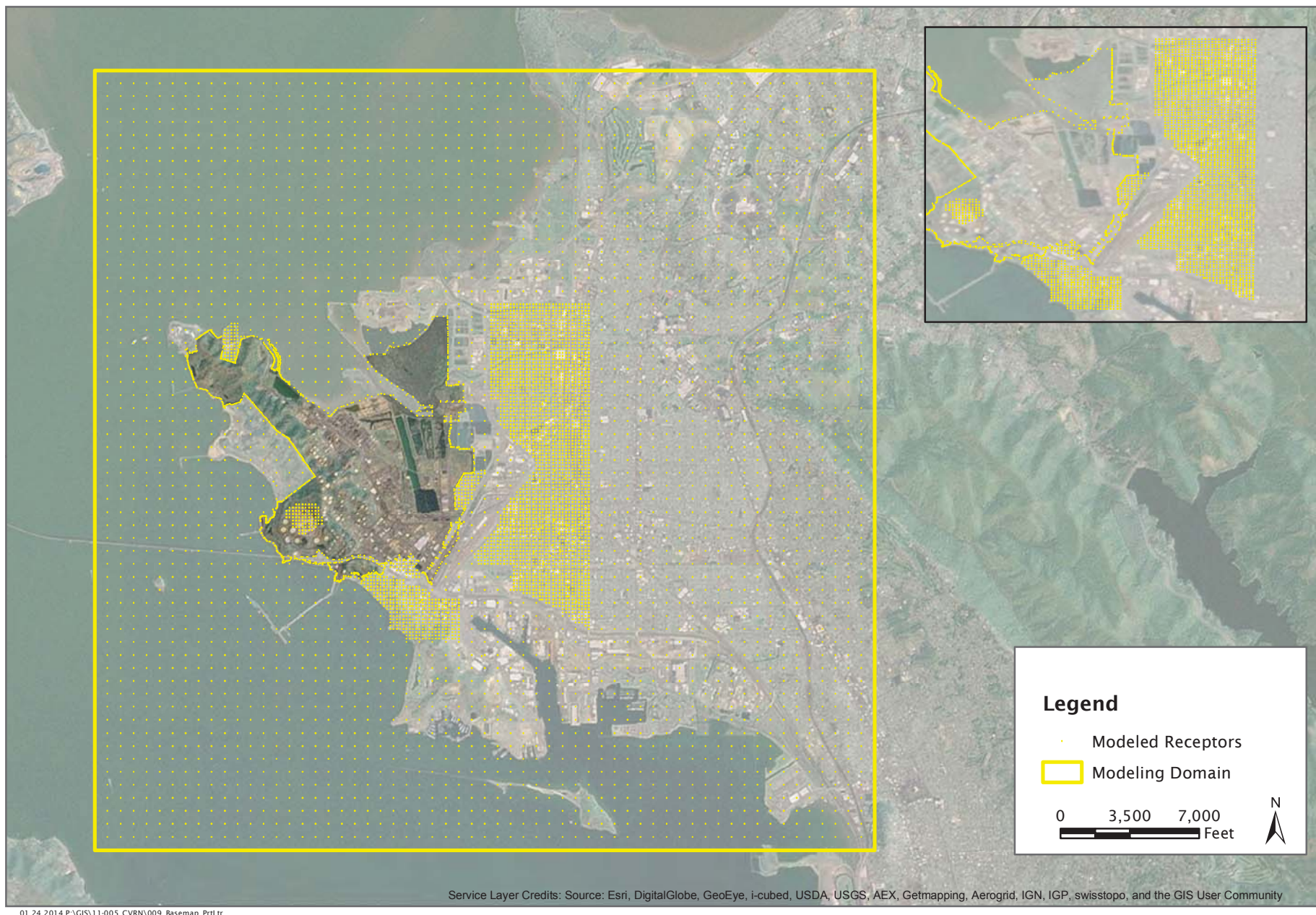


Figure A4.3-HRA-2
Chevron Refinery Modernization Project EIR
Modeled Receptor Locations

communities further away from the Facility that are covered or partially covered by the coarse grid include Tara Hills, Parchester Village, El Sobrante, San Pablo, East Richmond, Pinole, El Cerrito, and Albany.

1.4.2.3 Other Sensitive Receptors

Concentrations were also estimated at specific receptor locations to represent surrounding sensitive populations. Sensitive receptors evaluated for this Modernization Project include schools, health care facilities, and care centers for children or the elderly.⁵ Sensitive receptor locations within the 94801 and 94804 zip code areas (in the cities of Richmond, Point Richmond, and San Pablo) were identified from searches of the following sources:

- Schools (public and private) – California Department of Education, California School Directory (CDE, 2013)
- Health Care Facilities – California Office of Statewide Health Planning and Development (OSHPD, 2014)
- Childcare and Elderly Care Centers – California Department of Social Services, Community Care Licensing Division (CCLD, 2012)
- Google Map (<https://www.maps.google.com/>, using keyword of “childcare,” “daycare,” and “school,” to supplement the searches above)

All the identified addresses within 1 mile of the Facility boundary were then geocoded and mapped in the geographic information system. Quality assurance was performed on all geocoded addresses to confirm that mapped locations appear to be the correct facility. The sensitive receptors that were included in the HRA are shown in Table A4.3-HRA-11.

1.4.2.4 Additional Receptors

Other receptors that do not fall under BAAQMD’s definition of sensitive receptors were also included in the risk assessment. Worker receptors at points spaced 50-m apart in a “fine grid” were modeled over several industrial and office areas in the vicinity of the Facility. The industrial areas covered by the fine grid are the on-site San Rafael Rock Quarry close to the southwest corner of the Facility, and the General Chemical Plant, just outside of the east Facility boundary, across Castro Street from the BNSF Richmond Rail Yard. The office park just outside of

⁵ Residential units and worker receptors were identified using Google Map. List of city parks and community centers was provided to ENVIRON by the City of Richmond. Other sensitive receptor locations were obtained from searching various California government licensing departments, supplemented by Google search.

Table A4.3-HRA-11
Sensitive Receptor Survey Summary
Chevron Modernization Project
Richmond, California

Sensitive Receptor Name ¹	UTMx ² [meter]	UTMy ² [meter]	Street	City	State	Zip	Receptor Type
Argosy University - San Francisco	554,961	4,196,985	999A Canal Blvd.	Point Richmond	CA	94804	School
Washington Elementary	554,439	4,197,648	565 Wine St.	Richmond	CA	94801	School
W.C.C.U.S.D. – Washington School	554,439	4,197,648	565 Wine St.	Richmond	CA	94801	Child Care Center
YMCA of the East Bay Y-Kids Washington Richmond	554,439	4,197,648	565 Wine St.	Richmond	CA	94801	Child Care Center
Lincoln Elementary	555,909	4,198,423	29 Sixth St.	Richmond	CA	94801	School
WCCUSD – Lincoln School	555,909	4,198,423	29 Sixth St.	Richmond	CA	94801	Child Care Center
Gompers (Samuel) Continuation	556,012	4,198,519	715 Chanslor Ave.	Richmond	CA	94801	School
Leadership Public Schools	556,012	4,198,519	715 Chanslor Ave.	Richmond	CA	94801	School
Norma's Child Development Cent	555,752	4,198,581	138 South Fourth St.	Richmond	CA	94801	School
Iglesia De Cristo Agape	556,323	4,198,606	151 11th St.	Richmond	CA	94801	School
WCCUSD Community Day School Program	556,157	4,198,615	157 Ninth St.	Richmond	CA	94801	School
Leadership Public Schools	556,157	4,198,615	157 Ninth St.	Richmond	CA	94801	School
Gompers Continuation School	556,039	4,198,685	750 Bissel Ave.	Richmond	CA	94801	School
WCCUSD - Nystrom	556,248	4,198,749	230 Harbour Way South	Richmond	CA	94801	Child Care Center
Brookside Community Health Center - Richmond	556,267	4,198,993	1030 Nevin Ave.	Richmond	CA	94801	Community Clinic
Kaiser FND Hospital – Richmond Campus	556,201	4,199,005	901 Nevin Ave.	Richmond	CA	94804	General Acute Care Hospital
Kaiser Home Health Agency – Oakland (Branch)	556,201	4,199,005	901 Nevin Ave.	Richmond	CA	94801	Home Health Agency
La Petite Academy/Magic Years	556,401	4,199,005	1221 Nevin Ave.	Richmond	CA	94801	Child Care Center
Maat Youth Academy	556,253	4,199,006	1015 Nevin Ave.	Richmond	CA	94801	School
Greater Richmond Social Service	556,071	4,199,075	445 Eighth St.	Richmond	CA	94801	School
YMCA of the East Bay - 8TH Street CDC	556,071	4,199,075	445 Eighth St.	Richmond	CA	94801	Child Care Center
Latour's Residential Care Home	556,329	4,199,445	640 11th St.	Richmond	CA	94801	Residential Care for the Elderly
Peres Elementary	555,848	4,199,677	719 Fifth St.	Richmond	CA	94801	School
WCCUSD – Peres School	555,848	4,199,677	719 Fifth St.	Richmond	CA	94801	Child Care Center
Gloria's Child Care	556,232	4,199,726	727 Tenth St.	Richmond	CA	94801	Child Care Center
Level One Child Care	556,073	4,199,832	797 Eighth St.	Richmond	CA	94801	Child Care Center
YMCA of the East Bay - Richmond CDC	555,839	4,199,848	485 Lucas Ave.	Richmond	CA	94801	Infant Center
YMCA of the East Bay - Richmond CDC	555,839	4,199,848	485 Lucas Ave.	Richmond	CA	94801	Child Care Center
YMCA of the East Bay – Kelsey CDC	555,864	4,200,773	1350 Kelsey St.	Richmond	CA	94801	Child Care Center
YMCA of the East Bay - Kelsey CDC	555,864	4,200,773	1350 Kelsey St.	Richmond	CA	94801	Infant Center
Contra Costa County Child Development Center - Las Deltas	555,373	4,201,175	135 West Grove St.	Richmond	CA	94801	Child Care Center
Contra Costa County Child Development Center - Las Deltas	555,373	4,201,175	135 West Grove St.	Richmond	CA	94801	Infant Center
Verde Elementary	555,936	4,201,656	2000 Giaramita St.	Richmond	CA	94801	School
Contra Costa County Child Development Center - Verde	555,936	4,201,656	2000 Giaramita St.	Richmond	CA	94801	Child Care Center
Even Start Family Literacy	555,936	4,201,656	2000 Giaramita St.	Richmond	CA	94801	Child Care Center
JC Hawkins Christian Academy	556,139	4,198,868	N/A (from Google)	Richmond	CA	94801	School
Saint Marks School	556,168	4,198,587	N/A (from Google)	Richmond	CA	94801	School
Chavez, Cesar Elementary School	556,846	4,200,082	960 17Th St.	Richmond	CA	94801	School
Nystrom Elementary School	556,289	4,198,041	230 Harbour Way	Richmond	CA	94801	School
Mount Olive Lutheran	556,928	4,199,151	1827 Barrett Ave.	Richmond	CA	94801	School
El Nuevo Mundo National	556,925	4,199,611	1707 Pennsylvania Ave.	Richmond	CA	94801	School
Atchison Village Community Center	555,240	4,198,745	Collins & Curry St.	Richmond	CA	94801	Day Care Center
Atchison Village Community Center	555,248	4,198,745	Collins & Curry St.	Richmond	CA	94801	Patient
Center For Human Development	555,891	4,200,852	1410 Kelsey St.	Richmond	CA	94801	School
Mlk Community Center	556,279	4,197,900	360, Harbour Way	Richmond	CA	94801	Community Center Child
Nevin Community Center	555,894	4,198,971	598, Nevin Ave.	Richmond	CA	94801	Community Center Child
Point Richmond Community Center	554,032	4,197,846	139, Washington Ave.	Richmond	CA	94801	Community Center Child
Shields-Reid Community Center	555,890	4,200,868	1410, Kelsey St.	Richmond	CA	94806	Community Center Child

Notes:

1. Locations of sensitive receptors were obtained from the following databases:

(a) Schools (public and private) - California Department of Education, California School Directory (<http://www.cde.ca.gov/re/sd/>)

(b) Health Care Facilities - California Office of Statewide Health Planning and Development (<http://www.oshpd.ca.gov/HID/Products/Listings.html>)

(c) Childcare and Elderly Care Centers - California Department of Social Services, Community Care Licensing Division (http://www.cclid.ca.gov/docs/cclid_search/cclid_search.aspx)

(d) Google Map (<https://www.maps.google.com/>, using keyword of “childcare”, “daycare”, and “school”, to supplement the searches above

(e) Community Centers provided by City of Richmond
2. UTM coordinates are provided in NAD83.

Abbreviations:

UTM: Universal Transverse Mercator
N/A: not available

southeast corner of the Facility boundary, on the north side of the Chevron Way is also covered by the fine grid.

Furthermore, recreational receptors at off-site recreational facilities (i.e., parks) as well as a series of boundary receptors outlining the Facility boundary were included in the model. The boundary receptors were used to estimate acute non-cancer impacts only, which are independent of receptor type.

1.4.2.5 Receptor Modeling Parameter Specifications

In accordance with BAAQMD guidance, a default breathing height of 1.8 meters was used for all receptors. Figure A4.3-HRA-2 presents modeled receptors.

1.4.3 Physical Domain for Health Risk Analysis

The physical scope of the health risk analysis includes sources within the Project site boundary (“on-site sources”). However, only the subset of Modernization Project off-site TAC sources that would impact receptors in the vicinity of the Modernization Project was included in the risk analysis. Thus, the physical extent of off-site emissions included in the TAC inventory for the HRA analysis is smaller than the extent included for the criteria pollutant inventory, as the criteria pollutant inventory extends to the BAAQMD boundary.

Off-site emissions also consist of shipping emissions from ocean going vessels, barges, and tugs within the San Francisco Bay. The emissions estimations from these off-site activities for the TAC inventory included emissions associated with travel of these sources on water during transit, anchorage, and maneuvering. The activities within a radius of approximately 5 nautical miles centered on the Long Wharf were included for the emissions estimations.

1.4.4 Source Types, Locations and Parameters

1.4.4.1 Operations

Operational sources were modeled as point/stack, volume and area sources. Emissions from stacks from process sources, fixed roof tanks, cooling towers and diesel engines were modeled as point sources. Fugitive emissions from floating roof tanks were modeled as circular area sources. Fugitive emissions from process components, such as valves, pumps and flanges in piping were modeled as a rectangular or polygon area sources.

Chevron provided source data for the stacks, floating roof tanks, and non-mobile fugitive sources, in Transmittal #6C. The source parameters used as modeling inputs are presented in Tables A4.3-HRA-12a to d. Information on stack heights and area source release heights provided by Chevron (Chevron

Data Transmittal #6C, 2013) was verified visually using on-line tools (Bing maps, Google Earth), and through consultation with Chevron. The verified source information was then imported into the operational model setup. The locations of point sources, circular sources (modeled storage tanks), flares, and polygon sources (fugitives) are in Figures A4.3-HRA-3 to A4.3-HRA-6, respectively.

Rather than using each of over 100 tank locations as individual sources of emissions, three floating roof tanks T1899, T3100, and T3213, were used for all tank-related emissions in the HRA because of their general representativeness of the entire tank fleet at the Facility, and their proximity to the fenceline and off-site receptors. This resulted in a conservative estimate of impacts from emissions from the tank losses.

Incremental emissions for the stacks, floating roof tanks, and non-mobile fugitive sources were modeled in the HRA. Maximum hourly emissions were assumed to be equal to annual average emissions multiplied by a factor of 2.4, consistent with the BAAQMD Engineering Evaluation for maximum hourly TAC emissions. Incremental emissions allocated for each Refinery Operations source for the Project Crude Blend, 93% Utilization with Maximum Hydrogen Production are found in Attachment 4.

Emissions of the trucking and shipping emissions were modeled for the Baseline Modernization Project scenarios separately, and the risks were based on the difference between the two scenarios.

- **On-Road Vehicles-Running and Idling Emissions (On-Site and Off-Site).** Operational on-road vehicle movement was modeled using a set of consecutive volume sources. The sizing of volume sources varies between road segments such that volume sources visually fit the widths of the roads. All volumes were spaced 50 meters apart. The size and location of the sources are shown in Figures A4.3-HRA-7a through 14b.⁶ Release heights were 4.57 m for delivery trucks, consistent with BAAQMD recommendations for HRAs and land use (BAAQMD, 2010b). The initial vertical dimensions are calculated based on the release height following EPA guidance for an

⁶ In general, the figures with names ended with an “a” shows the vehicle travel paths and source groups; the figures with names ended with a “b” or a “c” shows the actual modeled volume sources. These volume sources are shown as small squares in the figures. The size of the squares represents the width of the roadway segment while the spacing between the squares represents the spacing between the volume sources.

Table A4.3-HRA-12a
Operational Refinery Modeling Source Parameters - Point Sources
Chevron Modernization Project
Richmond, California

Source Description	Source Group	Source Type	X Coordinates	Y Coordinates	Stack height	Stack temp.	Stack velocity	Stack diameter	Notes
					[m]	[K]	[m/s]	[m]	
Marine Loading Berth 1, 11, 2, 3, 4, 9 (S-9321, 9326, 9322, 9323, 9324, 9325)	MARINELD	POINT	553149	4199717	15.9	1033	1.92	3.69	1,2
FCCU Plant	FCCU	POINT	552685	4200280	45.7	505	16.4	4.3	1,2
No. 4 Rheniformer - Catalytic Reformer (S-4283)	4RHENI	POINT	553574	4199541	10.67	477.59	20	0.3	1,2
No. 5 Rheniformer - Catalytic Reformer (S-4237)	5RHENI	POINT	553475	4199483	10.67	477.59	20	0.3	1,2
A Hydrogen Tran Process Vent (S-4250)	H2VENTA	POINT	553010	4200446	21.34	299.8	0.91	0.15	1,2
B Hydrogen Tran Process Vent (S-4250)	H2VENTB	POINT	553039	4200431	21.34	299.8	0.91	0.15	1,2
4192 SRU Train #1 (preproject)	SRU1_E	POINT	552263	4200599	45.72	588.71	2.21	1.98	1,2
4193 SRU Train #2 (preproject)	SRU2_E	POINT	552287	4200584	45.72	588.71	2.37	1.98	1,2
4194 SRU Train #3 (preproject)	SRU3_E	POINT	552283	4200538	45.72	588.71	2.31	2.54	1,2
4192 SRU Train #1 (postproject)	SRU1_N	POINT	552263	4200599	45.72	588.71	3.02	1.98	1,2
4193 SRU Train #2 (postproject)	SRU2_N	POINT	552287	4200584	45.72	588.71	3.02	1.98	1,2
4194 SRU Train #3 (postproject)	SRU3_N	POINT	552283	4200538	45.72	588.71	3.76	2.54	1,2
New Project 4396 Sulfur Loading Racks	N_SULFVT	POINT	552446	4200741	15.24	310.93	1.6	0.2	1,2
H2 Plt Cooling Tower 3 Cells S4465	H2_COOL1	POINT	553365	4199889	7.62	302.59	1.8	7.62	1,2
H2 Plt Cooling Tower 3 Cells S4465	H2_COOL2	POINT	553375	4199895	7.62	302.59	1.8	7.62	1,2
	H2_COOL3	POINT	553387	4199902	7.62	302.59	1.8	7.62	1,2
H2 Plt Train 1 Reformer Furnace S4471	H2TRAIN1	POINT	553268	4199844	35.05	438.71	22.85	2.79	1,2
H2 Plt Train 2 Reformer Furnace S4472	H2TRAIN2	POINT	553221	4199929	35.05	438.71	22.85	2.79	1,2
Cooling Tower - Alyk AB	CTALKY_A	POINT	552659	4200137	8.23	302	1.8	4.88	1,2
Cooling Tower Alkyl AB	CTALKY_B	POINT	552655	4200141	8.23	302	1.8	4.88	1,2
Cooling Tower - Alyk CD	CTALKY_C	POINT	552648	4200149	11.2	302	1.8	4.88	1,2
Cooling Tower - Alyk CD	CTALKY_D	POINT	552644	4200155	11.2	302	1.8	4.88	1,2
Cooling Tower - Alyk EF	CTALKY_E	POINT	552638	4200163	11.15	302	1.8	5.49	1,2
Cooling Tower - Alyk EF	CTALKY_F	POINT	552633	4200158	11.15	302	1.8	5.49	1,2
S-4334 F-1251 LNC Dist S-4335 S-4333	P_0216	POINT	552726	4200527	53.34	421.9	3.27	2.23	1,2
S-4331 F-1361 LNF Rx S-4332 S-4330	P_0215	POINT	552776	4200702	53.34	421.9	3.21	2.23	1,2
S-4339 F-1551 HNC Dist S-4336 S-4338 S-4337	P_0217	POINT	552830	4200658	59.44	421.9	2.7	2.34	1,2
S-4152 F-100 SDA	P_0109	POINT	553076	4200390	30.48	616.15	3.29	1.45	1,2
S-4154 F-120 SDA	P_0111	POINT	553081	4200386	30.48	616.15	3.29	1.45	1,2
S-4155 F-135 SDA	P_4155	POINT	553105	4200384	30.48	413.58	12.53	1.68	1,2
S-4060 F-210A/B JHT	P_0048	POINT	553378	4199607	29.26	505.15	2.11	2.13	1,2
S-4059 F-247 JHT	P_0047	POINT	553387	4199612	25.91	524.58	3.36	1.91	1,2
S-4170 F-310/311 (SCR) A Train	P_0260	POINT	552998	4200464	42.67	497.38	10.75	3.51	1,2
S-4158 F-340 Hyd Plt	P_0116	POINT	553100	4200412	30.48	588.4	5.61	1.14	1,2
S-4171 F-355 (stack 1) B Train	P_0127	POINT	553045	4200447	35.6	497.38	14.8	1.45	1,2
S-4171 F-355 (stack 2) B Train	P_0128	POINT	553058	4200462	35.6	497.38	14.8	1.45	1,2
S-4171 F-355 (stack 3) B Train	P_0129	POINT	553051	4200444	35.6	497.38	14.8	1.45	1,2
S-4171 F-355 (stack 4) B Train	P_0130	POINT	553063	4200457	35.6	497.38	14.8	1.45	1,2
S-4159 F-410 TKC S-4160 F-420 TKC	P_0117	POINT	552814	4200504	41.15	671.65	6.28	1.83	1,2
S-4061 F-410 NHT S-4062 F-447 NHT	P_0049	POINT	553445	4199493	38.1	524.58	5.46	2.52	1,2
S-4161 F-510 TKN S-4162 F-520 TKN S-4163 F-530 TKN	P_311	POINT	552847	4200550	41.15	754.9	10.76	2.28	1,2
S-4166 F-610 Isocracker S-4165 F-620 Isocracker S-4164 F-630 Isocracker	P_0119	POINT	552867	4200572	41.15	588.4	4.13	2.11	1,2
S-4167 F-710 TKC	P_0120	POINT	552806	4200486	41.15	691.08	5.18	2.06	1,2
S-4168 F-730 TKN	P_0121	POINT	552918	4200609	54.86	632.8	8.52	2.36	1,2
S-4169 F-731 TKN	P_0122	POINT	552906	4200597	54.86	632.8	8.52	2.36	1,2
S-4070 F-1100A 4 Crude Atm	P_0057	POINT	553569	4199698	73.15	488.5	4.56	3.66	1,2
S-4071 F-1100B 4 Crude Atm	P_0058	POINT	553578	4199682	73.15	489.06	4.56	3.66	1,2
S-4072 F-1160 4 Crude Vac	F_1160	POINT	553560	4199713	47.24	546.78	7.2	2.9	1,2
S-4068 F-1610 DHT	P_0055	POINT	553461	4199870	51.97	491.28	2.62	2.21	1,2
S-4044 F-570 5 Rhen E, S-4045 F-580 5 Rhen E	P_0043	POINT	553479	4199513	58.22	505.15	3.58	2.59	1,2
S-4042 F-550 5 Rhen W, S-4043 F-560 5 Rhen W	P_0042	POINT	553469	4199507	58.22	505.15	3.58	2.59	1,2
S-4040 F-3570 4 Rhen E S-4041 F-3580 4 Rhen E	P_0041	POINT	553558	4199564	36.58	492.39	4.76	2.57	1,2
S-4038 F-3550 4 Rhen W S-4039 F-3560 4 Rhen W	P_0040	POINT	553551	4199560	36.58	492.39	4.76	2.57	1,2
S-4188 F-651 Poly	P_0147	POINT	552812	4200173	60.96	532.9	5.58	0.91	1,2
S-4189 F-661 Poly	P_0148	POINT	552807	4200176	60.96	616.15	4.4	0.91	1,2
S-4349 F-1650 HNF	F_1650	POINT	552727	4200644	32	582.85	4.23	0.74	1,2
S-4069 F-1660 GHT	F_1660	POINT	553444	4199863	33.53	546.55	7.77	1.35	1,2
Marketing Rack	MRKRACK	POINT	554182	4198570	9.45	316.48	10.42	0.30	1,2

Notes:

- 1. Source groups are the names used in the air dispersion modeling. Dispersion factors were generated for each of the source groups separately.
- 2. Stack height, stack temperature, stack velocity, and stack diameter were provided by Chevron.

Abbreviations:

K: Kelvin
m: meter

Table A4.3-HRA-12b
Operational Refinery Modeling Source Parameters - Circular Sources
Chevron Modernization Project
Richmond, California

Source Description	Source Group	Source Type	X Coordinates	Y Coordinates	Release Height	Initial Vertical Dimension	Radius	Vertices	Notes
					[m]	[m]	[m]		
Floating Roof Tank	T1899	Circular Area	552857	4198297	17.1	7.9	21.3	16	1,2,3
Floating Roof Tank	T3100	Circular Area	552584	4198796	19.5	9.1	36.9	16	1,2,3
Floating Roof Tank	T3213	Circular Area	552758	4199098	22.1	10.3	30.5	16	1,2,3

Notes:

1. Source groups are the names used in the air dispersion modeling. Dispersion factors were generated for each of the source groups separately.
2. Source release heights and radius were provided by Chevron.
3. According to USEPA ISC3 User's Guide Volume II, initial lateral dimension for line sources represented by adjacent volume sources is length of side divided by 2.15.

Abbreviations:

ISC: Industrial Source Complex Model

m: meter

USEPA: United States Environmental Protection Agency

References:

United States Environmental Protection Agency (USEPA). 1995. User's Guide for the Industrial Source Complex (ISC3) Dispersion Models. Volume II - Description of Model Algorithms. September. Available at <http://www.epa.gov/scram001/userg/regmod/isc3v2.pdf>

Table A4.3-HRA-12c
Operational Refinery Modeling Source Parameters - Flare Sources
Chevron Modernization Project
Richmond, California

Source Description	Source Group	Source Type	X Coordinates	Y Coordinates	Stack height	Stack temp.	Stack velocity	Heat release	Radiation loss	Notes
					[m]	[K]	[m/s]	[cal/s]	[%]	
H2 FLARE-model as flare S6020	H2FLARE	FLARE	553300	4200001	59.436	1273.15	20	104183.99	55	1,2

Notes:

1. Source group is the names used in the air dispersion modeling.
2. Stack height, stack temperature, stack velocity, stack diameter, and Radiation loss were provided by Chevron.

Abbreviations:

K: Kelvin
m: meter
s: second

Table A4.3-HRA-12d
Operational Refinery Modeling Source Parameters - Polygon Sources
Chevron Modernization Project
Richmond, California

Source Description	Source Group	Source Type	X Coordinates	Y Coordinates	Release Height	Initial Vertical Dimension	Notes
					[m]	[m]	
New Hydrogen Plant Fugitive	NEWHP	POLYGON	553121	4200137	0	0	1,2
		POLYGON	553484	4199932	0	0	1,2
		POLYGON	553192	4199762	0	0	1,2
		POLYGON	553121	4200137	0	0	1,2
TKC fugitive	TKC	POLYGON	552836	4200779	0	0	1,2
		POLYGON	552900	4200747	0	0	1,2
		POLYGON	552940	4200749	0	0	1,2
		POLYGON	552955	4200741	0	0	1,2
		POLYGON	552967	4200708	0	0	1,2
		POLYGON	553202	4200496	0	0	1,2
		POLYGON	553212	4200463	0	0	1,2
		POLYGON	553035	4200250	0	0	1,2
		POLYGON	552612	4200593	0	0	1,2
		POLYGON	552764	4200777	0	0	1,2
		POLYGON	552813	4200784	0	0	1,2
		POLYGON	552836	4200779	0	0	1,2
SRU fugitive	SRU	POLYGON	552321	4200491	0	0	1,2
		POLYGON	552106	4200667	0	0	1,2
		POLYGON	552282	4200882	0	0	1,2
		POLYGON	552532	4200670	0	0	1,2
		POLYGON	552391	4200498	0	0	1,2
		POLYGON	552321	4200491	0	0	1,2

Notes:

1. Source groups are the names used in the air dispersion modeling. Dispersion factors were generated for each of the source groups separately.
2. The release height and initial vertical dimension were conservatively assumed to be ground level for fugitive sources.

Abbreviations:

m: meter

This page deliberately blank

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y	Elevation	Height
		Coordinates	[m]	[m]
B&SOFFC	553303	4198858	4.1	3.5
	553297	4198851	4.1	3.5
	553293	4198853	4.1	3.5
	553272	4198831	4.1	3.5
	553265	4198840	4.1	3.5
	553287	4198861	4.1	3.5
	553282	4198864	4.1	3.5
B1	553289	4198871	4.1	3.5
	552261	4200637	4.37	4.7
	552258	4200634	4.37	4.7
	552255	4200636	4.37	4.7
	552244	4200624	4.37	4.7
	552246	4200623	4.37	4.7
	552243	4200619	4.37	4.7
B100	552230	4200629	4.37	4.7
	552246	4200648	4.37	4.7
	553603	4198896	3.45	4.6
	553590	4198882	3.45	4.6
B101	553578	4198894	3.45	4.6
	553591	4198908	3.45	4.6
	553633	4198862	2.96	4.6
	553616	4198845	2.96	4.6
B102	553605	4198856	2.96	4.6
	553622	4198873	2.96	4.6
	553644	4198866	2.94	4.6
	553641	4198863	2.94	4.6
B103	553625	4198878	2.94	4.6
	553628	4198881	2.94	4.6
	553649	4198872	2.88	4.6
	553644	4198867	2.88	4.6
B104	553630	4198882	2.88	4.6
	553635	4198887	2.88	4.6
	553435	4198886	3.4	4.6
	553461	4198861	3.4	4.6
	553458	4198857	3.4	4.6
	553460	4198856	3.4	4.6
	553461	4198857	3.4	4.6
	553464	4198854	3.4	4.6
	553456	4198847	3.4	4.6
	553454	4198849	3.4	4.6
	553455	4198851	3.4	4.6
	553453	4198852	3.4	4.6
	553450	4198849	3.4	4.6
	553456	4198843	3.4	4.6
	553452	4198839	3.4	4.6
	553438	4198853	3.4	4.6
	553440	4198856	3.4	4.6
	553434	4198862	3.4	4.6
	553436	4198864	3.4	4.6
	553424	4198875	3.4	4.6
B105	553429	4198880	3.4	4.6
	553428	4198881	3.4	4.6
	553431	4198884	3.4	4.6
	553432	4198883	3.4	4.6
B106	553459	4198891	3.47	4.6
	553448	4198879	3.47	4.6
	553440	4198887	3.47	4.6
	553452	4198898	3.47	4.6
B107	553467	4198883	3.63	4.6
	553455	4198872	3.63	4.6
	553449	4198878	3.63	4.6
	553461	4198889	3.63	4.6
B108	553478	4198872	3.2	4.6
	553466	4198860	3.2	4.6
	553456	4198870	3.2	4.6
	553468	4198882	3.2	4.6
B109	553495	4198886	3.12	4.6
	553481	4198872	3.12	4.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
B108	553472	4198881	3.12	4.6
	553486	4198895	3.12	4.6
B109	553411	4198936	3.52	4.6
	553413	4198933	3.52	4.6
	553415	4198935	3.52	4.6
	553427	4198923	3.52	4.6
	553425	4198922	3.52	4.6
	553435	4198912	3.52	4.6
	553412	4198889	3.52	4.6
	553399	4198902	3.52	4.6
	553418	4198921	3.52	4.6
	553409	4198930	3.52	4.6
	553411	4198931	3.52	4.6
B10A	553409	4198933	3.52	4.6
	553024	4200382	4.39	5.5
	553011	4200367	4.39	5.5
	553006	4200372	4.39	5.5
B10B	553018	4200387	4.39	5.5
	553112	4200479	3.06	3.7
	553100	4200464	3.06	3.7
	553088	4200475	3.06	3.7
B11	553100	4200489	3.06	3.7
	552939	4200492	4.1	7.6
	552934	4200486	4.1	7.6
	552922	4200496	4.1	7.6
B111	552927	4200502	4.1	7.6
	554310	4198688	2.89	9.1
	554248	4198626	2.89	9.1
	554222	4198651	2.89	9.1
B112	554285	4198714	2.89	9.1
	554251	4198740	3.25	9.1
	554228	4198717	3.25	9.1
	554204	4198741	3.25	9.1
B113	554227	4198764	3.25	9.1
	554159	4198515	3.08	6.1
	554147	4198504	3.08	6.1
	554137	4198515	3.08	6.1
B114	554148	4198526	3.08	6.1
	554128	4198551	3.07	7.6
	554113	4198537	3.07	7.6
	554091	4198559	3.07	7.6
B115	554106	4198573	3.07	7.6
	554072	4198604	3.02	4.6
	554078	4198598	3.02	4.6
	554074	4198594	3.02	4.6
	554088	4198580	3.02	4.6
	554078	4198571	3.02	4.6
	554059	4198591	3.02	4.6
	554062	4198594	3.02	4.6
	554059	4198597	3.02	4.6
	554066	4198604	3.02	4.6
B117	554069	4198601	3.02	4.6
	553881	4198816	3.22	10.7
	553860	4198796	3.22	10.7
	553838	4198817	3.22	10.7
B118	553859	4198838	3.22	10.7
	554461	4199119	3.18	12.2
	554461	4199064	3.18	12.2
	554336	4199064	3.18	12.2
B119	554336	4199119	3.18	12.2
	554290	4199112	3.11	12.2
	554290	4199057	3.11	12.2
	554209	4199057	3.11	12.2
B12	554209	4199112	3.11	12.2
	552763	4200598	4.28	10.7
	552749	4200583	4.28	10.7
	552738	4200593	4.28	10.7
	552749	4200607	4.28	10.7

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
B120	554128	4199177	3.22	4.6
	554128	4199163	3.22	4.6
	554138	4199163	3.22	4.6
	554138	4199159	3.22	4.6
	554124	4199159	3.22	4.6
	554124	4199173	3.22	4.6
	554093	4199173	3.22	4.6
	554093	4199185	3.22	4.6
	554140	4199185	3.22	4.6
B121	554140	4199177	3.22	4.6
	554450	4199262	3.67	4.6
	554450	4199254	3.67	4.6
	554412	4199254	3.67	4.6
	554412	4199247	3.67	4.6
	554450	4199247	3.67	4.6
	554450	4199239	3.67	4.6
	554369	4199239	3.67	4.6
	554369	4199247	3.67	4.6
	554397	4199247	3.67	4.6
	554397	4199254	3.67	4.6
	554374	4199254	3.67	4.6
B122	554374	4199262	3.67	4.6
	554491	4199333	3.27	4.6
	554473	4199333	3.27	4.6
	554473	4199350	3.27	4.6
B123	554491	4199350	3.27	4.6
	554585	4199349	2.95	4.6
	554585	4199336	2.95	4.6
	554554	4199336	2.95	4.6
B124	554554	4199349	2.95	4.6
	554432	4199546	3.27	7.6
	554432	4199498	3.27	7.6
	554397	4199498	3.27	7.6
B125	554397	4199546	3.27	7.6
	554605	4200819	4.7	6.1
	554589	4200817	4.7	6.1
	554587	4200834	4.7	6.1
B126	554603	4200836	4.7	6.1
	554584	4200857	3.83	4.6
	554584	4200844	3.83	4.6
	554550	4200844	3.83	4.6
B13	554550	4200857	3.83	4.6
	552787	4200588	4.03	10.7
	552779	4200578	4.03	10.7
	552767	4200588	4.03	10.7
	552770	4200591	4.03	10.7
	552769	4200593	4.03	10.7
B14	552774	4200598	4.03	10.7
	552850	4200214	4.9	3.7
	552843	4200206	4.9	3.7
	552835	4200212	4.9	3.7
B18	552843	4200221	4.9	3.7
	553401	4199661	4.53	7.6
	553377	4199647	4.53	7.6
	553360	4199674	4.53	7.6
B19	553385	4199689	4.53	7.6
	553373	4199705	4.2	3
	553364	4199699	4.2	3
	553355	4199715	4.2	3
B20	553364	4199720	4.2	3
	552455	4200684	3.97	4.6
	552468	4200673	3.97	4.6
	552467	4200672	3.97	4.6
	552487	4200656	3.97	4.6
	552487	4200657	3.97	4.6
	552497	4200650	3.97	4.6
	552488	4200640	3.97	4.6
B21	552481	4200646	3.97	4.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y	Elevation	Height
		Coordinates	[m]	[m]
B2	552480	4200645	3.97	4.6
	552451	4200668	3.97	4.6
	552452	4200669	3.97	4.6
	552447	4200674	3.97	4.6
	552449	4200677	3.97	4.6
	552448	4200679	3.97	4.6
	552450	4200682	3.97	4.6
	552453	4200680	3.97	4.6
B20	553304	4199582	6.38	9.1
	553344	4199518	6.38	9.1
	553316	4199500	6.38	9.1
	553302	4199523	6.38	9.1
	553290	4199516	6.38	9.1
	553288	4199520	6.38	9.1
	553283	4199517	6.38	9.1
	553259	4199557	6.38	9.1
B21	553347	4199511	5.07	6.1
	553360	4199490	5.07	6.1
	553365	4199493	5.07	6.1
	553373	4199481	5.07	6.1
	553353	4199470	5.07	6.1
	553334	4199503	5.07	6.1
B22	553397	4199464	4.81	4.6
	553365	4199446	4.81	4.6
	553361	4199453	4.81	4.6
	553393	4199472	4.81	4.6
B23	553388	4199426	5.93	4.6
	553357	4199407	5.93	4.6
	553349	4199419	5.93	4.6
	553381	4199438	5.93	4.6
B24	553499	4199615	4.1	9.1
	553474	4199599	4.1	9.1
	553469	4199609	4.1	9.1
	553493	4199624	4.1	9.1
B25	553631	4199303	3.77	4.6
	553615	4199293	3.77	4.6
	553598	4199320	3.77	4.6
	553615	4199330	3.77	4.6
B26	553707	4199196	3.31	5.5
	553679	4199164	3.31	5.5
	553651	4199189	3.31	5.5
	553680	4199220	3.31	5.5
B27	553573	4199103	3.39	13.7
	553560	4199089	3.39	13.7
	553513	4199133	3.39	13.7
	553526	4199146	3.39	13.7
B28	553492	4199032	4.8	4.6
	553505	4199020	4.8	4.6
	553507	4199022	4.8	4.6
	553510	4199019	4.8	4.6
	553511	4199017	4.8	4.6
	553495	4198999	4.8	4.6
	553478	4199014	4.8	4.6
	553484	4199020	4.8	4.6
	553494	4199012	4.8	4.6
	553497	4199015	4.8	4.6
	553495	4199017	4.8	4.6
	553493	4199015	4.8	4.6
	553488	4199019	4.8	4.6
	553491	4199021	4.8	4.6
	553486	4199025	4.8	4.6
B29	553510	4198907	3.42	4.6
	553495	4198893	3.42	4.6
	553454	4198934	3.42	4.6
	553469	4198948	3.42	4.6
B3	552502	4200674	2.66	4.3
	552495	4200664	2.66	4.3
	552481	4200675	2.66	4.3

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552488	4200685	2.66	4.3
B30	553552	4198949	3.19	4.6
	553510	4198907	3.19	4.6
	553497	4198920	3.19	4.6
	553539	4198962	3.19	4.6
B31	553444	4198832	3.25	4.6
	553431	4198819	3.25	4.6
	553393	4198856	3.25	4.6
	553405	4198869	3.25	4.6
B33	552668	4200224	5.38	5.7
	552656	4200208	5.38	5.7
	552627	4200231	5.38	5.7
	552639	4200247	5.38	5.7
B34	553145	4198651	4.64	9.1
	553177	4198621	4.64	9.1
	553180	4198623	4.64	9.1
	553190	4198614	4.64	9.1
	553186	4198610	4.64	9.1
	553187	4198609	4.64	9.1
	553178	4198600	4.64	9.1
	553183	4198596	4.64	9.1
	553180	4198593	4.64	9.1
	553181	4198591	4.64	9.1
	553167	4198577	4.64	9.1
	553145	4198597	4.64	9.1
	553154	4198606	4.64	9.1
	553126	4198631	4.64	9.1
	553264	4198562	6.87	22.9
B35	553252	4198549	6.87	22.9
	553244	4198557	6.87	22.9
	553237	4198549	6.87	22.9
	553242	4198545	6.87	22.9
	553246	4198549	6.87	22.9
	553254	4198542	6.87	22.9
	553240	4198527	6.87	22.9
	553232	4198535	6.87	22.9
	553227	4198529	6.87	22.9
	553210	4198545	6.87	22.9
	553206	4198540	6.87	22.9
	553193	4198554	6.87	22.9
	553207	4198567	6.87	22.9
	553211	4198563	6.87	22.9
	553214	4198567	6.87	22.9
	553228	4198553	6.87	22.9
	553230	4198556	6.87	22.9
	553224	4198563	6.87	22.9
	553244	4198582	6.87	22.9
B36	553299	4198527	6.94	22.9
	553276	4198503	6.94	22.9
	553249	4198529	6.94	22.9
	553272	4198554	6.94	22.9
B37	553306	4198755	3.47	3.7
	553292	4198740	3.47	3.7
	553256	4198774	3.47	3.7
	553271	4198789	3.47	3.7
B38	553352	4198668	4.16	20
	553315	4198627	4.16	20
	553300	4198642	4.16	20
	553337	4198681	4.16	20
B39	553373	4198646	4.27	9.1
	553346	4198616	4.27	9.1
	553329	4198632	4.27	9.1
	553324	4198627	4.27	9.1
	553319	4198632	4.27	9.1
	553351	4198666	4.27	9.1
B40	553555	4198781	3.17	4.6
	553525	4198748	3.17	4.6
	553512	4198760	3.17	4.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	553543	4198792	3.17	4.6
B41	553579	4198795	3.12	4.6
	553567	4198782	3.12	4.6
	553549	4198798	3.12	4.6
	553578	4198830	3.12	4.6
	553590	4198819	3.12	4.6
	553573	4198801	3.12	4.6
B42	553623	4198706	3.82	6.1
	553592	4198673	3.82	6.1
	553574	4198691	3.82	6.1
	553605	4198724	3.82	6.1
B43	553439	4198593	3.42	4.6
	553432	4198587	3.42	4.6
	553405	4198613	3.42	4.6
	553411	4198620	3.42	4.6
B44	553424	4198617	3.38	4.6
	553419	4198612	3.38	4.6
	553411	4198620	3.38	4.6
	553416	4198625	3.38	4.6
B45	553433	4198537	3.49	4.6
	553424	4198527	3.49	4.6
	553409	4198541	3.49	4.6
	553418	4198550	3.49	4.6
B46	553434	4198558	3.42	2.1
	553425	4198549	3.42	2.1
	553421	4198553	3.42	2.1
	553429	4198562	3.42	2.1
B47	553533	4198673	3.52	4.6
	553525	4198664	3.52	4.6
	553519	4198669	3.52	4.6
	553528	4198678	3.52	4.6
B48	553546	4198657	3.55	4.6
	553541	4198651	3.55	4.6
	553528	4198664	3.55	4.6
	553533	4198669	3.55	4.6
B49	553564	4198646	3.47	4.6
	553556	4198638	3.47	4.6
	553543	4198650	3.47	4.6
	553550	4198658	3.47	4.6
B5	552414	4200612	5.28	4
	552430	4200600	5.28	4
	552430	4200601	5.28	4
	552445	4200588	5.28	4
	552435	4200577	5.28	4
	552420	4200589	5.28	4
	552427	4200597	5.28	4
B50	552411	4200609	5.28	4
	553549	4198596	3.31	3.7
	553543	4198590	3.31	3.7
	553530	4198603	3.31	3.7
B51	553535	4198608	3.31	3.7
	553564	4198611	3.31	3.7
	553551	4198598	3.31	3.7
	553545	4198603	3.31	3.7
B52	553558	4198616	3.31	3.7
	553588	4198480	3.08	27.1
	553575	4198466	3.08	27.1
	553515	4198522	3.08	27.1
B53	553529	4198537	3.08	27.1
	553626	4198578	3.26	6.1
	553618	4198570	3.26	6.1
	553596	4198591	3.26	6.1
	553604	4198599	3.26	6.1
	553498	4198508	3.44	27.1
	553560	4198451	3.44	27.1
	553544	4198434	3.44	27.1
	553516	4198459	3.44	27.1
	553512	4198455	3.44	27.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation	Height
			[m]	[m]
B54	553516	4198451	3.44	27.1
	553501	4198436	3.44	27.1
	553487	4198451	3.44	27.1
	553502	4198466	3.44	27.1
	553506	4198462	3.44	27.1
	553510	4198466	3.44	27.1
	553482	4198491	3.44	27.1
B55	553547	4198395	3.65	8.2
	553536	4198384	3.65	8.2
	553500	4198419	3.65	8.2
	553511	4198430	3.65	8.2
B56	553566	4198415	3.1	4.9
	553547	4198395	3.1	4.9
	553537	4198405	3.1	4.9
	553555	4198424	3.1	4.9
B57	553577	4198400	3.07	4.3
	553562	4198385	3.07	4.3
	553550	4198396	3.07	4.3
	553565	4198411	3.07	4.3
B58-1	553604	4198386	3.21	12.2
	553574	4198353	3.21	12.2
	553554	4198371	3.21	12.2
	553584	4198404	3.21	12.2
B58-2	553601	4198383	3.24	13.7
	553582	4198362	3.24	13.7
	553571	4198372	3.24	13.7
	553590	4198393	3.24	13.7
B59	553605	4198466	2.79	9.1
	553578	4198437	2.79	9.1
	553568	4198446	2.79	9.1
	553595	4198476	2.79	9.1
B6	552482	4200580	4.89	4.6
	552498	4200567	4.89	4.6
	552502	4200571	4.89	4.6
	552519	4200557	4.89	4.6
	552516	4200553	4.89	4.6
	552521	4200549	4.89	4.6
	552529	4200543	4.89	4.6
	552510	4200521	4.89	4.6
	552464	4200557	4.89	4.6
	552454	4200565	4.89	4.6
	552462	4200575	4.89	4.6
	552468	4200571	4.89	4.6
	552476	4200580	4.89	4.6
	552479	4200577	4.89	4.6
B60	553636	4198399	2.88	9.1
	553625	4198386	2.88	9.1
	553581	4198428	2.88	9.1
	553592	4198439	2.88	9.1
B61	553630	4198455	2.87	9.1
	553608	4198432	2.87	9.1
	553595	4198444	2.87	9.1
	553617	4198467	2.87	9.1
B62	553643	4198465	3.1	9.1
	553636	4198458	3.1	9.1
	553618	4198474	3.1	9.1
	553625	4198481	3.1	9.1
B63	553631	4198332	3.66	12.2
	553614	4198313	3.66	12.2
	553574	4198353	3.66	12.2
	553591	4198372	3.66	12.2
B64	553666	4198327	3.44	12.2
	553636	4198294	3.44	12.2
	553614	4198313	3.44	12.2
	553644	4198346	3.44	12.2
B65	553665	4198418	2.65	9.1
	553649	4198401	2.65	9.1
	553642	4198407	2.65	9.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	553658	4198424	2.65	9.1
B66	553680	4198406	3.24	5.2
	553670	4198396	3.24	5.2
	553657	4198408	3.24	5.2
	553667	4198418	3.24	5.2
	553751	4198426	3.06	9.8
B67	553677	4198343	3.06	9.8
	553637	4198381	3.06	9.8
	553651	4198397	3.06	9.8
	553675	4198377	3.06	9.8
	553733	4198442	3.06	9.8
	553669	4198475	2.98	4.9
B68	553656	4198462	2.98	4.9
	553648	4198470	2.98	4.9
	553661	4198483	2.98	4.9
	553695	4198447	3.01	4.9
B69	553682	4198434	3.01	4.9
	553662	4198454	3.01	4.9
	553675	4198468	3.01	4.9
	552563	4200526	4.96	6.1
B7	552550	4200510	4.96	6.1
	552524	4200530	4.96	6.1
	552539	4200547	4.96	6.1
	553704	4198464	3.2	4.9
B70	553694	4198453	3.2	4.9
	553689	4198458	3.2	4.9
	553687	4198456	3.2	4.9
	553675	4198468	3.2	4.9
	553686	4198480	3.2	4.9
	553714	4198459	3.09	9.1
B71	553705	4198449	3.09	9.1
	553699	4198455	3.09	9.1
	553708	4198465	3.09	9.1
	553712	4198431	2.99	9.1
B72	553705	4198424	2.99	9.1
	553702	4198426	2.99	9.1
	553697	4198422	2.99	9.1
	553686	4198432	2.99	9.1
	553698	4198444	2.99	9.1
	553750	4198468	2.97	6.1
B73	553737	4198455	2.97	6.1
	553713	4198479	2.97	6.1
	553725	4198492	2.97	6.1
	553762	4198456	3	9.1
B74	553751	4198444	3	9.1
	553740	4198454	3	9.1
	553752	4198466	3	9.1
	553744	4198335	2.94	4.6
B77	553734	4198324	2.94	4.6
	553718	4198339	2.94	4.6
	553728	4198351	2.94	4.6
	553733	4198323	3.1	4.6
B78	553721	4198311	3.1	4.6
	553706	4198326	3.1	4.6
	553716	4198338	3.1	4.6
	553781	4198407	3.02	9.1
B79	553772	4198398	3.02	9.1
	553788	4198382	3.02	9.1
	553769	4198361	3.02	9.1
	553775	4198356	3.02	9.1
	553781	4198363	3.02	9.1
	553793	4198352	3.02	9.1
	553767	4198325	3.02	9.1
	553723	4198365	3.02	9.1
	553745	4198389	3.02	9.1
	553739	4198395	3.02	9.1
	553754	4198413	3.02	9.1
	553762	4198406	3.02	9.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	553771	4198416	3.02	9.1
B8	552178	4200600	4.68	3.7
	552187	4200592	4.68	3.7
	552188	4200592	4.68	3.7
	552207	4200577	4.68	3.7
	552211	4200580	4.68	3.7
	552213	4200579	4.68	3.7
	552204	4200569	4.68	3.7
	552182	4200587	4.68	3.7
	552184	4200589	4.68	3.7
B80	552175	4200597	4.68	3.7
	553814	4198401	3.15	7.6
	553808	4198394	3.15	7.6
	553773	4198426	3.15	7.6
	553784	4198439	3.15	7.6
	553814	4198411	3.15	7.6
B81	553809	4198406	3.15	7.6
	553756	4198317	3.29	9.1
	553772	4198301	3.29	9.1
	553777	4198306	3.29	9.1
	553786	4198296	3.29	9.1
	553765	4198274	3.29	9.1
	553757	4198282	3.29	9.1
	553745	4198269	3.29	9.1
	553727	4198287	3.29	9.1
B82	553789	4198324	3.47	9.1
	553779	4198313	3.47	9.1
	553772	4198320	3.47	9.1
	553782	4198331	3.47	9.1
B83	553795	4198344	3.7	9.1
	553806	4198333	3.7	9.1
	553809	4198336	3.7	9.1
	553818	4198327	3.7	9.1
	553797	4198306	3.7	9.1
	553788	4198315	3.7	9.1
	553796	4198324	3.7	9.1
	553785	4198334	3.7	9.1
B84	553833	4198345	3.37	9.1
	553822	4198333	3.37	9.1
	553788	4198366	3.37	9.1
	553802	4198380	3.37	9.1
	553819	4198365	3.37	9.1
	553816	4198362	3.37	9.1
B85	553838	4198263	3.68	30.4
	553865	4198239	3.68	30.4
	553853	4198225	3.68	30.4
	553825	4198250	3.68	30.4
	553823	4198248	3.68	30.4
	553821	4198250	3.68	30.4
	553823	4198252	3.68	30.4
	553814	4198260	3.68	30.4
	553829	4198276	3.68	30.4
	553840	4198265	3.68	30.4
B86	553826	4198246	4.81	30.4
	553813	4198233	4.81	30.4
	553775	4198267	4.81	30.4
	553790	4198283	4.81	30.4
	553801	4198272	4.81	30.4
	553799	4198270	4.81	30.4
B87	553866	4198266	4.38	30.4
	553899	4198235	4.38	30.4
	553888	4198222	4.38	30.4
	553865	4198243	4.38	30.4
	553863	4198241	4.38	30.4
	553861	4198243	4.38	30.4
	553865	4198248	4.38	30.4
	553856	4198256	4.38	30.4
	553853	4198281	3.4	8.2

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
B88	553845	4198274	3.4	8.2
	553815	4198304	3.4	8.2
	553822	4198312	3.4	8.2
B89	553847	4198329	3.59	33.5
	553868	4198308	3.59	33.5
	553871	4198312	3.59	33.5
	553878	4198306	3.59	33.5
	553857	4198284	3.59	33.5
	553824	4198316	3.59	33.5
	553835	4198326	3.59	33.5
	553840	4198321	3.59	33.5
B9	552907	4200678	4.29	6.9
	552886	4200652	4.29	6.9
	552847	4200684	4.29	6.9
	552867	4200710	4.29	6.9
	552868	4200710	4.29	6.9
B90	553891	4198336	3.53	4.6
	553874	4198317	3.53	4.6
	553846	4198344	3.53	4.6
	553863	4198363	3.53	4.6
B91	553916	4198274	3.81	7.6
	553904	4198260	3.81	7.6
	553884	4198278	3.81	7.6
	553896	4198292	3.81	7.6
B92	553936	4198295	3.82	6.1
	553920	4198277	3.82	6.1
	553889	4198306	3.82	6.1
	553905	4198323	3.82	6.1
B93	554052	4198370	3.26	11.8
	554001	4198309	3.26	11.8
	553924	4198378	3.26	11.8
	553976	4198438	3.26	11.8
B94	553871	4198456	3.09	15.2
	553931	4198401	3.09	15.2
	553923	4198392	3.09	15.2
	553898	4198414	3.09	15.2
	553891	4198407	3.09	15.2
	553913	4198387	3.09	15.2
	553903	4198376	3.09	15.2
	553847	4198427	3.09	15.2
	553857	4198438	3.09	15.2
	553882	4198417	3.09	15.2
	553889	4198423	3.09	15.2
	553863	4198447	3.09	15.2
B95	553863	4198531	3.6	18.3
	553888	4198511	3.6	18.3
	553891	4198514	3.6	18.3
	553895	4198516	3.6	18.3
	553903	4198515	3.6	18.3
	553906	4198509	3.6	18.3
	553907	4198504	3.6	18.3
	553906	4198500	3.6	18.3
	553902	4198496	3.6	18.3
	553895	4198496	3.6	18.3
	553892	4198497	3.6	18.3
	553832	4198430	3.6	18.3
B96	553798	4198461	3.6	18.3
	554100	4198447	3.07	3.7
	554080	4198427	3.07	3.7
	554075	4198432	3.07	3.7
B97	554095	4198452	3.07	3.7
	554099	4198475	2.97	12.2
	554110	4198465	2.97	12.2
	554103	4198458	2.97	12.2
	554092	4198468	2.97	12.2
	554086	4198461	2.97	12.2
	554070	4198475	2.97	12.2
	554041	4198441	2.97	12.2

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	554014	4198467	2.97	12.2
	554064	4198524	2.97	12.2
	554107	4198485	2.97	12.2
B98	554048	4198545	3.12	12.2
	553997	4198490	3.12	12.2
	553972	4198514	3.12	12.2
	554022	4198568	3.12	12.2
B99	553583	4198900	3.46	4.6
	553581	4198898	3.46	4.6
	553579	4198899	3.46	4.6
	553576	4198896	3.46	4.6
	553564	4198908	3.46	4.6
	553578	4198922	3.46	4.6
	553590	4198910	3.46	4.6
CT_RLOP	553581	4198901	3.46	4.6
	552989	4200661	3.09	14.9
	552976	4200646	3.09	14.9
	552960	4200658	3.09	14.9
CT_SRU	552974	4200674	3.09	14.9
	552501	4200467	11.88	12.6
	552486	4200450	11.88	12.6
	552423	4200500	11.88	12.6
CT4CAT_A	552437	4200517	11.88	12.6
	553603	4199645	3.37	14.6
	553572	4199628	3.37	14.6
	553565	4199642	3.37	14.6
CT4CAT_B	553596	4199659	3.37	14.6
	553555	4199618	3.53	14.6
	553539	4199609	3.53	14.6
	553532	4199623	3.53	14.6
CT4CAT_C	553550	4199632	3.53	14.6
	553572	4199628	3.59	14.6
	553557	4199618	3.59	14.6
	553550	4199633	3.59	14.6
CTALKAB	553565	4199641	3.59	14.6
	552666	4200137	6.4	8.2
	552659	4200130	6.4	8.2
	552648	4200141	6.4	8.2
CTALKYCD	552656	4200149	6.4	8.2
	552655	4200149	7.16	11.2
	552647	4200142	7.16	11.2
	552638	4200154	7.16	11.2
CTALKYEF	552645	4200162	7.16	11.2
	552645	4200163	7.25	11.2
	552632	4200150	7.25	11.2
	552626	4200157	7.25	11.2
CTISOMAX	552638	4200170	7.25	11.2
	553073	4200596	3.27	17.1
	553060	4200580	3.27	17.1
	552992	4200637	3.27	17.1
CTLSFO	553005	4200652	3.27	17.1
	553543	4199601	3.04	21
	553529	4199593	3.04	21
	553516	4199615	3.04	21
CTLSFO2	553531	4199622	3.04	21
	553524	4199599	3.51	15.2
	553504	4199588	3.51	15.2
	553499	4199599	3.51	15.2
CTPOLY	553496	4199603	3.51	15.2
	553517	4199614	3.51	15.2
	552910	4200122	11.46	14.8
	552900	4200119	11.46	14.8
	552897	4200126	11.46	14.8
	552907	4200129	11.46	14.8
	552972	4200526	4.1	6.9
	552972	4200525	4.1	6.9
	552971	4200526	4.1	6.9
	552971	4200526	4.1	6.9

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
D-1020	552970	4200526	4.1	6.9
	552970	4200526	4.1	6.9
	552970	4200527	4.1	6.9
	552970	4200527	4.1	6.9
	552969	4200527	4.1	6.9
	552969	4200528	4.1	6.9
	552969	4200528	4.1	6.9
	552970	4200529	4.1	6.9
	552970	4200529	4.1	6.9
	552970	4200530	4.1	6.9
	552970	4200530	4.1	6.9
	552971	4200530	4.1	6.9
	552971	4200530	4.1	6.9
	552972	4200530	4.1	6.9
	552972	4200530	4.1	6.9
	552973	4200530	4.1	6.9
	552973	4200530	4.1	6.9
	552973	4200530	4.1	6.9
	552974	4200529	4.1	6.9
	552974	4200529	4.1	6.9
	552974	4200528	4.1	6.9
	552974	4200528	4.1	6.9
	552974	4200527	4.1	6.9
	552974	4200527	4.1	6.9
	552974	4200527	4.1	6.9
	552973	4200526	4.1	6.9
	552973	4200526	4.1	6.9
	552973	4200526	4.1	6.9
D-1021	552977	4200524	4.11	3.7
	552977	4200524	4.11	3.7
	552976	4200524	4.11	3.7
	552976	4200524	4.11	3.7
	552976	4200524	4.11	3.7
	552976	4200524	4.11	3.7
	552975	4200524	4.11	3.7
	552975	4200525	4.11	3.7
	552975	4200525	4.11	3.7
	552975	4200525	4.11	3.7
	552975	4200525	4.11	3.7
	552975	4200526	4.11	3.7
	552975	4200526	4.11	3.7
	552976	4200526	4.11	3.7
	552976	4200526	4.11	3.7
	552976	4200527	4.11	3.7
	552976	4200527	4.11	3.7
	552977	4200527	4.11	3.7
	552977	4200527	4.11	3.7
	552977	4200527	4.11	3.7
	552978	4200526	4.11	3.7
	552978	4200526	4.11	3.7
	552978	4200526	4.11	3.7
	552978	4200526	4.11	3.7
	552978	4200525	4.11	3.7
	552978	4200525	4.11	3.7
	552978	4200525	4.11	3.7
	552978	4200525	4.11	3.7
	552978	4200524	4.11	3.7
	552978	4200524	4.11	3.7
	552978	4200524	4.11	3.7
FB4038	552977	4200524	4.11	3.7
	553582	4199562	3.38	20.4
	553556	4199548	3.38	20.4
	553547	4199562	3.38	20.4
FB4042	553574	4199577	3.38	20.4
	553492	4199509	4.1	21.3
	553474	4199497	4.1	21.3
	553467	4199508	4.1	21.3
	553485	4199519	4.1	21.3

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
FB4158	553111	4200413	4.23	10.1
	553103	4200404	4.23	10.1
	553091	4200413	4.23	10.1
	553098	4200422	4.23	10.1
FB4159	552820	4200504	4.13	41.1
	552816	4200499	4.13	41.1
	552808	4200504	4.13	41.1
	552813	4200510	4.13	41.1
FB4167	552809	4200488	4.08	41.1
	552802	4200478	4.08	41.1
	552799	4200481	4.08	41.1
	552807	4200490	4.08	41.1
FB4188	552812	4200172	5.08	11.6
	552811	4200171	5.08	11.6
	552811	4200172	5.08	11.6
	552811	4200172	5.08	11.6
	552811	4200172	5.08	11.6
	552811	4200172	5.08	11.6
	552810	4200172	5.08	11.6
	552810	4200172	5.08	11.6
	552810	4200172	5.08	11.6
	552810	4200172	5.08	11.6
	552810	4200173	5.08	11.6
	552810	4200173	5.08	11.6
	552810	4200173	5.08	11.6
	552810	4200173	5.08	11.6
	552810	4200174	5.08	11.6
	552810	4200174	5.08	11.6
	552810	4200174	5.08	11.6
	552810	4200174	5.08	11.6
	552811	4200174	5.08	11.6
	552811	4200174	5.08	11.6
	552811	4200175	5.08	11.6
	552811	4200175	5.08	11.6
	552812	4200175	5.08	11.6
	552812	4200174	5.08	11.6
	552812	4200174	5.08	11.6
	552813	4200174	5.08	11.6
	552813	4200174	5.08	11.6
	552813	4200174	5.08	11.6
	552813	4200173	5.08	11.6
	552813	4200173	5.08	11.6
	552813	4200173	5.08	11.6
	552813	4200172	5.08	11.6
	552813	4200172	5.08	11.6
	552813	4200172	5.08	11.6
	552812	4200172	5.08	11.6
	552812	4200172	5.08	11.6
FB4189	552808	4200175	5.14	10.7
	552807	4200175	5.14	10.7
	552807	4200175	5.14	10.7
	552807	4200175	5.14	10.7
	552807	4200175	5.14	10.7
	552806	4200176	5.14	10.7
	552806	4200176	5.14	10.7
	552806	4200176	5.14	10.7
	552806	4200176	5.14	10.7
	552806	4200177	5.14	10.7
	552806	4200177	5.14	10.7
	552806	4200177	5.14	10.7
	552806	4200177	5.14	10.7
	552806	4200177	5.14	10.7
	552806	4200177	5.14	10.7
	552807	4200178	5.14	10.7
	552807	4200178	5.14	10.7
	552807	4200178	5.14	10.7
	552807	4200178	5.14	10.7
	552808	4200178	5.14	10.7
	552808	4200178	5.14	10.7
	552808	4200178	5.14	10.7
	552808	4200177	5.14	10.7
	552808	4200177	5.14	10.7
	552809	4200177	5.14	10.7

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y	Elevation	Height
		Coordinates	[m]	[m]
	552809	4200177	5.14	10.7
	552809	4200177	5.14	10.7
	552809	4200176	5.14	10.7
	552809	4200176	5.14	10.7
	552808	4200176	5.14	10.7
	552808	4200176	5.14	10.7
	552808	4200175	5.14	10.7
	552808	4200175	5.14	10.7
FB4350	553698	4199384	3.92	12.2
	553641	4199354	3.92	12.2
	553636	4199362	3.92	12.2
	553692	4199394	3.92	12.2
FB4352	553681	4199412	3.93	12.2
	553623	4199381	3.93	12.2
	553619	4199389	3.93	12.2
	553675	4199421	3.93	12.2
FIREBOX4	553047	4200476	3.81	35.6
	553026	4200450	3.81	35.6
	553011	4200461	3.81	35.6
	553033	4200487	3.81	35.6
FIREBOX5	552877	4200572	3.97	10.9
	552870	4200562	3.97	10.9
	552863	4200568	3.97	10.9
	552862	4200568	3.97	10.9
	552869	4200577	3.97	10.9
FIREBOXY	553071	4200459	3.55	19.8
	553050	4200433	3.55	19.8
	553036	4200444	3.55	19.8
	553057	4200470	3.55	19.8
FIREBX4	552857	4200549	4.05	35.6
	552850	4200541	4.05	35.6
	552842	4200547	4.05	35.6
	552849	4200556	4.05	35.6
H2COOL	553396	4199901	2.91	7
	553362	4199881	2.91	7
	553356	4199891	2.91	7
	553389	4199911	2.91	7
H2FNCBX1	553245	4199908	3.5	29
	553227	4199897	3.5	29
	553213	4199920	3.5	29
	553232	4199931	3.5	29
H2FNCBX2	553194	4199993	3.75	29
	553177	4199983	3.75	29
	553164	4200005	3.75	29
	553182	4200014	3.75	29
P0121BLG	552925	4200608	3.69	10.9
	552921	4200603	3.69	10.9
	552906	4200614	3.69	10.9
	552911	4200620	3.69	10.9
P0122BDG	552913	4200595	4.13	10.9
	552908	4200590	4.13	10.9
	552894	4200603	4.13	10.9
	552899	4200608	4.13	10.9
S1A	553742	4199655	2.98	14
	553733	4199643	2.98	14
	553724	4199651	2.98	14
	553721	4199648	2.98	14
	553688	4199676	2.98	14
	553700	4199690	2.98	14
S2A	553823	4199355	3.35	14
	553823	4199352	3.35	14
	553861	4199353	3.35	14
	553862	4199339	3.35	14
	553807	4199337	3.35	14
	553807	4199352	3.35	14
	553807	4199355	3.35	14
	553857	4199314	3.67	14
	553807	4199313	3.67	14

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
S2B	553807	4199331	3.67	14
	553862	4199332	3.67	14
	553862	4199317	3.67	14
	553858	4199317	3.67	14
T-1	553025	4198619	11.31	3
	553023	4198619	11.31	3
	553022	4198619	11.31	3
	553020	4198619	11.31	3
	553018	4198620	11.31	3
	553017	4198621	11.31	3
	553015	4198623	11.31	3
	553015	4198624	11.31	3
	553014	4198626	11.31	3
	553014	4198628	11.31	3
	553014	4198630	11.31	3
	553015	4198632	11.31	3
	553015	4198634	11.31	3
	553017	4198635	11.31	3
	553018	4198636	11.31	3
	553020	4198637	11.31	3
	553022	4198638	11.31	3
	553023	4198638	11.31	3
	553025	4198638	11.31	3
	553027	4198637	11.31	3
	553029	4198636	11.31	3
	553030	4198635	11.31	3
	553031	4198634	11.31	3
	553032	4198632	11.31	3
	553033	4198630	11.31	3
	553033	4198628	11.31	3
	553033	4198626	11.31	3
	553032	4198624	11.31	3
	553031	4198623	11.31	3
	553030	4198621	11.31	3
	553029	4198620	11.31	3
	553027	4198619	11.31	3
T-11	554126	4198600	2.97	17.1
	554124	4198600	2.97	17.1
	554122	4198600	2.97	17.1
	554121	4198601	2.97	17.1
	554119	4198602	2.97	17.1
	554118	4198603	2.97	17.1
	554116	4198604	2.97	17.1
	554116	4198606	2.97	17.1
	554115	4198608	2.97	17.1
	554115	4198610	2.97	17.1
	554115	4198612	2.97	17.1
	554116	4198613	2.97	17.1
	554116	4198615	2.97	17.1
	554118	4198616	2.97	17.1
	554119	4198618	2.97	17.1
	554121	4198618	2.97	17.1
	554122	4198619	2.97	17.1
	554124	4198619	2.97	17.1
	554126	4198619	2.97	17.1
	554128	4198618	2.97	17.1
	554129	4198618	2.97	17.1
	554131	4198616	2.97	17.1
	554132	4198615	2.97	17.1
	554133	4198613	2.97	17.1
	554133	4198612	2.97	17.1
	554134	4198610	2.97	17.1
	554133	4198608	2.97	17.1
	554133	4198606	2.97	17.1
	554132	4198604	2.97	17.1
	554131	4198603	2.97	17.1
	554129	4198602	2.97	17.1
	554128	4198601	2.97	17.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-1108	553542	4199648	4.12	4
	553542	4199648	4.12	4
	553541	4199648	4.12	4
	553541	4199648	4.12	4
	553541	4199648	4.12	4
	553541	4199648	4.12	4
	553541	4199649	4.12	4
	553540	4199649	4.12	4
	553540	4199649	4.12	4
	553540	4199649	4.12	4
	553540	4199650	4.12	4
	553541	4199650	4.12	4
	553541	4199650	4.12	4
	553541	4199650	4.12	4
	553541	4199650	4.12	4
	553541	4199650	4.12	4
	553542	4199650	4.12	4
	553542	4199650	4.12	4
	553542	4199650	4.12	4
	553542	4199650	4.12	4
	553542	4199650	4.12	4
	553543	4199650	4.12	4
	553543	4199650	4.12	4
	553543	4199649	4.12	4
	553543	4199649	4.12	4
	553543	4199649	4.12	4
	553543	4199649	4.12	4
	553543	4199649	4.12	4
	553542	4199648	4.12	4
	553542	4199648	4.12	4
	553542	4199648	4.12	4
T-1148	553843	4199259	3.2	14.6
	553841	4199259	3.2	14.6
	553839	4199259	3.2	14.6
	553838	4199260	3.2	14.6
	553836	4199261	3.2	14.6
	553835	4199262	3.2	14.6
	553833	4199263	3.2	14.6
	553833	4199265	3.2	14.6
	553832	4199266	3.2	14.6
	553832	4199268	3.2	14.6
	553832	4199270	3.2	14.6
	553833	4199272	3.2	14.6
	553833	4199273	3.2	14.6
	553835	4199275	3.2	14.6
	553836	4199276	3.2	14.6
	553838	4199277	3.2	14.6
	553839	4199277	3.2	14.6
	553841	4199277	3.2	14.6
	553843	4199277	3.2	14.6
	553845	4199277	3.2	14.6
	553846	4199276	3.2	14.6
	553848	4199275	3.2	14.6
	553849	4199273	3.2	14.6
	553850	4199272	3.2	14.6
	553850	4199270	3.2	14.6
	553850	4199268	3.2	14.6
	553850	4199266	3.2	14.6
	553850	4199265	3.2	14.6
	553849	4199263	3.2	14.6
	553848	4199262	3.2	14.6
	553846	4199261	3.2	14.6
	553845	4199260	3.2	14.6
	553846	4199212	3.09	14.6
	553844	4199212	3.09	14.6
	553842	4199212	3.09	14.6
	553840	4199213	3.09	14.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-1149	553838	4199214	3.09	14.6
	553836	4199215	3.09	14.6
	553835	4199217	3.09	14.6
	553834	4199219	3.09	14.6
	553833	4199221	3.09	14.6
	553833	4199223	3.09	14.6
	553833	4199225	3.09	14.6
	553834	4199227	3.09	14.6
	553835	4199229	3.09	14.6
	553836	4199230	3.09	14.6
	553838	4199232	3.09	14.6
	553840	4199233	3.09	14.6
	553842	4199233	3.09	14.6
	553844	4199234	3.09	14.6
	553846	4199233	3.09	14.6
	553848	4199233	3.09	14.6
	553850	4199232	3.09	14.6
	553851	4199230	3.09	14.6
	553853	4199229	3.09	14.6
	553854	4199227	3.09	14.6
	553854	4199225	3.09	14.6
	553854	4199223	3.09	14.6
	553854	4199221	3.09	14.6
	553854	4199219	3.09	14.6
	553853	4199217	3.09	14.6
	553851	4199215	3.09	14.6
	553850	4199214	3.09	14.6
	553848	4199213	3.09	14.6
T-1287	553040	4199425	75.32	14.6
	553037	4199425	75.32	14.6
	553034	4199425	75.32	14.6
	553031	4199426	75.32	14.6
	553028	4199427	75.32	14.6
	553026	4199429	75.32	14.6
	553024	4199432	75.32	14.6
	553023	4199434	75.32	14.6
	553022	4199437	75.32	14.6
	553022	4199440	75.32	14.6
	553022	4199443	75.32	14.6
	553023	4199446	75.32	14.6
	553024	4199449	75.32	14.6
	553026	4199451	75.32	14.6
	553028	4199453	75.32	14.6
	553031	4199454	75.32	14.6
	553034	4199455	75.32	14.6
	553037	4199455	75.32	14.6
	553040	4199455	75.32	14.6
	553043	4199454	75.32	14.6
	553045	4199453	75.32	14.6
	553048	4199451	75.32	14.6
	553049	4199449	75.32	14.6
	553051	4199446	75.32	14.6
	553052	4199443	75.32	14.6
	553052	4199440	75.32	14.6
	553052	4199437	75.32	14.6
	553051	4199434	75.32	14.6
	553049	4199432	75.32	14.6
	553048	4199429	75.32	14.6
	553045	4199427	75.32	14.6
	553043	4199426	75.32	14.6
	553248	4199131	36.76	12.2
	553245	4199130	36.76	12.2
	553243	4199131	36.76	12.2
	553241	4199131	36.76	12.2
	553240	4199132	36.76	12.2
	553238	4199134	36.76	12.2
	553237	4199135	36.76	12.2
	553236	4199137	36.76	12.2

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-1289	553235	4199139	36.76	12.2
	553235	4199141	36.76	12.2
	553235	4199143	36.76	12.2
	553236	4199145	36.76	12.2
	553237	4199147	36.76	12.2
	553238	4199149	36.76	12.2
	553240	4199150	36.76	12.2
	553241	4199151	36.76	12.2
	553243	4199152	36.76	12.2
	553245	4199152	36.76	12.2
	553248	4199152	36.76	12.2
	553250	4199151	36.76	12.2
	553251	4199150	36.76	12.2
	553253	4199149	36.76	12.2
	553254	4199147	36.76	12.2
	553255	4199145	36.76	12.2
	553256	4199143	36.76	12.2
	553256	4199141	36.76	12.2
	553256	4199139	36.76	12.2
	553255	4199137	36.76	12.2
	553254	4199135	36.76	12.2
	553253	4199134	36.76	12.2
	553251	4199132	36.76	12.2
	553250	4199131	36.76	12.2
T-1292	553166	4198996	21.94	17.1
	553163	4198996	21.94	17.1
	553159	4198996	21.94	17.1
	553155	4198997	21.94	17.1
	553152	4198999	21.94	17.1
	553149	4199001	21.94	17.1
	553147	4199004	21.94	17.1
	553145	4199008	21.94	17.1
	553144	4199011	21.94	17.1
	553143	4199015	21.94	17.1
	553144	4199019	21.94	17.1
	553145	4199022	21.94	17.1
	553147	4199026	21.94	17.1
	553149	4199028	21.94	17.1
	553152	4199031	21.94	17.1
	553155	4199033	21.94	17.1
	553159	4199034	21.94	17.1
	553163	4199034	21.94	17.1
	553166	4199034	21.94	17.1
	553170	4199033	21.94	17.1
	553173	4199031	21.94	17.1
	553176	4199028	21.94	17.1
	553178	4199026	21.94	17.1
	553180	4199022	21.94	17.1
	553181	4199019	21.94	17.1
	553182	4199015	21.94	17.1
	553181	4199011	21.94	17.1
	553180	4199008	21.94	17.1
	553178	4199004	21.94	17.1
	553176	4199001	21.94	17.1
	553173	4198999	21.94	17.1
	553170	4198997	21.94	17.1
	552637	4199348	89.89	14.6
	552632	4199348	89.89	14.6
	552627	4199348	89.89	14.6
	552623	4199349	89.89	14.6
	552619	4199352	89.89	14.6
	552615	4199355	89.89	14.6
	552612	4199358	89.89	14.6
	552610	4199363	89.89	14.6
	552608	4199367	89.89	14.6
	552608	4199372	89.89	14.6
	552608	4199377	89.89	14.6
	552610	4199381	89.89	14.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-1296	552612	4199385	89.89	14.6
	552615	4199389	89.89	14.6
	552619	4199392	89.89	14.6
	552623	4199394	89.89	14.6
	552627	4199396	89.89	14.6
	552632	4199396	89.89	14.6
	552637	4199396	89.89	14.6
	552642	4199394	89.89	14.6
	552646	4199392	89.89	14.6
	552649	4199389	89.89	14.6
	552653	4199385	89.89	14.6
	552655	4199381	89.89	14.6
	552656	4199377	89.89	14.6
	552657	4199372	89.89	14.6
	552656	4199367	89.89	14.6
	552655	4199363	89.89	14.6
	552653	4199358	89.89	14.6
	552649	4199355	89.89	14.6
	552646	4199352	89.89	14.6
	552642	4199349	89.89	14.6
T-1297	552770	4200320	4.6	17.1
	552770	4200320	4.6	17.1
	552769	4200320	4.6	17.1
	552769	4200320	4.6	17.1
	552769	4200320	4.6	17.1
	552768	4200320	4.6	17.1
	552768	4200321	4.6	17.1
	552768	4200321	4.6	17.1
	552768	4200321	4.6	17.1
	552768	4200322	4.6	17.1
	552768	4200322	4.6	17.1
	552768	4200322	4.6	17.1
	552768	4200323	4.6	17.1
	552768	4200323	4.6	17.1
	552769	4200323	4.6	17.1
	552769	4200323	4.6	17.1
	552769	4200324	4.6	17.1
	552770	4200324	4.6	17.1
	552770	4200324	4.6	17.1
	552770	4200323	4.6	17.1
	552771	4200323	4.6	17.1
	552771	4200323	4.6	17.1
	552771	4200323	4.6	17.1
	552771	4200322	4.6	17.1
	552771	4200322	4.6	17.1
	552771	4200322	4.6	17.1
	552771	4200321	4.6	17.1
	552771	4200321	4.6	17.1
	552771	4200321	4.6	17.1
	552771	4200321	4.6	17.1
	552771	4200320	4.6	17.1
	552771	4200320	4.6	17.1
	552770	4200320	4.6	17.1
T-1298	552697	4199207	57.94	19.5
	552692	4199206	57.94	19.5
	552687	4199207	57.94	19.5
	552683	4199208	57.94	19.5
	552679	4199211	57.94	19.5
	552675	4199214	57.94	19.5
	552672	4199217	57.94	19.5
	552670	4199221	57.94	19.5
	552668	4199226	57.94	19.5
	552668	4199231	57.94	19.5
	552668	4199235	57.94	19.5
	552670	4199240	57.94	19.5
	552672	4199244	57.94	19.5
	552675	4199248	57.94	19.5
	552679	4199251	57.94	19.5
	552683	4199253	57.94	19.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-1420	552687	4199255	57.94	19.5
	552692	4199255	57.94	19.5
	552697	4199255	57.94	19.5
	552701	4199253	57.94	19.5
	552706	4199251	57.94	19.5
	552709	4199248	57.94	19.5
	552712	4199244	57.94	19.5
	552715	4199240	57.94	19.5
	552716	4199235	57.94	19.5
	552716	4199231	57.94	19.5
	552716	4199226	57.94	19.5
	552715	4199221	57.94	19.5
	552712	4199217	57.94	19.5
	552709	4199214	57.94	19.5
	552706	4199211	57.94	19.5
	552701	4199208	57.94	19.5
T-1444	553110	4199051	28.54	14.6
	553109	4199051	28.54	14.6
	553107	4199051	28.54	14.6
	553105	4199052	28.54	14.6
	553104	4199052	28.54	14.6
	553103	4199053	28.54	14.6
	553102	4199055	28.54	14.6
	553101	4199056	28.54	14.6
	553100	4199058	28.54	14.6
	553100	4199059	28.54	14.6
	553100	4199061	28.54	14.6
	553101	4199062	28.54	14.6
	553102	4199064	28.54	14.6
	553103	4199065	28.54	14.6
	553104	4199066	28.54	14.6
	553105	4199067	28.54	14.6
	553107	4199067	28.54	14.6
	553109	4199068	28.54	14.6
	553110	4199067	28.54	14.6
	553112	4199067	28.54	14.6
	553113	4199066	28.54	14.6
	553115	4199065	28.54	14.6
	553116	4199064	28.54	14.6
	553116	4199062	28.54	14.6
	553117	4199061	28.54	14.6
	553117	4199059	28.54	14.6
	553117	4199058	28.54	14.6
	553116	4199056	28.54	14.6
	553116	4199055	28.54	14.6
	553115	4199053	28.54	14.6
	553113	4199052	28.54	14.6
	553112	4199052	28.54	14.6
T-1451	552745	4198357	3.99	13.8
	552741	4198357	3.99	13.8
	552736	4198357	3.99	13.8
	552732	4198358	3.99	13.8
	552728	4198360	3.99	13.8
	552725	4198363	3.99	13.8
	552722	4198367	3.99	13.8
	552720	4198370	3.99	13.8
	552719	4198375	3.99	13.8
	552719	4198379	3.99	13.8
	552719	4198383	3.99	13.8
	552720	4198387	3.99	13.8
	552722	4198391	3.99	13.8
	552725	4198395	3.99	13.8
	552728	4198397	3.99	13.8
	552732	4198399	3.99	13.8
	552736	4198401	3.99	13.8
	552741	4198401	3.99	13.8
	552745	4198401	3.99	13.8
	552749	4198399	3.99	13.8

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552753	4198397	3.99	13.8
	552757	4198395	3.99	13.8
	552759	4198391	3.99	13.8
	552761	4198387	3.99	13.8
	552763	4198383	3.99	13.8
	552763	4198379	3.99	13.8
	552763	4198375	3.99	13.8
	552761	4198370	3.99	13.8
	552759	4198367	3.99	13.8
	552757	4198363	3.99	13.8
	552753	4198360	3.99	13.8
	552749	4198358	3.99	13.8
T-1455	552330	4200358	53.12	14.6
	552328	4200357	53.12	14.6
	552326	4200358	53.12	14.6
	552324	4200358	53.12	14.6
	552322	4200359	53.12	14.6
	552320	4200360	53.12	14.6
	552319	4200362	53.12	14.6
	552318	4200364	53.12	14.6
	552317	4200366	53.12	14.6
	552317	4200368	53.12	14.6
	552317	4200370	53.12	14.6
	552318	4200372	53.12	14.6
	552319	4200374	53.12	14.6
	552320	4200376	53.12	14.6
	552322	4200377	53.12	14.6
	552324	4200378	53.12	14.6
	552326	4200379	53.12	14.6
	552328	4200379	53.12	14.6
	552330	4200379	53.12	14.6
	552332	4200378	53.12	14.6
	552334	4200377	53.12	14.6
	552335	4200376	53.12	14.6
	552337	4200374	53.12	14.6
	552338	4200372	53.12	14.6
	552338	4200370	53.12	14.6
	552339	4200368	53.12	14.6
	552338	4200366	53.12	14.6
	552338	4200364	53.12	14.6
	552337	4200362	53.12	14.6
	552335	4200360	53.12	14.6
	552334	4200359	53.12	14.6
	552332	4200358	53.12	14.6
T-1456	552309	4200346	53.1	14.6
	552307	4200346	53.1	14.6
	552304	4200346	53.1	14.6
	552302	4200347	53.1	14.6
	552301	4200348	53.1	14.6
	552299	4200349	53.1	14.6
	552298	4200351	53.1	14.6
	552297	4200352	53.1	14.6
	552296	4200354	53.1	14.6
	552296	4200356	53.1	14.6
	552296	4200359	53.1	14.6
	552297	4200361	53.1	14.6
	552298	4200362	53.1	14.6
	552299	4200364	53.1	14.6
	552301	4200365	53.1	14.6
	552302	4200366	53.1	14.6
	552304	4200367	53.1	14.6
	552307	4200367	53.1	14.6
	552309	4200367	53.1	14.6
	552311	4200366	53.1	14.6
	552313	4200365	53.1	14.6
	552314	4200364	53.1	14.6
	552315	4200362	53.1	14.6
	552316	4200361	53.1	14.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552317	4200359	53.1	14.6
	552317	4200356	53.1	14.6
	552317	4200354	53.1	14.6
	552316	4200352	53.1	14.6
	552315	4200351	53.1	14.6
	552314	4200349	53.1	14.6
	552313	4200348	53.1	14.6
	552311	4200347	53.1	14.6
T-1459	552705	4199660	126.28	14.6
	552702	4199660	126.28	14.6
	552699	4199660	126.28	14.6
	552696	4199661	126.28	14.6
	552693	4199663	126.28	14.6
	552690	4199665	126.28	14.6
	552688	4199667	126.28	14.6
	552686	4199670	126.28	14.6
	552686	4199673	126.28	14.6
	552685	4199677	126.28	14.6
	552686	4199680	126.28	14.6
	552686	4199683	126.28	14.6
	552688	4199686	126.28	14.6
	552690	4199688	126.28	14.6
	552693	4199691	126.28	14.6
	552696	4199692	126.28	14.6
	552699	4199693	126.28	14.6
	552702	4199693	126.28	14.6
	552705	4199693	126.28	14.6
	552708	4199692	126.28	14.6
	552711	4199691	126.28	14.6
	552714	4199688	126.28	14.6
	552716	4199686	126.28	14.6
	552717	4199683	126.28	14.6
	552718	4199680	126.28	14.6
	552719	4199677	126.28	14.6
	552718	4199673	126.28	14.6
	552717	4199670	126.28	14.6
	552716	4199667	126.28	14.6
	552714	4199665	126.28	14.6
	552711	4199663	126.28	14.6
	552708	4199661	126.28	14.6
T-1488	552832	4199474	98.46	19.5
	552830	4199474	98.46	19.5
	552828	4199474	98.46	19.5
	552826	4199474	98.46	19.5
	552824	4199475	98.46	19.5
	552822	4199477	98.46	19.5
	552821	4199478	98.46	19.5
	552820	4199480	98.46	19.5
	552819	4199482	98.46	19.5
	552819	4199484	98.46	19.5
	552819	4199486	98.46	19.5
	552820	4199488	98.46	19.5
	552821	4199490	98.46	19.5
	552822	4199492	98.46	19.5
	552824	4199493	98.46	19.5
	552826	4199494	98.46	19.5
	552828	4199495	98.46	19.5
	552830	4199495	98.46	19.5
	552832	4199495	98.46	19.5
	552834	4199494	98.46	19.5
	552836	4199493	98.46	19.5
	552837	4199492	98.46	19.5
	552839	4199490	98.46	19.5
	552840	4199488	98.46	19.5
	552840	4199486	98.46	19.5
	552841	4199484	98.46	19.5
	552840	4199482	98.46	19.5
	552840	4199480	98.46	19.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552839	4199478	98.46	19.5
	552837	4199477	98.46	19.5
	552836	4199475	98.46	19.5
	552834	4199474	98.46	19.5
T-1489	552773	4199456	93.1	19.5
	552771	4199456	93.1	19.5
	552768	4199456	93.1	19.5
	552766	4199457	93.1	19.5
	552763	4199458	93.1	19.5
	552761	4199460	93.1	19.5
	552759	4199462	93.1	19.5
	552758	4199464	93.1	19.5
	552757	4199467	93.1	19.5
	552757	4199469	93.1	19.5
	552757	4199472	93.1	19.5
	552758	4199475	93.1	19.5
	552759	4199477	93.1	19.5
	552761	4199479	93.1	19.5
	552763	4199481	93.1	19.5
	552766	4199482	93.1	19.5
	552768	4199483	93.1	19.5
	552771	4199483	93.1	19.5
	552773	4199483	93.1	19.5
	552776	4199482	93.1	19.5
	552778	4199481	93.1	19.5
	552781	4199479	93.1	19.5
	552782	4199477	93.1	19.5
	552783	4199475	93.1	19.5
	552784	4199472	93.1	19.5
	552785	4199469	93.1	19.5
	552784	4199467	93.1	19.5
	552783	4199464	93.1	19.5
	552782	4199462	93.1	19.5
	552781	4199460	93.1	19.5
	552778	4199458	93.1	19.5
	552776	4199457	93.1	19.5
T-1491	552743	4199535	109.91	14.6
	552741	4199535	109.91	14.6
	552738	4199535	109.91	14.6
	552736	4199536	109.91	14.6
	552733	4199537	109.91	14.6
	552731	4199539	109.91	14.6
	552729	4199541	109.91	14.6
	552728	4199543	109.91	14.6
	552727	4199546	109.91	14.6
	552727	4199548	109.91	14.6
	552727	4199551	109.91	14.6
	552728	4199553	109.91	14.6
	552729	4199556	109.91	14.6
	552731	4199558	109.91	14.6
	552733	4199560	109.91	14.6
	552736	4199561	109.91	14.6
	552738	4199562	109.91	14.6
	552741	4199562	109.91	14.6
	552743	4199562	109.91	14.6
	552746	4199561	109.91	14.6
	552748	4199560	109.91	14.6
	552750	4199558	109.91	14.6
	552752	4199556	109.91	14.6
	552753	4199553	109.91	14.6
	552754	4199551	109.91	14.6
	552755	4199548	109.91	14.6
	552754	4199546	109.91	14.6
	552753	4199543	109.91	14.6
	552752	4199541	109.91	14.6
	552750	4199539	109.91	14.6
	552748	4199537	109.91	14.6
	552746	4199536	109.91	14.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-1492	552800	4199514	109.75	14.6
	552797	4199514	109.75	14.6
	552795	4199514	109.75	14.6
	552792	4199515	109.75	14.6
	552790	4199516	109.75	14.6
	552788	4199518	109.75	14.6
	552786	4199520	109.75	14.6
	552785	4199522	109.75	14.6
	552784	4199525	109.75	14.6
	552783	4199527	109.75	14.6
	552784	4199530	109.75	14.6
	552785	4199533	109.75	14.6
	552786	4199535	109.75	14.6
	552788	4199537	109.75	14.6
	552790	4199539	109.75	14.6
	552792	4199540	109.75	14.6
	552795	4199541	109.75	14.6
	552797	4199541	109.75	14.6
	552800	4199541	109.75	14.6
	552802	4199540	109.75	14.6
	552805	4199539	109.75	14.6
	552807	4199537	109.75	14.6
	552809	4199535	109.75	14.6
	552810	4199533	109.75	14.6
	552811	4199530	109.75	14.6
	552811	4199527	109.75	14.6
	552811	4199525	109.75	14.6
	552810	4199522	109.75	14.6
	552809	4199520	109.75	14.6
	552807	4199518	109.75	14.6
	552805	4199516	109.75	14.6
	552802	4199515	109.75	14.6
T-1493	552866	4199509	103.95	14.6
	552863	4199509	103.95	14.6
	552860	4199509	103.95	14.6
	552858	4199510	103.95	14.6
	552855	4199511	103.95	14.6
	552853	4199513	103.95	14.6
	552851	4199515	103.95	14.6
	552850	4199518	103.95	14.6
	552849	4199520	103.95	14.6
	552849	4199523	103.95	14.6
	552849	4199525	103.95	14.6
	552850	4199528	103.95	14.6
	552851	4199530	103.95	14.6
	552853	4199532	103.95	14.6
	552855	4199534	103.95	14.6
	552858	4199535	103.95	14.6
	552860	4199536	103.95	14.6
	552863	4199536	103.95	14.6
	552866	4199536	103.95	14.6
	552868	4199535	103.95	14.6
	552871	4199534	103.95	14.6
	552873	4199532	103.95	14.6
	552874	4199530	103.95	14.6
	552876	4199528	103.95	14.6
	552876	4199525	103.95	14.6
	552877	4199523	103.95	14.6
	552876	4199520	103.95	14.6
	552876	4199518	103.95	14.6
	552874	4199515	103.95	14.6
	552873	4199513	103.95	14.6
	552871	4199511	103.95	14.6
	552868	4199510	103.95	14.6
	552702	4198367	4.04	12.2
	552700	4198366	4.04	12.2
	552697	4198367	4.04	12.2
	552695	4198367	4.04	12.2

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-1504	552693	4198368	4.04	12.2
	552691	4198370	4.04	12.2
	552690	4198372	4.04	12.2
	552688	4198374	4.04	12.2
	552688	4198376	4.04	12.2
	552688	4198379	4.04	12.2
	552688	4198381	4.04	12.2
	552688	4198383	4.04	12.2
	552690	4198385	4.04	12.2
	552691	4198387	4.04	12.2
	552693	4198389	4.04	12.2
	552695	4198390	4.04	12.2
	552697	4198391	4.04	12.2
	552700	4198391	4.04	12.2
	552702	4198391	4.04	12.2
	552704	4198390	4.04	12.2
	552707	4198389	4.04	12.2
	552708	4198387	4.04	12.2
	552710	4198385	4.04	12.2
	552711	4198383	4.04	12.2
	552712	4198381	4.04	12.2
	552712	4198379	4.04	12.2
	552712	4198376	4.04	12.2
	552711	4198374	4.04	12.2
	552710	4198372	4.04	12.2
	552708	4198370	4.04	12.2
	552707	4198368	4.04	12.2
	552704	4198367	4.04	12.2
T-1506	552664	4198342	4	14.6
	552659	4198342	4	14.6
	552655	4198342	4	14.6
	552651	4198344	4	14.6
	552647	4198346	4	14.6
	552644	4198348	4	14.6
	552641	4198352	4	14.6
	552639	4198356	4	14.6
	552638	4198360	4	14.6
	552637	4198364	4	14.6
	552638	4198368	4	14.6
	552639	4198373	4	14.6
	552641	4198377	4	14.6
	552644	4198380	4	14.6
	552647	4198383	4	14.6
	552651	4198385	4	14.6
	552655	4198386	4	14.6
	552659	4198386	4	14.6
	552664	4198386	4	14.6
	552668	4198385	4	14.6
	552672	4198383	4	14.6
	552675	4198380	4	14.6
	552678	4198377	4	14.6
	552680	4198373	4	14.6
	552681	4198368	4	14.6
	552682	4198364	4	14.6
	552681	4198360	4	14.6
	552680	4198356	4	14.6
	552678	4198352	4	14.6
	552675	4198348	4	14.6
	552672	4198346	4	14.6
	552668	4198344	4	14.6
	552648	4199423	90.11	14.6
	552644	4199423	90.11	14.6
	552640	4199423	90.11	14.6
	552636	4199424	90.11	14.6
	552632	4199426	90.11	14.6
	552629	4199429	90.11	14.6
	552627	4199432	90.11	14.6
	552625	4199435	90.11	14.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-1514	552624	4199439	90.11	14.6
	552623	4199443	90.11	14.6
	552624	4199447	90.11	14.6
	552625	4199451	90.11	14.6
	552627	4199455	90.11	14.6
	552629	4199458	90.11	14.6
	552632	4199460	90.11	14.6
	552636	4199462	90.11	14.6
	552640	4199463	90.11	14.6
	552644	4199464	90.11	14.6
	552648	4199463	90.11	14.6
	552652	4199462	90.11	14.6
	552655	4199460	90.11	14.6
	552658	4199458	90.11	14.6
	552661	4199455	90.11	14.6
	552663	4199451	90.11	14.6
	552664	4199447	90.11	14.6
	552664	4199443	90.11	14.6
	552664	4199439	90.11	14.6
	552663	4199435	90.11	14.6
	552661	4199432	90.11	14.6
	552658	4199429	90.11	14.6
	552655	4199426	90.11	14.6
	552652	4199424	90.11	14.6
T-1518	552767	4199217	53.18	14.6
	552764	4199217	53.18	14.6
	552761	4199217	53.18	14.6
	552759	4199218	53.18	14.6
	552756	4199219	53.18	14.6
	552754	4199221	53.18	14.6
	552752	4199223	53.18	14.6
	552750	4199226	53.18	14.6
	552749	4199229	53.18	14.6
	552749	4199232	53.18	14.6
	552749	4199235	53.18	14.6
	552750	4199238	53.18	14.6
	552752	4199240	53.18	14.6
	552754	4199243	53.18	14.6
	552756	4199244	53.18	14.6
	552759	4199246	53.18	14.6
	552761	4199247	53.18	14.6
	552764	4199247	53.18	14.6
	552767	4199247	53.18	14.6
	552770	4199246	53.18	14.6
	552773	4199244	53.18	14.6
	552775	4199243	53.18	14.6
	552777	4199240	53.18	14.6
	552778	4199238	53.18	14.6
	552779	4199235	53.18	14.6
	552780	4199232	53.18	14.6
	552779	4199229	53.18	14.6
	552778	4199226	53.18	14.6
	552777	4199223	53.18	14.6
	552775	4199221	53.18	14.6
	552773	4199219	53.18	14.6
	552770	4199218	53.18	14.6
	554171	4198615	3.12	1.9
	554170	4198614	3.12	1.9
	554170	4198615	3.12	1.9
	554169	4198615	3.12	1.9
	554168	4198615	3.12	1.9
	554168	4198615	3.12	1.9
	554168	4198616	3.12	1.9
	554167	4198616	3.12	1.9
	554167	4198617	3.12	1.9
	554167	4198618	3.12	1.9
	554167	4198618	3.12	1.9
	554167	4198619	3.12	1.9

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-155	554168	4198619	3.12	1.9
	554168	4198620	3.12	1.9
	554168	4198620	3.12	1.9
	554169	4198620	3.12	1.9
	554170	4198621	3.12	1.9
	554170	4198621	3.12	1.9
	554171	4198621	3.12	1.9
	554171	4198620	3.12	1.9
	554172	4198620	3.12	1.9
	554172	4198620	3.12	1.9
	554173	4198619	3.12	1.9
	554173	4198619	3.12	1.9
	554173	4198618	3.12	1.9
	554173	4198618	3.12	1.9
	554173	4198617	3.12	1.9
	554173	4198616	3.12	1.9
	554173	4198616	3.12	1.9
	554172	4198615	3.12	1.9
	554172	4198615	3.12	1.9
	554171	4198615	3.12	1.9
T-1634	554046	4198854	3.44	9.1
	554045	4198854	3.44	9.1
	554044	4198854	3.44	9.1
	554043	4198855	3.44	9.1
	554042	4198855	3.44	9.1
	554041	4198856	3.44	9.1
	554041	4198856	3.44	9.1
	554040	4198857	3.44	9.1
	554040	4198858	3.44	9.1
	554040	4198859	3.44	9.1
	554040	4198860	3.44	9.1
	554040	4198861	3.44	9.1
	554041	4198861	3.44	9.1
	554041	4198862	3.44	9.1
	554042	4198863	3.44	9.1
	554043	4198863	3.44	9.1
	554044	4198863	3.44	9.1
	554045	4198863	3.44	9.1
	554046	4198863	3.44	9.1
	554046	4198863	3.44	9.1
	554047	4198863	3.44	9.1
	554048	4198862	3.44	9.1
	554048	4198861	3.44	9.1
	554049	4198861	3.44	9.1
	554049	4198860	3.44	9.1
	554049	4198859	3.44	9.1
	554049	4198858	3.44	9.1
	554049	4198857	3.44	9.1
	554048	4198856	3.44	9.1
	554048	4198856	3.44	9.1
	554047	4198855	3.44	9.1
	554046	4198855	3.44	9.1
T-1635	554036	4198846	3.4	9.1
	554036	4198846	3.4	9.1
	554035	4198846	3.4	9.1
	554034	4198846	3.4	9.1
	554034	4198846	3.4	9.1
	554034	4198846	3.4	9.1
	554033	4198847	3.4	9.1
	554033	4198847	3.4	9.1
	554033	4198848	3.4	9.1
	554033	4198848	3.4	9.1
	554033	4198849	3.4	9.1
	554033	4198849	3.4	9.1
	554033	4198850	3.4	9.1
	554034	4198850	3.4	9.1
	554034	4198851	3.4	9.1
	554034	4198851	3.4	9.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-1635	554035	4198851	3.4	9.1
	554036	4198851	3.4	9.1
	554036	4198851	3.4	9.1
	554037	4198851	3.4	9.1
	554037	4198851	3.4	9.1
	554037	4198850	3.4	9.1
	554038	4198850	3.4	9.1
	554038	4198849	3.4	9.1
	554038	4198849	3.4	9.1
	554038	4198848	3.4	9.1
	554038	4198848	3.4	9.1
	554038	4198847	3.4	9.1
	554038	4198847	3.4	9.1
	554037	4198846	3.4	9.1
	554037	4198846	3.4	9.1
T-1636	554037	4198846	3.4	9.1
	554029	4198836	3.37	8.8
	554028	4198836	3.37	8.8
	554027	4198836	3.37	8.8
	554026	4198837	3.37	8.8
	554025	4198837	3.37	8.8
	554025	4198838	3.37	8.8
	554024	4198838	3.37	8.8
	554024	4198839	3.37	8.8
	554023	4198840	3.37	8.8
	554023	4198841	3.37	8.8
	554023	4198842	3.37	8.8
	554024	4198843	3.37	8.8
	554024	4198843	3.37	8.8
	554025	4198844	3.37	8.8
	554025	4198845	3.37	8.8
	554026	4198845	3.37	8.8
	554027	4198845	3.37	8.8
	554028	4198845	3.37	8.8
	554029	4198845	3.37	8.8
	554030	4198845	3.37	8.8
	554030	4198845	3.37	8.8
	554031	4198844	3.37	8.8
	554032	4198843	3.37	8.8
	554032	4198843	3.37	8.8
	554032	4198842	3.37	8.8
	554033	4198841	3.37	8.8
	554032	4198840	3.37	8.8
	554032	4198839	3.37	8.8
	554032	4198838	3.37	8.8
	554031	4198838	3.37	8.8
	554030	4198837	3.37	8.8
	554030	4198837	3.37	8.8
T-1637	554020	4198829	3.32	9.1
	554019	4198829	3.32	9.1
	554019	4198829	3.32	9.1
	554018	4198829	3.32	9.1
	554017	4198829	3.32	9.1
	554017	4198830	3.32	9.1
	554016	4198830	3.32	9.1
	554016	4198831	3.32	9.1
	554016	4198832	3.32	9.1
	554015	4198833	3.32	9.1
	554016	4198833	3.32	9.1
	554016	4198834	3.32	9.1
	554016	4198835	3.32	9.1
	554017	4198835	3.32	9.1
	554017	4198836	3.32	9.1
	554018	4198836	3.32	9.1
	554019	4198836	3.32	9.1
	554019	4198836	3.32	9.1
	554020	4198836	3.32	9.1
	554021	4198836	3.32	9.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	554021	4198836	3.32	9.1
	554022	4198835	3.32	9.1
	554022	4198835	3.32	9.1
	554023	4198834	3.32	9.1
	554023	4198833	3.32	9.1
	554023	4198833	3.32	9.1
	554023	4198832	3.32	9.1
	554023	4198831	3.32	9.1
	554022	4198830	3.32	9.1
	554022	4198830	3.32	9.1
	554021	4198829	3.32	9.1
T-1653	554021	4198829	3.32	9.1
	553006	4198979	18.02	4.5
	553004	4198979	18.02	4.5
	553002	4198979	18.02	4.5
	553000	4198980	18.02	4.5
	552998	4198981	18.02	4.5
	552997	4198982	18.02	4.5
	552995	4198984	18.02	4.5
	552994	4198986	18.02	4.5
	552994	4198988	18.02	4.5
	552993	4198990	18.02	4.5
	552994	4198992	18.02	4.5
	552994	4198994	18.02	4.5
	552995	4198996	18.02	4.5
	552997	4198997	18.02	4.5
	552998	4198999	18.02	4.5
	553000	4198999	18.02	4.5
	553002	4199000	18.02	4.5
	553004	4199000	18.02	4.5
	553006	4199000	18.02	4.5
	553008	4198999	18.02	4.5
	553010	4198999	18.02	4.5
	553012	4198997	18.02	4.5
	553013	4198996	18.02	4.5
	553014	4198994	18.02	4.5
	553015	4198992	18.02	4.5
	553015	4198990	18.02	4.5
	553015	4198988	18.02	4.5
	553014	4198986	18.02	4.5
	553013	4198984	18.02	4.5
	553012	4198982	18.02	4.5
	553010	4198981	18.02	4.5
	553008	4198980	18.02	4.5
T-1688	552545	4199208	97.97	14.6
	552541	4199208	97.97	14.6
	552537	4199208	97.97	14.6
	552533	4199210	97.97	14.6
	552529	4199212	97.97	14.6
	552526	4199214	97.97	14.6
	552523	4199217	97.97	14.6
	552521	4199221	97.97	14.6
	552520	4199225	97.97	14.6
	552519	4199229	97.97	14.6
	552520	4199234	97.97	14.6
	552521	4199238	97.97	14.6
	552523	4199241	97.97	14.6
	552526	4199244	97.97	14.6
	552529	4199247	97.97	14.6
	552533	4199249	97.97	14.6
	552537	4199250	97.97	14.6
	552541	4199251	97.97	14.6
	552545	4199250	97.97	14.6
	552549	4199249	97.97	14.6
	552553	4199247	97.97	14.6
	552556	4199244	97.97	14.6
	552558	4199241	97.97	14.6
	552560	4199238	97.97	14.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552562	4199234	97.97	14.6
	552562	4199229	97.97	14.6
	552562	4199225	97.97	14.6
	552560	4199221	97.97	14.6
	552558	4199217	97.97	14.6
	552556	4199214	97.97	14.6
	552553	4199212	97.97	14.6
	552549	4199210	97.97	14.6
T-1689	552369	4200310	41.13	14.6
	552367	4200309	41.13	14.6
	552365	4200310	41.13	14.6
	552364	4200310	41.13	14.6
	552362	4200311	41.13	14.6
	552361	4200312	41.13	14.6
	552360	4200313	41.13	14.6
	552359	4200315	41.13	14.6
	552358	4200317	41.13	14.6
	552358	4200318	41.13	14.6
	552358	4200320	41.13	14.6
	552359	4200322	41.13	14.6
	552360	4200323	41.13	14.6
	552361	4200325	41.13	14.6
	552362	4200326	41.13	14.6
	552364	4200327	41.13	14.6
	552365	4200327	41.13	14.6
	552367	4200327	41.13	14.6
	552369	4200327	41.13	14.6
	552370	4200327	41.13	14.6
	552372	4200326	41.13	14.6
	552373	4200325	41.13	14.6
	552374	4200323	41.13	14.6
	552375	4200322	41.13	14.6
	552376	4200320	41.13	14.6
	552376	4200318	41.13	14.6
	552376	4200317	41.13	14.6
	552375	4200315	41.13	14.6
	552374	4200313	41.13	14.6
	552373	4200312	41.13	14.6
	552372	4200311	41.13	14.6
	552370	4200310	41.13	14.6
T-1716	553821	4198627	4.26	4.5
	553820	4198627	4.26	4.5
	553819	4198627	4.26	4.5
	553819	4198627	4.26	4.5
	553818	4198628	4.26	4.5
	553817	4198628	4.26	4.5
	553816	4198629	4.26	4.5
	553816	4198630	4.26	4.5
	553816	4198631	4.26	4.5
	553816	4198632	4.26	4.5
	553816	4198632	4.26	4.5
	553816	4198633	4.26	4.5
	553816	4198634	4.26	4.5
	553817	4198635	4.26	4.5
	553818	4198635	4.26	4.5
	553819	4198636	4.26	4.5
	553819	4198636	4.26	4.5
	553820	4198636	4.26	4.5
	553821	4198636	4.26	4.5
	553822	4198636	4.26	4.5
	553823	4198635	4.26	4.5
	553823	4198635	4.26	4.5
	553824	4198634	4.26	4.5
	553824	4198633	4.26	4.5
	553825	4198632	4.26	4.5
	553825	4198632	4.26	4.5
	553825	4198631	4.26	4.5
	553824	4198630	4.26	4.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	553824	4198629	4.26	4.5
	553823	4198628	4.26	4.5
	553823	4198628	4.26	4.5
	553822	4198627	4.26	4.5
T-1798	552575	4199068	94.9	14.6
	552571	4199068	94.9	14.6
	552566	4199068	94.9	14.6
	552562	4199070	94.9	14.6
	552557	4199072	94.9	14.6
	552554	4199075	94.9	14.6
	552551	4199078	94.9	14.6
	552549	4199082	94.9	14.6
	552547	4199087	94.9	14.6
	552547	4199091	94.9	14.6
	552547	4199096	94.9	14.6
	552549	4199100	94.9	14.6
	552551	4199105	94.9	14.6
	552554	4199108	94.9	14.6
	552557	4199111	94.9	14.6
	552562	4199113	94.9	14.6
	552566	4199115	94.9	14.6
	552571	4199115	94.9	14.6
	552575	4199115	94.9	14.6
	552580	4199113	94.9	14.6
	552584	4199111	94.9	14.6
	552587	4199108	94.9	14.6
	552590	4199105	94.9	14.6
	552592	4199100	94.9	14.6
	552594	4199096	94.9	14.6
	552594	4199091	94.9	14.6
	552594	4199087	94.9	14.6
	552592	4199082	94.9	14.6
	552590	4199078	94.9	14.6
	552587	4199075	94.9	14.6
	552584	4199072	94.9	14.6
	552580	4199070	94.9	14.6
T-1799	552542	4199135	97.83	14.6
	552537	4199134	97.83	14.6
	552533	4199135	97.83	14.6
	552528	4199136	97.83	14.6
	552524	4199138	97.83	14.6
	552521	4199141	97.83	14.6
	552518	4199145	97.83	14.6
	552515	4199149	97.83	14.6
	552514	4199153	97.83	14.6
	552514	4199158	97.83	14.6
	552514	4199163	97.83	14.6
	552515	4199167	97.83	14.6
	552518	4199171	97.83	14.6
	552521	4199175	97.83	14.6
	552524	4199178	97.83	14.6
	552528	4199180	97.83	14.6
	552533	4199181	97.83	14.6
	552537	4199182	97.83	14.6
	552542	4199181	97.83	14.6
	552546	4199180	97.83	14.6
	552550	4199178	97.83	14.6
	552554	4199175	97.83	14.6
	552557	4199171	97.83	14.6
	552559	4199167	97.83	14.6
	552560	4199163	97.83	14.6
	552561	4199158	97.83	14.6
	552560	4199153	97.83	14.6
	552559	4199149	97.83	14.6
	552557	4199145	97.83	14.6
	552554	4199141	97.83	14.6
	552550	4199138	97.83	14.6
	552546	4199136	97.83	14.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-1843	552748	4200008	18.36	12.8
	552747	4200008	18.36	12.8
	552746	4200008	18.36	12.8
	552745	4200009	18.36	12.8
	552744	4200009	18.36	12.8
	552743	4200010	18.36	12.8
	552743	4200010	18.36	12.8
	552742	4200011	18.36	12.8
	552742	4200012	18.36	12.8
	552742	4200013	18.36	12.8
	552742	4200014	18.36	12.8
	552742	4200015	18.36	12.8
	552743	4200015	18.36	12.8
	552743	4200016	18.36	12.8
	552744	4200017	18.36	12.8
	552745	4200017	18.36	12.8
	552746	4200017	18.36	12.8
	552747	4200018	18.36	12.8
	552748	4200017	18.36	12.8
	552748	4200017	18.36	12.8
	552749	4200017	18.36	12.8
	552750	4200016	18.36	12.8
	552750	4200015	18.36	12.8
	552751	4200015	18.36	12.8
	552751	4200014	18.36	12.8
	552751	4200013	18.36	12.8
	552751	4200012	18.36	12.8
	552751	4200011	18.36	12.8
	552750	4200010	18.36	12.8
	552750	4200010	18.36	12.8
	552749	4200009	18.36	12.8
	552748	4200009	18.36	12.8
T-1899	552862	4198275	25.96	17.1
	552857	4198275	25.96	17.1
	552853	4198275	25.96	17.1
	552849	4198277	25.96	17.1
	552845	4198279	25.96	17.1
	552842	4198281	25.96	17.1
	552839	4198285	25.96	17.1
	552837	4198289	25.96	17.1
	552835	4198293	25.96	17.1
	552835	4198297	25.96	17.1
	552835	4198301	25.96	17.1
	552837	4198306	25.96	17.1
	552839	4198309	25.96	17.1
	552842	4198313	25.96	17.1
	552845	4198316	25.96	17.1
	552849	4198318	25.96	17.1
	552853	4198319	25.96	17.1
	552857	4198319	25.96	17.1
	552862	4198319	25.96	17.1
	552866	4198318	25.96	17.1
	552870	4198316	25.96	17.1
	552873	4198313	25.96	17.1
	552876	4198309	25.96	17.1
	552878	4198306	25.96	17.1
	552879	4198301	25.96	17.1
	552880	4198297	25.96	17.1
	552879	4198293	25.96	17.1
	552878	4198289	25.96	17.1
	552876	4198285	25.96	17.1
	552873	4198281	25.96	17.1
	552870	4198279	25.96	17.1
	552866	4198277	25.96	17.1
	553245	4198885	6.76	3.7
	553245	4198885	6.76	3.7
	553245	4198885	6.76	3.7
	553245	4198885	6.76	3.7

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-1911	553244	4198885	6.76	3.7
	553244	4198885	6.76	3.7
	553244	4198886	6.76	3.7
	553244	4198886	6.76	3.7
	553244	4198886	6.76	3.7
	553244	4198886	6.76	3.7
	553244	4198887	6.76	3.7
	553244	4198887	6.76	3.7
	553244	4198887	6.76	3.7
	553244	4198887	6.76	3.7
	553244	4198887	6.76	3.7
	553245	4198887	6.76	3.7
	553245	4198887	6.76	3.7
	553245	4198888	6.76	3.7
	553245	4198887	6.76	3.7
	553246	4198887	6.76	3.7
	553246	4198887	6.76	3.7
	553246	4198887	6.76	3.7
	553246	4198887	6.76	3.7
	553246	4198887	6.76	3.7
	553246	4198887	6.76	3.7
	553246	4198886	6.76	3.7
	553246	4198886	6.76	3.7
	553246	4198886	6.76	3.7
	553246	4198886	6.76	3.7
	553246	4198885	6.76	3.7
	553246	4198885	6.76	3.7
	553246	4198885	6.76	3.7
T-1966	552959	4198668	35.96	17.1
	552956	4198668	35.96	17.1
	552954	4198668	35.96	17.1
	552952	4198669	35.96	17.1
	552950	4198670	35.96	17.1
	552948	4198671	35.96	17.1
	552946	4198673	35.96	17.1
	552945	4198675	35.96	17.1
	552945	4198677	35.96	17.1
	552944	4198680	35.96	17.1
	552945	4198682	35.96	17.1
	552945	4198685	35.96	17.1
	552946	4198687	35.96	17.1
	552948	4198688	35.96	17.1
	552950	4198690	35.96	17.1
	552952	4198691	35.96	17.1
	552954	4198692	35.96	17.1
	552956	4198692	35.96	17.1
	552959	4198692	35.96	17.1
	552961	4198691	35.96	17.1
	552963	4198690	35.96	17.1
	552965	4198688	35.96	17.1
	552967	4198687	35.96	17.1
	552968	4198685	35.96	17.1
	552968	4198682	35.96	17.1
	552969	4198680	35.96	17.1
	552968	4198677	35.96	17.1
	552968	4198675	35.96	17.1
	552967	4198673	35.96	17.1
	552965	4198671	35.96	17.1
	552963	4198670	35.96	17.1
	552961	4198669	35.96	17.1
	552672	4200397	4.52	5.5
	552672	4200397	4.52	5.5
	552671	4200397	4.52	5.5
	552671	4200397	4.52	5.5
	552671	4200398	4.52	5.5
	552670	4200398	4.52	5.5
	552670	4200398	4.52	5.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-200A	552670	4200398	4.52	5.5
	552670	4200399	4.52	5.5
	552670	4200399	4.52	5.5
	552670	4200399	4.52	5.5
	552670	4200400	4.52	5.5
	552671	4200400	4.52	5.5
	552671	4200400	4.52	5.5
	552671	4200400	4.52	5.5
	552671	4200400	4.52	5.5
	552672	4200400	4.52	5.5
	552672	4200400	4.52	5.5
	552672	4200400	4.52	5.5
	552672	4200400	4.52	5.5
	552673	4200400	4.52	5.5
	552673	4200400	4.52	5.5
	552673	4200400	4.52	5.5
	552673	4200399	4.52	5.5
	552673	4200399	4.52	5.5
	552673	4200399	4.52	5.5
	552673	4200398	4.52	5.5
	552673	4200398	4.52	5.5
	552673	4200398	4.52	5.5
	552673	4200398	4.52	5.5
	552673	4200397	4.52	5.5
	552672	4200397	4.52	5.5
T-200B	552675	4200400	4.48	5.5
	552674	4200400	4.48	5.5
	552674	4200400	4.48	5.5
	552674	4200400	4.48	5.5
	552673	4200401	4.48	5.5
	552673	4200401	4.48	5.5
	552673	4200401	4.48	5.5
	552673	4200401	4.48	5.5
	552673	4200401	4.48	5.5
	552673	4200402	4.48	5.5
	552673	4200402	4.48	5.5
	552673	4200402	4.48	5.5
	552673	4200403	4.48	5.5
	552673	4200403	4.48	5.5
	552673	4200403	4.48	5.5
	552674	4200403	4.48	5.5
	552674	4200403	4.48	5.5
	552674	4200403	4.48	5.5
	552675	4200403	4.48	5.5
	552675	4200403	4.48	5.5
	552675	4200403	4.48	5.5
	552675	4200403	4.48	5.5
	552675	4200403	4.48	5.5
	552676	4200403	4.48	5.5
	552676	4200402	4.48	5.5
	552676	4200402	4.48	5.5
	552676	4200402	4.48	5.5
	552676	4200401	4.48	5.5
	552676	4200401	4.48	5.5
	552676	4200401	4.48	5.5
	552675	4200401	4.48	5.5
	552675	4200401	4.48	5.5
	552675	4200400	4.48	5.5
	552824	4199019	29.13	17.1
	552822	4199019	29.13	17.1
	552821	4199019	29.13	17.1
	552819	4199020	29.13	17.1
	552817	4199021	29.13	17.1
	552815	4199022	29.13	17.1
	552814	4199024	29.13	17.1
	552813	4199025	29.13	17.1
	552813	4199027	29.13	17.1
	552813	4199029	29.13	17.1
	552813	4199031	29.13	17.1
	552813	4199033	29.13	17.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-231	552814	4199035	29.13	17.1
	552815	4199036	29.13	17.1
	552817	4199037	29.13	17.1
	552819	4199038	29.13	17.1
	552821	4199039	29.13	17.1
	552822	4199039	29.13	17.1
	552824	4199039	29.13	17.1
	552826	4199038	29.13	17.1
	552828	4199037	29.13	17.1
	552829	4199036	29.13	17.1
	552831	4199035	29.13	17.1
	552832	4199033	29.13	17.1
	552832	4199031	29.13	17.1
	552832	4199029	29.13	17.1
	552832	4199027	29.13	17.1
	552832	4199025	29.13	17.1
	552831	4199024	29.13	17.1
	552829	4199022	29.13	17.1
	552828	4199021	29.13	17.1
	552826	4199020	29.13	17.1
T-234	552930	4199112	28.7	17.1
	552926	4199111	28.7	17.1
	552921	4199112	28.7	17.1
	552917	4199113	28.7	17.1
	552913	4199115	28.7	17.1
	552910	4199118	28.7	17.1
	552907	4199121	28.7	17.1
	552905	4199125	28.7	17.1
	552904	4199129	28.7	17.1
	552904	4199134	28.7	17.1
	552904	4199138	28.7	17.1
	552905	4199142	28.7	17.1
	552907	4199146	28.7	17.1
	552910	4199149	28.7	17.1
	552913	4199152	28.7	17.1
	552917	4199154	28.7	17.1
	552921	4199155	28.7	17.1
	552926	4199156	28.7	17.1
	552930	4199155	28.7	17.1
	552934	4199154	28.7	17.1
	552938	4199152	28.7	17.1
	552941	4199149	28.7	17.1
	552944	4199146	28.7	17.1
	552946	4199142	28.7	17.1
	552947	4199138	28.7	17.1
	552948	4199134	28.7	17.1
	552947	4199129	28.7	17.1
	552946	4199125	28.7	17.1
	552944	4199121	28.7	17.1
	552941	4199118	28.7	17.1
	552938	4199115	28.7	17.1
	552934	4199113	28.7	17.1
T-200	553111	4199127	34.2	11
	553108	4199126	34.2	11
	553104	4199127	34.2	11
	553101	4199128	34.2	11
	553098	4199129	34.2	11
	553095	4199131	34.2	11
	553093	4199134	34.2	11
	553092	4199137	34.2	11
	553091	4199140	34.2	11
	553090	4199144	34.2	11
	553091	4199147	34.2	11
	553092	4199150	34.2	11
	553093	4199153	34.2	11
	553095	4199156	34.2	11
	553098	4199158	34.2	11
	553101	4199160	34.2	11

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-290	553104	4199161	34.2	11
	553108	4199161	34.2	11
	553111	4199161	34.2	11
	553114	4199160	34.2	11
	553117	4199158	34.2	11
	553120	4199156	34.2	11
	553122	4199153	34.2	11
	553124	4199150	34.2	11
	553125	4199147	34.2	11
	553125	4199144	34.2	11
	553125	4199140	34.2	11
	553124	4199137	34.2	11
	553122	4199134	34.2	11
	553120	4199131	34.2	11
	553117	4199129	34.2	11
T-3	553114	4199128	34.2	11
	554125	4198870	3.68	12.2
	554123	4198870	3.68	12.2
	554121	4198870	3.68	12.2
	554119	4198871	3.68	12.2
	554117	4198872	3.68	12.2
	554116	4198873	3.68	12.2
	554114	4198875	3.68	12.2
	554113	4198877	3.68	12.2
	554113	4198878	3.68	12.2
	554113	4198880	3.68	12.2
	554113	4198882	3.68	12.2
	554113	4198884	3.68	12.2
	554114	4198886	3.68	12.2
	554116	4198888	3.68	12.2
	554117	4198889	3.68	12.2
	554119	4198890	3.68	12.2
	554121	4198890	3.68	12.2
	554123	4198891	3.68	12.2
	554125	4198890	3.68	12.2
	554127	4198890	3.68	12.2
	554129	4198889	3.68	12.2
	554130	4198888	3.68	12.2
	554131	4198886	3.68	12.2
	554132	4198884	3.68	12.2
	554133	4198882	3.68	12.2
	554133	4198880	3.68	12.2
	554133	4198878	3.68	12.2
	554132	4198877	3.68	12.2
	554131	4198875	3.68	12.2
	554130	4198873	3.68	12.2
	554129	4198872	3.68	12.2
	554127	4198871	3.68	12.2
T-3071	552557	4199416	113.36	14.6
	552553	4199415	113.36	14.6
	552549	4199416	113.36	14.6
	552544	4199417	113.36	14.6
	552540	4199419	113.36	14.6
	552537	4199422	113.36	14.6
	552534	4199425	113.36	14.6
	552532	4199429	113.36	14.6
	552531	4199434	113.36	14.6
	552530	4199438	113.36	14.6
	552531	4199443	113.36	14.6
	552532	4199447	113.36	14.6
	552534	4199451	113.36	14.6
	552537	4199454	113.36	14.6
	552540	4199457	113.36	14.6
	552544	4199459	113.36	14.6
	552549	4199461	113.36	14.6
	552553	4199461	113.36	14.6
	552557	4199461	113.36	14.6
	552562	4199459	113.36	14.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552566	4199457	113.36	14.6
	552569	4199454	113.36	14.6
	552572	4199451	113.36	14.6
	552574	4199447	113.36	14.6
	552575	4199443	113.36	14.6
	552576	4199438	113.36	14.6
	552575	4199434	113.36	14.6
	552574	4199429	113.36	14.6
	552572	4199425	113.36	14.6
	552569	4199422	113.36	14.6
	552566	4199419	113.36	14.6
T-3072	552562	4199417	113.36	14.6
	552818	4199301	85.28	19.5
	552814	4199300	85.28	19.5
	552810	4199301	85.28	19.5
	552806	4199302	85.28	19.5
	552802	4199304	85.28	19.5
	552799	4199306	85.28	19.5
	552797	4199310	85.28	19.5
	552795	4199313	85.28	19.5
	552794	4199317	85.28	19.5
	552793	4199321	85.28	19.5
	552794	4199325	85.28	19.5
	552795	4199329	85.28	19.5
	552797	4199333	85.28	19.5
	552799	4199336	85.28	19.5
	552802	4199338	85.28	19.5
	552806	4199340	85.28	19.5
	552810	4199341	85.28	19.5
	552814	4199342	85.28	19.5
	552818	4199341	85.28	19.5
	552822	4199340	85.28	19.5
	552825	4199338	85.28	19.5
	552829	4199336	85.28	19.5
	552831	4199333	85.28	19.5
	552833	4199329	85.28	19.5
	552834	4199325	85.28	19.5
	552835	4199321	85.28	19.5
	552834	4199317	85.28	19.5
	552833	4199313	85.28	19.5
	552831	4199310	85.28	19.5
	552829	4199306	85.28	19.5
	552825	4199304	85.28	19.5
	552822	4199302	85.28	19.5
T-3073	552822	4199367	88.13	19.5
	552819	4199366	88.13	19.5
	552815	4199367	88.13	19.5
	552812	4199368	88.13	19.5
	552809	4199369	88.13	19.5
	552806	4199372	88.13	19.5
	552804	4199374	88.13	19.5
	552802	4199377	88.13	19.5
	552801	4199381	88.13	19.5
	552800	4199384	88.13	19.5
	552801	4199388	88.13	19.5
	552802	4199391	88.13	19.5
	552804	4199395	88.13	19.5
	552806	4199397	88.13	19.5
	552809	4199400	88.13	19.5
	552812	4199401	88.13	19.5
	552815	4199402	88.13	19.5
	552819	4199403	88.13	19.5
	552822	4199402	88.13	19.5
	552826	4199401	88.13	19.5
	552829	4199400	88.13	19.5
	552832	4199397	88.13	19.5
	552834	4199395	88.13	19.5
	552836	4199391	88.13	19.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552837	4199388	88.13	19.5
	552837	4199384	88.13	19.5
	552837	4199381	88.13	19.5
	552836	4199377	88.13	19.5
	552834	4199374	88.13	19.5
	552832	4199372	88.13	19.5
	552829	4199369	88.13	19.5
	552826	4199368	88.13	19.5
T-3074	552813	4199144	45.02	14.6
	552809	4199143	45.02	14.6
	552805	4199144	45.02	14.6
	552801	4199145	45.02	14.6
	552798	4199146	45.02	14.6
	552795	4199149	45.02	14.6
	552792	4199152	45.02	14.6
	552790	4199155	45.02	14.6
	552789	4199159	45.02	14.6
	552789	4199163	45.02	14.6
	552789	4199167	45.02	14.6
	552790	4199171	45.02	14.6
	552792	4199174	45.02	14.6
	552795	4199177	45.02	14.6
	552798	4199179	45.02	14.6
	552801	4199181	45.02	14.6
	552805	4199182	45.02	14.6
	552809	4199183	45.02	14.6
	552813	4199182	45.02	14.6
	552816	4199181	45.02	14.6
	552820	4199179	45.02	14.6
	552823	4199177	45.02	14.6
	552825	4199174	45.02	14.6
	552827	4199171	45.02	14.6
	552828	4199167	45.02	14.6
	552828	4199163	45.02	14.6
	552828	4199159	45.02	14.6
	552827	4199155	45.02	14.6
	552825	4199152	45.02	14.6
	552823	4199149	45.02	14.6
	552820	4199146	45.02	14.6
	552816	4199145	45.02	14.6
T-3075	553282	4199171	38.82	12.2
	553279	4199171	38.82	12.2
	553277	4199171	38.82	12.2
	553274	4199172	38.82	12.2
	553272	4199173	38.82	12.2
	553270	4199175	38.82	12.2
	553268	4199177	38.82	12.2
	553267	4199179	38.82	12.2
	553266	4199181	38.82	12.2
	553266	4199184	38.82	12.2
	553266	4199186	38.82	12.2
	553267	4199189	38.82	12.2
	553268	4199191	38.82	12.2
	553270	4199193	38.82	12.2
	553272	4199195	38.82	12.2
	553274	4199196	38.82	12.2
	553277	4199197	38.82	12.2
	553279	4199197	38.82	12.2
	553282	4199197	38.82	12.2
	553284	4199196	38.82	12.2
	553286	4199195	38.82	12.2
	553288	4199193	38.82	12.2
	553290	4199191	38.82	12.2
	553291	4199189	38.82	12.2
	553292	4199186	38.82	12.2
	553292	4199184	38.82	12.2
	553292	4199181	38.82	12.2
	553291	4199179	38.82	12.2

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	553290	4199177	38.82	12.2
	553288	4199175	38.82	12.2
	553286	4199173	38.82	12.2
	553284	4199172	38.82	12.2
T-3076	552831	4199070	35.49	21.9
	552827	4199070	35.49	21.9
	552822	4199070	35.49	21.9
	552818	4199071	35.49	21.9
	552814	4199073	35.49	21.9
	552810	4199076	35.49	21.9
	552808	4199080	35.49	21.9
	552805	4199084	35.49	21.9
	552804	4199088	35.49	21.9
	552804	4199092	35.49	21.9
	552804	4199097	35.49	21.9
	552805	4199101	35.49	21.9
	552808	4199105	35.49	21.9
	552810	4199109	35.49	21.9
	552814	4199111	35.49	21.9
	552818	4199114	35.49	21.9
	552822	4199115	35.49	21.9
	552827	4199115	35.49	21.9
	552831	4199115	35.49	21.9
	552835	4199114	35.49	21.9
	552839	4199111	35.49	21.9
	552843	4199109	35.49	21.9
	552846	4199105	35.49	21.9
	552848	4199101	35.49	21.9
	552849	4199097	35.49	21.9
	552849	4199092	35.49	21.9
	552849	4199088	35.49	21.9
	552848	4199084	35.49	21.9
	552846	4199080	35.49	21.9
	552843	4199076	35.49	21.9
	552839	4199073	35.49	21.9
	552835	4199071	35.49	21.9
T-3100	552590	4198759	28.23	19.5
	552583	4198759	28.23	19.5
	552575	4198759	28.23	19.5
	552569	4198761	28.23	19.5
	552562	4198765	28.23	19.5
	552557	4198769	28.23	19.5
	552552	4198775	28.23	19.5
	552549	4198781	28.23	19.5
	552546	4198788	28.23	19.5
	552546	4198796	28.23	19.5
	552546	4198803	28.23	19.5
	552549	4198810	28.23	19.5
	552552	4198816	28.23	19.5
	552557	4198822	28.23	19.5
	552562	4198826	28.23	19.5
	552569	4198830	28.23	19.5
	552575	4198832	28.23	19.5
	552583	4198832	28.23	19.5
	552590	4198832	28.23	19.5
	552597	4198830	28.23	19.5
	552603	4198826	28.23	19.5
	552609	4198822	28.23	19.5
	552613	4198816	28.23	19.5
	552617	4198810	28.23	19.5
	552619	4198803	28.23	19.5
	552620	4198796	28.23	19.5
	552619	4198788	28.23	19.5
	552617	4198781	28.23	19.5
	552613	4198775	28.23	19.5
	552609	4198769	28.23	19.5
	552603	4198765	28.23	19.5
	552597	4198761	28.23	19.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3101	552445	4198728	28.42	19.5
	552437	4198727	28.42	19.5
	552430	4198728	28.42	19.5
	552423	4198730	28.42	19.5
	552417	4198733	28.42	19.5
	552411	4198738	28.42	19.5
	552407	4198744	28.42	19.5
	552403	4198750	28.42	19.5
	552401	4198757	28.42	19.5
	552401	4198764	28.42	19.5
	552401	4198771	28.42	19.5
	552403	4198778	28.42	19.5
	552407	4198785	28.42	19.5
	552411	4198790	28.42	19.5
	552417	4198795	28.42	19.5
	552423	4198798	28.42	19.5
	552430	4198800	28.42	19.5
	552437	4198801	28.42	19.5
	552445	4198800	28.42	19.5
	552452	4198798	28.42	19.5
	552458	4198795	28.42	19.5
	552464	4198790	28.42	19.5
	552468	4198785	28.42	19.5
	552471	4198778	28.42	19.5
	552474	4198771	28.42	19.5
	552474	4198764	28.42	19.5
	552474	4198757	28.42	19.5
	552471	4198750	28.42	19.5
	552468	4198744	28.42	19.5
	552464	4198738	28.42	19.5
	552458	4198733	28.42	19.5
	552452	4198730	28.42	19.5
T-3102	552260	4198728	29.66	19.5
	552253	4198727	29.66	19.5
	552246	4198728	29.66	19.5
	552239	4198730	29.66	19.5
	552233	4198733	29.66	19.5
	552227	4198738	29.66	19.5
	552223	4198743	29.66	19.5
	552219	4198750	29.66	19.5
	552217	4198756	29.66	19.5
	552217	4198763	29.66	19.5
	552217	4198771	29.66	19.5
	552219	4198777	29.66	19.5
	552223	4198784	29.66	19.5
	552227	4198789	29.66	19.5
	552233	4198794	29.66	19.5
	552239	4198797	29.66	19.5
	552246	4198799	29.66	19.5
	552253	4198800	29.66	19.5
	552260	4198799	29.66	19.5
	552267	4198797	29.66	19.5
	552273	4198794	29.66	19.5
	552279	4198789	29.66	19.5
	552283	4198784	29.66	19.5
	552287	4198777	29.66	19.5
	552289	4198771	29.66	19.5
	552290	4198763	29.66	19.5
	552289	4198756	29.66	19.5
	552287	4198750	29.66	19.5
	552283	4198743	29.66	19.5
	552279	4198738	29.66	19.5
	552273	4198733	29.66	19.5
	552267	4198730	29.66	19.5
	552139	4198733	29.51	19.5
	552131	4198733	29.51	19.5
	552124	4198733	29.51	19.5
	552117	4198736	29.51	19.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3103	552111	4198739	29.51	19.5
	552105	4198744	29.51	19.5
	552101	4198749	29.51	19.5
	552097	4198756	29.51	19.5
	552095	4198762	29.51	19.5
	552095	4198770	29.51	19.5
	552095	4198777	29.51	19.5
	552097	4198784	29.51	19.5
	552101	4198790	29.51	19.5
	552105	4198796	29.51	19.5
	552111	4198800	29.51	19.5
	552117	4198804	29.51	19.5
	552124	4198806	29.51	19.5
	552131	4198807	29.51	19.5
	552139	4198806	29.51	19.5
	552145	4198804	29.51	19.5
	552152	4198800	29.51	19.5
	552157	4198796	29.51	19.5
	552162	4198790	29.51	19.5
	552165	4198784	29.51	19.5
	552168	4198777	29.51	19.5
	552168	4198770	29.51	19.5
	552168	4198762	29.51	19.5
	552165	4198756	29.51	19.5
	552162	4198749	29.51	19.5
	552157	4198744	29.51	19.5
	552152	4198739	29.51	19.5
	552145	4198736	29.51	19.5
T-3104	552003	4198739	30.13	19.5
	551994	4198739	30.13	19.5
	551986	4198739	30.13	19.5
	551977	4198742	30.13	19.5
	551970	4198746	30.13	19.5
	551963	4198751	30.13	19.5
	551958	4198758	30.13	19.5
	551953	4198766	30.13	19.5
	551951	4198774	30.13	19.5
	551950	4198783	30.13	19.5
	551951	4198791	30.13	19.5
	551953	4198800	30.13	19.5
	551958	4198807	30.13	19.5
	551963	4198814	30.13	19.5
	551970	4198819	30.13	19.5
	551977	4198824	30.13	19.5
	551986	4198826	30.13	19.5
	551994	4198827	30.13	19.5
	552003	4198826	30.13	19.5
	552011	4198824	30.13	19.5
	552019	4198819	30.13	19.5
	552026	4198814	30.13	19.5
	552031	4198807	30.13	19.5
	552035	4198800	30.13	19.5
	552038	4198791	30.13	19.5
	552038	4198783	30.13	19.5
	552038	4198774	30.13	19.5
	552035	4198766	30.13	19.5
	552031	4198758	30.13	19.5
	552026	4198751	30.13	19.5
	552019	4198746	30.13	19.5
	552011	4198742	30.13	19.5
	552079	4198875	30.59	19.5
	552070	4198874	30.59	19.5
	552061	4198875	30.59	19.5
	552053	4198878	30.59	19.5
	552045	4198882	30.59	19.5
	552039	4198887	30.59	19.5
	552033	4198894	30.59	19.5
	552029	4198902	30.59	19.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3105	552027	4198910	30.59	19.5
	552026	4198918	30.59	19.5
	552027	4198927	30.59	19.5
	552029	4198935	30.59	19.5
	552033	4198943	30.59	19.5
	552039	4198950	30.59	19.5
	552045	4198955	30.59	19.5
	552053	4198959	30.59	19.5
	552061	4198962	30.59	19.5
	552070	4198963	30.59	19.5
	552079	4198962	30.59	19.5
	552087	4198959	30.59	19.5
	552094	4198955	30.59	19.5
	552101	4198950	30.59	19.5
	552107	4198943	30.59	19.5
	552111	4198935	30.59	19.5
	552113	4198927	30.59	19.5
	552114	4198918	30.59	19.5
	552113	4198910	30.59	19.5
	552111	4198902	30.59	19.5
	552107	4198894	30.59	19.5
	552101	4198887	30.59	19.5
	552094	4198882	30.59	19.5
	552087	4198878	30.59	19.5
T-3106	551931	4198885	31.22	19.5
	551922	4198885	31.22	19.5
	551913	4198885	31.22	19.5
	551905	4198888	31.22	19.5
	551897	4198892	31.22	19.5
	551891	4198897	31.22	19.5
	551885	4198904	31.22	19.5
	551881	4198912	31.22	19.5
	551879	4198920	31.22	19.5
	551878	4198929	31.22	19.5
	551879	4198937	31.22	19.5
	551881	4198945	31.22	19.5
	551885	4198953	31.22	19.5
	551891	4198960	31.22	19.5
	551897	4198965	31.22	19.5
	551905	4198969	31.22	19.5
	551913	4198972	31.22	19.5
	551922	4198973	31.22	19.5
	551931	4198972	31.22	19.5
	551939	4198969	31.22	19.5
	551946	4198965	31.22	19.5
	551953	4198960	31.22	19.5
	551959	4198953	31.22	19.5
	551963	4198945	31.22	19.5
	551965	4198937	31.22	19.5
	551966	4198929	31.22	19.5
	551965	4198920	31.22	19.5
	551963	4198912	31.22	19.5
	551959	4198904	31.22	19.5
	551953	4198897	31.22	19.5
	551946	4198892	31.22	19.5
	551939	4198888	31.22	19.5
	551959	4199016	32.62	19.5
	551951	4199015	32.62	19.5
	551943	4199016	32.62	19.5
	551936	4199018	32.62	19.5
	551929	4199022	32.62	19.5
	551923	4199027	32.62	19.5
	551918	4199033	32.62	19.5
	551914	4199039	32.62	19.5
	551912	4199047	32.62	19.5
	551911	4199055	32.62	19.5
	551912	4199062	32.62	19.5
	551914	4199070	32.62	19.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3107	551918	4199077	32.62	19.5
	551923	4199083	32.62	19.5
	551929	4199088	32.62	19.5
	551936	4199091	32.62	19.5
	551943	4199093	32.62	19.5
	551951	4199094	32.62	19.5
	551959	4199093	32.62	19.5
	551966	4199091	32.62	19.5
	551973	4199088	32.62	19.5
	551979	4199083	32.62	19.5
	551984	4199077	32.62	19.5
	551988	4199070	32.62	19.5
	551990	4199062	32.62	19.5
	551991	4199055	32.62	19.5
	551990	4199047	32.62	19.5
	551988	4199039	32.62	19.5
	551984	4199033	32.62	19.5
	551979	4199027	32.62	19.5
	551973	4199022	32.62	19.5
	551966	4199018	32.62	19.5
T-3126	553738	4199491	3.31	9.8
	553736	4199491	3.31	9.8
	553735	4199491	3.31	9.8
	553733	4199491	3.31	9.8
	553731	4199492	3.31	9.8
	553730	4199493	3.31	9.8
	553729	4199495	3.31	9.8
	553728	4199496	3.31	9.8
	553727	4199498	3.31	9.8
	553727	4199500	3.31	9.8
	553727	4199502	3.31	9.8
	553728	4199503	3.31	9.8
	553729	4199505	3.31	9.8
	553730	4199506	3.31	9.8
	553731	4199507	3.31	9.8
	553733	4199508	3.31	9.8
	553735	4199509	3.31	9.8
	553736	4199509	3.31	9.8
	553738	4199509	3.31	9.8
	553740	4199508	3.31	9.8
	553741	4199507	3.31	9.8
	553743	4199506	3.31	9.8
	553744	4199505	3.31	9.8
	553745	4199503	3.31	9.8
	553745	4199502	3.31	9.8
	553745	4199500	3.31	9.8
	553745	4199498	3.31	9.8
	553745	4199496	3.31	9.8
	553744	4199495	3.31	9.8
	553743	4199493	3.31	9.8
	553741	4199492	3.31	9.8
	553740	4199491	3.31	9.8
T-3127	553888	4199269	3.68	14
	553885	4199268	3.68	14
	553883	4199269	3.68	14
	553881	4199269	3.68	14
	553879	4199270	3.68	14
	553877	4199272	3.68	14
	553875	4199274	3.68	14
	553874	4199276	3.68	14
	553874	4199278	3.68	14
	553873	4199281	3.68	14
	553874	4199283	3.68	14
	553874	4199285	3.68	14
	553875	4199287	3.68	14
	553877	4199289	3.68	14
	553879	4199291	3.68	14
	553881	4199292	3.68	14

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3127	553883	4199293	3.68	14
	553885	4199293	3.68	14
	553888	4199293	3.68	14
	553890	4199292	3.68	14
	553892	4199291	3.68	14
	553894	4199289	3.68	14
	553896	4199287	3.68	14
	553897	4199285	3.68	14
	553897	4199283	3.68	14
	553898	4199281	3.68	14
	553897	4199278	3.68	14
	553897	4199276	3.68	14
	553896	4199274	3.68	14
	553894	4199272	3.68	14
	553892	4199270	3.68	14
T-3128	553890	4199269	3.68	14
	553895	4199224	3.7	14
	553893	4199224	3.7	14
	553890	4199224	3.7	14
	553888	4199225	3.7	14
	553886	4199226	3.7	14
	553884	4199228	3.7	14
	553882	4199229	3.7	14
	553881	4199231	3.7	14
	553881	4199234	3.7	14
	553880	4199236	3.7	14
	553881	4199239	3.7	14
	553881	4199241	3.7	14
	553882	4199243	3.7	14
	553884	4199245	3.7	14
	553886	4199246	3.7	14
	553888	4199247	3.7	14
	553890	4199248	3.7	14
	553893	4199248	3.7	14
	553895	4199248	3.7	14
	553897	4199247	3.7	14
	553899	4199246	3.7	14
	553901	4199245	3.7	14
	553903	4199243	3.7	14
	553904	4199241	3.7	14
	553905	4199239	3.7	14
	553905	4199236	3.7	14
	553905	4199234	3.7	14
	553904	4199231	3.7	14
	553903	4199229	3.7	14
	553901	4199228	3.7	14
	553899	4199226	3.7	14
	553897	4199225	3.7	14
T-3129	553059	4199175	50.44	19.8
	553055	4199175	50.44	19.8
	553052	4199175	50.44	19.8
	553049	4199176	50.44	19.8
	553046	4199177	50.44	19.8
	553043	4199179	50.44	19.8
	553041	4199182	50.44	19.8
	553040	4199185	50.44	19.8
	553039	4199188	50.44	19.8
	553039	4199191	50.44	19.8
	553039	4199195	50.44	19.8
	553040	4199198	50.44	19.8
	553041	4199201	50.44	19.8
	553043	4199203	50.44	19.8
	553046	4199205	50.44	19.8
	553049	4199207	50.44	19.8
	553052	4199208	50.44	19.8
	553055	4199208	50.44	19.8
	553059	4199208	50.44	19.8
	553062	4199207	50.44	19.8

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	553065	4199205	50.44	19.8
	553067	4199203	50.44	19.8
	553069	4199201	50.44	19.8
	553071	4199198	50.44	19.8
	553072	4199195	50.44	19.8
	553072	4199191	50.44	19.8
	553072	4199188	50.44	19.8
	553071	4199185	50.44	19.8
	553069	4199182	50.44	19.8
	553067	4199179	50.44	19.8
	553065	4199177	50.44	19.8
	553062	4199176	50.44	19.8
T-3132	552736	4199777	99.36	19.5
	552731	4199777	99.36	19.5
	552726	4199777	99.36	19.5
	552722	4199778	99.36	19.5
	552718	4199780	99.36	19.5
	552714	4199783	99.36	19.5
	552712	4199787	99.36	19.5
	552709	4199791	99.36	19.5
	552708	4199795	99.36	19.5
	552708	4199800	99.36	19.5
	552708	4199804	99.36	19.5
	552709	4199809	99.36	19.5
	552712	4199813	99.36	19.5
	552714	4199816	99.36	19.5
	552718	4199819	99.36	19.5
	552722	4199821	99.36	19.5
	552726	4199823	99.36	19.5
	552731	4199823	99.36	19.5
	552736	4199823	99.36	19.5
	552740	4199821	99.36	19.5
	552744	4199819	99.36	19.5
	552747	4199816	99.36	19.5
	552750	4199813	99.36	19.5
	552752	4199809	99.36	19.5
	552754	4199804	99.36	19.5
	552754	4199800	99.36	19.5
	552754	4199795	99.36	19.5
	552752	4199791	99.36	19.5
	552750	4199787	99.36	19.5
	552747	4199783	99.36	19.5
	552744	4199780	99.36	19.5
	552740	4199778	99.36	19.5
T-3133	552617	4199585	109.49	19.5
	552611	4199585	109.49	19.5
	552605	4199585	109.49	19.5
	552600	4199587	109.49	19.5
	552595	4199590	109.49	19.5
	552591	4199593	109.49	19.5
	552587	4199597	109.49	19.5
	552585	4199602	109.49	19.5
	552583	4199608	109.49	19.5
	552582	4199613	109.49	19.5
	552583	4199619	109.49	19.5
	552585	4199624	109.49	19.5
	552587	4199629	109.49	19.5
	552591	4199633	109.49	19.5
	552595	4199637	109.49	19.5
	552600	4199640	109.49	19.5
	552605	4199641	109.49	19.5
	552611	4199642	109.49	19.5
	552617	4199641	109.49	19.5
	552622	4199640	109.49	19.5
	552627	4199637	109.49	19.5
	552631	4199633	109.49	19.5
	552635	4199629	109.49	19.5
	552637	4199624	109.49	19.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552639	4199619	109.49	19.5
	552639	4199613	109.49	19.5
	552639	4199608	109.49	19.5
	552637	4199602	109.49	19.5
	552635	4199597	109.49	19.5
	552631	4199593	109.49	19.5
	552627	4199590	109.49	19.5
T-3134	552622	4199587	109.49	19.5
	552520	4199656	109.08	19.5
	552515	4199656	109.08	19.5
	552511	4199656	109.08	19.5
	552507	4199658	109.08	19.5
	552503	4199660	109.08	19.5
	552499	4199663	109.08	19.5
	552496	4199666	109.08	19.5
	552494	4199670	109.08	19.5
	552493	4199674	109.08	19.5
	552492	4199679	109.08	19.5
	552493	4199683	109.08	19.5
	552494	4199688	109.08	19.5
	552496	4199692	109.08	19.5
	552499	4199695	109.08	19.5
	552503	4199698	109.08	19.5
	552507	4199700	109.08	19.5
	552511	4199701	109.08	19.5
	552515	4199702	109.08	19.5
	552520	4199701	109.08	19.5
	552524	4199700	109.08	19.5
	552528	4199698	109.08	19.5
	552531	4199695	109.08	19.5
	552534	4199692	109.08	19.5
	552536	4199688	109.08	19.5
	552538	4199683	109.08	19.5
	552538	4199679	109.08	19.5
	552538	4199674	109.08	19.5
	552536	4199670	109.08	19.5
	552534	4199666	109.08	19.5
	552531	4199663	109.08	19.5
	552528	4199660	109.08	19.5
	552524	4199658	109.08	19.5
T-3138	552442	4200032	29.19	19.3
	552437	4200031	29.19	19.3
	552433	4200032	29.19	19.3
	552428	4200033	29.19	19.3
	552425	4200035	29.19	19.3
	552421	4200038	29.19	19.3
	552418	4200041	29.19	19.3
	552416	4200045	29.19	19.3
	552415	4200049	29.19	19.3
	552414	4200054	29.19	19.3
	552415	4200058	29.19	19.3
	552416	4200062	29.19	19.3
	552418	4200066	29.19	19.3
	552421	4200070	29.19	19.3
	552425	4200073	29.19	19.3
	552428	4200075	29.19	19.3
	552433	4200076	29.19	19.3
	552437	4200076	29.19	19.3
	552442	4200076	29.19	19.3
	552446	4200075	29.19	19.3
	552450	4200073	29.19	19.3
	552453	4200070	29.19	19.3
	552456	4200066	29.19	19.3
	552458	4200062	29.19	19.3
	552459	4200058	29.19	19.3
	552460	4200054	29.19	19.3
	552459	4200049	29.19	19.3
	552458	4200045	29.19	19.3

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552456	4200041	29.19	19.3
	552453	4200038	29.19	19.3
	552450	4200035	29.19	19.3
	552446	4200033	29.19	19.3
T-3139	552394	4200092	29.18	5.9
	552390	4200092	29.18	5.9
	552385	4200092	29.18	5.9
	552381	4200094	29.18	5.9
	552377	4200096	29.18	5.9
	552374	4200098	29.18	5.9
	552371	4200102	29.18	5.9
	552369	4200106	29.18	5.9
	552367	4200110	29.18	5.9
	552367	4200115	29.18	5.9
	552367	4200119	29.18	5.9
	552369	4200123	29.18	5.9
	552371	4200127	29.18	5.9
	552374	4200131	29.18	5.9
	552377	4200134	29.18	5.9
	552381	4200136	29.18	5.9
	552385	4200137	29.18	5.9
	552390	4200137	29.18	5.9
	552394	4200137	29.18	5.9
	552399	4200136	29.18	5.9
	552402	4200134	29.18	5.9
	552406	4200131	29.18	5.9
	552409	4200127	29.18	5.9
	552411	4200123	29.18	5.9
	552412	4200119	29.18	5.9
	552413	4200115	29.18	5.9
	552412	4200110	29.18	5.9
	552411	4200106	29.18	5.9
	552409	4200102	29.18	5.9
	552406	4200098	29.18	5.9
	552402	4200096	29.18	5.9
	552399	4200094	29.18	5.9
T-3140	552414	4200713	3.52	12.2
	552412	4200713	3.52	12.2
	552410	4200713	3.52	12.2
	552408	4200713	3.52	12.2
	552406	4200714	3.52	12.2
	552404	4200716	3.52	12.2
	552403	4200717	3.52	12.2
	552402	4200719	3.52	12.2
	552401	4200721	3.52	12.2
	552401	4200723	3.52	12.2
	552401	4200725	3.52	12.2
	552402	4200727	3.52	12.2
	552403	4200729	3.52	12.2
	552404	4200731	3.52	12.2
	552406	4200732	3.52	12.2
	552408	4200733	3.52	12.2
	552410	4200734	3.52	12.2
	552412	4200734	3.52	12.2
	552414	4200734	3.52	12.2
	552416	4200733	3.52	12.2
	552418	4200732	3.52	12.2
	552419	4200731	3.52	12.2
	552421	4200729	3.52	12.2
	552422	4200727	3.52	12.2
	552422	4200725	3.52	12.2
	552422	4200723	3.52	12.2
	552422	4200721	3.52	12.2
	552422	4200719	3.52	12.2
	552421	4200717	3.52	12.2
	552419	4200716	3.52	12.2
	552418	4200714	3.52	12.2
	552416	4200713	3.52	12.2

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3141	552435	4200696	3.33	9.8
	552433	4200696	3.33	9.8
	552431	4200696	3.33	9.8
	552429	4200697	3.33	9.8
	552427	4200698	3.33	9.8
	552425	4200699	3.33	9.8
	552424	4200701	3.33	9.8
	552423	4200702	3.33	9.8
	552422	4200704	3.33	9.8
	552422	4200707	3.33	9.8
	552422	4200709	3.33	9.8
	552423	4200711	3.33	9.8
	552424	4200712	3.33	9.8
	552425	4200714	3.33	9.8
	552427	4200715	3.33	9.8
	552429	4200716	3.33	9.8
	552431	4200717	3.33	9.8
	552433	4200717	3.33	9.8
	552435	4200717	3.33	9.8
	552437	4200716	3.33	9.8
	552439	4200715	3.33	9.8
	552440	4200714	3.33	9.8
	552442	4200712	3.33	9.8
	552443	4200711	3.33	9.8
	552443	4200709	3.33	9.8
	552443	4200707	3.33	9.8
	552443	4200704	3.33	9.8
	552443	4200702	3.33	9.8
	552442	4200701	3.33	9.8
	552440	4200699	3.33	9.8
	552439	4200698	3.33	9.8
	552437	4200697	3.33	9.8
T-3144	553618	4199649	3.37	11
	553617	4199649	3.37	11
	553616	4199649	3.37	11
	553615	4199649	3.37	11
	553614	4199650	3.37	11
	553613	4199651	3.37	11
	553612	4199652	3.37	11
	553611	4199653	3.37	11
	553611	4199654	3.37	11
	553611	4199655	3.37	11
	553611	4199657	3.37	11
	553611	4199658	3.37	11
	553612	4199659	3.37	11
	553613	4199660	3.37	11
	553614	4199661	3.37	11
	553615	4199661	3.37	11
	553616	4199662	3.37	11
	553617	4199662	3.37	11
	553618	4199662	3.37	11
	553620	4199661	3.37	11
	553621	4199661	3.37	11
	553622	4199660	3.37	11
	553622	4199659	3.37	11
	553623	4199658	3.37	11
	553623	4199657	3.37	11
	553624	4199655	3.37	11
	553623	4199654	3.37	11
	553623	4199653	3.37	11
	553622	4199652	3.37	11
	553622	4199651	3.37	11
	553621	4199650	3.37	11
	553620	4199649	3.37	11
	553386	4199751	4.12	8.2
	553385	4199751	4.12	8.2
	553385	4199751	4.12	8.2
	553384	4199752	4.12	8.2

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3146	553383	4199752	4.12	8.2
	553383	4199752	4.12	8.2
	553382	4199753	4.12	8.2
	553382	4199754	4.12	8.2
	553382	4199754	4.12	8.2
	553382	4199755	4.12	8.2
	553382	4199756	4.12	8.2
	553382	4199757	4.12	8.2
	553382	4199757	4.12	8.2
	553383	4199758	4.12	8.2
	553383	4199758	4.12	8.2
	553384	4199759	4.12	8.2
	553385	4199759	4.12	8.2
	553385	4199759	4.12	8.2
	553386	4199759	4.12	8.2
	553387	4199759	4.12	8.2
	553388	4199758	4.12	8.2
	553388	4199758	4.12	8.2
	553389	4199757	4.12	8.2
	553389	4199757	4.12	8.2
	553389	4199756	4.12	8.2
	553389	4199755	4.12	8.2
	553389	4199754	4.12	8.2
	553389	4199754	4.12	8.2
	553389	4199753	4.12	8.2
	553388	4199752	4.12	8.2
	553388	4199752	4.12	8.2
	553387	4199752	4.12	8.2
T-3148	553447	4199789	4.05	5.5
	553446	4199789	4.05	5.5
	553446	4199789	4.05	5.5
	553446	4199789	4.05	5.5
	553445	4199789	4.05	5.5
	553445	4199790	4.05	5.5
	553444	4199790	4.05	5.5
	553444	4199790	4.05	5.5
	553444	4199791	4.05	5.5
	553444	4199791	4.05	5.5
	553444	4199792	4.05	5.5
	553444	4199792	4.05	5.5
	553444	4199793	4.05	5.5
	553445	4199793	4.05	5.5
	553445	4199793	4.05	5.5
	553446	4199793	4.05	5.5
	553446	4199794	4.05	5.5
	553446	4199794	4.05	5.5
	553447	4199794	4.05	5.5
	553447	4199793	4.05	5.5
	553448	4199793	4.05	5.5
	553448	4199793	4.05	5.5
	553448	4199793	4.05	5.5
	553449	4199792	4.05	5.5
	553449	4199792	4.05	5.5
	553449	4199791	4.05	5.5
	553449	4199791	4.05	5.5
	553449	4199790	4.05	5.5
	553448	4199790	4.05	5.5
	553448	4199790	4.05	5.5
	553448	4199789	4.05	5.5
	553447	4199789	4.05	5.5
	552179	4200281	75.02	17.1
	552175	4200281	75.02	17.1
	552172	4200281	75.02	17.1
	552169	4200282	75.02	17.1
	552166	4200284	75.02	17.1
	552163	4200286	75.02	17.1
	552161	4200288	75.02	17.1
	552159	4200291	75.02	17.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3157	552158	4200295	75.02	17.1
	552158	4200298	75.02	17.1
	552158	4200301	75.02	17.1
	552159	4200304	75.02	17.1
	552161	4200307	75.02	17.1
	552163	4200310	75.02	17.1
	552166	4200312	75.02	17.1
	552169	4200314	75.02	17.1
	552172	4200315	75.02	17.1
	552175	4200315	75.02	17.1
	552179	4200315	75.02	17.1
	552182	4200314	75.02	17.1
	552185	4200312	75.02	17.1
	552187	4200310	75.02	17.1
	552189	4200307	75.02	17.1
	552191	4200304	75.02	17.1
	552192	4200301	75.02	17.1
	552192	4200298	75.02	17.1
	552192	4200295	75.02	17.1
	552191	4200291	75.02	17.1
	552189	4200288	75.02	17.1
	552187	4200286	75.02	17.1
	552185	4200284	75.02	17.1
	552182	4200282	75.02	17.1
T-3158	552254	4200313	65.24	19.5
	552251	4200312	65.24	19.5
	552247	4200313	65.24	19.5
	552244	4200314	65.24	19.5
	552240	4200316	65.24	19.5
	552238	4200318	65.24	19.5
	552235	4200321	65.24	19.5
	552234	4200324	65.24	19.5
	552233	4200327	65.24	19.5
	552232	4200331	65.24	19.5
	552233	4200334	65.24	19.5
	552234	4200338	65.24	19.5
	552235	4200341	65.24	19.5
	552238	4200344	65.24	19.5
	552240	4200346	65.24	19.5
	552244	4200348	65.24	19.5
	552247	4200349	65.24	19.5
	552251	4200349	65.24	19.5
	552254	4200349	65.24	19.5
	552258	4200348	65.24	19.5
	552261	4200346	65.24	19.5
	552264	4200344	65.24	19.5
	552266	4200341	65.24	19.5
	552268	4200338	65.24	19.5
	552269	4200334	65.24	19.5
	552269	4200331	65.24	19.5
	552269	4200327	65.24	19.5
	552268	4200324	65.24	19.5
	552266	4200321	65.24	19.5
	552264	4200318	65.24	19.5
	552261	4200316	65.24	19.5
	552258	4200314	65.24	19.5
	552883	4199882	70.67	19.5
	552879	4199882	70.67	19.5
	552876	4199882	70.67	19.5
	552872	4199883	70.67	19.5
	552869	4199885	70.67	19.5
	552866	4199888	70.67	19.5
	552863	4199890	70.67	19.5
	552862	4199894	70.67	19.5
	552861	4199897	70.67	19.5
	552860	4199901	70.67	19.5
	552861	4199905	70.67	19.5
	552862	4199908	70.67	19.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3159	552863	4199912	70.67	19.5
	552866	4199914	70.67	19.5
	552869	4199917	70.67	19.5
	552872	4199919	70.67	19.5
	552876	4199920	70.67	19.5
	552879	4199920	70.67	19.5
	552883	4199920	70.67	19.5
	552886	4199919	70.67	19.5
	552890	4199917	70.67	19.5
	552893	4199914	70.67	19.5
	552895	4199912	70.67	19.5
	552897	4199908	70.67	19.5
	552898	4199905	70.67	19.5
	552898	4199901	70.67	19.5
	552898	4199897	70.67	19.5
	552897	4199894	70.67	19.5
	552895	4199890	70.67	19.5
	552893	4199888	70.67	19.5
	552890	4199885	70.67	19.5
	552886	4199883	70.67	19.5
T-3160	552401	4200188	26.77	20.7
	552398	4200188	26.77	20.7
	552395	4200188	26.77	20.7
	552391	4200189	26.77	20.7
	552388	4200191	26.77	20.7
	552386	4200193	26.77	20.7
	552383	4200196	26.77	20.7
	552382	4200199	26.77	20.7
	552381	4200202	26.77	20.7
	552380	4200206	26.77	20.7
	552381	4200209	26.77	20.7
	552382	4200212	26.77	20.7
	552383	4200215	26.77	20.7
	552386	4200218	26.77	20.7
	552388	4200220	26.77	20.7
	552391	4200222	26.77	20.7
	552395	4200223	26.77	20.7
	552398	4200223	26.77	20.7
	552401	4200223	26.77	20.7
	552405	4200222	26.77	20.7
	552408	4200220	26.77	20.7
	552410	4200218	26.77	20.7
	552413	4200215	26.77	20.7
	552414	4200212	26.77	20.7
	552415	4200209	26.77	20.7
	552416	4200206	26.77	20.7
	552415	4200202	26.77	20.7
	552414	4200199	26.77	20.7
	552413	4200196	26.77	20.7
	552410	4200193	26.77	20.7
	552408	4200191	26.77	20.7
	552405	4200189	26.77	20.7
T-3161	552308	4200170	32.28	16.5
	552305	4200170	32.28	16.5
	552301	4200170	32.28	16.5
	552298	4200171	32.28	16.5
	552295	4200173	32.28	16.5
	552293	4200175	32.28	16.5
	552291	4200177	32.28	16.5
	552289	4200180	32.28	16.5
	552288	4200184	32.28	16.5
	552288	4200187	32.28	16.5
	552288	4200190	32.28	16.5
	552289	4200193	32.28	16.5
	552291	4200196	32.28	16.5
	552293	4200199	32.28	16.5
	552295	4200201	32.28	16.5
	552298	4200203	32.28	16.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3161	552301	4200204	32.28	16.5
	552305	4200204	32.28	16.5
	552308	4200204	32.28	16.5
	552311	4200203	32.28	16.5
	552314	4200201	32.28	16.5
	552317	4200199	32.28	16.5
	552319	4200196	32.28	16.5
	552320	4200193	32.28	16.5
	552321	4200190	32.28	16.5
	552322	4200187	32.28	16.5
	552321	4200184	32.28	16.5
	552320	4200180	32.28	16.5
	552319	4200177	32.28	16.5
	552317	4200175	32.28	16.5
	552314	4200173	32.28	16.5
T-3162	552311	4200171	32.28	16.5
	552348	4200146	32.26	16.5
	552345	4200146	32.26	16.5
	552342	4200146	32.26	16.5
	552339	4200147	32.26	16.5
	552336	4200148	32.26	16.5
	552333	4200151	32.26	16.5
	552331	4200153	32.26	16.5
	552330	4200156	32.26	16.5
	552329	4200159	32.26	16.5
	552328	4200162	32.26	16.5
	552329	4200165	32.26	16.5
	552330	4200168	32.26	16.5
	552331	4200171	32.26	16.5
	552333	4200174	32.26	16.5
	552336	4200176	32.26	16.5
	552339	4200177	32.26	16.5
	552342	4200178	32.26	16.5
	552345	4200178	32.26	16.5
	552348	4200178	32.26	16.5
	552351	4200177	32.26	16.5
	552354	4200176	32.26	16.5
	552356	4200174	32.26	16.5
	552358	4200171	32.26	16.5
	552360	4200168	32.26	16.5
	552361	4200165	32.26	16.5
	552361	4200162	32.26	16.5
	552361	4200159	32.26	16.5
	552360	4200156	32.26	16.5
	552358	4200153	32.26	16.5
	552356	4200151	32.26	16.5
	552354	4200148	32.26	16.5
	552351	4200147	32.26	16.5
T-3163	552448	4198934	33.83	17.1
	552445	4198934	33.83	17.1
	552442	4198934	33.83	17.1
	552439	4198935	33.83	17.1
	552437	4198936	33.83	17.1
	552435	4198938	33.83	17.1
	552433	4198940	33.83	17.1
	552432	4198942	33.83	17.1
	552431	4198945	33.83	17.1
	552431	4198948	33.83	17.1
	552431	4198951	33.83	17.1
	552432	4198953	33.83	17.1
	552433	4198956	33.83	17.1
	552435	4198958	33.83	17.1
	552437	4198960	33.83	17.1
	552439	4198961	33.83	17.1
	552442	4198962	33.83	17.1
	552445	4198962	33.83	17.1
	552448	4198962	33.83	17.1
	552450	4198961	33.83	17.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552453	4198960	33.83	17.1
	552455	4198958	33.83	17.1
	552457	4198956	33.83	17.1
	552458	4198953	33.83	17.1
	552459	4198951	33.83	17.1
	552459	4198948	33.83	17.1
	552459	4198945	33.83	17.1
	552458	4198942	33.83	17.1
	552457	4198940	33.83	17.1
	552455	4198938	33.83	17.1
	552453	4198936	33.83	17.1
T-3164	552450	4198935	33.83	17.1
	552478	4198911	33.96	17.1
	552476	4198910	33.96	17.1
	552473	4198911	33.96	17.1
	552470	4198911	33.96	17.1
	552468	4198913	33.96	17.1
	552466	4198914	33.96	17.1
	552464	4198917	33.96	17.1
	552462	4198919	33.96	17.1
	552462	4198922	33.96	17.1
	552461	4198925	33.96	17.1
	552462	4198927	33.96	17.1
	552462	4198930	33.96	17.1
	552464	4198933	33.96	17.1
	552466	4198935	33.96	17.1
	552468	4198936	33.96	17.1
	552470	4198938	33.96	17.1
	552473	4198939	33.96	17.1
	552476	4198939	33.96	17.1
	552478	4198939	33.96	17.1
	552481	4198938	33.96	17.1
	552484	4198936	33.96	17.1
	552486	4198935	33.96	17.1
	552488	4198933	33.96	17.1
	552489	4198930	33.96	17.1
	552490	4198927	33.96	17.1
	552490	4198925	33.96	17.1
	552490	4198922	33.96	17.1
	552489	4198919	33.96	17.1
	552488	4198917	33.96	17.1
	552486	4198914	33.96	17.1
	552484	4198913	33.96	17.1
	552481	4198911	33.96	17.1
T-3165	552425	4198843	33.93	17.1
	552422	4198843	33.93	17.1
	552418	4198843	33.93	17.1
	552414	4198844	33.93	17.1
	552411	4198846	33.93	17.1
	552408	4198848	33.93	17.1
	552406	4198851	33.93	17.1
	552404	4198855	33.93	17.1
	552403	4198858	33.93	17.1
	552402	4198862	33.93	17.1
	552403	4198866	33.93	17.1
	552404	4198869	33.93	17.1
	552406	4198873	33.93	17.1
	552408	4198875	33.93	17.1
	552411	4198878	33.93	17.1
	552414	4198880	33.93	17.1
	552418	4198881	33.93	17.1
	552422	4198881	33.93	17.1
	552425	4198881	33.93	17.1
	552429	4198880	33.93	17.1
	552432	4198878	33.93	17.1
	552435	4198875	33.93	17.1
	552438	4198873	33.93	17.1
	552439	4198869	33.93	17.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552440	4198866	33.93	17.1
	552441	4198862	33.93	17.1
	552440	4198858	33.93	17.1
	552439	4198855	33.93	17.1
	552438	4198851	33.93	17.1
	552435	4198848	33.93	17.1
	552432	4198846	33.93	17.1
T-3166	552429	4198844	33.93	17.1
	552472	4198816	33.71	17.1
	552468	4198816	33.71	17.1
	552464	4198816	33.71	17.1
	552461	4198818	33.71	17.1
	552457	4198819	33.71	17.1
	552454	4198822	33.71	17.1
	552452	4198825	33.71	17.1
	552450	4198828	33.71	17.1
	552449	4198832	33.71	17.1
	552448	4198836	33.71	17.1
	552449	4198840	33.71	17.1
	552450	4198844	33.71	17.1
	552452	4198847	33.71	17.1
	552454	4198850	33.71	17.1
	552457	4198853	33.71	17.1
	552461	4198855	33.71	17.1
	552464	4198856	33.71	17.1
	552468	4198856	33.71	17.1
	552472	4198856	33.71	17.1
	552476	4198855	33.71	17.1
	552479	4198853	33.71	17.1
	552482	4198850	33.71	17.1
	552485	4198847	33.71	17.1
	552487	4198844	33.71	17.1
	552488	4198840	33.71	17.1
	552488	4198836	33.71	17.1
	552488	4198832	33.71	17.1
	552487	4198828	33.71	17.1
	552485	4198825	33.71	17.1
	552482	4198822	33.71	17.1
	552479	4198819	33.71	17.1
	552476	4198818	33.71	17.1
T-3167	552439	4198889	33.98	17.1
	552436	4198889	33.98	17.1
	552433	4198889	33.98	17.1
	552430	4198890	33.98	17.1
	552428	4198892	33.98	17.1
	552425	4198894	33.98	17.1
	552423	4198896	33.98	17.1
	552422	4198899	33.98	17.1
	552421	4198902	33.98	17.1
	552421	4198905	33.98	17.1
	552421	4198908	33.98	17.1
	552422	4198911	33.98	17.1
	552423	4198914	33.98	17.1
	552425	4198916	33.98	17.1
	552428	4198918	33.98	17.1
	552430	4198919	33.98	17.1
	552433	4198920	33.98	17.1
	552436	4198921	33.98	17.1
	552439	4198920	33.98	17.1
	552442	4198919	33.98	17.1
	552445	4198918	33.98	17.1
	552447	4198916	33.98	17.1
	552449	4198914	33.98	17.1
	552451	4198911	33.98	17.1
	552452	4198908	33.98	17.1
	552452	4198905	33.98	17.1
	552452	4198902	33.98	17.1
	552451	4198899	33.98	17.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552449	4198896	33.98	17.1
	552447	4198894	33.98	17.1
	552445	4198892	33.98	17.1
	552442	4198890	33.98	17.1
T-3168	552481	4198868	33.76	17.1
	552478	4198867	33.76	17.1
	552475	4198868	33.76	17.1
	552472	4198869	33.76	17.1
	552469	4198870	33.76	17.1
	552466	4198872	33.76	17.1
	552464	4198875	33.76	17.1
	552463	4198878	33.76	17.1
	552462	4198881	33.76	17.1
	552461	4198884	33.76	17.1
	552462	4198887	33.76	17.1
	552463	4198890	33.76	17.1
	552464	4198893	33.76	17.1
	552466	4198896	33.76	17.1
	552469	4198898	33.76	17.1
	552472	4198899	33.76	17.1
	552475	4198900	33.76	17.1
	552478	4198901	33.76	17.1
	552481	4198900	33.76	17.1
	552485	4198899	33.76	17.1
	552487	4198898	33.76	17.1
	552490	4198896	33.76	17.1
	552492	4198893	33.76	17.1
	552494	4198890	33.76	17.1
	552495	4198887	33.76	17.1
	552495	4198884	33.76	17.1
	552495	4198881	33.76	17.1
	552494	4198878	33.76	17.1
	552492	4198875	33.76	17.1
	552490	4198872	33.76	17.1
	552487	4198870	33.76	17.1
	552485	4198869	33.76	17.1
T-3169	552384	4198931	34.69	16.5
	552380	4198931	34.69	16.5
	552376	4198931	34.69	16.5
	552371	4198933	34.69	16.5
	552368	4198935	34.69	16.5
	552364	4198937	34.69	16.5
	552362	4198941	34.69	16.5
	552360	4198944	34.69	16.5
	552358	4198949	34.69	16.5
	552358	4198953	34.69	16.5
	552358	4198957	34.69	16.5
	552360	4198961	34.69	16.5
	552362	4198965	34.69	16.5
	552364	4198968	34.69	16.5
	552368	4198971	34.69	16.5
	552371	4198973	34.69	16.5
	552376	4198974	34.69	16.5
	552380	4198975	34.69	16.5
	552384	4198974	34.69	16.5
	552388	4198973	34.69	16.5
	552392	4198971	34.69	16.5
	552395	4198968	34.69	16.5
	552398	4198965	34.69	16.5
	552400	4198961	34.69	16.5
	552401	4198957	34.69	16.5
	552402	4198953	34.69	16.5
	552401	4198949	34.69	16.5
	552400	4198944	34.69	16.5
	552398	4198941	34.69	16.5
	552395	4198937	34.69	16.5
	552392	4198935	34.69	16.5
	552388	4198933	34.69	16.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3170	552384	4198879	34.12	17.1
	552381	4198878	34.12	17.1
	552378	4198879	34.12	17.1
	552375	4198880	34.12	17.1
	552372	4198881	34.12	17.1
	552369	4198883	34.12	17.1
	552367	4198886	34.12	17.1
	552366	4198889	34.12	17.1
	552365	4198892	34.12	17.1
	552364	4198895	34.12	17.1
	552365	4198898	34.12	17.1
	552366	4198901	34.12	17.1
	552367	4198904	34.12	17.1
	552369	4198907	34.12	17.1
	552372	4198909	34.12	17.1
	552375	4198911	34.12	17.1
	552378	4198911	34.12	17.1
	552381	4198912	34.12	17.1
	552384	4198911	34.12	17.1
	552387	4198911	34.12	17.1
	552390	4198909	34.12	17.1
	552393	4198907	34.12	17.1
	552395	4198904	34.12	17.1
	552396	4198901	34.12	17.1
	552397	4198898	34.12	17.1
	552398	4198895	34.12	17.1
	552397	4198892	34.12	17.1
	552396	4198889	34.12	17.1
	552395	4198886	34.12	17.1
	552393	4198883	34.12	17.1
	552390	4198881	34.12	17.1
	552387	4198880	34.12	17.1
T-3171	552329	4198848	34.14	17.1
	552326	4198848	34.14	17.1
	552322	4198848	34.14	17.1
	552319	4198849	34.14	17.1
	552316	4198851	34.14	17.1
	552313	4198853	34.14	17.1
	552311	4198856	34.14	17.1
	552310	4198859	34.14	17.1
	552309	4198862	34.14	17.1
	552308	4198866	34.14	17.1
	552309	4198869	34.14	17.1
	552310	4198872	34.14	17.1
	552311	4198875	34.14	17.1
	552313	4198878	34.14	17.1
	552316	4198880	34.14	17.1
	552319	4198882	34.14	17.1
	552322	4198883	34.14	17.1
	552326	4198883	34.14	17.1
	552329	4198883	34.14	17.1
	552332	4198882	34.14	17.1
	552335	4198880	34.14	17.1
	552338	4198878	34.14	17.1
	552340	4198875	34.14	17.1
	552342	4198872	34.14	17.1
	552343	4198869	34.14	17.1
	552343	4198866	34.14	17.1
	552343	4198862	34.14	17.1
	552342	4198859	34.14	17.1
	552340	4198856	34.14	17.1
	552338	4198853	34.14	17.1
	552335	4198851	34.14	17.1
	552332	4198849	34.14	17.1
	552283	4198851	33.9	14.6
	552280	4198851	33.9	14.6
	552277	4198851	33.9	14.6
	552275	4198852	33.9	14.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3172	552272	4198854	33.9	14.6
	552270	4198855	33.9	14.6
	552268	4198858	33.9	14.6
	552267	4198860	33.9	14.6
	552266	4198863	33.9	14.6
	552266	4198866	33.9	14.6
	552266	4198868	33.9	14.6
	552267	4198871	33.9	14.6
	552268	4198874	33.9	14.6
	552270	4198876	33.9	14.6
	552272	4198877	33.9	14.6
	552275	4198879	33.9	14.6
	552277	4198880	33.9	14.6
	552280	4198880	33.9	14.6
	552283	4198880	33.9	14.6
	552286	4198879	33.9	14.6
	552288	4198877	33.9	14.6
	552290	4198876	33.9	14.6
	552292	4198874	33.9	14.6
	552293	4198871	33.9	14.6
	552294	4198868	33.9	14.6
	552295	4198866	33.9	14.6
	552294	4198863	33.9	14.6
	552293	4198860	33.9	14.6
	552292	4198858	33.9	14.6
	552290	4198855	33.9	14.6
	552288	4198854	33.9	14.6
	552286	4198852	33.9	14.6
T-3178	553657	4199325	3.87	7.3
	553656	4199324	3.87	7.3
	553655	4199325	3.87	7.3
	553653	4199325	3.87	7.3
	553652	4199325	3.87	7.3
	553652	4199326	3.87	7.3
	553651	4199327	3.87	7.3
	553650	4199328	3.87	7.3
	553650	4199329	3.87	7.3
	553650	4199331	3.87	7.3
	553650	4199332	3.87	7.3
	553650	4199333	3.87	7.3
	553651	4199334	3.87	7.3
	553652	4199335	3.87	7.3
	553652	4199336	3.87	7.3
	553653	4199336	3.87	7.3
	553655	4199336	3.87	7.3
	553656	4199337	3.87	7.3
	553657	4199336	3.87	7.3
	553658	4199336	3.87	7.3
	553659	4199336	3.87	7.3
	553660	4199335	3.87	7.3
	553661	4199334	3.87	7.3
	553661	4199333	3.87	7.3
	553662	4199332	3.87	7.3
	553662	4199331	3.87	7.3
	553662	4199329	3.87	7.3
	553661	4199328	3.87	7.3
	553661	4199327	3.87	7.3
	553660	4199326	3.87	7.3
	553659	4199325	3.87	7.3
	553658	4199325	3.87	7.3
	553137	4199288	63.43	17.1
	553132	4199288	63.43	17.1
	553128	4199288	63.43	17.1
	553124	4199290	63.43	17.1
	553120	4199292	63.43	17.1
	553116	4199295	63.43	17.1
	553113	4199298	63.43	17.1
	553111	4199302	63.43	17.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3180	553110	4199306	63.43	17.1
	553109	4199311	63.43	17.1
	553110	4199315	63.43	17.1
	553111	4199319	63.43	17.1
	553113	4199323	63.43	17.1
	553116	4199327	63.43	17.1
	553120	4199330	63.43	17.1
	553124	4199332	63.43	17.1
	553128	4199333	63.43	17.1
	553132	4199334	63.43	17.1
	553137	4199333	63.43	17.1
	553141	4199332	63.43	17.1
	553145	4199330	63.43	17.1
	553149	4199327	63.43	17.1
	553151	4199323	63.43	17.1
	553153	4199319	63.43	17.1
	553155	4199315	63.43	17.1
	553155	4199311	63.43	17.1
	553155	4199306	63.43	17.1
	553153	4199302	63.43	17.1
	553151	4199298	63.43	17.1
	553149	4199295	63.43	17.1
	553145	4199292	63.43	17.1
	553141	4199290	63.43	17.1
T-3182	552881	4199712	78.77	19.5
	552877	4199712	78.77	19.5
	552872	4199712	78.77	19.5
	552868	4199713	78.77	19.5
	552864	4199716	78.77	19.5
	552860	4199718	78.77	19.5
	552857	4199722	78.77	19.5
	552855	4199726	78.77	19.5
	552854	4199730	78.77	19.5
	552853	4199735	78.77	19.5
	552854	4199740	78.77	19.5
	552855	4199744	78.77	19.5
	552857	4199748	78.77	19.5
	552860	4199752	78.77	19.5
	552864	4199754	78.77	19.5
	552868	4199757	78.77	19.5
	552872	4199758	78.77	19.5
	552877	4199758	78.77	19.5
	552881	4199758	78.77	19.5
	552886	4199757	78.77	19.5
	552890	4199754	78.77	19.5
	552893	4199752	78.77	19.5
	552896	4199748	78.77	19.5
	552898	4199744	78.77	19.5
	552900	4199740	78.77	19.5
	552900	4199735	78.77	19.5
	552900	4199730	78.77	19.5
	552898	4199726	78.77	19.5
	552896	4199722	78.77	19.5
	552893	4199718	78.77	19.5
	552890	4199716	78.77	19.5
	552886	4199713	78.77	19.5
	553155	4199080	39.89	19.4
	553151	4199080	39.89	19.4
	553148	4199080	39.89	19.4
	553144	4199081	39.89	19.4
	553141	4199083	39.89	19.4
	553139	4199085	39.89	19.4
	553136	4199088	39.89	19.4
	553135	4199091	39.89	19.4
	553134	4199094	39.89	19.4
	553133	4199098	39.89	19.4
	553134	4199101	39.89	19.4
	553135	4199105	39.89	19.4

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3185	553136	4199108	39.89	19.4
	553139	4199111	39.89	19.4
	553141	4199113	39.89	19.4
	553144	4199115	39.89	19.4
	553148	4199116	39.89	19.4
	553151	4199116	39.89	19.4
	553155	4199116	39.89	19.4
	553158	4199115	39.89	19.4
	553162	4199113	39.89	19.4
	553164	4199111	39.89	19.4
	553167	4199108	39.89	19.4
	553168	4199105	39.89	19.4
	553169	4199101	39.89	19.4
	553170	4199098	39.89	19.4
	553169	4199094	39.89	19.4
	553168	4199091	39.89	19.4
	553167	4199088	39.89	19.4
	553164	4199085	39.89	19.4
	553162	4199083	39.89	19.4
	553158	4199081	39.89	19.4
T-3186	552723	4199146	45.39	5.9
	552719	4199145	45.39	5.9
	552715	4199146	45.39	5.9
	552711	4199147	45.39	5.9
	552708	4199149	45.39	5.9
	552705	4199152	45.39	5.9
	552702	4199155	45.39	5.9
	552700	4199158	45.39	5.9
	552699	4199162	45.39	5.9
	552699	4199166	45.39	5.9
	552699	4199170	45.39	5.9
	552700	4199174	45.39	5.9
	552702	4199178	45.39	5.9
	552705	4199181	45.39	5.9
	552708	4199183	45.39	5.9
	552711	4199185	45.39	5.9
	552715	4199186	45.39	5.9
	552719	4199187	45.39	5.9
	552723	4199186	45.39	5.9
	552727	4199185	45.39	5.9
	552731	4199183	45.39	5.9
	552734	4199181	45.39	5.9
	552736	4199178	45.39	5.9
	552738	4199174	45.39	5.9
	552739	4199170	45.39	5.9
	552740	4199166	45.39	5.9
	552739	4199162	45.39	5.9
	552738	4199158	45.39	5.9
	552736	4199155	45.39	5.9
	552734	4199152	45.39	5.9
	552731	4199149	45.39	5.9
	552727	4199147	45.39	5.9
T-3189	552489	4199721	114.36	28.2
	552484	4199720	114.36	28.2
	552480	4199721	114.36	28.2
	552476	4199722	114.36	28.2
	552472	4199724	114.36	28.2
	552468	4199727	114.36	28.2
	552465	4199730	114.36	28.2
	552463	4199734	114.36	28.2
	552462	4199739	114.36	28.2
	552461	4199743	114.36	28.2
	552462	4199748	114.36	28.2
	552463	4199752	114.36	28.2
	552465	4199756	114.36	28.2
	552468	4199759	114.36	28.2
	552472	4199762	114.36	28.2
	552476	4199764	114.36	28.2

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3189	552480	4199766	114.36	28.2
	552484	4199766	114.36	28.2
	552489	4199766	114.36	28.2
	552493	4199764	114.36	28.2
	552497	4199762	114.36	28.2
	552500	4199759	114.36	28.2
	552503	4199756	114.36	28.2
	552505	4199752	114.36	28.2
	552507	4199748	114.36	28.2
	552507	4199743	114.36	28.2
	552507	4199739	114.36	28.2
	552505	4199734	114.36	28.2
	552503	4199730	114.36	28.2
	552500	4199727	114.36	28.2
	552497	4199724	114.36	28.2
T-3190	552493	4199722	114.36	28.2
	553152	4199203	48.58	21.7
	553148	4199203	48.58	21.7
	553145	4199203	48.58	21.7
	553141	4199204	48.58	21.7
	553138	4199206	48.58	21.7
	553135	4199208	48.58	21.7
	553133	4199211	48.58	21.7
	553131	4199214	48.58	21.7
	553130	4199217	48.58	21.7
	553130	4199221	48.58	21.7
	553130	4199225	48.58	21.7
	553131	4199228	48.58	21.7
	553133	4199231	48.58	21.7
	553135	4199234	48.58	21.7
	553138	4199236	48.58	21.7
	553141	4199238	48.58	21.7
	553145	4199239	48.58	21.7
	553148	4199239	48.58	21.7
	553152	4199239	48.58	21.7
	553155	4199238	48.58	21.7
	553158	4199236	48.58	21.7
	553161	4199234	48.58	21.7
	553164	4199231	48.58	21.7
	553165	4199228	48.58	21.7
	553166	4199225	48.58	21.7
	553167	4199221	48.58	21.7
	553166	4199217	48.58	21.7
	553165	4199214	48.58	21.7
	553164	4199211	48.58	21.7
	553161	4199208	48.58	21.7
	553158	4199206	48.58	21.7
	553155	4199204	48.58	21.7
T-3191	553080	4199055	26.9	21.8
	553077	4199055	26.9	21.8
	553073	4199055	26.9	21.8
	553070	4199056	26.9	21.8
	553066	4199058	26.9	21.8
	553064	4199060	26.9	21.8
	553061	4199063	26.9	21.8
	553060	4199066	26.9	21.8
	553059	4199069	26.9	21.8
	553058	4199073	26.9	21.8
	553059	4199076	26.9	21.8
	553060	4199080	26.9	21.8
	553061	4199083	26.9	21.8
	553064	4199086	26.9	21.8
	553066	4199088	26.9	21.8
	553070	4199090	26.9	21.8
	553073	4199091	26.9	21.8
	553077	4199091	26.9	21.8
	553080	4199091	26.9	21.8
	553084	4199090	26.9	21.8

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	553087	4199088	26.9	21.8
	553089	4199086	26.9	21.8
	553092	4199083	26.9	21.8
	553093	4199080	26.9	21.8
	553094	4199076	26.9	21.8
	553095	4199073	26.9	21.8
	553094	4199069	26.9	21.8
	553093	4199066	26.9	21.8
	553092	4199063	26.9	21.8
	553089	4199060	26.9	21.8
	553087	4199058	26.9	21.8
T-3192	553084	4199056	26.9	21.8
	553665	4199253	3.34	13.7
	553663	4199253	3.34	13.7
	553662	4199253	3.34	13.7
	553660	4199254	3.34	13.7
	553658	4199254	3.34	13.7
	553657	4199256	3.34	13.7
	553656	4199257	3.34	13.7
	553655	4199259	3.34	13.7
	553654	4199260	3.34	13.7
	553654	4199262	3.34	13.7
	553654	4199264	3.34	13.7
	553655	4199266	3.34	13.7
	553656	4199267	3.34	13.7
	553657	4199268	3.34	13.7
	553658	4199270	3.34	13.7
	553660	4199270	3.34	13.7
	553662	4199271	3.34	13.7
	553663	4199271	3.34	13.7
	553665	4199271	3.34	13.7
	553667	4199270	3.34	13.7
	553668	4199270	3.34	13.7
	553670	4199268	3.34	13.7
	553671	4199267	3.34	13.7
	553672	4199266	3.34	13.7
	553672	4199264	3.34	13.7
	553672	4199262	3.34	13.7
	553672	4199260	3.34	13.7
	553672	4199259	3.34	13.7
	553671	4199257	3.34	13.7
	553670	4199256	3.34	13.7
	553668	4199254	3.34	13.7
	553667	4199254	3.34	13.7
T-3193	553092	4199243	60.14	21.7
	553088	4199243	60.14	21.7
	553084	4199243	60.14	21.7
	553080	4199245	60.14	21.7
	553077	4199246	60.14	21.7
	553074	4199249	60.14	21.7
	553072	4199252	60.14	21.7
	553070	4199255	60.14	21.7
	553069	4199259	60.14	21.7
	553068	4199263	60.14	21.7
	553069	4199267	60.14	21.7
	553070	4199270	60.14	21.7
	553072	4199274	60.14	21.7
	553074	4199277	60.14	21.7
	553077	4199279	60.14	21.7
	553080	4199281	60.14	21.7
	553084	4199282	60.14	21.7
	553088	4199283	60.14	21.7
	553092	4199282	60.14	21.7
	553096	4199281	60.14	21.7
	553099	4199279	60.14	21.7
	553102	4199277	60.14	21.7
	553105	4199274	60.14	21.7
	553106	4199270	60.14	21.7

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	553107	4199267	60.14	21.7
	553108	4199263	60.14	21.7
	553107	4199259	60.14	21.7
	553106	4199255	60.14	21.7
	553105	4199252	60.14	21.7
	553102	4199249	60.14	21.7
	553099	4199246	60.14	21.7
T-3194	553096	4199245	60.14	21.7
	552496	4199978	30.58	21.9
	552492	4199977	30.58	21.9
	552488	4199978	30.58	21.9
	552484	4199979	30.58	21.9
	552480	4199981	30.58	21.9
	552476	4199984	30.58	21.9
	552474	4199987	30.58	21.9
	552472	4199991	30.58	21.9
	552470	4199995	30.58	21.9
	552470	4200000	30.58	21.9
	552470	4200004	30.58	21.9
	552472	4200008	30.58	21.9
	552474	4200012	30.58	21.9
	552476	4200015	30.58	21.9
	552480	4200018	30.58	21.9
	552484	4200020	30.58	21.9
	552488	4200021	30.58	21.9
	552492	4200022	30.58	21.9
	552496	4200021	30.58	21.9
	552501	4200020	30.58	21.9
	552504	4200018	30.58	21.9
	552508	4200015	30.58	21.9
	552511	4200012	30.58	21.9
	552513	4200008	30.58	21.9
	552514	4200004	30.58	21.9
	552514	4200000	30.58	21.9
	552514	4199995	30.58	21.9
	552513	4199991	30.58	21.9
	552511	4199987	30.58	21.9
	552508	4199984	30.58	21.9
	552504	4199981	30.58	21.9
	552501	4199979	30.58	21.9
T-3195	552851	4198699	58.43	5.9
	552848	4198699	58.43	5.9
	552844	4198699	58.43	5.9
	552841	4198700	58.43	5.9
	552838	4198702	58.43	5.9
	552835	4198704	58.43	5.9
	552833	4198706	58.43	5.9
	552831	4198709	58.43	5.9
	552830	4198713	58.43	5.9
	552830	4198716	58.43	5.9
	552830	4198720	58.43	5.9
	552831	4198723	58.43	5.9
	552833	4198726	58.43	5.9
	552835	4198729	58.43	5.9
	552838	4198731	58.43	5.9
	552841	4198732	58.43	5.9
	552844	4198733	58.43	5.9
	552848	4198734	58.43	5.9
	552851	4198733	58.43	5.9
	552854	4198732	58.43	5.9
	552857	4198731	58.43	5.9
	552860	4198729	58.43	5.9
	552862	4198726	58.43	5.9
	552864	4198723	58.43	5.9
	552865	4198720	58.43	5.9
	552865	4198716	58.43	5.9
	552865	4198713	58.43	5.9
	552864	4198709	58.43	5.9

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552862	4198706	58.43	5.9
	552860	4198704	58.43	5.9
	552857	4198702	58.43	5.9
	552854	4198700	58.43	5.9
T-3196	552526	4199927	30.02	23.2
	552521	4199926	30.02	23.2
	552517	4199927	30.02	23.2
	552513	4199928	30.02	23.2
	552509	4199930	30.02	23.2
	552505	4199933	30.02	23.2
	552502	4199936	30.02	23.2
	552500	4199940	30.02	23.2
	552499	4199945	30.02	23.2
	552499	4199949	30.02	23.2
	552499	4199953	30.02	23.2
	552500	4199958	30.02	23.2
	552502	4199962	30.02	23.2
	552505	4199965	30.02	23.2
	552509	4199968	30.02	23.2
	552513	4199970	30.02	23.2
	552517	4199971	30.02	23.2
	552521	4199972	30.02	23.2
	552526	4199971	30.02	23.2
	552530	4199970	30.02	23.2
	552534	4199968	30.02	23.2
	552538	4199965	30.02	23.2
	552540	4199962	30.02	23.2
	552543	4199958	30.02	23.2
	552544	4199953	30.02	23.2
	552544	4199949	30.02	23.2
	552544	4199945	30.02	23.2
	552543	4199940	30.02	23.2
	552540	4199936	30.02	23.2
	552538	4199933	30.02	23.2
	552534	4199930	30.02	23.2
	552530	4199928	30.02	23.2
T-3197	552581	4199911	31.07	22.9
	552577	4199911	31.07	22.9
	552573	4199911	31.07	22.9
	552568	4199912	31.07	22.9
	552565	4199914	31.07	22.9
	552561	4199917	31.07	22.9
	552558	4199921	31.07	22.9
	552556	4199924	31.07	22.9
	552555	4199928	31.07	22.9
	552555	4199933	31.07	22.9
	552555	4199937	31.07	22.9
	552556	4199941	31.07	22.9
	552558	4199945	31.07	22.9
	552561	4199948	31.07	22.9
	552565	4199951	31.07	22.9
	552568	4199953	31.07	22.9
	552573	4199954	31.07	22.9
	552577	4199955	31.07	22.9
	552581	4199954	31.07	22.9
	552585	4199953	31.07	22.9
	552589	4199951	31.07	22.9
	552592	4199948	31.07	22.9
	552595	4199945	31.07	22.9
	552597	4199941	31.07	22.9
	552599	4199937	31.07	22.9
	552599	4199933	31.07	22.9
	552599	4199928	31.07	22.9
	552597	4199924	31.07	22.9
	552595	4199921	31.07	22.9
	552592	4199917	31.07	22.9
	552589	4199914	31.07	22.9
	552585	4199912	31.07	22.9

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3198	553086	4198971	16.98	17.1
	553083	4198971	16.98	17.1
	553081	4198971	16.98	17.1
	553078	4198972	16.98	17.1
	553076	4198973	16.98	17.1
	553074	4198975	16.98	17.1
	553072	4198977	16.98	17.1
	553071	4198979	16.98	17.1
	553070	4198982	16.98	17.1
	553070	4198985	16.98	17.1
	553070	4198987	16.98	17.1
	553071	4198990	16.98	17.1
	553072	4198992	16.98	17.1
	553074	4198994	16.98	17.1
	553076	4198996	16.98	17.1
	553078	4198997	16.98	17.1
	553081	4198998	16.98	17.1
	553083	4198998	16.98	17.1
	553086	4198998	16.98	17.1
	553089	4198997	16.98	17.1
	553091	4198996	16.98	17.1
	553093	4198994	16.98	17.1
	553095	4198992	16.98	17.1
	553096	4198990	16.98	17.1
	553097	4198987	16.98	17.1
	553097	4198985	16.98	17.1
	553097	4198982	16.98	17.1
	553096	4198979	16.98	17.1
	553095	4198977	16.98	17.1
	553093	4198975	16.98	17.1
	553091	4198973	16.98	17.1
	553089	4198972	16.98	17.1
T-3201	552994	4199419	76.37	19.3
	552990	4199419	76.37	19.3
	552985	4199419	76.37	19.3
	552982	4199421	76.37	19.3
	552978	4199423	76.37	19.3
	552975	4199425	76.37	19.3
	552972	4199428	76.37	19.3
	552970	4199432	76.37	19.3
	552969	4199436	76.37	19.3
	552969	4199440	76.37	19.3
	552969	4199444	76.37	19.3
	552970	4199448	76.37	19.3
	552972	4199452	76.37	19.3
	552975	4199455	76.37	19.3
	552978	4199458	76.37	19.3
	552982	4199460	76.37	19.3
	552985	4199461	76.37	19.3
	552990	4199461	76.37	19.3
	552994	4199461	76.37	19.3
	552998	4199460	76.37	19.3
	553001	4199458	76.37	19.3
	553004	4199455	76.37	19.3
	553007	4199452	76.37	19.3
	553009	4199448	76.37	19.3
	553010	4199444	76.37	19.3
	553011	4199440	76.37	19.3
	553010	4199436	76.37	19.3
	553009	4199432	76.37	19.3
	553007	4199428	76.37	19.3
	553004	4199425	76.37	19.3
	553001	4199423	76.37	19.3
	552998	4199421	76.37	19.3
	552570	4200003	19.27	18.3
	552567	4200003	19.27	18.3
	552564	4200003	19.27	18.3
	552561	4200004	19.27	18.3

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3202	552558	4200005	19.27	18.3
	552555	4200007	19.27	18.3
	552553	4200010	19.27	18.3
	552551	4200013	19.27	18.3
	552551	4200016	19.27	18.3
	552550	4200019	19.27	18.3
	552551	4200023	19.27	18.3
	552551	4200026	19.27	18.3
	552553	4200029	19.27	18.3
	552555	4200031	19.27	18.3
	552558	4200033	19.27	18.3
	552561	4200035	19.27	18.3
	552564	4200036	19.27	18.3
	552567	4200036	19.27	18.3
	552570	4200036	19.27	18.3
	552573	4200035	19.27	18.3
	552576	4200033	19.27	18.3
	552579	4200031	19.27	18.3
	552581	4200029	19.27	18.3
	552582	4200026	19.27	18.3
	552583	4200023	19.27	18.3
	552584	4200019	19.27	18.3
	552583	4200016	19.27	18.3
	552582	4200013	19.27	18.3
	552581	4200010	19.27	18.3
	552579	4200007	19.27	18.3
	552576	4200005	19.27	18.3
	552573	4200004	19.27	18.3
T-3213	552766	4199068	37.37	22.1
	552760	4199067	37.37	22.1
	552754	4199068	37.37	22.1
	552748	4199070	37.37	22.1
	552743	4199073	37.37	22.1
	552738	4199076	37.37	22.1
	552734	4199081	37.37	22.1
	552732	4199086	37.37	22.1
	552730	4199092	37.37	22.1
	552729	4199098	37.37	22.1
	552730	4199104	37.37	22.1
	552732	4199110	37.37	22.1
	552734	4199115	37.37	22.1
	552738	4199119	37.37	22.1
	552743	4199123	37.37	22.1
	552748	4199126	37.37	22.1
	552754	4199128	37.37	22.1
	552760	4199128	37.37	22.1
	552766	4199128	37.37	22.1
	552771	4199126	37.37	22.1
	552777	4199123	37.37	22.1
	552781	4199119	37.37	22.1
	552785	4199115	37.37	22.1
	552788	4199110	37.37	22.1
	552790	4199104	37.37	22.1
	552790	4199098	37.37	22.1
	552790	4199092	37.37	22.1
	552788	4199086	37.37	22.1
	552785	4199081	37.37	22.1
	552781	4199076	37.37	22.1
	552777	4199073	37.37	22.1
	552771	4199070	37.37	22.1
	553197	4199258	60.63	19.4
	553194	4199258	60.63	19.4
	553190	4199258	60.63	19.4
	553187	4199259	60.63	19.4
	553184	4199261	60.63	19.4
	553181	4199263	60.63	19.4
	553179	4199266	60.63	19.4
	553177	4199269	60.63	19.4

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3214	553176	4199273	60.63	19.4
	553176	4199276	60.63	19.4
	553176	4199280	60.63	19.4
	553177	4199283	60.63	19.4
	553179	4199286	60.63	19.4
	553181	4199289	60.63	19.4
	553184	4199291	60.63	19.4
	553187	4199293	60.63	19.4
	553190	4199294	60.63	19.4
	553194	4199295	60.63	19.4
	553197	4199294	60.63	19.4
	553201	4199293	60.63	19.4
	553204	4199291	60.63	19.4
	553207	4199289	60.63	19.4
	553209	4199286	60.63	19.4
	553211	4199283	60.63	19.4
	553212	4199280	60.63	19.4
	553212	4199276	60.63	19.4
	553212	4199273	60.63	19.4
	553211	4199269	60.63	19.4
	553209	4199266	60.63	19.4
	553207	4199263	60.63	19.4
	553204	4199261	60.63	19.4
	553201	4199259	60.63	19.4
T-3215	552801	4198547	36.19	6.7
	552798	4198547	36.19	6.7
	552794	4198547	36.19	6.7
	552791	4198548	36.19	6.7
	552788	4198550	36.19	6.7
	552785	4198552	36.19	6.7
	552783	4198555	36.19	6.7
	552782	4198558	36.19	6.7
	552781	4198561	36.19	6.7
	552780	4198564	36.19	6.7
	552781	4198568	36.19	6.7
	552782	4198571	36.19	6.7
	552783	4198574	36.19	6.7
	552785	4198577	36.19	6.7
	552788	4198579	36.19	6.7
	552791	4198581	36.19	6.7
	552794	4198582	36.19	6.7
	552798	4198582	36.19	6.7
	552801	4198582	36.19	6.7
	552804	4198581	36.19	6.7
	552808	4198579	36.19	6.7
	552810	4198577	36.19	6.7
	552812	4198574	36.19	6.7
	552814	4198571	36.19	6.7
	552815	4198568	36.19	6.7
	552815	4198564	36.19	6.7
	552815	4198561	36.19	6.7
	552814	4198558	36.19	6.7
	552812	4198555	36.19	6.7
	552810	4198552	36.19	6.7
	552808	4198550	36.19	6.7
	552804	4198548	36.19	6.7
	553032	4199003	20.01	6.7
	553029	4199002	20.01	6.7
	553025	4199003	20.01	6.7
	553022	4199004	20.01	6.7
	553019	4199006	20.01	6.7
	553016	4199008	20.01	6.7
	553014	4199011	20.01	6.7
	553012	4199014	20.01	6.7
	553011	4199017	20.01	6.7
	553010	4199021	20.01	6.7
	553011	4199024	20.01	6.7
	553012	4199028	20.01	6.7

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3216	553014	4199031	20.01	6.7
	553016	4199034	20.01	6.7
	553019	4199036	20.01	6.7
	553022	4199038	20.01	6.7
	553025	4199039	20.01	6.7
	553029	4199039	20.01	6.7
	553032	4199039	20.01	6.7
	553036	4199038	20.01	6.7
	553039	4199036	20.01	6.7
	553042	4199034	20.01	6.7
	553044	4199031	20.01	6.7
	553046	4199028	20.01	6.7
	553047	4199024	20.01	6.7
	553047	4199021	20.01	6.7
	553047	4199017	20.01	6.7
	553046	4199014	20.01	6.7
	553044	4199011	20.01	6.7
	553042	4199008	20.01	6.7
	553039	4199006	20.01	6.7
	553036	4199004	20.01	6.7
T-3217	552893	4198645	58.16	5.9
	552889	4198645	58.16	5.9
	552886	4198645	58.16	5.9
	552883	4198646	58.16	5.9
	552880	4198648	58.16	5.9
	552877	4198650	58.16	5.9
	552875	4198653	58.16	5.9
	552873	4198656	58.16	5.9
	552872	4198659	58.16	5.9
	552872	4198663	58.16	5.9
	552872	4198666	58.16	5.9
	552873	4198669	58.16	5.9
	552875	4198672	58.16	5.9
	552877	4198675	58.16	5.9
	552880	4198677	58.16	5.9
	552883	4198679	58.16	5.9
	552886	4198680	58.16	5.9
	552889	4198680	58.16	5.9
	552893	4198680	58.16	5.9
	552896	4198679	58.16	5.9
	552899	4198677	58.16	5.9
	552902	4198675	58.16	5.9
	552904	4198672	58.16	5.9
	552906	4198669	58.16	5.9
	552907	4198666	58.16	5.9
	552907	4198663	58.16	5.9
	552907	4198659	58.16	5.9
	552906	4198656	58.16	5.9
	552904	4198653	58.16	5.9
	552902	4198650	58.16	5.9
	552899	4198648	58.16	5.9
	552896	4198646	58.16	5.9
T-3219	552922	4199955	60.52	17.1
	552919	4199955	60.52	17.1
	552916	4199955	60.52	17.1
	552913	4199956	60.52	17.1
	552910	4199957	60.52	17.1
	552908	4199959	60.52	17.1
	552906	4199962	60.52	17.1
	552904	4199965	60.52	17.1
	552903	4199968	60.52	17.1
	552903	4199971	60.52	17.1
	552903	4199974	60.52	17.1
	552904	4199977	60.52	17.1
	552906	4199980	60.52	17.1
	552908	4199982	60.52	17.1
	552910	4199984	60.52	17.1
	552913	4199986	60.52	17.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-3218	552916	4199987	60.52	17.1
	552919	4199987	60.52	17.1
	552922	4199987	60.52	17.1
	552925	4199986	60.52	17.1
	552928	4199984	60.52	17.1
	552931	4199982	60.52	17.1
	552933	4199980	60.52	17.1
	552934	4199977	60.52	17.1
	552935	4199974	60.52	17.1
	552935	4199971	60.52	17.1
	552935	4199968	60.52	17.1
	552934	4199965	60.52	17.1
	552933	4199962	60.52	17.1
	552931	4199959	60.52	17.1
	552928	4199957	60.52	17.1
T-3220	552925	4199956	60.52	17.1
	552387	4200376	50.62	21.9
	552383	4200376	50.62	21.9
	552379	4200376	50.62	21.9
	552375	4200378	50.62	21.9
	552371	4200380	50.62	21.9
	552368	4200382	50.62	21.9
	552365	4200385	50.62	21.9
	552363	4200389	50.62	21.9
	552362	4200393	50.62	21.9
	552362	4200397	50.62	21.9
	552362	4200401	50.62	21.9
	552363	4200405	50.62	21.9
	552365	4200409	50.62	21.9
	552368	4200412	50.62	21.9
	552371	4200415	50.62	21.9
	552375	4200417	50.62	21.9
	552379	4200418	50.62	21.9
	552383	4200419	50.62	21.9
	552387	4200418	50.62	21.9
	552391	4200417	50.62	21.9
	552395	4200415	50.62	21.9
	552398	4200412	50.62	21.9
	552401	4200409	50.62	21.9
	552403	4200405	50.62	21.9
	552404	4200401	50.62	21.9
	552404	4200397	50.62	21.9
	552404	4200393	50.62	21.9
	552403	4200389	50.62	21.9
	552401	4200385	50.62	21.9
	552398	4200382	50.62	21.9
	552395	4200380	50.62	21.9
	552391	4200378	50.62	21.9
T-3221	552122	4200255	91.77	17.1
	552119	4200254	91.77	17.1
	552116	4200255	91.77	17.1
	552113	4200255	91.77	17.1
	552111	4200257	91.77	17.1
	552108	4200259	91.77	17.1
	552107	4200261	91.77	17.1
	552105	4200264	91.77	17.1
	552104	4200267	91.77	17.1
	552104	4200269	91.77	17.1
	552104	4200272	91.77	17.1
	552105	4200275	91.77	17.1
	552107	4200278	91.77	17.1
	552108	4200280	91.77	17.1
	552111	4200282	91.77	17.1
	552113	4200284	91.77	17.1
	552116	4200284	91.77	17.1
	552119	4200285	91.77	17.1
	552122	4200284	91.77	17.1
	552125	4200284	91.77	17.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552128	4200282	91.77	17.1
	552130	4200280	91.77	17.1
	552132	4200278	91.77	17.1
	552133	4200275	91.77	17.1
	552134	4200272	91.77	17.1
	552135	4200269	91.77	17.1
	552134	4200267	91.77	17.1
	552133	4200264	91.77	17.1
	552132	4200261	91.77	17.1
	552130	4200259	91.77	17.1
	552128	4200257	91.77	17.1
T-3222	552125	4200255	91.77	17.1
	552645	4199942	29.67	23.2
	552641	4199941	29.67	23.2
	552637	4199942	29.67	23.2
	552633	4199943	29.67	23.2
	552629	4199945	29.67	23.2
	552626	4199948	29.67	23.2
	552623	4199951	29.67	23.2
	552621	4199955	29.67	23.2
	552620	4199959	29.67	23.2
	552619	4199963	29.67	23.2
	552620	4199967	29.67	23.2
	552621	4199971	29.67	23.2
	552623	4199975	29.67	23.2
	552626	4199978	29.67	23.2
	552629	4199981	29.67	23.2
	552633	4199983	29.67	23.2
	552637	4199984	29.67	23.2
	552641	4199985	29.67	23.2
	552645	4199984	29.67	23.2
	552649	4199983	29.67	23.2
	552653	4199981	29.67	23.2
	552656	4199978	29.67	23.2
	552659	4199975	29.67	23.2
	552661	4199971	29.67	23.2
	552662	4199967	29.67	23.2
	552662	4199963	29.67	23.2
	552662	4199959	29.67	23.2
	552661	4199955	29.67	23.2
	552659	4199951	29.67	23.2
	552656	4199948	29.67	23.2
	552653	4199945	29.67	23.2
	552649	4199943	29.67	23.2
T-3225	552782	4200021	15.15	19.5
	552778	4200021	15.15	19.5
	552775	4200021	15.15	19.5
	552772	4200022	15.15	19.5
	552769	4200024	15.15	19.5
	552766	4200026	15.15	19.5
	552764	4200029	15.15	19.5
	552763	4200031	15.15	19.5
	552762	4200035	15.15	19.5
	552761	4200038	15.15	19.5
	552762	4200041	15.15	19.5
	552763	4200044	15.15	19.5
	552764	4200047	15.15	19.5
	552766	4200050	15.15	19.5
	552769	4200052	15.15	19.5
	552772	4200053	15.15	19.5
	552775	4200054	15.15	19.5
	552778	4200055	15.15	19.5
	552782	4200054	15.15	19.5
	552785	4200053	15.15	19.5
	552788	4200052	15.15	19.5
	552790	4200050	15.15	19.5
	552792	4200047	15.15	19.5
	552794	4200044	15.15	19.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552795	4200041	15.15	19.5
	552795	4200038	15.15	19.5
	552795	4200035	15.15	19.5
	552794	4200031	15.15	19.5
	552792	4200029	15.15	19.5
	552790	4200026	15.15	19.5
	552788	4200024	15.15	19.5
	552785	4200022	15.15	19.5
T-3227	552842	4198598	41.9	11.6
	552838	4198598	41.9	11.6
	552835	4198598	41.9	11.6
	552832	4198599	41.9	11.6
	552829	4198600	41.9	11.6
	552826	4198603	41.9	11.6
	552824	4198605	41.9	11.6
	552823	4198608	41.9	11.6
	552822	4198611	41.9	11.6
	552821	4198615	41.9	11.6
	552822	4198618	41.9	11.6
	552823	4198621	41.9	11.6
	552824	4198624	41.9	11.6
	552826	4198627	41.9	11.6
	552829	4198629	41.9	11.6
	552832	4198630	41.9	11.6
	552835	4198631	41.9	11.6
	552838	4198632	41.9	11.6
	552842	4198631	41.9	11.6
	552845	4198630	41.9	11.6
	552848	4198629	41.9	11.6
	552851	4198627	41.9	11.6
	552853	4198624	41.9	11.6
	552854	4198621	41.9	11.6
	552855	4198618	41.9	11.6
	552856	4198615	41.9	11.6
	552855	4198611	41.9	11.6
	552854	4198608	41.9	11.6
	552853	4198605	41.9	11.6
	552851	4198603	41.9	11.6
	552848	4198600	41.9	11.6
	552845	4198599	41.9	11.6
T-397	552528	4200051	17.65	14.5
	552525	4200051	17.65	14.5
	552522	4200051	17.65	14.5
	552520	4200052	17.65	14.5
	552517	4200053	17.65	14.5
	552515	4200055	17.65	14.5
	552513	4200058	17.65	14.5
	552511	4200060	17.65	14.5
	552511	4200063	17.65	14.5
	552510	4200066	17.65	14.5
	552511	4200069	17.65	14.5
	552511	4200072	17.65	14.5
	552513	4200075	17.65	14.5
	552515	4200077	17.65	14.5
	552517	4200079	17.65	14.5
	552520	4200080	17.65	14.5
	552522	4200081	17.65	14.5
	552525	4200081	17.65	14.5
	552528	4200081	17.65	14.5
	552531	4200080	17.65	14.5
	552534	4200079	17.65	14.5
	552536	4200077	17.65	14.5
	552538	4200075	17.65	14.5
	552540	4200072	17.65	14.5
	552540	4200069	17.65	14.5
	552541	4200066	17.65	14.5
	552540	4200063	17.65	14.5
	552540	4200060	17.65	14.5

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	552538	4200058	17.65	14.5
	552536	4200055	17.65	14.5
	552534	4200053	17.65	14.5
	552531	4200052	17.65	14.5
T-399	552414	4200308	39.28	12.8
	552411	4200308	39.28	12.8
	552407	4200308	39.28	12.8
	552404	4200310	39.28	12.8
	552400	4200311	39.28	12.8
	552398	4200313	39.28	12.8
	552395	4200316	39.28	12.8
	552394	4200319	39.28	12.8
	552393	4200323	39.28	12.8
	552392	4200326	39.28	12.8
	552393	4200330	39.28	12.8
	552394	4200333	39.28	12.8
	552395	4200337	39.28	12.8
	552398	4200339	39.28	12.8
	552400	4200342	39.28	12.8
	552404	4200343	39.28	12.8
	552407	4200344	39.28	12.8
	552411	4200345	39.28	12.8
	552414	4200344	39.28	12.8
	552418	4200343	39.28	12.8
	552421	4200342	39.28	12.8
	552424	4200339	39.28	12.8
	552426	4200337	39.28	12.8
	552428	4200333	39.28	12.8
	552429	4200330	39.28	12.8
	552429	4200326	39.28	12.8
	552429	4200323	39.28	12.8
	552428	4200319	39.28	12.8
	552426	4200316	39.28	12.8
	552424	4200313	39.28	12.8
	552421	4200311	39.28	12.8
	552418	4200310	39.28	12.8
T-4	554140	4198854	3.65	12.2
	554138	4198853	3.65	12.2
	554136	4198854	3.65	12.2
	554134	4198854	3.65	12.2
	554132	4198855	3.65	12.2
	554130	4198857	3.65	12.2
	554129	4198858	3.65	12.2
	554128	4198860	3.65	12.2
	554127	4198862	3.65	12.2
	554127	4198864	3.65	12.2
	554127	4198866	3.65	12.2
	554128	4198868	3.65	12.2
	554129	4198870	3.65	12.2
	554130	4198872	3.65	12.2
	554132	4198873	3.65	12.2
	554134	4198874	3.65	12.2
	554136	4198875	3.65	12.2
	554138	4198875	3.65	12.2
	554140	4198875	3.65	12.2
	554142	4198874	3.65	12.2
	554144	4198873	3.65	12.2
	554146	4198872	3.65	12.2
	554147	4198870	3.65	12.2
	554148	4198868	3.65	12.2
	554149	4198866	3.65	12.2
	554149	4198864	3.65	12.2
	554149	4198862	3.65	12.2
	554148	4198860	3.65	12.2
	554147	4198858	3.65	12.2
	554146	4198857	3.65	12.2
	554144	4198855	3.65	12.2
	554142	4198854	3.65	12.2

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-634	553143	4199364	59.81	11
	553141	4199366	59.81	11
	553139	4199368	59.81	11
	553137	4199371	59.81	11
	553136	4199375	59.81	11
	553136	4199378	59.81	11
	553136	4199382	59.81	11
	553137	4199385	59.81	11
	553139	4199388	59.81	11
	553141	4199390	59.81	11
	553143	4199393	59.81	11
	553146	4199394	59.81	11
	553150	4199395	59.81	11
	553153	4199396	59.81	11
	553157	4199395	59.81	11
	553160	4199394	59.81	11
	553163	4199393	59.81	11
	553166	4199390	59.81	11
	553168	4199388	59.81	11
	553169	4199385	59.81	11
	553170	4199382	59.81	11
	553171	4199378	59.81	11
	553170	4199375	59.81	11
	553169	4199371	59.81	11
	553168	4199368	59.81	11
	553166	4199366	59.81	11
	553163	4199364	59.81	11
	553160	4199362	59.81	11
T-679	553001	4200112	21.91	14.6
	552997	4200112	21.91	14.6
	552994	4200112	21.91	14.6
	552990	4200113	21.91	14.6
	552987	4200115	21.91	14.6
	552984	4200117	21.91	14.6
	552982	4200120	21.91	14.6
	552980	4200123	21.91	14.6
	552979	4200127	21.91	14.6
	552979	4200130	21.91	14.6
	552979	4200134	21.91	14.6
	552980	4200137	21.91	14.6
	552982	4200140	21.91	14.6
	552984	4200143	21.91	14.6
	552987	4200145	21.91	14.6
	552990	4200147	21.91	14.6
	552994	4200148	21.91	14.6
	552997	4200148	21.91	14.6
	553001	4200148	21.91	14.6
	553004	4200147	21.91	14.6
	553007	4200145	21.91	14.6
	553010	4200143	21.91	14.6
	553013	4200140	21.91	14.6
	553014	4200137	21.91	14.6
	553015	4200134	21.91	14.6
	553016	4200130	21.91	14.6
	553015	4200127	21.91	14.6
	553014	4200123	21.91	14.6
	553013	4200120	21.91	14.6
	553010	4200117	21.91	14.6
	553007	4200115	21.91	14.6
	553004	4200113	21.91	14.6
	553079	4199602	18.26	12.8
	553077	4199602	18.26	12.8
	553075	4199602	18.26	12.8
	553073	4199603	18.26	12.8
	553071	4199604	18.26	12.8
	553070	4199605	18.26	12.8
	553069	4199607	18.26	12.8
	553068	4199609	18.26	12.8

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-907	553067	4199610	18.26	12.8
	553067	4199612	18.26	12.8
	553067	4199615	18.26	12.8
	553068	4199616	18.26	12.8
	553069	4199618	18.26	12.8
	553070	4199620	18.26	12.8
	553071	4199621	18.26	12.8
	553073	4199622	18.26	12.8
	553075	4199623	18.26	12.8
	553077	4199623	18.26	12.8
	553079	4199623	18.26	12.8
	553081	4199622	18.26	12.8
	553083	4199621	18.26	12.8
	553085	4199620	18.26	12.8
	553086	4199618	18.26	12.8
	553087	4199616	18.26	12.8
	553087	4199615	18.26	12.8
	553088	4199612	18.26	12.8
	553087	4199610	18.26	12.8
	553087	4199609	18.26	12.8
	553086	4199607	18.26	12.8
	553085	4199605	18.26	12.8
	553083	4199604	18.26	12.8
	553081	4199603	18.26	12.8
T-908	553068	4199629	18.14	12.8
	553066	4199629	18.14	12.8
	553064	4199629	18.14	12.8
	553062	4199630	18.14	12.8
	553060	4199630	18.14	12.8
	553059	4199632	18.14	12.8
	553058	4199633	18.14	12.8
	553057	4199635	18.14	12.8
	553056	4199636	18.14	12.8
	553056	4199638	18.14	12.8
	553056	4199640	18.14	12.8
	553057	4199642	18.14	12.8
	553058	4199643	18.14	12.8
	553059	4199645	18.14	12.8
	553060	4199646	18.14	12.8
	553062	4199647	18.14	12.8
	553064	4199647	18.14	12.8
	553066	4199648	18.14	12.8
	553068	4199647	18.14	12.8
	553069	4199647	18.14	12.8
	553071	4199646	18.14	12.8
	553072	4199645	18.14	12.8
	553074	4199643	18.14	12.8
	553074	4199642	18.14	12.8
	553075	4199640	18.14	12.8
	553075	4199638	18.14	12.8
	553075	4199636	18.14	12.8
	553074	4199635	18.14	12.8
	553074	4199633	18.14	12.8
	553072	4199632	18.14	12.8
	553071	4199630	18.14	12.8
	553069	4199630	18.14	12.8
	553060	4199651	18.98	14.7
	553058	4199651	18.98	14.7
	553056	4199651	18.98	14.7
	553054	4199652	18.98	14.7
	553052	4199653	18.98	14.7
	553051	4199654	18.98	14.7
	553049	4199656	18.98	14.7
	553048	4199657	18.98	14.7
	553048	4199659	18.98	14.7
	553048	4199661	18.98	14.7
	553048	4199663	18.98	14.7
	553048	4199665	18.98	14.7

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-909	553049	4199667	18.98	14.7
	553051	4199668	18.98	14.7
	553052	4199670	18.98	14.7
	553054	4199671	18.98	14.7
	553056	4199671	18.98	14.7
	553058	4199671	18.98	14.7
	553060	4199671	18.98	14.7
	553062	4199671	18.98	14.7
	553063	4199670	18.98	14.7
	553065	4199668	18.98	14.7
	553066	4199667	18.98	14.7
	553067	4199665	18.98	14.7
	553068	4199663	18.98	14.7
	553068	4199661	18.98	14.7
	553068	4199659	18.98	14.7
	553067	4199657	18.98	14.7
	553066	4199656	18.98	14.7
	553065	4199654	18.98	14.7
	553063	4199653	18.98	14.7
	553062	4199652	18.98	14.7
T-910	553176	4199558	8.15	14.3
	553173	4199558	8.15	14.3
	553170	4199558	8.15	14.3
	553167	4199559	8.15	14.3
	553165	4199560	8.15	14.3
	553163	4199562	8.15	14.3
	553161	4199564	8.15	14.3
	553160	4199567	8.15	14.3
	553159	4199570	8.15	14.3
	553158	4199573	8.15	14.3
	553159	4199575	8.15	14.3
	553160	4199578	8.15	14.3
	553161	4199581	8.15	14.3
	553163	4199583	8.15	14.3
	553165	4199585	8.15	14.3
	553167	4199586	8.15	14.3
	553170	4199587	8.15	14.3
	553173	4199587	8.15	14.3
	553176	4199587	8.15	14.3
	553179	4199586	8.15	14.3
	553181	4199585	8.15	14.3
	553183	4199583	8.15	14.3
	553185	4199581	8.15	14.3
	553187	4199578	8.15	14.3
	553188	4199575	8.15	14.3
	553188	4199573	8.15	14.3
	553188	4199570	8.15	14.3
	553187	4199567	8.15	14.3
	553185	4199564	8.15	14.3
	553183	4199562	8.15	14.3
	553181	4199560	8.15	14.3
	553179	4199559	8.15	14.3
T-911	553144	4199599	7.95	8.2
	553143	4199599	7.95	8.2
	553142	4199599	7.95	8.2
	553141	4199599	7.95	8.2
	553140	4199600	7.95	8.2
	553139	4199601	7.95	8.2
	553138	4199601	7.95	8.2
	553138	4199602	7.95	8.2
	553137	4199603	7.95	8.2
	553137	4199604	7.95	8.2
	553137	4199606	7.95	8.2
	553138	4199607	7.95	8.2
	553138	4199608	7.95	8.2
	553139	4199608	7.95	8.2
	553140	4199609	7.95	8.2
	553141	4199610	7.95	8.2

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-912	553142	4199610	7.95	8.2
	553143	4199610	7.95	8.2
	553144	4199610	7.95	8.2
	553145	4199610	7.95	8.2
	553146	4199609	7.95	8.2
	553147	4199608	7.95	8.2
	553148	4199608	7.95	8.2
	553148	4199607	7.95	8.2
	553148	4199606	7.95	8.2
	553149	4199604	7.95	8.2
	553148	4199603	7.95	8.2
	553148	4199602	7.95	8.2
	553148	4199601	7.95	8.2
	553147	4199601	7.95	8.2
	553146	4199600	7.95	8.2
T-913	553145	4199599	7.95	8.2
	553137	4199611	8.21	8.2
	553136	4199611	8.21	8.2
	553134	4199611	8.21	8.2
	553133	4199611	8.21	8.2
	553132	4199612	8.21	8.2
	553131	4199613	8.21	8.2
	553130	4199614	8.21	8.2
	553129	4199615	8.21	8.2
	553129	4199616	8.21	8.2
	553129	4199618	8.21	8.2
	553129	4199619	8.21	8.2
	553129	4199620	8.21	8.2
	553130	4199622	8.21	8.2
	553131	4199623	8.21	8.2
	553132	4199624	8.21	8.2
	553133	4199624	8.21	8.2
	553134	4199625	8.21	8.2
	553136	4199625	8.21	8.2
	553137	4199625	8.21	8.2
	553138	4199624	8.21	8.2
	553140	4199624	8.21	8.2
	553141	4199623	8.21	8.2
	553142	4199622	8.21	8.2
	553142	4199620	8.21	8.2
	553143	4199619	8.21	8.2
	553143	4199618	8.21	8.2
	553143	4199616	8.21	8.2
	553142	4199615	8.21	8.2
	553142	4199614	8.21	8.2
	553141	4199613	8.21	8.2
	553140	4199612	8.21	8.2
	553138	4199611	8.21	8.2
T-914	553127	4199624	8.25	9.1
	553125	4199624	8.25	9.1
	553124	4199624	8.25	9.1
	553122	4199624	8.25	9.1
	553121	4199625	8.25	9.1
	553119	4199626	8.25	9.1
	553118	4199627	8.25	9.1
	553118	4199629	8.25	9.1
	553117	4199630	8.25	9.1
	553117	4199632	8.25	9.1
	553117	4199634	8.25	9.1
	553118	4199635	8.25	9.1
	553118	4199637	8.25	9.1
	553119	4199638	8.25	9.1
	553121	4199639	8.25	9.1
	553122	4199640	8.25	9.1
	553124	4199640	8.25	9.1
	553125	4199640	8.25	9.1
	553127	4199640	8.25	9.1
	553128	4199640	8.25	9.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	553130	4199639	8.25	9.1
	553131	4199638	8.25	9.1
	553132	4199637	8.25	9.1
	553133	4199635	8.25	9.1
	553133	4199634	8.25	9.1
	553133	4199632	8.25	9.1
	553133	4199630	8.25	9.1
	553133	4199629	8.25	9.1
	553132	4199627	8.25	9.1
	553131	4199626	8.25	9.1
	553130	4199625	8.25	9.1
T-915	553128	4199624	8.25	9.1
	553117	4199640	8.31	9.8
	553115	4199640	8.31	9.8
	553114	4199640	8.31	9.8
	553112	4199640	8.31	9.8
	553111	4199641	8.31	9.8
	553110	4199642	8.31	9.8
	553109	4199643	8.31	9.8
	553108	4199645	8.31	9.8
	553107	4199646	8.31	9.8
	553107	4199648	8.31	9.8
	553107	4199650	8.31	9.8
	553108	4199651	8.31	9.8
	553109	4199653	8.31	9.8
	553110	4199654	8.31	9.8
	553111	4199655	8.31	9.8
	553112	4199656	8.31	9.8
	553114	4199656	8.31	9.8
	553115	4199656	8.31	9.8
	553117	4199656	8.31	9.8
	553119	4199656	8.31	9.8
	553120	4199655	8.31	9.8
	553121	4199654	8.31	9.8
	553122	4199653	8.31	9.8
	553123	4199651	8.31	9.8
	553123	4199650	8.31	9.8
	553124	4199648	8.31	9.8
	553123	4199646	8.31	9.8
	553123	4199645	8.31	9.8
	553122	4199643	8.31	9.8
	553121	4199642	8.31	9.8
	553120	4199641	8.31	9.8
	553119	4199640	8.31	9.8
T-920	553121	4199670	8.17	8.2
	553120	4199670	8.17	8.2
	553118	4199670	8.17	8.2
	553117	4199670	8.17	8.2
	553116	4199671	8.17	8.2
	553115	4199672	8.17	8.2
	553114	4199673	8.17	8.2
	553113	4199674	8.17	8.2
	553112	4199676	8.17	8.2
	553112	4199677	8.17	8.2
	553112	4199679	8.17	8.2
	553113	4199680	8.17	8.2
	553114	4199681	8.17	8.2
	553115	4199683	8.17	8.2
	553116	4199684	8.17	8.2
	553117	4199684	8.17	8.2
	553118	4199685	8.17	8.2
	553120	4199685	8.17	8.2
	553121	4199685	8.17	8.2
	553123	4199684	8.17	8.2
	553124	4199684	8.17	8.2
	553125	4199683	8.17	8.2
	553126	4199681	8.17	8.2
	553127	4199680	8.17	8.2

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	553127	4199679	8.17	8.2
	553127	4199677	8.17	8.2
	553127	4199676	8.17	8.2
	553127	4199674	8.17	8.2
	553126	4199673	8.17	8.2
	553125	4199672	8.17	8.2
	553124	4199671	8.17	8.2
T-921	553123	4199670	8.17	8.2
	553298	4199361	8.45	9.1
	553297	4199361	8.45	9.1
	553296	4199361	8.45	9.1
	553294	4199362	8.45	9.1
	553293	4199362	8.45	9.1
	553292	4199363	8.45	9.1
	553292	4199364	8.45	9.1
	553291	4199365	8.45	9.1
	553291	4199366	8.45	9.1
	553291	4199368	8.45	9.1
	553291	4199369	8.45	9.1
	553291	4199370	8.45	9.1
	553292	4199371	8.45	9.1
	553292	4199372	8.45	9.1
	553293	4199373	8.45	9.1
	553294	4199373	8.45	9.1
	553296	4199374	8.45	9.1
	553297	4199374	8.45	9.1
	553298	4199374	8.45	9.1
	553299	4199373	8.45	9.1
	553300	4199373	8.45	9.1
	553301	4199372	8.45	9.1
	553302	4199371	8.45	9.1
	553303	4199370	8.45	9.1
	553303	4199369	8.45	9.1
	553303	4199368	8.45	9.1
	553303	4199366	8.45	9.1
	553303	4199365	8.45	9.1
	553302	4199364	8.45	9.1
	553301	4199363	8.45	9.1
	553300	4199362	8.45	9.1
	553299	4199362	8.45	9.1
T-922	553322	4199339	8.66	9.1
	553321	4199339	8.66	9.1
	553319	4199339	8.66	9.1
	553318	4199340	8.66	9.1
	553317	4199340	8.66	9.1
	553316	4199341	8.66	9.1
	553315	4199342	8.66	9.1
	553314	4199344	8.66	9.1
	553314	4199345	8.66	9.1
	553314	4199346	8.66	9.1
	553314	4199348	8.66	9.1
	553314	4199349	8.66	9.1
	553315	4199350	8.66	9.1
	553316	4199351	8.66	9.1
	553317	4199352	8.66	9.1
	553318	4199353	8.66	9.1
	553319	4199353	8.66	9.1
	553321	4199353	8.66	9.1
	553322	4199353	8.66	9.1
	553323	4199353	8.66	9.1
	553325	4199352	8.66	9.1
	553326	4199351	8.66	9.1
	553327	4199350	8.66	9.1
	553327	4199349	8.66	9.1
	553328	4199348	8.66	9.1
	553328	4199346	8.66	9.1
	553328	4199345	8.66	9.1
	553327	4199344	8.66	9.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	553327	4199342	8.66	9.1
	553326	4199341	8.66	9.1
	553325	4199340	8.66	9.1
	553323	4199340	8.66	9.1
T-923	553319	4199357	8.24	9.1
	553317	4199356	8.24	9.1
	553315	4199357	8.24	9.1
	553313	4199357	8.24	9.1
	553312	4199358	8.24	9.1
	553310	4199359	8.24	9.1
	553309	4199361	8.24	9.1
	553308	4199363	8.24	9.1
	553307	4199365	8.24	9.1
	553307	4199367	8.24	9.1
	553307	4199369	8.24	9.1
	553308	4199371	8.24	9.1
	553309	4199373	8.24	9.1
	553310	4199374	8.24	9.1
	553312	4199375	8.24	9.1
	553313	4199376	8.24	9.1
	553315	4199377	8.24	9.1
	553317	4199377	8.24	9.1
	553319	4199377	8.24	9.1
	553321	4199376	8.24	9.1
	553323	4199375	8.24	9.1
	553325	4199374	8.24	9.1
	553326	4199373	8.24	9.1
	553327	4199371	8.24	9.1
	553328	4199369	8.24	9.1
	553328	4199367	8.24	9.1
	553328	4199365	8.24	9.1
	553327	4199363	8.24	9.1
	553326	4199361	8.24	9.1
	553325	4199359	8.24	9.1
	553323	4199358	8.24	9.1
	553321	4199357	8.24	9.1
T-924	553323	4199315	9.16	9.1
	553321	4199315	9.16	9.1
	553319	4199315	9.16	9.1
	553317	4199316	9.16	9.1
	553315	4199317	9.16	9.1
	553314	4199318	9.16	9.1
	553312	4199319	9.16	9.1
	553312	4199321	9.16	9.1
	553311	4199323	9.16	9.1
	553311	4199325	9.16	9.1
	553311	4199327	9.16	9.1
	553312	4199329	9.16	9.1
	553312	4199331	9.16	9.1
	553314	4199332	9.16	9.1
	553315	4199333	9.16	9.1
	553317	4199334	9.16	9.1
	553319	4199335	9.16	9.1
	553321	4199335	9.16	9.1
	553323	4199335	9.16	9.1
	553325	4199334	9.16	9.1
	553326	4199333	9.16	9.1
	553328	4199332	9.16	9.1
	553329	4199331	9.16	9.1
	553330	4199329	9.16	9.1
	553331	4199327	9.16	9.1
	553331	4199325	9.16	9.1
	553331	4199323	9.16	9.1
	553330	4199321	9.16	9.1
	553329	4199319	9.16	9.1
	553328	4199318	9.16	9.1
	553326	4199317	9.16	9.1
	553325	4199316	9.16	9.1

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-953	552810	4198756	67.21	14.6
	552806	4198755	67.21	14.6
	552803	4198756	67.21	14.6
	552799	4198757	67.21	14.6
	552796	4198759	67.21	14.6
	552793	4198761	67.21	14.6
	552791	4198764	67.21	14.6
	552789	4198767	67.21	14.6
	552788	4198771	67.21	14.6
	552787	4198775	67.21	14.6
	552788	4198778	67.21	14.6
	552789	4198782	67.21	14.6
	552791	4198785	67.21	14.6
	552793	4198788	67.21	14.6
	552796	4198791	67.21	14.6
	552799	4198792	67.21	14.6
	552803	4198793	67.21	14.6
	552806	4198794	67.21	14.6
	552810	4198793	67.21	14.6
	552814	4198792	67.21	14.6
	552817	4198791	67.21	14.6
	552820	4198788	67.21	14.6
	552822	4198785	67.21	14.6
	552824	4198782	67.21	14.6
	552825	4198778	67.21	14.6
	552826	4198775	67.21	14.6
	552825	4198771	67.21	14.6
	552824	4198767	67.21	14.6
	552822	4198764	67.21	14.6
	552820	4198761	67.21	14.6
	552817	4198759	67.21	14.6
	552814	4198757	67.21	14.6
T-954	552714	4198743	65.52	11.9
	552711	4198743	65.52	11.9
	552707	4198743	65.52	11.9
	552704	4198744	65.52	11.9
	552700	4198746	65.52	11.9
	552698	4198748	65.52	11.9
	552695	4198751	65.52	11.9
	552694	4198754	65.52	11.9
	552693	4198757	65.52	11.9
	552692	4198761	65.52	11.9
	552693	4198765	65.52	11.9
	552694	4198768	65.52	11.9
	552695	4198771	65.52	11.9
	552698	4198774	65.52	11.9
	552700	4198776	65.52	11.9
	552704	4198778	65.52	11.9
	552707	4198779	65.52	11.9
	552711	4198779	65.52	11.9
	552714	4198779	65.52	11.9
	552718	4198778	65.52	11.9
	552721	4198776	65.52	11.9
	552723	4198774	65.52	11.9
	552726	4198771	65.52	11.9
	552727	4198768	65.52	11.9
	552728	4198765	65.52	11.9
	552729	4198761	65.52	11.9
	552728	4198757	65.52	11.9
	552727	4198754	65.52	11.9
	552726	4198751	65.52	11.9
	552723	4198748	65.52	11.9
	552721	4198746	65.52	11.9
	552718	4198744	65.52	11.9
	552673	4198691	54.5	11.9
	552670	4198691	54.5	11.9
	552667	4198691	54.5	11.9
	552663	4198692	54.5	11.9

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-955	552660	4198694	54.5	11.9
	552658	4198696	54.5	11.9
	552655	4198698	54.5	11.9
	552654	4198701	54.5	11.9
	552653	4198705	54.5	11.9
	552653	4198708	54.5	11.9
	552653	4198712	54.5	11.9
	552654	4198715	54.5	11.9
	552655	4198718	54.5	11.9
	552658	4198721	54.5	11.9
	552660	4198723	54.5	11.9
	552663	4198724	54.5	11.9
	552667	4198725	54.5	11.9
	552670	4198726	54.5	11.9
	552673	4198725	54.5	11.9
	552677	4198724	54.5	11.9
	552680	4198723	54.5	11.9
	552682	4198721	54.5	11.9
	552685	4198718	54.5	11.9
	552686	4198715	54.5	11.9
	552687	4198712	54.5	11.9
	552687	4198708	54.5	11.9
	552687	4198705	54.5	11.9
	552686	4198701	54.5	11.9
	552685	4198698	54.5	11.9
	552682	4198696	54.5	11.9
	552680	4198694	54.5	11.9
	552677	4198692	54.5	11.9
T-956	552638	4198625	39.68	14
	552634	4198625	39.68	14
	552631	4198625	39.68	14
	552627	4198626	39.68	14
	552624	4198628	39.68	14
	552621	4198630	39.68	14
	552619	4198633	39.68	14
	552617	4198636	39.68	14
	552616	4198639	39.68	14
	552616	4198643	39.68	14
	552616	4198647	39.68	14
	552617	4198650	39.68	14
	552619	4198653	39.68	14
	552621	4198656	39.68	14
	552624	4198658	39.68	14
	552627	4198660	39.68	14
	552631	4198661	39.68	14
	552634	4198661	39.68	14
	552638	4198661	39.68	14
	552641	4198660	39.68	14
	552645	4198658	39.68	14
	552647	4198656	39.68	14
	552650	4198653	39.68	14
	552651	4198650	39.68	14
	552652	4198647	39.68	14
	552653	4198643	39.68	14
	552652	4198639	39.68	14
	552651	4198636	39.68	14
	552650	4198633	39.68	14
	552647	4198630	39.68	14
	552645	4198628	39.68	14
	552641	4198626	39.68	14
	552587	4198578	31.76	12.2
	552584	4198577	31.76	12.2
	552580	4198578	31.76	12.2
	552577	4198579	31.76	12.2
	552574	4198580	31.76	12.2
	552571	4198582	31.76	12.2
	552569	4198585	31.76	12.2
	552568	4198588	31.76	12.2

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-957	552567	4198592	31.76	12.2
	552566	4198595	31.76	12.2
	552567	4198598	31.76	12.2
	552568	4198602	31.76	12.2
	552569	4198605	31.76	12.2
	552571	4198608	31.76	12.2
	552574	4198610	31.76	12.2
	552577	4198611	31.76	12.2
	552580	4198612	31.76	12.2
	552584	4198613	31.76	12.2
	552587	4198612	31.76	12.2
	552591	4198611	31.76	12.2
	552594	4198610	31.76	12.2
	552596	4198608	31.76	12.2
	552599	4198605	31.76	12.2
	552600	4198602	31.76	12.2
	552601	4198598	31.76	12.2
	552602	4198595	31.76	12.2
	552601	4198592	31.76	12.2
	552600	4198588	31.76	12.2
	552599	4198585	31.76	12.2
	552596	4198582	31.76	12.2
	552594	4198580	31.76	12.2
	552591	4198579	31.76	12.2
T-979	552840	4198835	59.65	3.8
	552837	4198835	59.65	3.8
	552833	4198835	59.65	3.8
	552830	4198836	59.65	3.8
	552827	4198838	59.65	3.8
	552824	4198840	59.65	3.8
	552822	4198843	59.65	3.8
	552820	4198846	59.65	3.8
	552819	4198849	59.65	3.8
	552818	4198853	59.65	3.8
	552819	4198856	59.65	3.8
	552820	4198860	59.65	3.8
	552822	4198863	59.65	3.8
	552824	4198866	59.65	3.8
	552827	4198868	59.65	3.8
	552830	4198870	59.65	3.8
	552833	4198871	59.65	3.8
	552837	4198871	59.65	3.8
	552840	4198871	59.65	3.8
	552844	4198870	59.65	3.8
	552847	4198868	59.65	3.8
	552850	4198866	59.65	3.8
	552852	4198863	59.65	3.8
	552854	4198860	59.65	3.8
	552855	4198856	59.65	3.8
	552855	4198853	59.65	3.8
	552855	4198849	59.65	3.8
	552854	4198846	59.65	3.8
	552852	4198843	59.65	3.8
	552850	4198840	59.65	3.8
	552847	4198838	59.65	3.8
	552844	4198836	59.65	3.8
	552629	4198558	23.38	4.4
	552627	4198558	23.38	4.4
	552626	4198558	23.38	4.4
	552624	4198559	23.38	4.4
	552622	4198560	23.38	4.4
	552621	4198561	23.38	4.4
	552620	4198562	23.38	4.4
	552619	4198564	23.38	4.4
	552618	4198566	23.38	4.4
	552618	4198567	23.38	4.4
	552618	4198569	23.38	4.4
	552619	4198571	23.38	4.4

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-984	552620	4198572	23.38	4.4
	552621	4198574	23.38	4.4
	552622	4198575	23.38	4.4
	552624	4198576	23.38	4.4
	552626	4198576	23.38	4.4
	552627	4198577	23.38	4.4
	552629	4198576	23.38	4.4
	552631	4198576	23.38	4.4
	552632	4198575	23.38	4.4
	552634	4198574	23.38	4.4
	552635	4198572	23.38	4.4
	552636	4198571	23.38	4.4
	552636	4198569	23.38	4.4
	552636	4198567	23.38	4.4
	552636	4198566	23.38	4.4
	552636	4198564	23.38	4.4
	552635	4198562	23.38	4.4
	552634	4198561	23.38	4.4
	552632	4198560	23.38	4.4
	552631	4198559	23.38	4.4
T-990	552758	4198795	77.4	14.6
	552755	4198794	77.4	14.6
	552751	4198795	77.4	14.6
	552748	4198796	77.4	14.6
	552745	4198797	77.4	14.6
	552742	4198800	77.4	14.6
	552740	4198803	77.4	14.6
	552738	4198806	77.4	14.6
	552737	4198809	77.4	14.6
	552737	4198813	77.4	14.6
	552737	4198816	77.4	14.6
	552738	4198820	77.4	14.6
	552740	4198823	77.4	14.6
	552742	4198826	77.4	14.6
	552745	4198828	77.4	14.6
	552748	4198830	77.4	14.6
	552751	4198831	77.4	14.6
	552755	4198831	77.4	14.6
	552758	4198831	77.4	14.6
	552762	4198830	77.4	14.6
	552765	4198828	77.4	14.6
	552768	4198826	77.4	14.6
	552770	4198823	77.4	14.6
	552772	4198820	77.4	14.6
	552773	4198816	77.4	14.6
	552773	4198813	77.4	14.6
	552773	4198809	77.4	14.6
	552772	4198806	77.4	14.6
	552770	4198803	77.4	14.6
	552768	4198800	77.4	14.6
	552765	4198797	77.4	14.6
	552762	4198796	77.4	14.6
T-991	552721	4198851	80.22	14.6
	552718	4198850	80.22	14.6
	552714	4198851	80.22	14.6
	552711	4198852	80.22	14.6
	552708	4198853	80.22	14.6
	552705	4198855	80.22	14.6
	552703	4198858	80.22	14.6
	552702	4198861	80.22	14.6
	552701	4198864	80.22	14.6
	552700	4198868	80.22	14.6
	552701	4198871	80.22	14.6
	552702	4198874	80.22	14.6
	552703	4198878	80.22	14.6
	552705	4198880	80.22	14.6
	552708	4198882	80.22	14.6
	552711	4198884	80.22	14.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
T-991	552714	4198885	80.22	14.6
	552718	4198885	80.22	14.6
	552721	4198885	80.22	14.6
	552724	4198884	80.22	14.6
	552727	4198882	80.22	14.6
	552730	4198880	80.22	14.6
	552732	4198878	80.22	14.6
	552734	4198874	80.22	14.6
	552735	4198871	80.22	14.6
	552735	4198868	80.22	14.6
	552735	4198864	80.22	14.6
	552734	4198861	80.22	14.6
	552732	4198858	80.22	14.6
	552730	4198855	80.22	14.6
	552727	4198853	80.22	14.6
T-992	552724	4198852	80.22	14.6
	552674	4198902	88.97	14.6
	552671	4198902	88.97	14.6
	552668	4198902	88.97	14.6
	552664	4198903	88.97	14.6
	552661	4198905	88.97	14.6
	552659	4198907	88.97	14.6
	552656	4198910	88.97	14.6
	552655	4198913	88.97	14.6
	552654	4198916	88.97	14.6
	552653	4198919	88.97	14.6
	552654	4198923	88.97	14.6
	552655	4198926	88.97	14.6
	552656	4198929	88.97	14.6
	552659	4198932	88.97	14.6
	552661	4198934	88.97	14.6
	552664	4198936	88.97	14.6
	552668	4198937	88.97	14.6
	552671	4198937	88.97	14.6
	552674	4198937	88.97	14.6
	552678	4198936	88.97	14.6
	552681	4198934	88.97	14.6
	552683	4198932	88.97	14.6
	552686	4198929	88.97	14.6
	552687	4198926	88.97	14.6
	552688	4198923	88.97	14.6
	552689	4198919	88.97	14.6
	552688	4198916	88.97	14.6
	552687	4198913	88.97	14.6
	552686	4198910	88.97	14.6
	552683	4198907	88.97	14.6
	552681	4198905	88.97	14.6
	552678	4198903	88.97	14.6
T-994	553326	4199287	10.27	8.8
	553324	4199286	10.27	8.8
	553322	4199287	10.27	8.8
	553321	4199287	10.27	8.8
	553319	4199288	10.27	8.8
	553317	4199289	10.27	8.8
	553316	4199291	10.27	8.8
	553315	4199293	10.27	8.8
	553315	4199295	10.27	8.8
	553314	4199297	10.27	8.8
	553315	4199299	10.27	8.8
	553315	4199300	10.27	8.8
	553316	4199302	10.27	8.8
	553317	4199304	10.27	8.8
	553319	4199305	10.27	8.8
	553321	4199306	10.27	8.8
	553322	4199306	10.27	8.8
	553324	4199307	10.27	8.8
	553326	4199306	10.27	8.8
	553328	4199306	10.27	8.8

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
	553330	4199305	10.27	8.8
	553331	4199304	10.27	8.8
	553333	4199302	10.27	8.8
	553334	4199300	10.27	8.8
	553334	4199299	10.27	8.8
	553334	4199297	10.27	8.8
	553334	4199295	10.27	8.8
	553334	4199293	10.27	8.8
	553333	4199291	10.27	8.8
	553331	4199289	10.27	8.8
	553330	4199288	10.27	8.8
T-995	553328	4199287	10.27	8.8
	553327	4199263	11.34	8.8
	553325	4199263	11.34	8.8
	553323	4199263	11.34	8.8
	553321	4199263	11.34	8.8
	553319	4199264	11.34	8.8
	553318	4199266	11.34	8.8
	553316	4199267	11.34	8.8
	553315	4199269	11.34	8.8
	553315	4199271	11.34	8.8
	553314	4199273	11.34	8.8
	553315	4199276	11.34	8.8
	553315	4199278	11.34	8.8
	553316	4199279	11.34	8.8
	553318	4199281	11.34	8.8
	553319	4199282	11.34	8.8
	553321	4199283	11.34	8.8
	553323	4199284	11.34	8.8
	553325	4199284	11.34	8.8
	553327	4199284	11.34	8.8
	553329	4199283	11.34	8.8
	553331	4199282	11.34	8.8
	553333	4199281	11.34	8.8
	553334	4199279	11.34	8.8
	553335	4199278	11.34	8.8
	553336	4199276	11.34	8.8
	553336	4199273	11.34	8.8
	553336	4199271	11.34	8.8
	553335	4199269	11.34	8.8
	553334	4199267	11.34	8.8
	553333	4199266	11.34	8.8
	553331	4199264	11.34	8.8
	553329	4199263	11.34	8.8
T&BCTR	553280	4198861	4.74	4.5
	553264	4198844	4.74	4.5
	553261	4198847	4.74	4.5
	553256	4198841	4.74	4.5
	553249	4198849	4.74	4.5
	553247	4198849	4.74	4.5
	553278	4198881	4.74	4.5
	553286	4198873	4.74	4.5
WHARFBLD	553278	4198863	4.74	4.5
	552771	4198173	3.23	3.7
	552766	4198159	3.23	3.7
	552745	4198167	3.23	3.7
	552744	4198160	3.23	3.7
	552735	4198163	3.23	3.7
	552738	4198174	3.23	3.7
	552729	4198176	3.23	3.7
	552732	4198184	3.23	3.7
	552733	4198184	3.23	3.7
WHRFBLD2	552804	4198167	3.6	3.7
	552800	4198153	3.6	3.7
	552784	4198158	3.6	3.7
	552788	4198171	3.6	3.7
B116.2	554135	4198786	3.78	15.3
	554109	4198812	3.78	15.3

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
B116-2	554128	4198835	3.78	15.3
	554156	4198808	3.78	15.3
B116-3	554035	4198715	3.54	18.3
	554014	4198694	3.54	18.3
	553969	4198736	3.54	18.3
	553991	4198758	3.54	18.3
	554110	4198812	3.8	6.1
B116-1	554136	4198786	3.8	6.1
	554126	4198774	3.8	6.1
	554136	4198764	3.8	6.1
	554004	4198624	3.8	6.1
	553929	4198692	3.8	6.1
	553970	4198735	3.8	6.1
	554014	4198695	3.8	6.1
	554035	4198714	3.8	6.1
	553991	4198758	3.8	6.1
	554061	4198833	3.8	6.1
	554098	4198799	3.8	6.1
	552208	4200631	4.92	6.1
B-ADD_1	552213	4200627	4.92	6.1
	552200	4200611	4.92	6.1
	552195	4200615	4.92	6.1
	552225	4200617	4.97	6.1
B-ADD_2	552232	4200611	4.97	6.1
	552221	4200597	4.97	6.1
	552214	4200603	4.97	6.1
	552737	4200313	4.89	9.8
B-ADD_3	552735	4200314	4.89	9.8
	552734	4200314	4.89	9.8
	552733	4200315	4.89	9.8
	552733	4200316	4.89	9.8
	552732	4200317	4.89	9.8
	552731	4200318	4.89	9.8
	552731	4200319	4.89	9.8
	552731	4200320	4.89	9.8
	552731	4200321	4.89	9.8
	552731	4200322	4.89	9.8
	552732	4200323	4.89	9.8
	552733	4200324	4.89	9.8
	552733	4200325	4.89	9.8
	552734	4200326	4.89	9.8
	552735	4200326	4.89	9.8
	552737	4200327	4.89	9.8
	552738	4200327	4.89	9.8
	552739	4200327	4.89	9.8
	552740	4200326	4.89	9.8
	552741	4200326	4.89	9.8
	552742	4200325	4.89	9.8
	552743	4200324	4.89	9.8
	552744	4200323	4.89	9.8
	552744	4200322	4.89	9.8
	552745	4200321	4.89	9.8
	552745	4200320	4.89	9.8
	552745	4200319	4.89	9.8
	552744	4200318	4.89	9.8
	552744	4200317	4.89	9.8
	552743	4200316	4.89	9.8
	552742	4200315	4.89	9.8
	552741	4200314	4.89	9.8
	552740	4200314	4.89	9.8
	552739	4200313	4.89	9.8
	552743	4200331	4.7	14.3
	552745	4200333	4.7	14.3
	552745	4200333	4.7	14.3
	552746	4200333	4.7	14.3
	552746	4200333	4.7	14.3
	552747	4200333	4.7	14.3
	552747	4200333	4.7	14.3

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
B-ADD_4	552748	4200333	4.7	14.3
	552748	4200332	4.7	14.3
	552749	4200332	4.7	14.3
	552749	4200332	4.7	14.3
	552750	4200331	4.7	14.3
	552750	4200331	4.7	14.3
	552750	4200330	4.7	14.3
	552750	4200330	4.7	14.3
	552750	4200329	4.7	14.3
	552750	4200328	4.7	14.3
	552749	4200328	4.7	14.3
	552749	4200327	4.7	14.3
	552749	4200327	4.7	14.3
	552748	4200327	4.7	14.3
	552748	4200326	4.7	14.3
	552747	4200326	4.7	14.3
	552746	4200326	4.7	14.3
	552746	4200326	4.7	14.3
	552745	4200326	4.7	14.3
	552745	4200327	4.7	14.3
	552744	4200327	4.7	14.3
	552744	4200327	4.7	14.3
	552744	4200328	4.7	14.3
	552743	4200328	4.7	14.3
	552743	4200329	4.7	14.3
	552743	4200330	4.7	14.3
	552743	4200330	4.7	14.3
B-ADD_5	552689	4200315	4.54	15.7
	552689	4200315	4.54	15.7
	552690	4200315	4.54	15.7
	552691	4200315	4.54	15.7
	552691	4200314	4.54	15.7
	552692	4200314	4.54	15.7
	552692	4200313	4.54	15.7
	552692	4200313	4.54	15.7
	552693	4200312	4.54	15.7
	552693	4200312	4.54	15.7
	552693	4200311	4.54	15.7
	552693	4200310	4.54	15.7
	552692	4200310	4.54	15.7
	552692	4200309	4.54	15.7
	552692	4200308	4.54	15.7
	552691	4200308	4.54	15.7
	552691	4200308	4.54	15.7
	552690	4200307	4.54	15.7
	552689	4200307	4.54	15.7
	552689	4200307	4.54	15.7
	552688	4200307	4.54	15.7
	552687	4200308	4.54	15.7
	552687	4200308	4.54	15.7
	552686	4200308	4.54	15.7
	552686	4200309	4.54	15.7
	552685	4200309	4.54	15.7
	552685	4200310	4.54	15.7
	552685	4200311	4.54	15.7
	552685	4200311	4.54	15.7
	552685	4200312	4.54	15.7
	552685	4200313	4.54	15.7
	552685	4200313	4.54	15.7
	552686	4200314	4.54	15.7
	552686	4200314	4.54	15.7
	552700	4200324	4.59	18.8
	552701	4200323	4.59	18.8
	552701	4200323	4.59	18.8
	552701	4200322	4.59	18.8
	552702	4200322	4.59	18.8
	552702	4200321	4.59	18.8
	552702	4200321	4.59	18.8

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
B-ADD_6	552702	4200320	4.59	18.8
	552701	4200320	4.59	18.8
	552701	4200319	4.59	18.8
	552701	4200319	4.59	18.8
	552700	4200318	4.59	18.8
	552700	4200318	4.59	18.8
	552699	4200318	4.59	18.8
	552699	4200318	4.59	18.8
	552698	4200317	4.59	18.8
	552698	4200318	4.59	18.8
	552697	4200318	4.59	18.8
	552696	4200318	4.59	18.8
	552696	4200318	4.59	18.8
	552696	4200319	4.59	18.8
	552695	4200319	4.59	18.8
	552695	4200320	4.59	18.8
	552695	4200320	4.59	18.8
	552695	4200321	4.59	18.8
	552695	4200322	4.59	18.8
	552695	4200322	4.59	18.8
	552695	4200323	4.59	18.8
	552695	4200323	4.59	18.8
	552696	4200324	4.59	18.8
	552696	4200324	4.59	18.8
	552697	4200324	4.59	18.8
	552697	4200324	4.59	18.8
	552698	4200324	4.59	18.8
B-ADD_7	552586	4200363	4.67	29.7
	552587	4200363	4.67	29.7
	552588	4200363	4.67	29.7
	552589	4200362	4.67	29.7
	552590	4200362	4.67	29.7
	552591	4200361	4.67	29.7
	552591	4200360	4.67	29.7
	552592	4200359	4.67	29.7
	552592	4200358	4.67	29.7
	552593	4200357	4.67	29.7
	552593	4200356	4.67	29.7
	552592	4200355	4.67	29.7
	552592	4200354	4.67	29.7
	552591	4200353	4.67	29.7
	552591	4200352	4.67	29.7
	552590	4200351	4.67	29.7
	552589	4200351	4.67	29.7
	552588	4200350	4.67	29.7
	552587	4200350	4.67	29.7
	552586	4200350	4.67	29.7
	552585	4200350	4.67	29.7
	552584	4200351	4.67	29.7
	552583	4200351	4.67	29.7
	552582	4200352	4.67	29.7
	552581	4200353	4.67	29.7
	552581	4200353	4.67	29.7
	552580	4200354	4.67	29.7
	552580	4200355	4.67	29.7
	552580	4200356	4.67	29.7
	552580	4200358	4.67	29.7
	552580	4200359	4.67	29.7
	552581	4200360	4.67	29.7
	552581	4200360	4.67	29.7
	552582	4200361	4.67	29.7
	552583	4200362	4.67	29.7
	552597	4200370	4.77	36.3
	552598	4200370	4.77	36.3
	552599	4200370	4.77	36.3
	552599	4200369	4.77	36.3
	552600	4200369	4.77	36.3
	552600	4200368	4.77	36.3

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
B-ADD_8	552600	4200368	4.77	36.3
	552601	4200367	4.77	36.3
	552601	4200366	4.77	36.3
	552601	4200366	4.77	36.3
	552601	4200365	4.77	36.3
	552600	4200365	4.77	36.3
	552600	4200364	4.77	36.3
	552600	4200363	4.77	36.3
	552599	4200363	4.77	36.3
	552599	4200363	4.77	36.3
	552598	4200362	4.77	36.3
	552597	4200362	4.77	36.3
	552597	4200362	4.77	36.3
	552596	4200362	4.77	36.3
	552595	4200363	4.77	36.3
	552595	4200363	4.77	36.3
	552594	4200363	4.77	36.3
	552594	4200364	4.77	36.3
	552594	4200364	4.77	36.3
	552593	4200365	4.77	36.3
	552593	4200366	4.77	36.3
	552593	4200366	4.77	36.3
	552593	4200367	4.77	36.3
	552593	4200368	4.77	36.3
	552594	4200368	4.77	36.3
	552594	4200369	4.77	36.3
	552595	4200369	4.77	36.3
	552595	4200369	4.77	36.3
B-ADD_9	552613	4200384	4.52	36.3
	552613	4200384	4.52	36.3
	552614	4200384	4.52	36.3
	552614	4200384	4.52	36.3
	552615	4200384	4.52	36.3
	552615	4200383	4.52	36.3
	552615	4200383	4.52	36.3
	552616	4200382	4.52	36.3
	552616	4200382	4.52	36.3
	552616	4200381	4.52	36.3
	552616	4200381	4.52	36.3
	552616	4200380	4.52	36.3
	552616	4200380	4.52	36.3
	552616	4200379	4.52	36.3
	552615	4200379	4.52	36.3
	552615	4200378	4.52	36.3
	552614	4200378	4.52	36.3
	552614	4200378	4.52	36.3
	552613	4200378	4.52	36.3
	552613	4200378	4.52	36.3
	552612	4200378	4.52	36.3
	552612	4200378	4.52	36.3
	552611	4200378	4.52	36.3
	552611	4200379	4.52	36.3
	552610	4200379	4.52	36.3
	552610	4200379	4.52	36.3
	552610	4200380	4.52	36.3
	552610	4200380	4.52	36.3
	552610	4200381	4.52	36.3
	552610	4200382	4.52	36.3
	552610	4200382	4.52	36.3
	552610	4200383	4.52	36.3
	552611	4200383	4.52	36.3
	552611	4200383	4.52	36.3
B-ADD_10	552630	4200302	4.6	22.9
	552640	4200294	4.6	22.9
	552625	4200276	4.6	22.9
	552615	4200284	4.6	22.9
	553818	4199679	3.42	3.7
	553846	4199652	3.42	3.7

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y Coordinates	Elevation [m]	Height [m]
B-ADD_11	553842	4199649	3.42	3.7
	553844	4199648	3.42	3.7
	553841	4199644	3.42	3.7
	553829	4199657	3.42	3.7
	553826	4199661	3.42	3.7
	553813	4199673	3.42	3.7
B-ADD_12	554361	4199476	3.29	11.6
	554354	4199481	3.29	11.6
	554352	4199483	3.29	11.6
	554351	4199486	3.29	11.6
	554350	4199488	3.29	11.6
	554350	4199491	3.29	11.6
	554350	4199494	3.29	11.6
	554351	4199497	3.29	11.6
	554352	4199500	3.29	11.6
	554353	4199502	3.29	11.6
	554355	4199504	3.29	11.6
	554358	4199506	3.29	11.6
	554360	4199507	3.29	11.6
	554363	4199508	3.29	11.6
	554366	4199509	3.29	11.6
	554369	4199509	3.29	11.6
	554372	4199508	3.29	11.6
	554374	4199507	3.29	11.6
	554377	4199506	3.29	11.6
	554379	4199504	3.29	11.6
	554381	4199501	3.29	11.6
	554382	4199499	3.29	11.6
	554383	4199496	3.29	11.6
	554384	4199493	3.29	11.6
	554384	4199490	3.29	11.6
	554384	4199488	3.29	11.6
	554383	4199485	3.29	11.6
	554381	4199482	3.29	11.6
	554379	4199480	3.29	11.6
	554377	4199478	3.29	11.6
	554375	4199477	3.29	11.6
	554372	4199475	3.29	11.6
	554369	4199475	3.29	11.6
	554366	4199475	3.29	11.6
	554363	4199475	3.29	11.6
B-ADD_13	554360	4199528	3.32	11.6
	554358	4199528	3.32	11.6
	554356	4199529	3.32	11.6
	554354	4199530	3.32	11.6
	554352	4199531	3.32	11.6
	554350	4199533	3.32	11.6
	554349	4199535	3.32	11.6
	554348	4199537	3.32	11.6
	554348	4199539	3.32	11.6
	554348	4199541	3.32	11.6
	554348	4199543	3.32	11.6
	554349	4199545	3.32	11.6
	554350	4199547	3.32	11.6
	554351	4199549	3.32	11.6
	554353	4199550	3.32	11.6
	554354	4199551	3.32	11.6
	554356	4199552	3.32	11.6
	554358	4199553	3.32	11.6
	554361	4199553	3.32	11.6
	554363	4199553	3.32	11.6
	554365	4199552	3.32	11.6
	554367	4199551	3.32	11.6
	554368	4199550	3.32	11.6
	554370	4199549	3.32	11.6
	554371	4199547	3.32	11.6
	554372	4199545	3.32	11.6
	554373	4199543	3.32	11.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

Building ID	X Coordinates	Y	Elevation	Height
		Coordinates	[m]	[m]
	554373	4199541	3.32	11.6
	554373	4199538	3.32	11.6
	554372	4199536	3.32	11.6
	554371	4199534	3.32	11.6
	554370	4199533	3.32	11.6
	554369	4199531	3.32	11.6
	554367	4199530	3.32	11.6
	554365	4199529	3.32	11.6
B-ADD_14	554363	4199528	3.32	11.6
	553952	4199160	3.72	3.7
	553955	4199171	3.72	3.7
	553980	4199165	3.72	3.7
B-ADD_15	553978	4199154	3.72	3.7
	551982	4197451	2.99	7.3
	551990	4197440	2.99	7.3
	551954	4197414	2.99	7.3
B-ADD_16	551946	4197425	2.99	7.3
	551859	4197413	1.16	8.4
	551868	4197401	1.16	8.4
	551837	4197379	1.16	8.4
B-ADD_17	551828	4197391	1.16	8.4
	551929	4197409	3.08	7.3
	551938	4197398	3.08	7.3
	551929	4197390	3.08	7.3
B-ADD_18	551920	4197402	3.08	7.3
	551908	4197446	0.8	4.6
	551912	4197440	0.8	4.6
	551900	4197431	0.8	4.6
B110	551897	4197437	0.8	4.6
	554242	4198543	3.31	9.1
	554229	4198530	3.31	9.1
	554186	4198572	3.31	9.1
B4	554199	4198585	3.31	9.1
	552452	4200602	4.77	4.6
	552449	4200598	4.77	4.6
	552440	4200606	4.77	4.6
T-1687	552443	4200610	4.77	4.6
	552557	4199260	102.24	14.6
	552553	4199259	102.24	14.6
	552549	4199260	102.24	14.6
	552545	4199261	102.24	14.6
	552541	4199263	102.24	14.6
	552538	4199265	102.24	14.6
	552535	4199269	102.24	14.6
	552533	4199272	102.24	14.6
	552532	4199276	102.24	14.6
	552532	4199280	102.24	14.6
	552532	4199285	102.24	14.6
	552533	4199289	102.24	14.6
	552535	4199292	102.24	14.6
	552538	4199296	102.24	14.6
	552541	4199298	102.24	14.6
	552545	4199300	102.24	14.6
	552549	4199301	102.24	14.6
	552553	4199302	102.24	14.6
	552557	4199301	102.24	14.6
	552561	4199300	102.24	14.6
	552565	4199298	102.24	14.6
	552568	4199296	102.24	14.6
	552571	4199292	102.24	14.6
	552573	4199289	102.24	14.6
	552574	4199285	102.24	14.6
	552574	4199280	102.24	14.6
	552574	4199276	102.24	14.6
	552573	4199272	102.24	14.6
	552571	4199269	102.24	14.6
	552568	4199265	102.24	14.6
	552565	4199263	102.24	14.6

Table A4.3-HRA-12e
Modeled Refinery Buildings¹
Chevron Modernization Project
Richmond, California

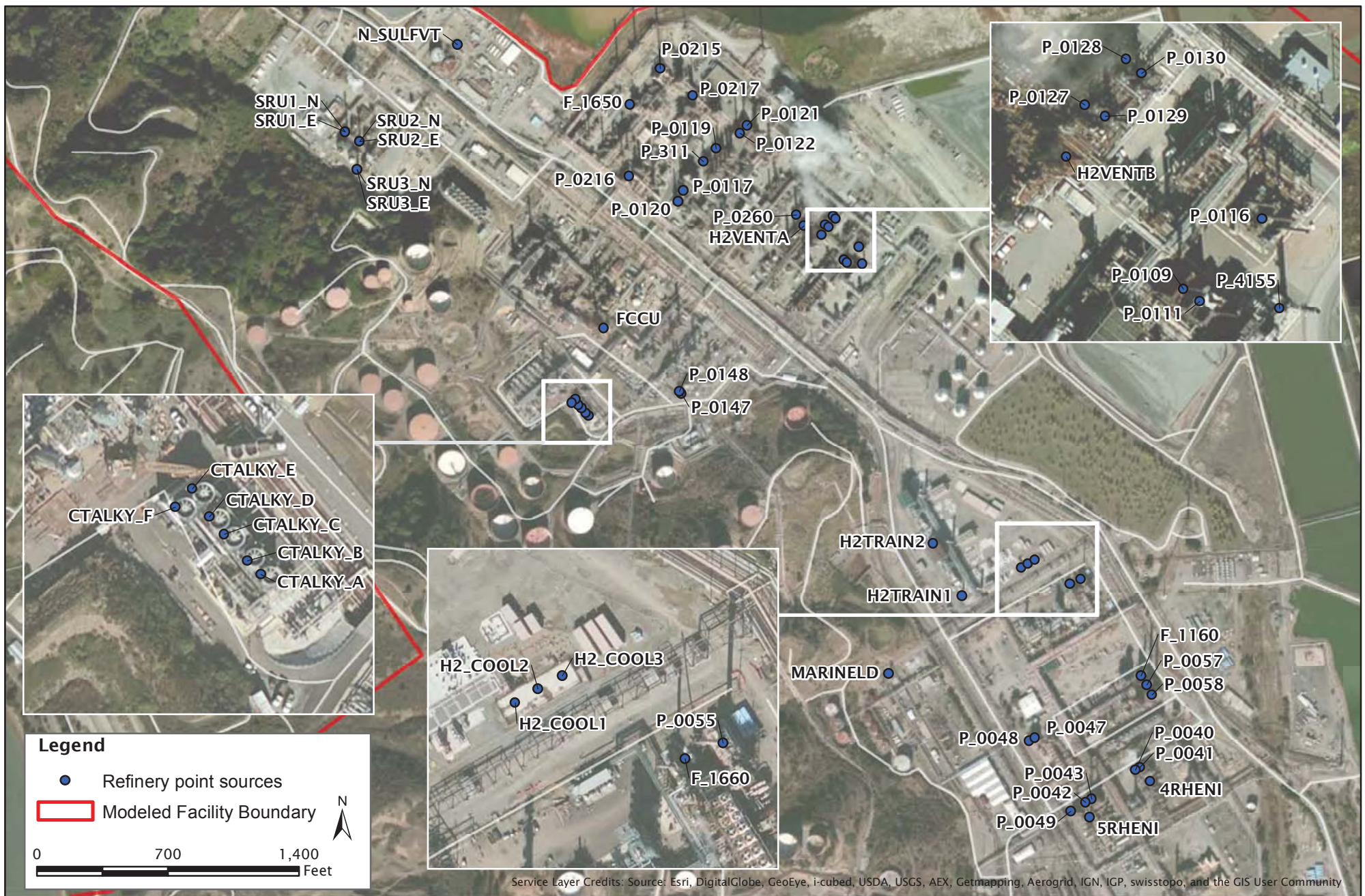
Building ID	X Coordinates	Y Coordinates	Elevation	Height
			[m]	[m]
	552561	4199261	102.24	14.6

Notes:

1. The building locations and dimensions were provided by Chevron.

Abbreviations:

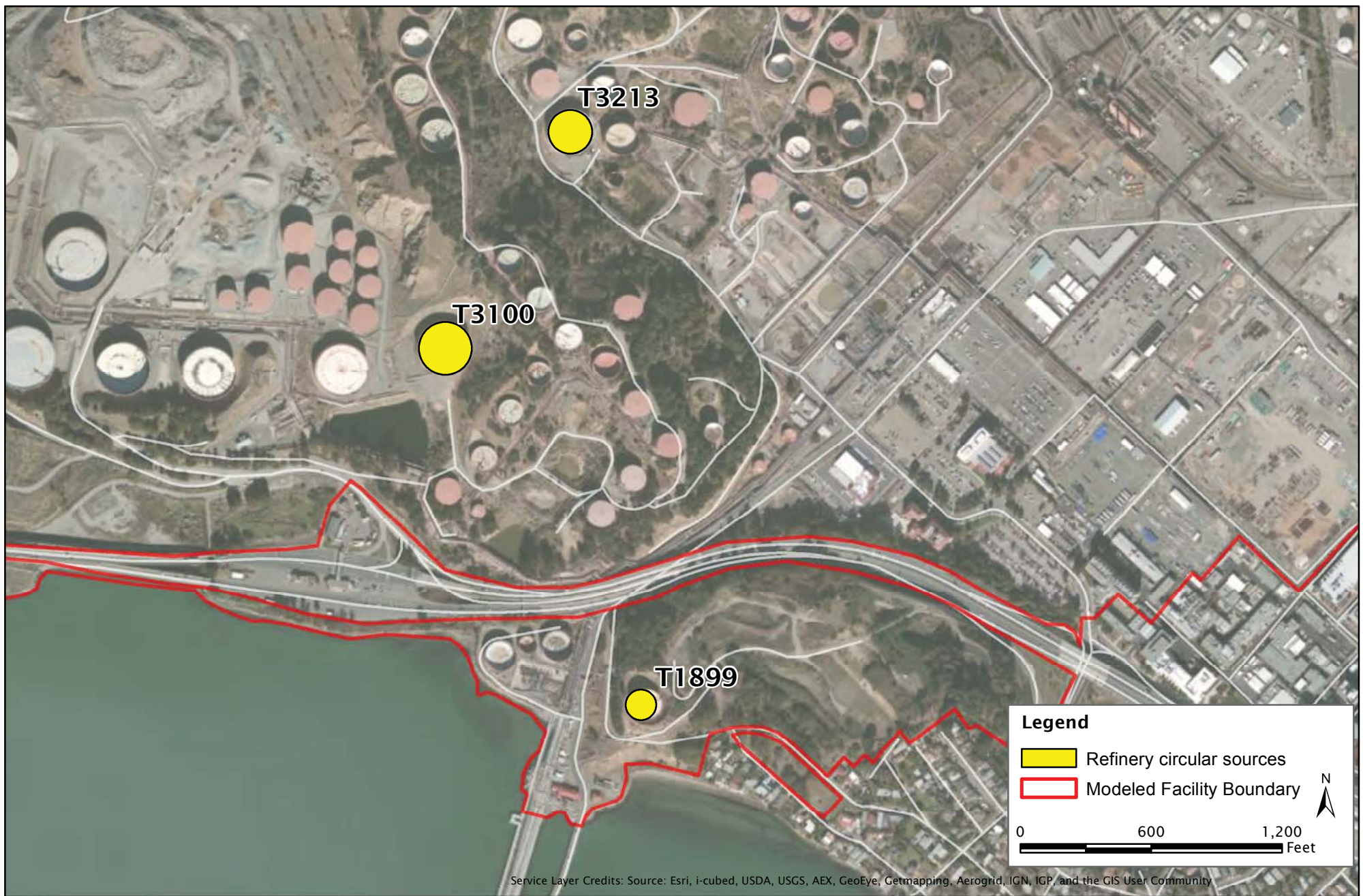
m: meter



02.24.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\Fig_33 Refinery points.mxd

Source: Chevron Transmittals

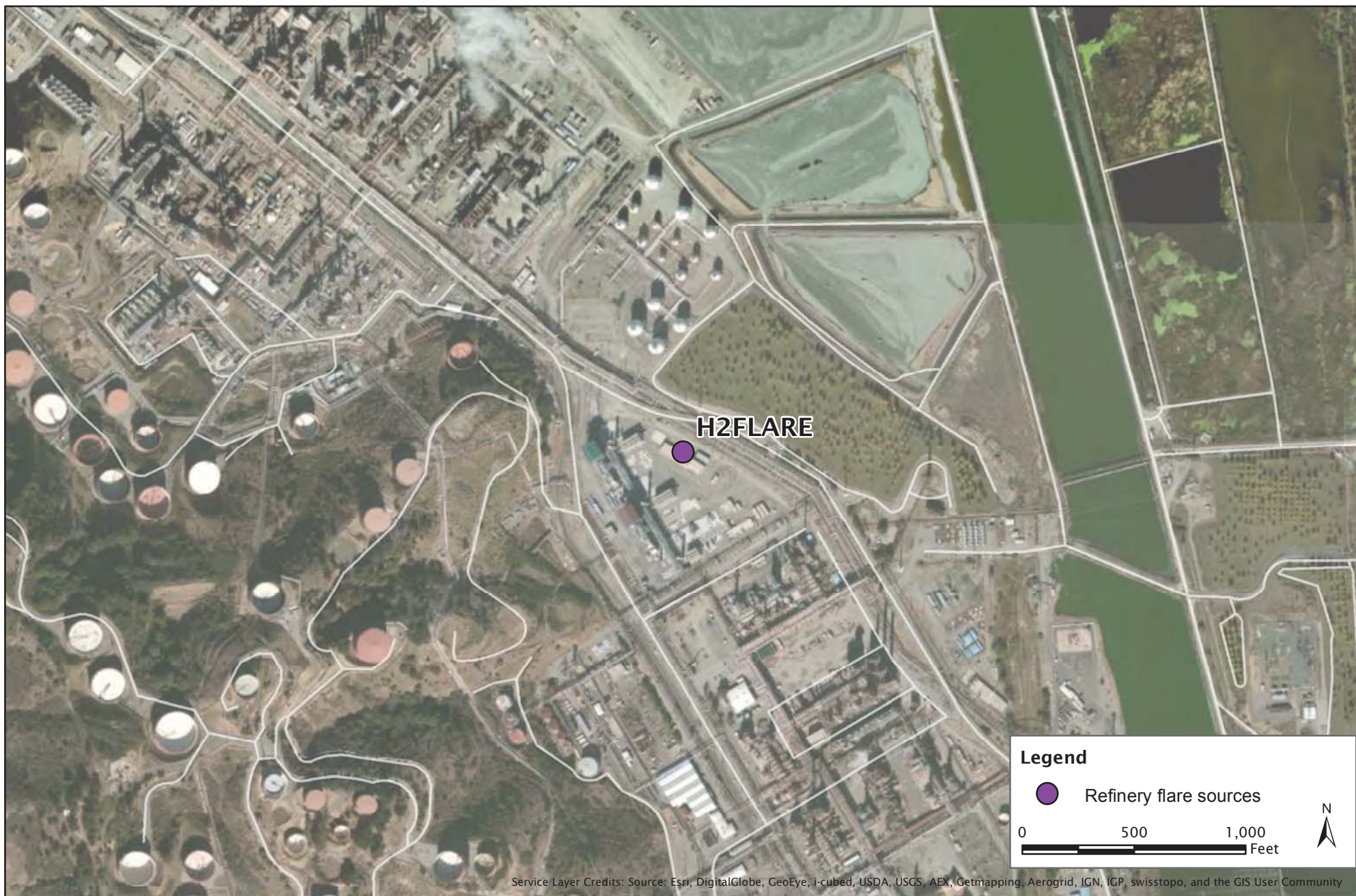
Figure A4.3-HRA-3
Chevron Refinery Modernization Project EIR
Modeled Refinery Operations Point Sources



02.24.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\Figures for UPP\final figure\A4.3-HRA-4_Refinery circles.mxd

Source: Chevron Transmittals

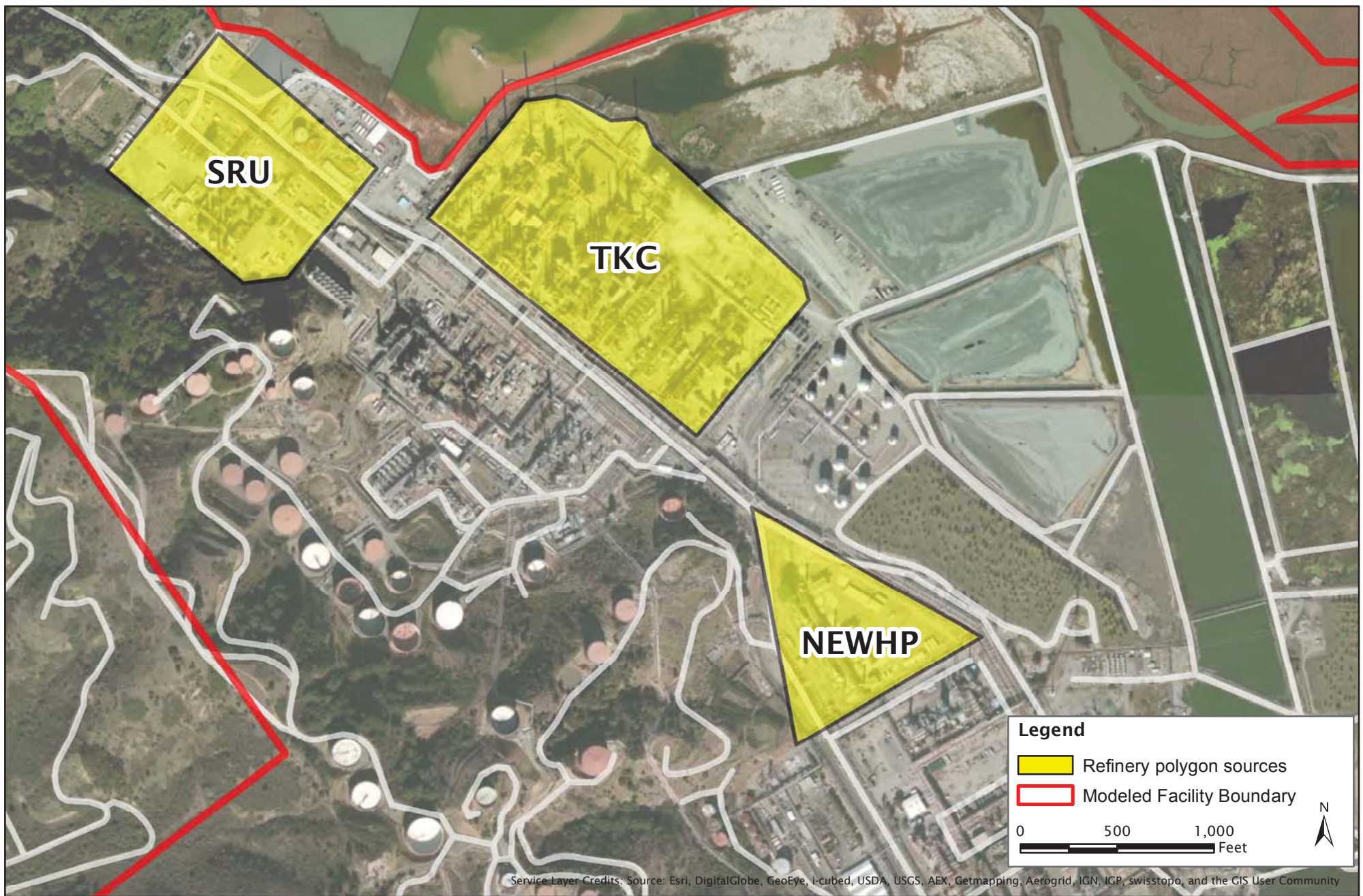
Figure A4.3-HRA-4
Chevron Refinery Modernization Project EIR
Modeled Refinery Operations Circular Sources



02.24.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_35 Refinery flares.mxd

Source: Chevron Transmittals

Figure A4.3-HRA-5
Chevron Refinery Modernization Project EIR
Modeled Refinery Flare Sources



02.24.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\Fig_36 Refinery polygons.mxd

Source: Chevron Transmittals

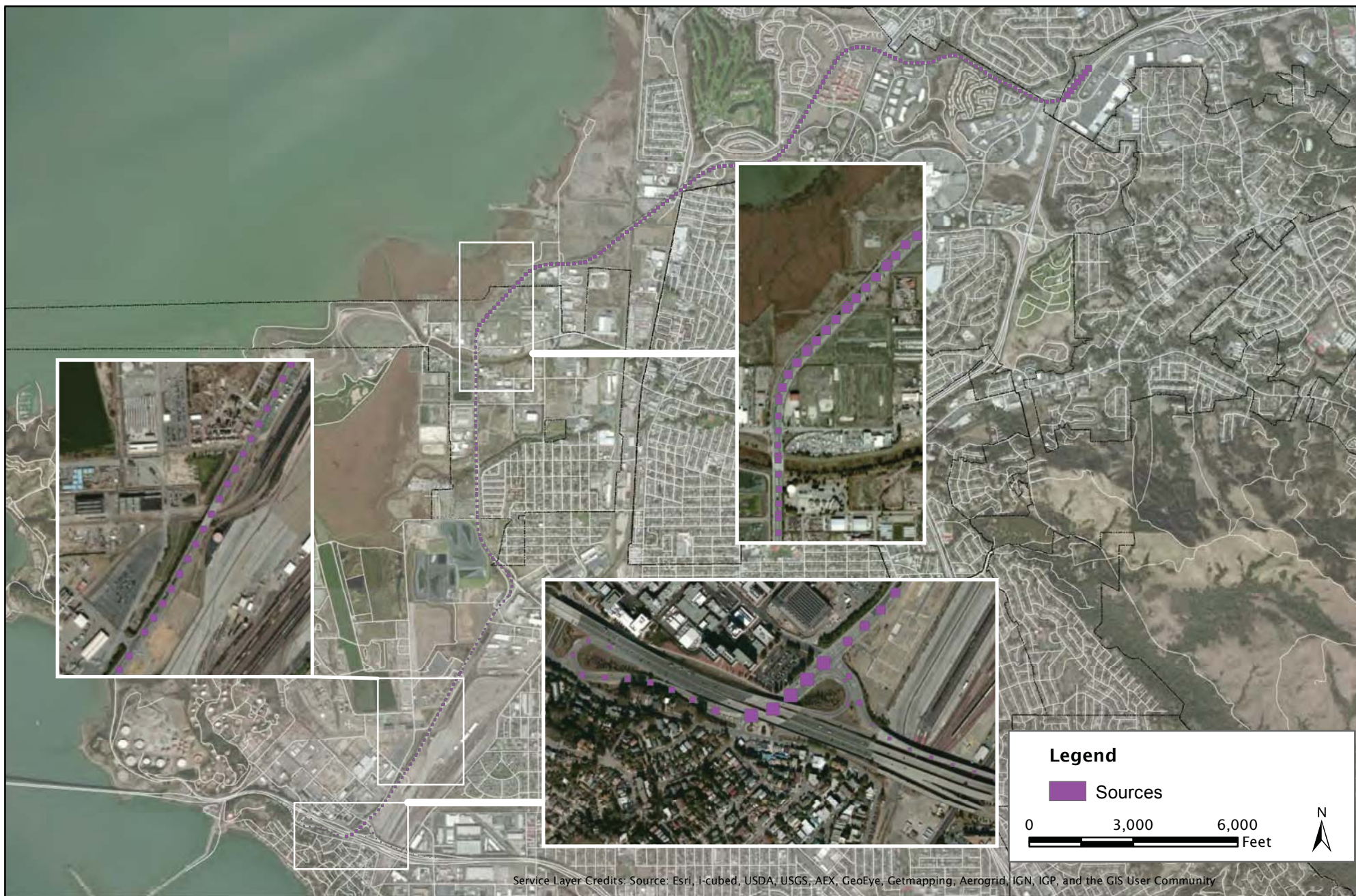
Figure A4.3-HRA-6
Chevron Refinery Modernization Project EIR
Modeled Refinery Polygon Sources



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\Figures for UPP\final figure\A4.3-HRA-7a_Construction Delivery Truck Trips ETC.mxd

Source: Chevron Transmittals

Figure A4.3-HRA-7a
Operational Truck Trips: trips from highways through
Richmond Parkway and through Castro St.



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\Figures for UPP\final figure\A4.3-HRA-7b_Modeled Construction Delivery Truck Trips ETC.mxd

NOTE: This figure shows the offsite construction delivery truck trip route from the I-80 ramp through Richmond Parkway to Gate 31, and from the I-580 ramp through Castro St. to Gate 31. Source groups include ETC_6, ETC_7, ETC_8, ETC_9, RAMPST, and CAS_G31T, as shown in Figure AQ-HRA-19a.

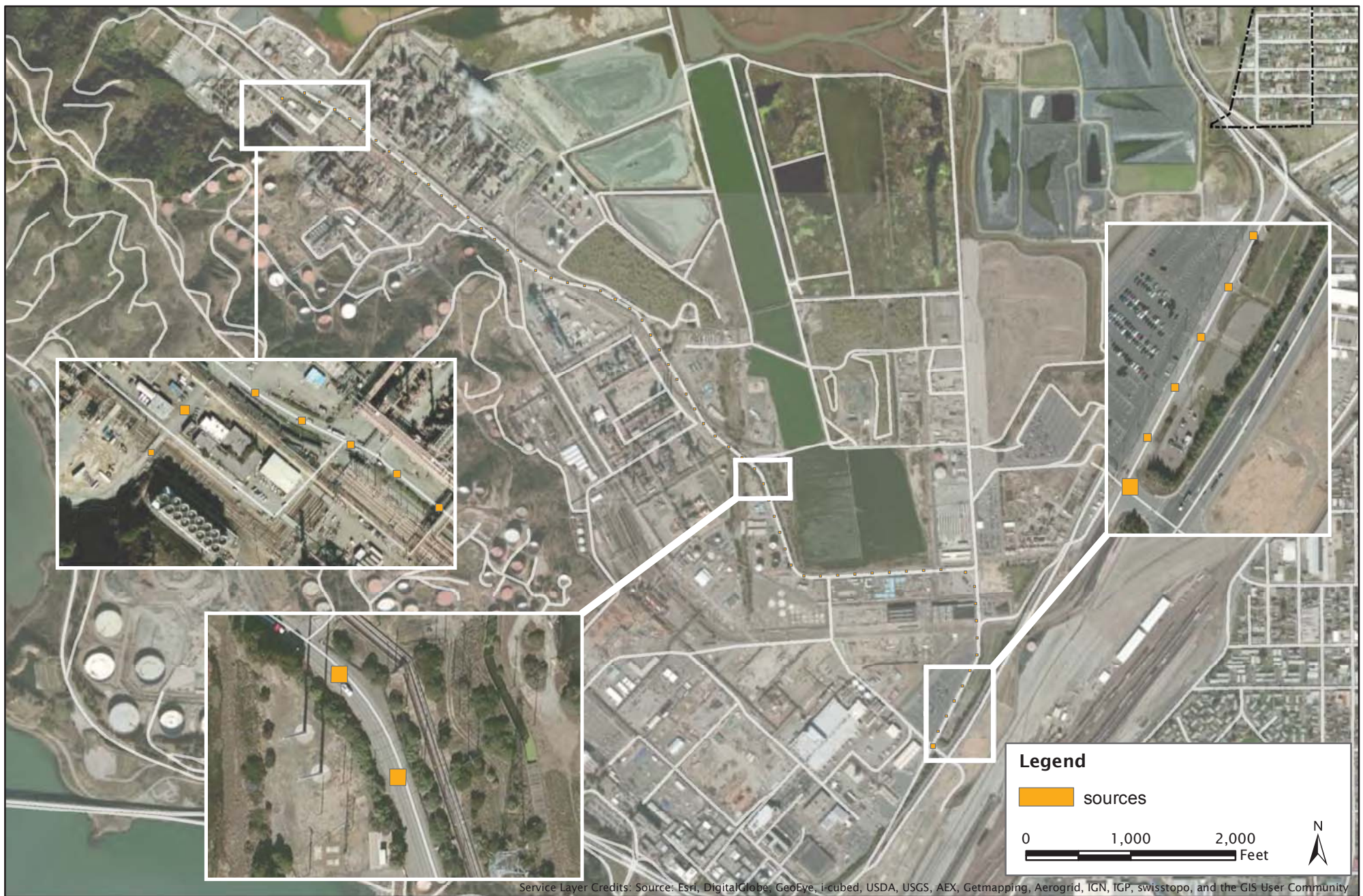
Figure A4.3-HRA-7b
Chevron Refinery Modernization Project EIR
Modeled Operational Truck Trips: trips from highways
through Richmond Parkway and through Castro St.



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_25a oxygen trucks.mxd

Source: Chevron Transmittals

Figure A4.3-HRA-8a
Chevron Refinery Modernization Project EIR
Oxygen Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_25b oxygen trucks.mxd

NOTE: This figure shows the oxygen truck route from the facility entrance to the #6 H2S Plant. Source groups are ITOO_1, ITOO_2, and ITOO_3 as shown in Figure AQ-HRA-25a.

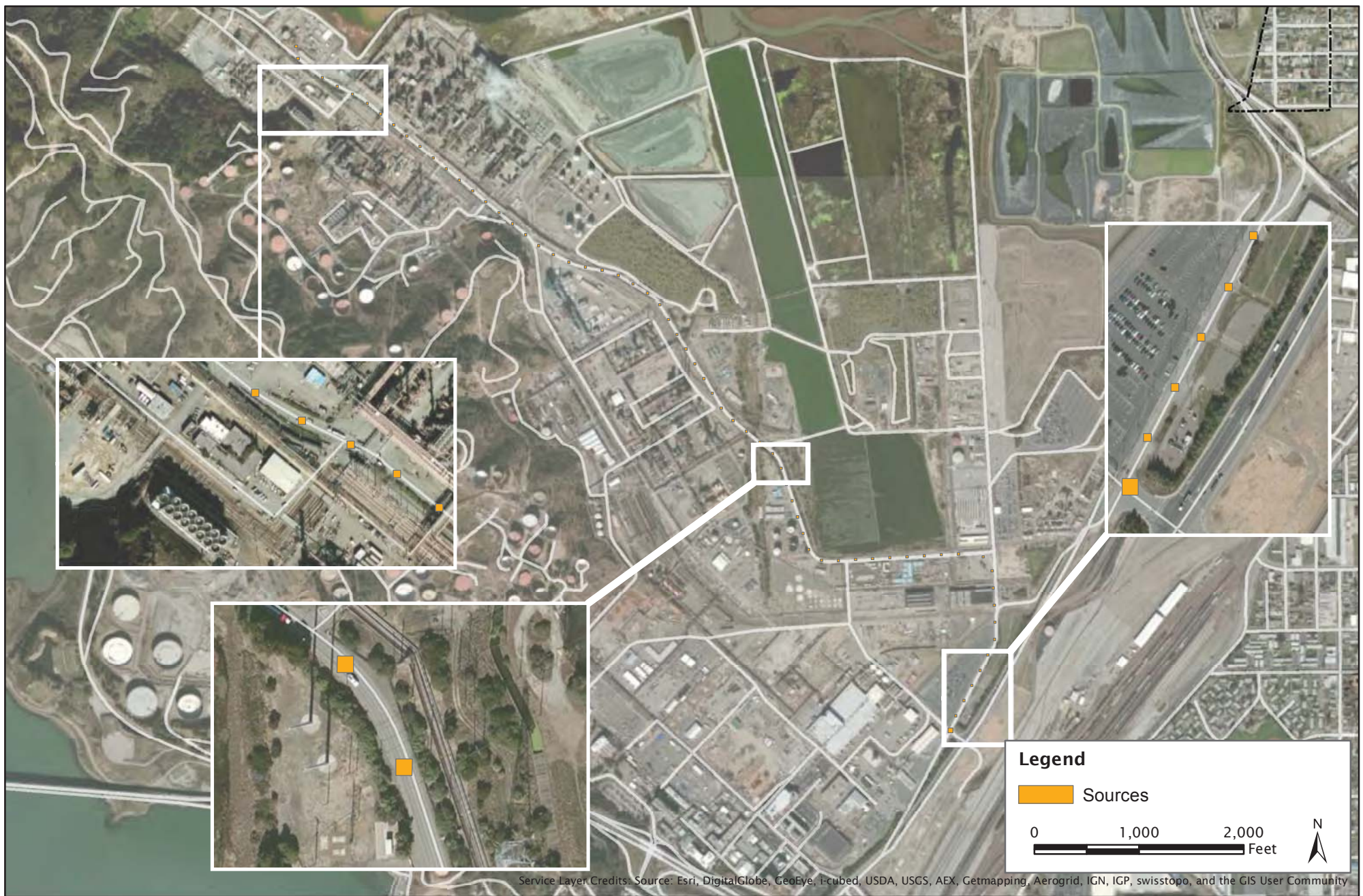
Figure A4.3-HRA-8b
Chevron Refinery Modernization Project EIR
Modeled Oxygen Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_26a sulfur trucks.mxd

Source: Chevron Transmittals

Figure A4.3-HRA-9a
Chevron Refinery Modernization Project EIR
Sulfur Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_26b sulfur trucks.mxd

NOTE: This figure shows the sulfur truck route from the facility entrance to the sulfur loading racks. Source groups are ITOS_1, ITOS_2, and ITOS_3 as shown in Figure AQ-HRA-26a.

Figure A4.3-HRA-9b
Chevron Refinery Modernization Project EIR
Modeled Sulfur Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_27a marketing rack trucks.mxd

Source: Chevron Transmittals

Figure A4.3-HRA-10a
Chevron Refinery Modernization Project EIR
Marketing Rack Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_27b marketing rack trucks.mxd

NOTE: This figure shows the marketing rack truck route from the facility entrance to the marketing racks. Source group is ITOMR as shown in Figure AQ-HRA-27a.

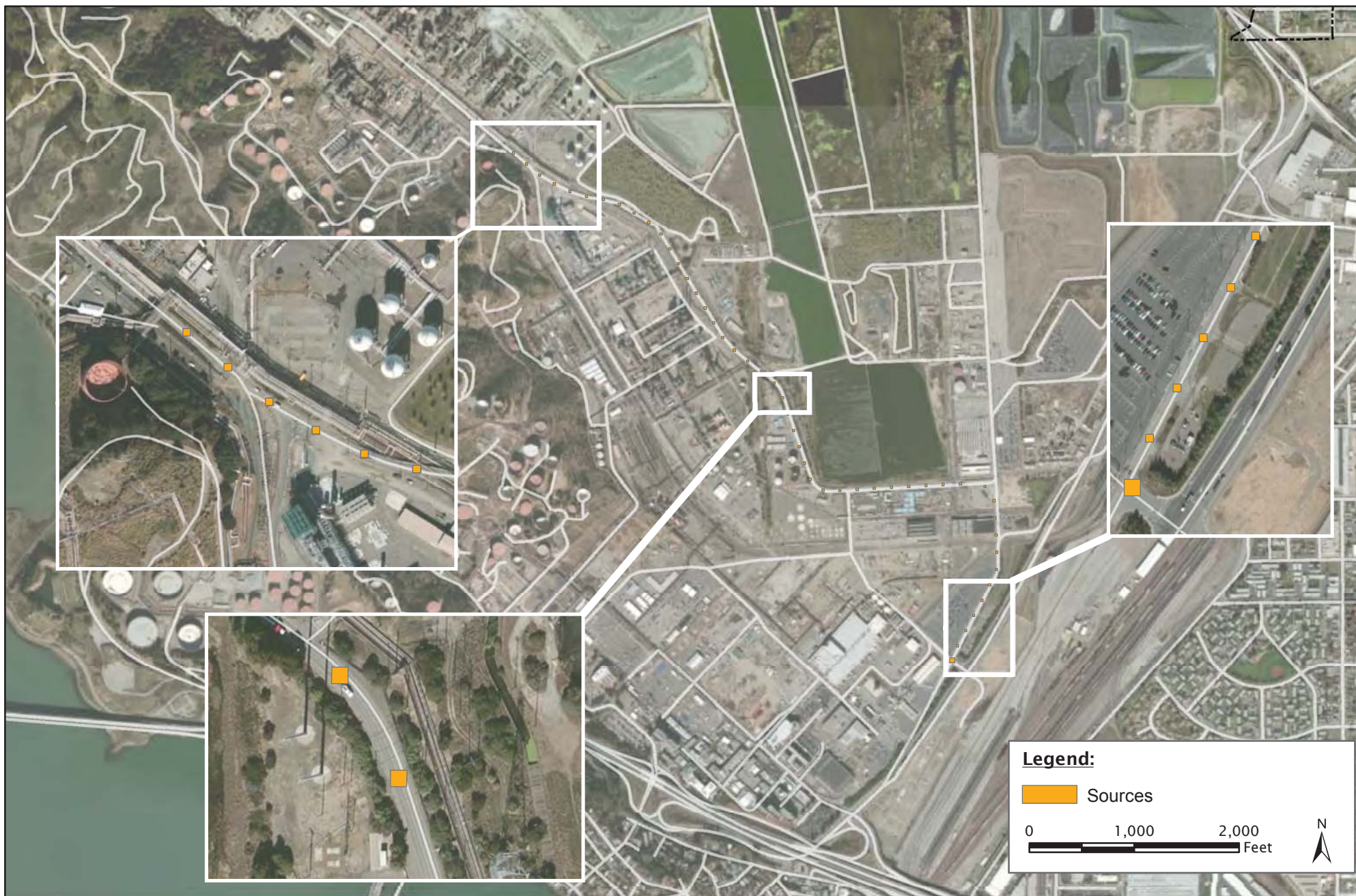
Figure A4.3-HRA-10b
Chevron Refinery Modernization Project EIR
Modeled Marketing Rack Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_28a Propane trucks.mxd

Source: Chevron Transmittals

Figure A4.3-HRA-11a
Chevron Refinery Modernization Project EIR
Propane Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_28b Propane trucks.mxd

NOTE: This figure shows the propane truck route from the facility entrance to the LPG tank truck loading area. Source group is ITOLPG as shown in Figure AQ-HRA-28a.

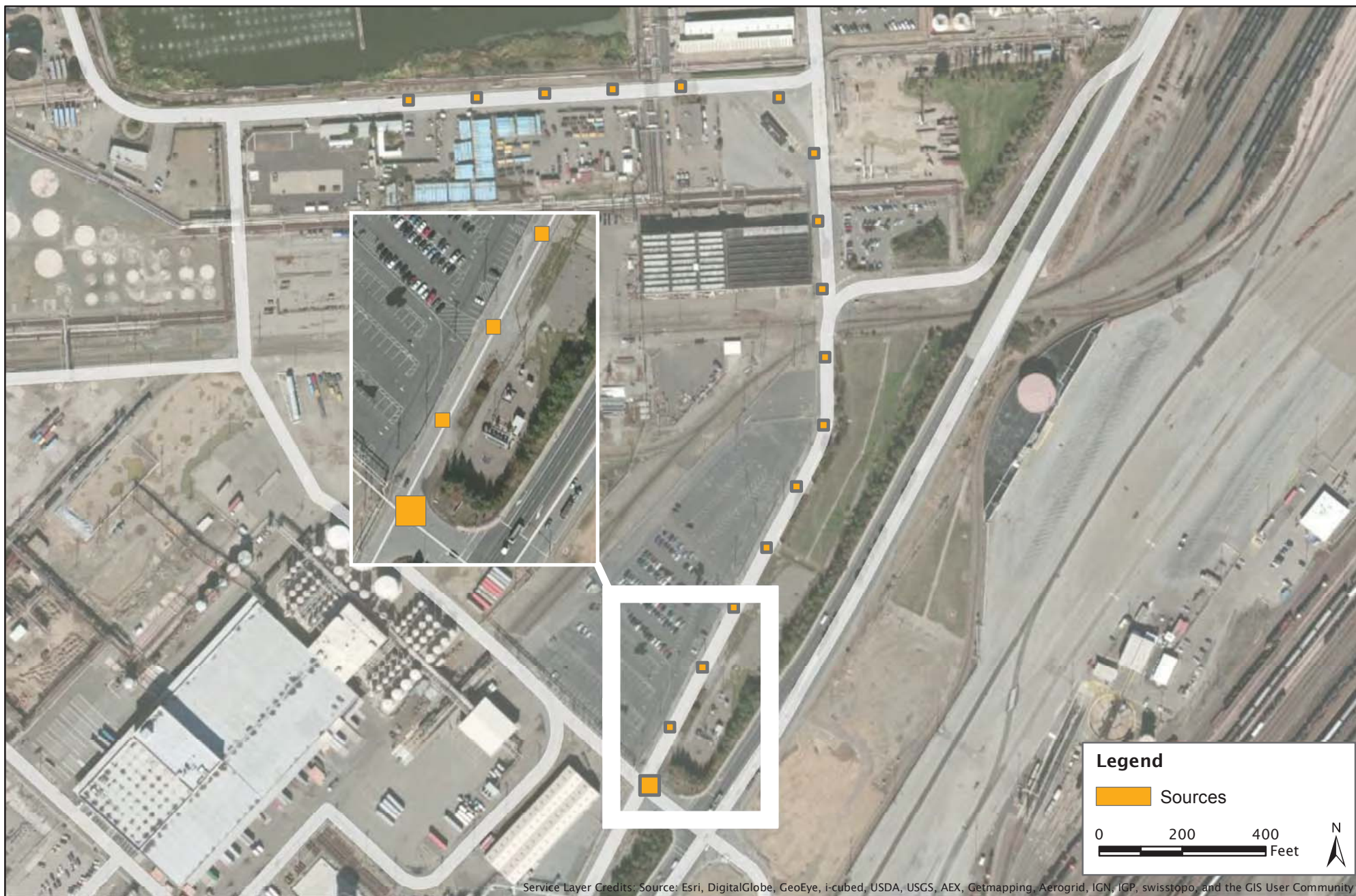
Figure A4.3-HRA-11b
Chevron Refinery Modernization Project EIR
Modeled Propane Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_29a HAZ trucks.mxd

Source: Chevron Transmittals

Figure A4.3-HRA-12a
Chevron Refinery Modernization Project EIR
Solid Hazardous Waste Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_29b HAZ trucks.mxd

NOTE: This figure shows the solid hazardous waste truck route from the facility entrance to the south edge of the No.1 oxidation pond. Source group is ITOHAZ as shown in Figure AQ-HRA-29a.

Figure A4.3-HRA-12b
Chevron Refinery Modernization Project EIR
Modeled Solid Hazardous Waste Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_30a Tally room trucks.mxd

Source: Chevron Transmittals

Figure A4.3-HRA-13a
Chevron Refinery Modernization Project EIR
Tally Room Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_30b Tally room trucks.mxd

NOTE: This figure shows the Tally room truck route from the facility entrance to the Tally room. Source group is ITOT as shown in Figure AQ-HRA-30a.

Figure A4.3-HRA-13b
Chevron Refinery Modernization Project EIR
Modeled Tally Room Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_31a Lubricant trucks.mxd

Source: Chevron Transmittals

Figure A4.3-HRA-14a
Chevron Refinery Modernization Project EIR
Lubricant Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\Fig_31b Lubricant trucks.mxd

NOTE: This figure shows the lubricant truck route from the facility entrance to the Rich Lube Plant. Source group is ITOL_1 as shown in Figure AQ-HRA-31a.

Figure A4.3-HRA-14b
Chevron Refinery Modernization Project EIR
Modeled Lubricant Truck Trips

elevated source not on or adjacent to a building (EPA, 1995).⁷ Initial lateral dimensions are also calculated based on volume size divided by 4.3 following EPA guidance for a single volume source (EPA, 1995).⁸ Details of the source parameters used are presented in Table A4.3-HRA-13.

- **On-Road Vehicles-Idling Emissions.** Area sources were used to represent the delivery truck idling areas on the Modernization Project site. As described above, the idling areas are at the Facility gates. The release height and initial vertical dimensions are consistent with that used for the operational truck movement sources described above. Details of the source parameters used are presented in Table 4.3-HRA-13.

In addition, operational on-road vehicle trips occur both within and outside the Facility boundary. In general, operational trucks travel from highways Interstate 580 (I-580) or Interstate 80 (I-80) to the Facility via Castro Street or Richmond Parkway. Then, some of these trucks enter the Facility through Gate 31 and travel north to the sulfur loading rack area for the sulfur and sodium bisulfide shipments, to the #6 hydrogen sulfide plant for the oxygen shipments, to the liquefied petroleum gas tank truck loading area for the propane shipments, or to the south edge of the No.1 oxidation pond for the solid hazard waste shipments. Some of these trucks enter the Facility through Gate 31 and travel south to the Tally room area for the tally room deliveries and to the Richmond lube oil plant for the lubricant shipment and deliveries. Another portion of these trucks enter the Facility boundary, and immediately turn south to the area for marketing track shipments. Half of the chemical deliveries were assumed to go to the Modernization Project area, while the other half were assumed to go to the Tally room.

1.4.4.1.1 Shipping Emissions

Three types of vessels contribute to the Modernization Project's shipping emissions: ships, barges, and tugs. Depending on the operating mode, these vessels are powered by engines, turbines,⁹ generators, and/or boilers, which can combust a variety of fuels including distillate oil, residual fuel oil, bunker fuel, marine gas oil, and marine diesel oil.

⁷ Initial vertical dimension of elevated volume sources not on or adjacent to a building is release height divided by 4.3.

⁸ Initial lateral dimension of single volume sources is length of side divided by 4.3.

⁹ Gas turbines ships were phased out in 2010 and 2011. Steam turbine SuezMax ships are being replaced in 2014. As a result, no turbine emissions are expected for Baseline and Future cases. The 2008-2010 emissions included that from the turbines.

Table A4.3-HRA-13
Operational On-road Mobile Modeling Source Parameters
Chevron Modernization Project
Richmond, California

Source Description	Source Group ¹	Source Type	Source Dimension	Number of Sources	Release Height	Initial Vertical Dimension	Initial Lateral Dimension	Notes
			[m]		[m]	[m]	[m]	
Oxygen truck onsite path	ITOO_1	Volume	6.9	51	4.57	1.1	1.6	2,3,4,5,6,7
	ITOO_2	Volume	6.9-14	12	4.57	1.1	1.6-3.3	2,3,4,5,6,7
	ITOO_3	Volume	5.6-9.0	2	4.57	1.1	1.3-2.1	2,3,4,5,6,7
Sulfur truck onsite path	ITOS_1	Volume	6.9	51	4.57	1.1	1.6	2,3,4,5,6,7
	ITOS_2	Volume	6.9-14	12	4.57	1.1	1.6-3.3	2,3,4,5,6,7
	ITOS_3	Volume	8.2	2	4.57	1.1	1.9	2,3,4,5,6,7
Marketing rack truck onsite path	ITOMR	Volume	13.5-14	6	4.57	1.1	3.1-3.3	2,3,4,5,6,7
Propane truck onsite path	ITO LPG	Volume	6.9-14	49	4.57	1.1	1.6-3.3	2,3,4,5,6,7
Solid hazardous waste truck onsite path	ITOHMZ	Volume	6.9-14	16	4.57	1.1	1.6	2,3,4,5,6,7
Tally room truck onsite path	ITOT_1	Volume	6.9-14	44	4.57	1.1	1.6-3.5	2,3,4,5,6,7
Lubricant truck onsite path	ITOL_1	Area	6.9-14	37	4.57	1.1	1.6-3.3	8,9,10
Chemical truck onsite path	ITOO_1	Volume	6.9	51	4.57	1.1	1.6	2,3,4,5,6,7,11
	ITOO_2	Volume	6.9-14	12	4.57	1.1	1.6-3.3	2,3,4,5,6,7,11
	ITOO_3	Volume	5.6-9.0	2	4.57	1.1	1.3-2.1	2,3,4,5,6,7,11
	ITOT_1	Volume	6.9-14	39	4.57	1.1	1.6-3.3	2,3,4,5,6,7,11
All truck offsite path on Richmond Parkway	ETC_6	Volume	36-57	11	4.57	1.1	8.3-13	2,3,4,5,6,7
	ETC_7	Volume	30.5	124	4.57	1.1	7.1	2,3,4,5,6,7
	ETC_8	Volume	21.4	48	4.57	1.1	5.0	2,3,4,5,6,7
	ETC_9	Volume	16.8	37	4.57	1.1	3.9	2,3,4,5,6,7
All truck offsite path on Castro Street	RAMPST	Volume	3.4 - 28.3	39	4.57	1.1	0.8 - 6.6	2,3,4,5,6,7
	CAS_G31T	Volume	19.8	10	4.57	1.1	4.6	2,3,4,5,6,7
Marketing rack truck idling area at Main Gate	ITC_IDLN	Area	Not Applicable	1	4.57	1.1	Not Applicable	8,9,10
All truck except marketing rack truck idling area at Gate 31	ITC_IDL	Area	Not Applicable	1	4.57	1.1	Not Applicable	8,9,10

Notes:

1. Source groups are the names used in the air dispersion modeling. Dispersion factors were generated for each of the source groups separately.
2. ENVIRON used non-adjacent volume sources to model onroad vehicle running emissions.
3. For volume sources, source dimensions were determined by the roadway width where the source is placed. The volume source is placed such that the roadway width is just covered by the volume source.
4. ENVIRON used 50-m spacing between volume sources. Number of sources were determined by the length of the roadway segment.
5. According to USEPA ISC3 User's Guide Volume II, initial vertical dimension of elevated volume sources not on or adjacent to a building is release height divided by 4.3.
6. According to USEPA ISC3 User's Guide Volume II, initial lateral dimension of single volume sources is length of side divided by 4.3.
7. Consistent with BAAQMD recommendations for Health Risk Assessments & Land Use, release height of the modeled volume sources representing truck onroad vehicles was set to 4.57m.
8. ENVIRON used area sources to model onroad vehicle idling emissions.
9. Consistent with BAAQMD recommendations for Health Risk Assessments & Land Use, release height of the modeled area sources representing truck idling was set to 4.57m.
10. According to USEPA ISC3 User's Guide Volume II, initial vertical dimension of elevated area sources is release height divided by 4.3.
11. According to Chevron, half of the chemical delivery trucks go to the Tally room while the other half go to #6 H2S Plant.

Abbreviations:

ARB: California Air Resources Board
BAAQMD: Bay Area Air Quality Management District
ISC: Industrial Source Complex Model
LST: Local Significance Threshold
m: meter
SCAQMD: South Coast Air Quality Management District
USEPA: United States Environmental Protection Agency

References:

South Coast Air Quality Management District (SCAQMD). 2008. Final Localized Significance Threshold (LST) Methodology. July. Available at http://www.aqmd.gov/ceqa/handbook/lst/Method_final.pdf
United States Environmental Protection Agency (USEPA). 1995. User's Guide for the Industrial Source Complex (ISC3) Dispersion Models. Volume II - Description of Model Algorithms. September. Available at <http://www.epa.gov/scram001/userg/regmod/isc3v2.pdf>

There are four operating modes: transiting, maneuvering, anchorage, and at-berth. The list below describes how each Modernization Project source operating in each of the four modes was represented as either a volume or point source in the air dispersion model and Tables A4.3-HRA-14a to 14c.

- Ships, Barges, and Tugs
 - Transiting – Consecutive Volume Sources
 - Maneuvering – Adjacent Volume Sources
 - Anchorage – Single Volume Source
 - At-Berth – Point Sources

Each source type is discussed in detail below.

1.4.4.1.2 Transiting

Transiting emissions occur from vessels moving between ports. Typically, both the main and auxiliary engines operate during transit, and in some cases the vessel's boilers also operate. Modernization Project transiting was modeled as far as approximately 5 nautical miles from the Long Wharf. Figure A4.3-HRA-15 shows the modeled transiting routes within this 5 nautical mile boundary for all Modernization Project sources. Ships, barges, and tugs all travel along the same channels; therefore, all three vessel types were modeled with volume sources in the same spatial locations. The locations of the transit routes were provided by Chevron (Chevron Data Transmittal #26A, 2012). Transiting is divided into six "legs," which were modeled as separate source groups: Leg W, X Northbound, X Southbound, Y, Z Northbound, and Z Southbound.¹⁰ Consecutive volume sources were used to represent vessel transiting emissions along each of these legs. Initial lateral dimensions were calculated based on the width of the volume source following EPA AERMOD guidance for a line source represented by adjacent volume sources.¹¹ Volumes were spaced between 200 and 600 meters apart, depending on the width of the volume sources. Release heights of 28.8, 7.27, and 7.32 meters were used for ships, barges, and tugs, respectively, based on data provided by Chevron (Chevron Data Transmittal #26C (Rev #3), 2014). Initial vertical dimensions were calculated based on the release height following

¹⁰ Moffatt and Nichol calculated emissions separately for each of the six legs; therefore, ENVIRON modeled the six legs as separate source groups.

¹¹ As per the EPA AERMOD User's Guide, the initial lateral dimension of a line source represented by adjacent volume sources is the length of side (which in this case is the width of the channel) divided by 2.15 (EPA, 2004).

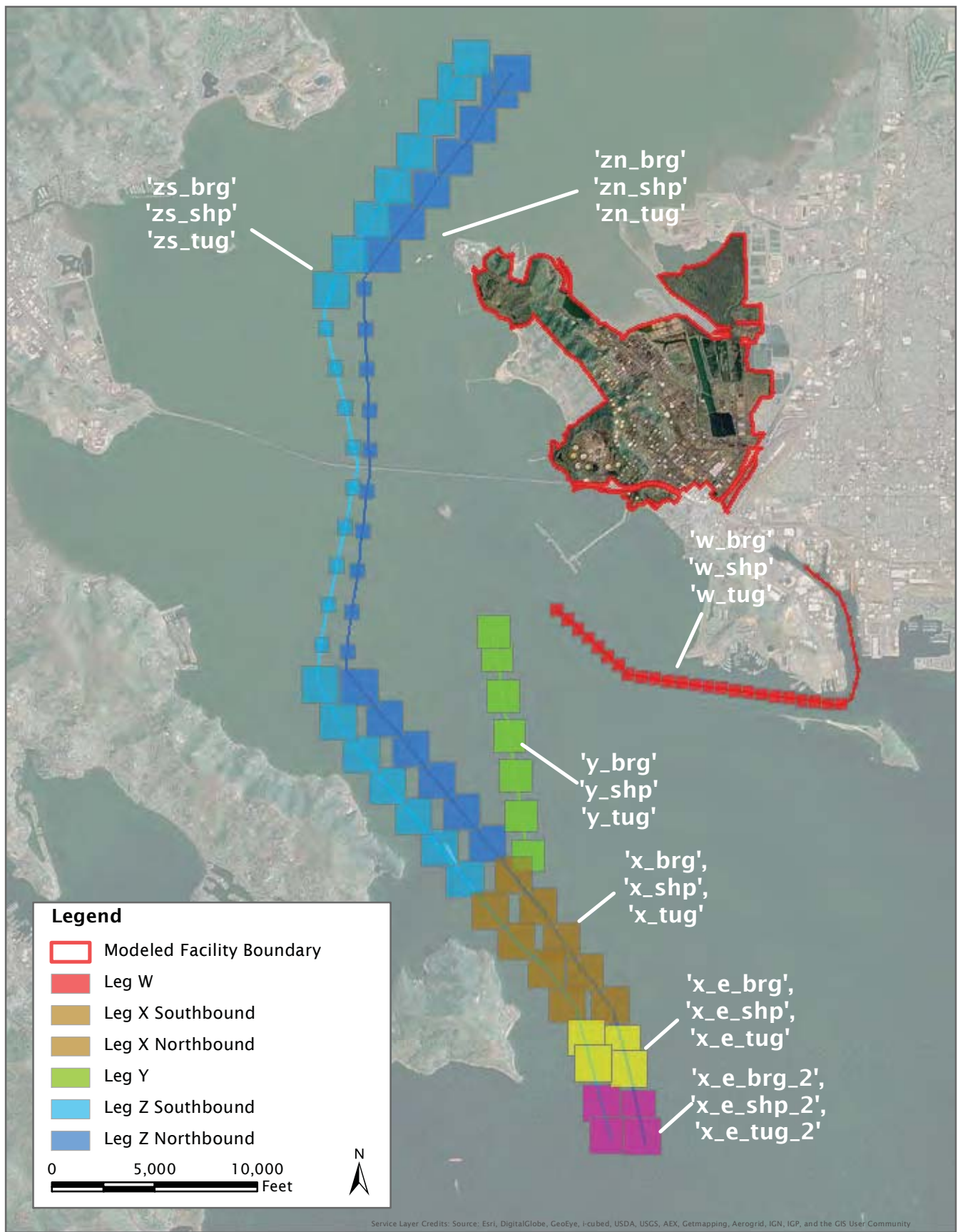


Figure A4.3-HRA-15
Chevron Refinery Modernization Project EIR
Shipping: Modeled Transiting Locations (Legs W, X, Y, and Z)

Table A4.3-HRA-14a
Shipping Anchorage Maneuvering Modeling Parameters
Chevron Modernization Project
Richmond, California

Source Description	Source Group	Source	Source Type	X Coordinates	Y Coordinates	Source Dimension	Release Height	Initial Vertical Dimension	Initial Lateral Dimension	Notes
				[m]	[m]	[m]	[m]	[m]	[m]	
Barge Emissions during Anchorage	ancbrg	ANCBRG01	Volume	549290	4196652	250	7.27	1.69	116.28	1,2,3,4,5
		BERBRG01	Volume	551700	4197600	50	7.27	1.69	23.26	1,2,3,4,5
Barge Emissions while Maneuvering	berbrg	BERBRG02	Volume	551800	4197600	50	7.27	1.69	23.26	1,2,3,4,5
		BERBRG03	Volume	551600	4197700	50	7.27	1.69	23.26	1,2,3,4,5
		BERBRG04	Volume	551700	4197700	50	7.27	1.69	23.26	1,2,3,4,5
		BERBRG05	Volume	551500	4197800	50	7.27	1.69	23.26	1,2,3,4,5
		BERBRG06	Volume	551600	4197800	50	7.27	1.69	23.26	1,2,3,4,5
		BERBRG07	Volume	551400	4197900	50	7.27	1.69	23.26	1,2,3,4,5
		BERBRG08	Volume	551500	4197900	50	7.27	1.69	23.26	1,2,3,4,5
		BERBRG09	Volume	551300	4198000	50	7.27	1.69	23.26	1,2,3,4,5
		BERBRG10	Volume	551400	4198000	50	7.27	1.69	23.26	1,2,3,4,5
		BERBRG11	Volume	551300	4198100	50	7.27	1.69	23.26	1,2,3,4,5
	mnbrg	MNBRG01	Volume	550500	4196600	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG02	Volume	550500	4196700	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG03	Volume	550600	4196700	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG04	Volume	550700	4196700	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG05	Volume	550500	4196800	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG06	Volume	550600	4196800	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG07	Volume	550700	4196800	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG08	Volume	550800	4196800	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG09	Volume	550900	4196800	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG10	Volume	551000	4196800	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG11	Volume	551500	4196800	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG12	Volume	551600	4196800	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG13	Volume	550500	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG14	Volume	550600	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG15	Volume	550700	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG16	Volume	550800	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG17	Volume	550900	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG18	Volume	551000	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG19	Volume	551100	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG20	Volume	551200	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG21	Volume	551400	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG22	Volume	551500	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG23	Volume	551600	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG24	Volume	551700	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG25	Volume	551800	4196900	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG26	Volume	550500	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG27	Volume	550600	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG28	Volume	550700	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG29	Volume	550800	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG30	Volume	550900	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG31	Volume	551000	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG32	Volume	551100	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG33	Volume	551200	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG34	Volume	551300	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG35	Volume	551400	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG36	Volume	551500	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG37	Volume	551600	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG38	Volume	551700	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG39	Volume	551800	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG40	Volume	551900	4197000	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG41	Volume	550600	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG42	Volume	550700	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG43	Volume	550800	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG44	Volume	550900	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG45	Volume	551000	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG46	Volume	551100	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG47	Volume	551200	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG48	Volume	551300	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG49	Volume	551400	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG50	Volume	551500	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG51		Volume	551600	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG52		Volume	551700	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG53		Volume	551800	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG54		Volume	551900	4197100	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG55		Volume	550600	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG56		Volume	550700	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG57		Volume	550800	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG58		Volume	550900	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG59		Volume	551000	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG60		Volume	551100	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG61	Volume	551200	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG62	Volume	551300	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG63	Volume	551400	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG64	Volume	551500	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG65	Volume	551600	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG66	Volume	551700	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG67	Volume	551800	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG68	Volume	551900	4197200	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG69	Volume	550600	4197300	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG70	Volume	550700	4197300	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG71	Volume	550800	4197300	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG72	Volume	550900	4197300	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG73	Volume	551000	4197300	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG74	Volume	551100	4197300	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG75	Volume	551200	4197300	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG76	Volume	551300	4197300	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG77	Volume	551400	4197300	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG78	Volume	551500	4197300	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG79	Volume	551600	4197300	50	7.27	1.69	23.26	1,2,3,4,5

		MNBRG80	Volume	551700	4197300	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG81	Volume	551800	4197300	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG82	Volume	550600	4197400	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG83	Volume	550700	4197400	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG84	Volume	550800	4197400	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG85	Volume	550900	4197400	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG86	Volume	551000	4197400	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG87	Volume	551100	4197400	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG88	Volume	551200	4197400	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG89	Volume	551300	4197400	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG90	Volume	551400	4197400	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG91	Volume	551500	4197400	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG92	Volume	551600	4197400	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG93	Volume	551700	4197400	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG94	Volume	550600	4197500	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG95	Volume	550700	4197500	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG96	Volume	550800	4197500	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG97	Volume	550900	4197500	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG98	Volume	551000	4197500	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG99	Volume	551100	4197500	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG100	Volume	551200	4197500	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG101	Volume	551300	4197500	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG102	Volume	551400	4197500	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG103	Volume	551500	4197500	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG104	Volume	551600	4197500	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG105	Volume	550600	4197600	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG106	Volume	550700	4197600	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG107	Volume	550800	4197600	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG108	Volume	550900	4197600	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG109	Volume	551000	4197600	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG110	Volume	551100	4197600	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG111	Volume	551200	4197600	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG112	Volume	551300	4197600	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG113	Volume	551400	4197600	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG114	Volume	551500	4197600	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG115	Volume	551600	4197600	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG116	Volume	550600	4197700	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG117	Volume	550700	4197700	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG118	Volume	550800	4197700	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG119	Volume	550900	4197700	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG120	Volume	551000	4197700	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG121	Volume	551100	4197700	50	7.27	1.69	23.26	1,2,3,4,5
		MNBRG122	Volume	551200						

mnshp

MNSHP36	Volume	551500	4197000	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP37	Volume	551600	4197000	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP38	Volume	551700	4197000	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP39	Volume	551800	4197000	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP40	Volume	551900	4197000	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP41	Volume	550600	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP42	Volume	550700	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP43	Volume	550800	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP44	Volume	550900	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP45	Volume	551000	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP46	Volume	551100	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP47	Volume	551200	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP48	Volume	551300	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP49	Volume	551400	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP50	Volume	551500	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP51	Volume	551600	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP52	Volume	551700	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP53	Volume	551800	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP54	Volume	551900	4197100	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP55	Volume	550600	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP56	Volume	550700	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP57	Volume	550800	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP58	Volume	550900	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP59	Volume	551000	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP60	Volume	551100	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP61	Volume	551200	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP62	Volume	551300	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP63	Volume	551400	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP64	Volume	551500	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP65	Volume	551600	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP66	Volume	551700	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP67	Volume	551800	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP68	Volume	551900	4197200	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP69	Volume	550600	4197300	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP70	Volume	550700	4197300	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP71	Volume	550800	4197300	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP72	Volume	550900	4197300	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP73	Volume	551000	4197300	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP74	Volume	551100	4197300	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP75	Volume	551200	4197300	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP76	Volume	551300	4197300	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP77	Volume	551400	4197300	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP78	Volume	551500	4197300	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP79	Volume	551600	4197300	50	28.8	6.70	23.26	1,2,3,4,5
MNSHP80	Volume	551700	4197300	50	28.8	6.70	23.26	1,2,3,4,5

		MNSHP135	Volume	550900	4197900	50	28.8	6.70	23.26	1,2,3,4,5
		MNSHP136	Volume	551000	4197900	50	28.8	6.70	23.26	1,2,3,4,5
		MNSHP137	Volume	551100	4197900	50	28.8	6.70	23.26	1,2,3,4,5
		MNSHP138	Volume	551200	4197900	50	28.8	6.70	23.26	1,2,3,4,5
		MNSHP139	Volume	551300	4197900	50	28.8	6.70	23.26	1,2,3,4,5
		MNSHP140	Volume	551100	4198000	50	28.8	6.70	23.26	1,2,3,4,5
		MNSHP141	Volume	551200	4198000	50	28.8	6.70	23.26	1,2,3,4,5
Tug Emissions during Anchorage	anctug	ANCTUG01	Volume	549290.43	4196651.55	250	7.32	1.70	116.28	1,2,3,4,5
		BERTUG01	Volume	551700	4197800	50	7.32	1.70	23.26	1,2,3,4,5
		BERTUG02	Volume	551800	4197600	50	7.32	1.70	23.26	1,2,3,4,5
		BERTUG03	Volume	551600	4197700	50	7.32	1.70	23.26	1,2,3,4,5
		BERTUG04	Volume	551700	4197700	50	7.32	1.70	23.26	1,2,3,4,5
		BERTUG05	Volume	551500	4197800	50	7.32	1.70	23.26	1,2,3,4,5
		BERTUG06	Volume	551600	4197800	50	7.32	1.70	23.26	1,2,3,4,5
		BERTUG07	Volume	551400	4197900	50	7.32	1.70	23.26	1,2,3,4,5
		BERTUG08	Volume	551500	4197900	50	7.32	1.70	23.26	1,2,3,4,5
		BERTUG09	Volume	551300	4198000	50	7.32	1.70	23.26	1,2,3,4,5
		BERTUG10	Volume	551400	4198000	50	7.32	1.70	23.26	1,2,3,4,5
		BERTUG11	Volume	551300	4198100	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG01	Volume	550500	4196600	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG02	Volume	550500	4196700	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG03	Volume	550600	4196700	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG04	Volume	550700	4196700	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG05	Volume	550500	4196800	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG06	Volume	550600	4196800	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG07	Volume	550700	4196800	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG08	Volume	550800	4196800	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG09	Volume	550900	4196800	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG10	Volume	551000	4196800	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG11	Volume	551500	4196800	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG12	Volume	551600	4196800	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG13	Volume	550500	4196900	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG14	Volume	550600	4196900	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG15	Volume	550700	4196900	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG16	Volume	550800	4196900	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG17	Volume	550900	4196900	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG18	Volume	551000	4196900	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG19	Volume	551100	4196900	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG20	Volume	551200	4196900	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG21	Volume	551400	4196900	50	7.32	1.70	23.26	1,2,3,4,5
		MNTUG22	Volume	551500	4196900	50	7.32	1.70	23.26	1,2,3,4,5
	</									

Table A4.3-HRA-14a
Shipping Anchorage Maneuvering Modeling Parameters
Chevron Modernization Project
Richmond, California

MNTUG80	Volume	551700	4197300	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG81	Volume	551800	4197300	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG82	Volume	550600	4197400	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG83	Volume	550700	4197400	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG84	Volume	550800	4197400	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG85	Volume	550900	4197400	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG86	Volume	551000	4197400	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG87	Volume	551100	4197400	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG88	Volume	551200	4197400	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG89	Volume	551300	4197400	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG90	Volume	551400	4197400	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG91	Volume	551500	4197400	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG92	Volume	551600	4197400	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG93	Volume	551700	4197400	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG94	Volume	550600	4197500	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG95	Volume	550700	4197500	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG96	Volume	550800	4197500	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG97	Volume	550900	4197500	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG98	Volume	551000	4197500	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG99	Volume	551100	4197500	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG100	Volume	551200	4197500	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG101	Volume	551300	4197500	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG102	Volume	551400	4197500	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG103	Volume	551500	4197500	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG104	Volume	551600	4197500	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG105	Volume	550600	4197600	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG106	Volume	550700	4197600	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG107	Volume	550800	4197600	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG108	Volume	550900	4197600	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG109	Volume	551000	4197600	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG110	Volume	551100	4197600	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG111	Volume	551200	4197600	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG112	Volume	551300	4197600	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG113	Volume	551400	4197600	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG114	Volume	551500	4197600	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG115	Volume	551600	4197600	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG116	Volume	550600	4197700	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG117	Volume	550700	4197700	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG118	Volume	550800	4197700	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG119	Volume	550900	4197700	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG120	Volume	551000	4197700	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG121	Volume	551100	4197700	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG122	Volume	551200	4197700	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG123	Volume	551300	4197700	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG124	Volume	551400	4197700	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG125	Volume	551500	4197700	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG126	Volume	550600	4197800	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG127	Volume	550700	4197800	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG128	Volume	550800	4197800	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG129	Volume	550900	4197800	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG130	Volume	551000	4197800	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG131	Volume	551100	4197800	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG132	Volume	551200	4197800	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG133	Volume	551300	4197800	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG134	Volume	551400	4197800	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG135	Volume	550900	4197900	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG136	Volume	551000	4197900	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG137	Volume	551100	4197900	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG138	Volume	551200	4197900	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG139	Volume	551300	4197900	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG140	Volume	551100	4198000	50	7.32	1.70	23.26	1,2,3,4,5
MNTUG141	Volume	551200	4198000	50	7.32	1.70	23.26	1,2,3,4,5

Notes:

1. Source groups are the names used in the air dispersion modeling. Dispersion factors were generated for each of the source groups separately.
2. Source dimensions, release heights, and initial vertical dimensions were provided by Chevron.
3. Number of sources were determined by area of each activity's zone and source dimensions for the sources within each zone.
4. According to USEPA ISC3 User's Guide Volume II, initial lateral dimension for line sources represented by adjacent volume sources is length of side divided by 2.15.
5. According to USEPA ISC3 User's Guide Volume II, initial vertical dimension for elevated volume sources (release height >0) not on or adjacent to a building is length of side divided by 4.3.

Abbreviations:

ISC: Industrial Source Complex Model
m: meter
USEPA: United States Environmental Protection Agency

References:

United States Environmental Protection Agency (USEPA). 1995. User's Guide for the Industrial Source Complex (ISC3) Dispersion Models. Volume II - Description of Model Algorithms. September. Available at <http://www.epa.gov/scram001/user/regmod/isc3v2.pdf>

Table A4.3-HRA-14b
Shipping Transiting Modeling Parameters
Chevron Modernization Project
Richmond, California

Source Description	Source Group	Source	Source Type	X Coordinates	Y Coordinates	Source Dimension	Release Height	Initial Vertical Dimension	Initial Lateral Dimension	Notes
				[m]	[m]			[m]	[m]	
Santa Fe Channel		W BRG 01	Volume	555341	4197270	80	7.27	1.69	37.2093	1,2,3,4,5
		W BRG 02	Volume	555494	4197142	80	7.27	1.69	37.2093	1,2,3,4,5
		W BRG 03	Volume	555647	4197014	80	7.27	1.69	37.2093	1,2,3,4,5
		W BRG 04	Volume	555803	4196888	80	7.27	1.69	37.2093	1,2,3,4,5
PtPotrero Turn Harbour		W BRG 05	Volume	555894	4196715	80	7.27	1.69	37.2093	1,2,3,4,5
		W BRG 06	Volume	555963	4196528	80	7.27	1.69	37.2093	1,2,3,4,5
		W BRG 07	Volume	555992	4196330	80	7.27	1.69	37.2093	1,2,3,4,5
		W BRG 08	Volume	556022	4196133	80	7.27	1.69	37.2093	1,2,3,4,5
		W BRG 09	Volume	556066	4195938	80	7.27	1.69	37.2093	1,2,3,4,5
		W BRG 10	Volume	556110	4195742	80	7.27	1.69	37.2093	1,2,3,4,5
		W BRG 11	Volume	556074	4195550	80	7.27	1.69	37.2093	1,2,3,4,5
		W BRG 12	Volume	556019	4195357	80	7.27	1.69	37.2093	1,2,3,4,5
		W BRG 13	Volume	555860	4195253	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 14	Volume	555666	4195251	200	7.27	1.69	93.02325	1,2,3,4,5
Point Potrero Channel	w_brg	W BRG 15	Volume	555469	4195280	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 16	Volume	555271	4195309	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 17	Volume	555073	4195337	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 18	Volume	554875	4195366	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 19	Volume	554677	4195394	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 20	Volume	554479	4195423	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 21	Volume	554281	4195452	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 22	Volume	554083	4195480	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 23	Volume	553885	4195509	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 24	Volume	553687	4195537	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 25	Volume	553489	4195566	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 26	Volume	553291	4195595	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 27	Volume	553093	4195623	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 28	Volume	552895	4195652	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 29	Volume	552700	4195690	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 30	Volume	552552	4195824	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 31	Volume	552403	4195958	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 32	Volume	552255	4196093	200	7.27	1.69	93.02325	1,2,3,4,5
Entrance Channel		W BRG 33	Volume	552107	4196227	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 34	Volume	551959	4196361	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 35	Volume	551810	4196495	200	7.27	1.69	93.02325	1,2,3,4,5
		W BRG 36	Volume	551652	4196639	200	7.27	1.69	93.02325	1,2,3,4,5
		X BRG 01	Volume	551791	4190805	550	7.27	1.69	255.8139	1,2,3,4,5
		X BRG 02	Volume	551487	4191321	550	7.27	1.69	255.8139	1,2,3,4,5
Southbound Transit LegX	x_brg	X BRG 03	Volume	551048	4191729	550	7.27	1.69	255.8139	1,2,3,4,5
		X BRG 04	Volume	550666	4192192	550	7.27	1.69	255.8139	1,2,3,4,5
		X BRG 05	Volume	552435	4190790	550	7.27	1.69	255.8139	1,2,3,4,5
		X BRG 06	Volume	552064	4191261	550	7.27	1.69	255.8139	1,2,3,4,5
		X BRG 07	Volume	551709	4191745	550	7.27	1.69	255.8139	1,2,3,4,5
		X BRG 08	Volume	551371	4192239	550	7.27	1.69	255.8139	1,2,3,4,5
		X BRG 09	Volume	550995	4192707	550	7.27	1.69	255.8139	1,2,3,4,5
		Y BRG 01	Volume	551213	4192995	480	7.27	1.69	223.2558	1,2,3,4,5
		Y BRG 02	Volume	551122	4193588	480	7.27	1.69	223.2558	1,2,3,4,5
Southhampton Shoal Channel	y_brg	Y BRG 03	Volume	551031	4194182	480	7.27	1.69	223.2558	1,2,3,4,5
		Y BRG 04	Volume	550940	4194775	480	7.27	1.69	223.2558	1,2,3,4,5
		Y BRG 05	Volume	550849	4195368	480	7.27	1.69	223.2558	1,2,3,4,5
		Y BRG 06	Volume	550758	4195961	480	7.27	1.69	223.2558	1,2,3,4,5
		Y BRG 07	Volume	550703	4196317	480	7.27	1.69	223.2558	1,2,3,4,5
		ZS BRG01	Volume	550284	4192655	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG02	Volume	549901	4193117	550	7.27	1.69	255.8139	1,2,3,4,5
Southbound Transit LegZ	zs_brg	ZS BRG03	Volume	549517	4193578	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG04	Volume	549133	4194039	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG05	Volume	548754	4194504	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG06	Volume	548402	4194989	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG07	Volume	548148	4195532	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG08	Volume	548154	4196118	225	7.27	1.69	104.6512	1,2,3,4,5
		ZS BRG09	Volume	548262	4196708	225	7.27	1.69	104.6512	1,2,3,4,5
		ZS BRG10	Volume	548390	4197294	225	7.27	1.69	104.6512	1,2,3,4,5
		ZS BRG11	Volume	548514	4197881	225	7.27	1.69	104.6512	1,2,3,4,5
		ZS BRG12	Volume	548630	4198470	225	7.27	1.69	104.6512	1,2,3,4,5
		ZS BRG13	Volume	548630	4199056	225	7.27	1.69	104.6512	1,2,3,4,5
		ZS BRG14	Volume	548510	4199644	225	7.27	1.69	104.6512	1,2,3,4,5
		ZS BRG15	Volume	548365	4200226	225	7.27	1.69	104.6512	1,2,3,4,5
		ZS BRG16	Volume	548231	4200811	225	7.27	1.69	104.6512	1,2,3,4,5
		ZS BRG17	Volume	548309	4201387	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG18	Volume	548594	4201911	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG19	Volume	548907	4202422	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG20	Volume	549225	4202931	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG21	Volume	549544	4203439	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG22	Volume	549859	4203950	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG23	Volume	550160	4204469	550	7.27	1.69	255.8139	1,2,3,4,5
		ZS BRG24	Volume	550374	4204816	550	7.27	1.69	255.8139	1,2,3,4,5
Northbound Transit LegN	zn_brg	ZN BRG01	Volume	550618	4193174	550	7.27	1.69	255.8139	1,2,3,4,5
		ZN BRG02	Volume	550242	4193641	550	7.27	1.69	255.8139	1,2,3,4,5
		ZN BRG03	Volume	549864	4194107	550	7.27	1.69	255.8139	1,2,3,4,5
		ZN BRG04	Volume	549487	4194574	550	7.27	1.69	255.8139	1,2,3,4,5
		ZN BRG05	Volume	549101	4195033	550	7.27	1.69	255.8139	1,2,3,4,5
		ZN BRG06	Volume	548719	4195496	550	7.27	1.69	255.8139	1,2,3,4,5
		ZN BRG07	Volume	548537	4196027	225	7.27	1.69	104.6512	1,2,3,4,5
		ZN BRG08	Volume	548612	4196622	225	7.27	1.69	104.6512	1,2,3,4,5
		ZN BRG09	Volume	548690	4197216	225	7.27	1.69	104.6512	1,2,3,4,5
		ZN BRG10	Volume	548764	4197812	225	7.27	1.69	104.6512	1,2,3,4,5
		ZN BRG11	Volume	548831	4198408	225	7.27	1.69	104.6512	1,2,3,4,5
		ZN BRG12	Volume	548870	4199005	225	7.27	1.69	104.6512	1,2,3,4,5
		ZN BRG13	Volume	548866	4199605	225	7.27	1.69	104.6512	1,2,3,4,5
		ZN BRG14	Volume	548838	4200204	225	7.27	1.69	104.6512	1,2,3,4,5
		ZN BRG15	Volume	548814	4200804	225	7.27	1.69	104.6512	1,2,3,4,5
		ZN BRG16	Volume	548795	4201403	225	7.27	1.69	104.6512	1,2,3,4,5
		ZN BRG17	Volume	549056	4201917	550	7.27	1.69	255.8139	1,2,3,4,5
		ZN BRG18	Volume	549418	4202396	550	7.27	1.69	255.8139	1,2,3,4,5
		ZN BRG19	Volume	549778	4202876	550	7.27	1.69	255.8139	1,2,3,4,5

Table A4.3-HRA-14b
Shipping Transiting Modeling Parameters
Chevron Modernization Project
Richmond, California

			ZN BRG20	Volume	550131	4203360	550	7.27	1.69	255.8139	1,2,3,4,5
			ZN BRG21	Volume	550481	4203846	550	7.27	1.69	255.8139	1,2,3,4,5
			ZN BRG22	Volume	550804	4204351	550	7.27	1.69	255.8139	1,2,3,4,5
			ZN BRG23	Volume	550977	4204603	550	7.27	1.69	255.8139	1,2,3,4,5
Santa Fe Channel			W SHP_01	Volume	555341	4197270	80	28.8	6.7	37.2093	1,2,3,4,5
			W SHP_02	Volume	555494	4197142	80	28.8	6.7	37.2093	1,2,3,4,5
			W SHP_03	Volume	555647	4197014	80	28.8	6.7	37.2093	1,2,3,4,5
			W SHP_04	Volume	555803	4196888	80	28.8	6.7	37.2093	1,2,3,4,5
PtPotrero Turn Harbour			W SHP_05	Volume	555894	4196715	80	28.8	6.7	37.2093	1,2,3,4,5
			W SHP_06	Volume	555963	4196528	80	28.8	6.7	37.2093	1,2,3,4,5
			W SHP_07	Volume	555992	4196330	80	28.8	6.7	37.2093	1,2,3,4,5
			W SHP_08	Volume	556022	4196133	80	28.8	6.7	37.2093	1,2,3,4,5
Point Potrero Channel	w_shp	W SHP_09	Volume	556066	4195938	80	28.8	6.7	37.2093	1,2,3,4,5	
		W SHP_10	Volume	556110	4195742	80	28.8	6.7	37.2093	1,2,3,4,5	
		W SHP_11	Volume	556074	4195550	80	28.8	6.7	37.2093	1,2,3,4,5	
		W SHP_12	Volume	556019	4195357	80	28.8	6.7	37.2093	1,2,3,4,5	
		W SHP_13	Volume	555860	4195253	200	28.8	6.7	93.02325	1,2,3,4,5	
		W SHP_14	Volume	555666	4195251	200	28.8	6.7	93.02325	1,2,3,4,5	
		W SHP_15	Volume	555469	4195280	200	28.8	6.7	93.02325	1,2,3,4,5	
		W SHP_16	Volume	555271	4195309	200	28.8	6.7	93.02325	1,2,3,4,5	
		W SHP_17	Volume	555073	4195337	200	28.8	6.7	93.02325	1,2,3,4,5	
		W SHP_18	Volume	554875	4195366	200	28.8	6.7	93.02325	1,2,3,4,5	
		W SHP_19	Volume	554677	4195394	200	28.8	6.7	93.02325	1,2,3,4,5	
		W SHP_20	Volume	554479	4195423	200	28.8	6.7	93.02325	1,2,3,4,5	
		W SHP_21	Volume	554281	4195452	200	28.8	6.7	93.02325	1,2,3,4,5	
		W SHP_22	Volume	554083	4195480	200	28.8	6.7	93.02325	1,2,3,4,5	
		W SHP_23	Volume	553885	4195509	200	28.8	6.7	93.02325	1,2,3,4,5	
		W SHP_24	Volume	553687	4195537	200	28.8	6.7	93.02325	1,2,3,4,5	
		Entrance Channel		W SHP_25	Volume	553489	4195566	200	28.8	6.7	93.02325
W SHP_26	Volume			553291	4195595	200	28.8	6.7	93.02325	1,2,3,4,5	
W SHP_27	Volume			553093	4195623	200	28.8	6.7	93.02325	1,2,3,4,5	
W SHP_28	Volume			552895	4195652	200	28.8	6.7	93.02325	1,2,3,4,5	
W SHP_29	Volume			552700	4195690	200	28.8	6.7	93.02325	1,2,3,4,5	
W SHP_30	Volume			552552	4195824	200	28.8	6.7	93.02325	1,2,3,4,5	
W SHP_31	Volume			552403	4195958	200	28.8	6.7	93.02325	1,2,3,4,5	
W SHP_32	Volume			552255	4196093	200	28.8	6.7	93.02325	1,2,3,4,5	
W SHP_33	Volume			552107	4196227	200	28.8	6.7	93.02325	1,2,3,4,5	
W SHP_34	Volume			551959	4196361	200	28.8	6.7	93.02325	1,2,3,4,5	
Southbound Transit LegX	x_shp	W SHP_35	Volume	551810	4196495	200	28.8	6.7	93.02325	1,2,3,4,5	
		X SHP_01	Volume	551791	4190805	550	28.8	6.7	255.8139	1,2,3,4,5	
		X SHP_02	Volume	551487	4191321	550	28.8	6.7	255.8139	1,2,3,4,5	
		X SHP_03	Volume	551048	4191729	550	28.8	6.7	255.8139	1,2,3,4,5	
		X SHP_04	Volume	550666	4192192	550	28.8	6.7	255.8139	1,2,3,4,5	
		X SHP_05	Volume	552435	4190790	550	28.8	6.7	255.8139	1,2,3,4,5	
		X SHP_06	Volume	552064	4191261	550	28.8	6.7	255.8139	1,2,3,4,5	
		X SHP_07	Volume	551709	4191745	550	28.8	6.7	255.8139	1,2,3,4,5	
		X SHP_08	Volume	551371	4192239	550	28.8	6.7	255.8139	1,2,3,4,5	
Southampton Shoal Channel	y_shp	X SHP_09	Volume	550995	4192707	550	28.8	6.7	255.8139	1,2,3,4,5	
		Y SHP_01	Volume	551213	4192995	480	28.8	6.7	223.2558	1,2,3,4,5	
		Y SHP_02	Volume	551122	4193588	480	28.8	6.7	223.2558	1,2,3,4,5	
		Y SHP_03	Volume	551031	4194182	480	28.8	6.7	223.2558	1,2,3,4,5	
		Y SHP_04	Volume	550940	4194775	480	28.8	6.7	223.2558	1,2,3,4,5	
		Y SHP_05	Volume	550849	4195368	480	28.8	6.7	223.2558	1,2,3,4,5	
		Y SHP_06	Volume	550758	4195961	480	28.8	6.7	223.2558	1,2,3,4,5	
		Y SHP_07	Volume	550703	4196317	480	28.8	6.7	223.2558	1,2,3,4,5	
		ZS SHP01	Volume	550284	4192655	550	28.8	6.7	255.8139	1,2,3,4,5	
Southbound Transit LegZ	zs_shp	ZS SHP02	Volume	549901	4193117	550	28.8	6.7	255.8139	1,2,3,4,5	
		ZS SHP03	Volume	549517	4193578	550	28.8	6.7	255.8139	1,2,3,4,5	
		ZS SHP04	Volume	549133	4194039	550	28.8	6.7	255.8139	1,2,3,4,5	
		ZS SHP05	Volume	548754	4194504	550	28.8	6.7	255.8139	1,2,3,4,5	
		ZS SHP06	Volume	548402	4194989	550	28.8	6.7	255.8139	1,2,3,4,5	
		ZS SHP07	Volume	548148	4195532	550	28.8	6.7	255.8139	1,2,3,4,5	
		ZS SHP08	Volume	548154	4196118	225	28.8	6.7	104.6512	1,2,3,4,5	
		ZS SHP09	Volume	548262	4196708	225	28.8	6.7	104.6512	1,2,3,4,5	
		ZS SHP10	Volume	548390	4197294	225	28.8	6.7	104.6512	1,2,3,4,5	
		ZS SHP11	Volume	548514	4197881	225	28.8	6.7	104.6512	1,2,3,4,5	
		ZS SHP12	Volume	548630	4198470	225	28.8	6.7	104.6512	1,2,3,4,5	
		ZS SHP13	Volume	548630	4199056	225	28.8	6.7	104.6512	1,2,3,4,5	
		ZS SHP14	Volume	548510	4199644	225	28.8	6.7	104.6512	1,2,3,4,5	
		ZS SHP15	Volume	548365	4200226	225	28.8	6.7	104.6512	1,2,3,4,5	
		ZS SHP16	Volume	548231	4200811	225	28.8	6.7	104.6512	1,2,3,4,5	
		ZS SHP17	Volume	548309	4201387	550	28.8	6.7	255.8139	1,2,3,4,5	
		ZS SHP18	Volume	548594	4201911	550	28.8	6.7	255.8139	1,2,3,4,5	
		ZS SHP19	Volume	548907	4202422	550	28.8	6.7	255.8139	1,2,3,4,5	
		ZS SHP20	Volume	549225	4202931	550	28.8	6.7	255.8139	1,2,3,4,5	
		ZS SHP21	Volume	549544	4203439	550	28.8	6.7	255.8139	1,2,3,4,5	
		ZS SHP22	Volume	549859	4203950	550	28.8	6.7	255.8139	1,2,3,4,5	
		Northbound Transit LegZ	zn_shp	ZS SHP23	Volume	550160	4204469	550	28.8	6.7	255.8139	1,2,3,4,5
ZS SHP24	Volume			550374	4204816	550	28.8	6.7	255.8139	1,2,3,4,5	
ZN SHP01	Volume			550618	4193174	550	28.8	6.7	255.8139	1,2,3,4,5	
ZN SHP02	Volume			550242	4193641	550	28.8	6.7	255.8139	1,2,3,4,5	
ZN SHP03	Volume			549864	4194107	550	28.8	6.7	255.8139	1,2,3,4,5	
ZN SHP04	Volume			549487	4194574	550	28.8	6.7	255.8139	1,2,3,4,5	
ZN SHP05	Volume			549101	4195033	550	28.8	6.7	255.8139	1,2,3,4,5	
ZN SHP06	Volume			548719	4195496	550	28.8	6.7	255.8139	1,2,3,4,5	
ZN SHP07	Volume			548537	4196027	225	28.8	6.7	104.6512	1,2,3,4,5	
ZN SHP08	Volume			548612	4196622	225	28.8	6.7	104.6512	1,2,3,4,5	
ZN SHP09	Volume			548690	4197216	225	28.8	6.7	104.6512	1,2,3,4,5	
ZN SHP10	Volume			548764	4197812	225	28.8	6.7	104.6512	1,2,3,4,5	
ZN SHP11	Volume			548831	4198408	225	28.8	6.7	104.6512	1,2,3,4,5	
ZN SHP12	Volume			548870	4199005	225	28.8	6.7	104.6512	1,2,3,4,5	
ZN SHP13	Volume			548866	4199605	225	28.8	6.7	104.6512	1,2,3,4,5	
ZN SHP14	Volume			548838	4200204	225	28.8	6.7	104.6512	1,2,3,4,5	
ZN SHP15	Volume			548814	4200804	225	28.8	6.7	104.6512	1,2,3,4,5	
ZN SHP16	Volume			548795	4201403	225	28.8	6.7	104.6512	1,2,3,4,5	
ZN SHP17	Volume			549056	4201917	550	28.8	6.7	255.8139	1,2,3,4,5	
ZN SHP18	Volume			549418	4202396	550	28.8	6.7	255.8139	1,2,3,4,5	
ZN SHP19	Volume			549778	4202876	550	28.8	6.7	255.8139	1,2,3,4,5	
ZN SHP20	Volume	550131	4203360	550	28.8	6.7	255.8139	1,2,3,4,5			
ZN SHP21	Volume	550481	4203846	550	28.8	6.7	255.8139	1,2,3,4,5			

Table A4.3-HRA-14b
Shipping Transiting Modeling Parameters
Chevron Modernization Project
Richmond, California

		ZN_SHP22	Volume	550804	4204351	550	28.8	6.7	255.8139	1,2,3,4,5
		ZN_SHP23	Volume	550977	4204603	550	28.8	6.7	255.8139	1,2,3,4,5
Santa Fe Channel		W_TUG_01	Volume	555341	4197270	80	7.32	1.7	37.2093	1,2,3,4,5
		W_TUG_02	Volume	555494	4197142	80	7.32	1.7	37.2093	1,2,3,4,5
		W_TUG_03	Volume	555647	4197014	80	7.32	1.7	37.2093	1,2,3,4,5
		W_TUG_04	Volume	555803	4196888	80	7.32	1.7	37.2093	1,2,3,4,5
PtPotrero Turn Harbour		W_TUG_05	Volume	555894	4196715	80	7.32	1.7	37.2093	1,2,3,4,5
		W_TUG_06	Volume	555963	4196528	80	7.32	1.7	37.2093	1,2,3,4,5
		W_TUG_07	Volume	555992	4196330	80	7.32	1.7	37.2093	1,2,3,4,5
		W_TUG_08	Volume	556022	4196133	80	7.32	1.7	37.2093	1,2,3,4,5
Point Potrero Channel	w_tug	W_TUG_09	Volume	556066	4195938	80	7.32	1.7	37.2093	1,2,3,4,5
		W_TUG_10	Volume	556110	4195742	80	7.32	1.7	37.2093	1,2,3,4,5
		W_TUG_11	Volume	556074	4195550	80	7.32	1.7	37.2093	1,2,3,4,5
		W_TUG_12	Volume	556019	4195357	80	7.32	1.7	37.2093	1,2,3,4,5
		W_TUG_13	Volume	555860	4195253	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_14	Volume	555666	4195251	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_15	Volume	555469	4195280	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_16	Volume	555271	4195309	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_17	Volume	555073	4195337	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_18	Volume	554875	4195366	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_19	Volume	554677	4195394	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_20	Volume	554479	4195423	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_21	Volume	554281	4195452	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_22	Volume	554083	4195480	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_23	Volume	553885	4195509	200	7.32	1.7	93.02325	1,2,3,4,5
Entrance Channel		W_TUG_24	Volume	553687	4195537	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_25	Volume	553489	4195566	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_26	Volume	553291	4195595	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_27	Volume	553093	4195623	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_28	Volume	552895	4195652	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_29	Volume	552700	4195690	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_30	Volume	552552	4195824	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_31	Volume	552403	4195958	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_32	Volume	552255	4196093	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_33	Volume	552107	4196227	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_34	Volume	551959	4196361	200	7.32	1.7	93.02325	1,2,3,4,5
		W_TUG_35	Volume	551810	4196495	200	7.32	1.7	93.02325	1,2,3,4,5
Southbound Transit LegX	x_tug	W_TUG_36	Volume	551652	4196639	200	7.32	1.7	93.02325	1,2,3,4,5
		X_TUG_01	Volume	551791	4190805	550	7.32	1.7	255.8139	1,2,3,4,5
		X_TUG_02	Volume	551487	4191321	550	7.32	1.7	255.8139	1,2,3,4,5
		X_TUG_03	Volume	551048	4191729	550	7.32	1.7	255.8139	1,2,3,4,5
		X_TUG_04	Volume	550666	4192192	550	7.32	1.7	255.8139	1,2,3,4,5
		X_TUG_05	Volume	552435	4190790	550	7.32	1.7	255.8139	1,2,3,4,5
		X_TUG_06	Volume	552064	4191261	550	7.32	1.7	255.8139	1,2,3,4,5
		X_TUG_07	Volume	551709	4191745	550	7.32	1.7	255.8139	1,2,3,4,5
		X_TUG_08	Volume	551371	4192239	550	7.32	1.7	255.8139	1,2,3,4,5
		X_TUG_09	Volume	550995	4192707	550	7.32	1.7	255.8139	1,2,3,4,5
Southampton Shoal Channel	y_tug	Y_TUG_01	Volume	551213	4192995	480	7.32	1.7	223.2558	1,2,3,4,5
		Y_TUG_02	Volume	551122	4193588	480	7.32	1.7	223.2558	1,2,3,4,5
		Y_TUG_03	Volume	551031	4194182	480	7.32	1.7	223.2558	1,2,3,4,5
		Y_TUG_04	Volume	550940	4194775	480	7.32	1.7	223.2558	1,2,3,4,5
		Y_TUG_05	Volume	550849	4195368	480	7.32	1.7	223.2558	1,2,3,4,5
		Y_TUG_06	Volume	550758	4195961	480	7.32	1.7	223.2558	1,2,3,4,5
		Y_TUG_07	Volume	550703	4196317	480	7.32	1.7	223.2558	1,2,3,4,5
		ZS_TUG01	Volume	550284	4192655	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG02	Volume	549901	4193117	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG03	Volume	549517	4193578	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG04	Volume	549133	4194039	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG05	Volume	548754	4194504	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG06	Volume	548402	4194989	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG07	Volume	548148	4195532	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG08	Volume	548154	4196118	225	7.32	1.7	104.6512	1,2,3,4,5
		ZS_TUG09	Volume	548262	4196708	225	7.32	1.7	104.6512	1,2,3,4,5
		ZS_TUG10	Volume	548390	4197294	225	7.32	1.7	104.6512	1,2,3,4,5
		ZS_TUG11	Volume	548514	4197881	225	7.32	1.7	104.6512	1,2,3,4,5
		ZS_TUG12	Volume	548630	4198470	225	7.32	1.7	104.6512	1,2,3,4,5
		ZS_TUG13	Volume	548630	4199056	225	7.32	1.7	104.6512	1,2,3,4,5
		ZS_TUG14	Volume	548510	4199644	225	7.32	1.7	104.6512	1,2,3,4,5
		ZS_TUG15	Volume	548365	4200226	225	7.32	1.7	104.6512	1,2,3,4,5
		ZS_TUG16	Volume	548231	4200811	225	7.32	1.7	104.6512	1,2,3,4,5
		ZS_TUG17	Volume	548309	4201387	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG18	Volume	548594	4201911	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG19	Volume	548907	4202422	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG20	Volume	549225	4202931	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG21	Volume	549544	4203439	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG22	Volume	549859	4203950	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG23	Volume	550160	4204469	550	7.32	1.7	255.8139	1,2,3,4,5
		ZS_TUG24	Volume	550374	4204816	550	7.32	1.7	255.8139	1,2,3,4,5
Northbound Transit LegZ	zn_tug	ZN_TUG01	Volume	550618	4193174	550	7.32	1.7	255.8139	1,2,3,4,5
		ZN_TUG02	Volume	550242	4193641	550	7.32	1.7	255.8139	1,2,3,4,5
		ZN_TUG03	Volume	549864	4194107	550	7.32	1.7	255.8139	1,2,3,4,5
		ZN_TUG04	Volume	549487	4194574	550	7.32	1.7	255.8139	1,2,3,4,5
		ZN_TUG05	Volume	549101	4195033	550	7.32	1.7	255.8139	1,2,3,4,5
		ZN_TUG06	Volume	548719	4195496	550	7.32	1.7	255.8139	1,2,3,4,5
		ZN_TUG07	Volume	548537	4196027	225	7.32	1.7	104.6512	1,2,3,4,5
		ZN_TUG08	Volume	548612	4196622	225	7.32	1.7	104.6512	1,2,3,4,5
		ZN_TUG09	Volume	548690	4197216	225	7.32	1.7	104.6512	1,2,3,4,5
		ZN_TUG10	Volume	548764	4197812	225	7.32	1.7	104.6512	1,2,3,4,5
		ZN_TUG11	Volume	548831	4198408	225	7.32	1.7	104.6512	1,2,3,4,5
		ZN_TUG12	Volume	548870	4199005	225	7.32	1.7	104.6512	1,2,3,4,5
		ZN_TUG13	Volume	548866	4199605	225	7.32	1.7	104.6512	1,2,3,4,5
		ZN_TUG14	Volume	548838	4200204	225	7.32	1.7	104.6512	1,2,3,4,5
		ZN_TUG15	Volume	548814	4200804	225	7.32	1.7	104.6512	1,2,3,4,5
		ZN_TUG16	Volume	548795	4201403	225	7.32	1.7	104.6512	1,2,3,4,5
		ZN_TUG17	Volume	549056	4201917	550	7.32	1.7	255.8139	1,2,3,4,5
		ZN_TUG18	Volume	549418	4202396	550	7.32	1.7	255.8139	1,2,3,4,5
		ZN_TUG19	Volume	549778	4202876	550	7.32	1.7	255.8139	1,2,3,4,5
		ZN_TUG20	Volume	550131	4203360	550	7.32	1.7	255.8139	1,2,3,4,5
		ZN_TUG21	Volume	550481	4203846	550	7.32	1.7	255.8139	1,2,3,4,5
		ZN_TUG22	Volume	550804	4204351	550	7.32	1.7	255.8139	1,2,3,4,5
		ZN_TUG23	Volume	550977	4204603	550	7.32	1.7	255.8139	1,2,3,4,5

Table A4.3-HRA-14b
Shipping Transiting Modeling Parameters
Chevron Modernization Project
Richmond, California

Northbound Transit LegX	x_e_brg	X BRG_10	Volume	552605	4190215	550	7.27	1.7	255.8	1,2,3,4,5
		X BRG_11	Volume	552718	4189830	550	7.27	1.7	255.8	1,2,3,4,5
Southbound Transit LegX		X BRG_12	Volume	552074	4190287	550	7.27	1.7	255.8	1,2,3,4,5
	x_e_shp	X BRG_13	Volume	552178	4189900	550	7.27	1.7	255.8	1,2,3,4,5
Northbound Transit LegX		X SHP_10	Volume	552605	4190215	550	28.8	6.7	255.8	1,2,3,4,5
		X SHP_11	Volume	552718	4189830	550	28.8	6.7	255.8	1,2,3,4,5
Southbound Transit LegX	x_e_tug	X SHP_12	Volume	552074	4190287	550	28.8	6.7	255.8	1,2,3,4,5
		X SHP_13	Volume	552178	4189900	550	28.8	6.7	255.8	1,2,3,4,5
Northbound Transit LegX		X TUG_10	Volume	552605	4190215	550	7.32	1.7	255.8	1,2,3,4,5
	x_e_brg_2	X TUG_11	Volume	552718	4189830	550	7.32	1.7	255.8	1,2,3,4,5
Southbound Transit LegX		X TUG_12	Volume	552074	4190287	550	7.32	1.7	255.8	1,2,3,4,5
	x_e_shp_2	X TUG_13	Volume	552178	4189900	550	7.32	1.7	255.8	1,2,3,4,5
Northbound Transit LegX		X BRG_10	Volume	552833	4189241	550	7.27	1.7	255.8	1,2,3,4,5
	x_e_tug_2	X BRG_11	Volume	552299	4189313	550	7.27	1.7	255.8	1,2,3,4,5
Southbound Transit LegX		X BRG_12	Volume	552408	4188854	550	7.27	1.7	255.8	1,2,3,4,5
	x_e_shp_2	X BRG_13	Volume	552915	4188828	550	7.27	1.7	255.8	1,2,3,4,5
Northbound Transit LegX		X SHP_10	Volume	552833	4189241	550	28.8	6.7	255.8	1,2,3,4,5
	x_e_tug_2	X SHP_11	Volume	552299	4189313	550	28.8	6.7	255.8	1,2,3,4,5
Southbound Transit LegX		X SHP_12	Volume	552408	4188854	550	28.8	6.7	255.8	1,2,3,4,5
	x_e_shp_2	X SHP_13	Volume	552915	4188828	550	28.8	6.7	255.8	1,2,3,4,5
Northbound Transit LegX		X TUG_10	Volume	552833	4189241	550	7.32	1.7	255.8	1,2,3,4,5
	x_e_tug_2	X TUG_11	Volume	552299	4189313	550	7.32	1.7	255.8	1,2,3,4,5
Southbound Transit LegX		X TUG_12	Volume	552408	4188854	550	7.32	1.7	255.8	1,2,3,4,5
		X TUG_13	Volume	552915	4188828	550	7.32	1.7	255.8	1,2,3,4,5

Notes:

1. Source groups are the names used in the air dispersion modeling. Dispersion factors were generated for each of the source groups separately.
2. Source dimensions, release heights, and initial vertical dimensions were provided by Chevron.
3. Number of sources on each transiting route were determined by the length of each transiting route and the source dimensions of the sources on each route.
4. According to USEPA ISC3 User's Guide Volume II, initial lateral dimension for line sources (represented by adjacent volume sources) is length of side divided by 2.15.
5. According to USEPA ISC3 User's Guide Volume II, initial vertical dimension for elevated volume sources (release height >0) not on or adjacent to a building is length of side divided by 4.3.

Abbreviations:

ISC: Industrial Source Complex Model
m: meter
USEPA: United States Environmental Protection Agency

References:

United States Environmental Protection Agency (USEPA). 1995. User's Guide for the Industrial Source Complex (ISC3) Dispersion Models. Volume II - Description of Model Algorithms. September. Available at <http://www.epa.gov/scram001/userg/regmod/isc3v2.pdf>



01_24_2014 P:\GIS\11-005_CVRN\009_Basemap_PrtLtr

Figure A4.3-HRA-16
Chevron Refinery Modernization Project EIR
Shipping: Modeled Anchorage and Maneuvering Locations

1.4.4.1.5 At-Berth

At-berth (also known as hoteling) emissions occur when vessels are moored to berths. Typically, only the auxiliary engines, turbines and boilers operate at berth. Figure A4.3-HRA-17 shows the modeled at-berth locations for all Modernization Project sources. There are six berths for vessel mooring, and one station for a stand-by tug. Vessels with diesel generators moor at all six berths. Vessels with boilers moor at berths 1-4, and vessels with turbines¹⁵ moor at berths 1-3. Point sources were used to represent these stationary at-berth emissions. Source locations and release parameters, including stack height, diameter, temperature, and exit velocity were provided by Chevron (Chevron Data Transmittal #26C (Rev #3), 2014). Details of the source parameters used in the air dispersion model are presented in Table A4.3-HRA-14c.

1.4.5 Temporal Variation in Emission Rates

1.4.5.1 Operations (Refinery and Shipping)

To reflect the meteorological conditions when refinery operational emitting activities, on-road mobile source activities and shipping operations (including transiting, maneuvering, anchorage, and operations at berth) are likely to occur, emissions from these sources were all modeled as occurring continuously, i.e., 24 hours per day.

1.4.6 Meteorological Data

AERMOD requires a meteorological input file to characterize the transport and dispersion of pollutants in the atmosphere. In order to create this input file, surface and upper air meteorological data inputs, along with surface parameter data describing the land use and surface characteristics near the Facility, are first processed using AERMET, the meteorological preprocessor to AERMOD. The output file generated by AERMET is the meteorological input file required by AERMOD. Details of AERMET and AERMOD meteorological data needs are described in EPA guidance documents (EPA, 2012a, 2012b). Details of the methodology used for the meteorological data processing for the Modernization Project as well as inputs and outputs of the AERMET runs for both stations can be found in Attachment 2.

Two surface meteorological stations were found in the vicinity of the Facility: one station is maintained by Chevron and is located just south of the western end of the W. Gertrude Avenue (“Gertrude station”). The other station is a National

¹⁵ As indicated by ICF (Chevron Data Transmittal #26F, 2014), vessels with turbines only operate in the 2008-2010 scenario.

EPA AERMOD guidance for an elevated source not on or adjacent to a building.¹² Emissions were distributed uniformly amongst all volume sources within a given leg. Details of the source parameters used in the air dispersion model are presented in Table A4.3-HRA-14b.

1.4.4.1.3 Maneuvering

Maneuvering emissions occur when vessels operate at slow speeds in-port, such as approaching berth. Typically, the main engine, auxiliary engines, and boilers all operate during maneuvering, though the main engine operates at lower loads than it would during transit. Figure A4.3-HRA-16 shows the modeled areas of maneuvering. Barges and tugs all maneuver in the same areas southwest and northeast of the wharf; therefore, these vessel types were modeled with volume sources in the same spatial locations. Ships only maneuver in the area southeast of the wharf. These maneuvering locations were provided by Chevron. Twenty adjacent volume sources were used to represent vessel maneuvering emissions. Initial lateral dimensions were calculated by dividing the length of side by 4.3, which is typical for large areas of emissions represented by adjacent volume sources. The release heights and initial vertical dimensions were identical to those used in Transiting. Emissions were distributed uniformly amongst all volume sources within the maneuvering area. Details of the source parameters used in the air dispersion model are presented in Table A4.3-HRA-14a.

1.4.4.1.4 Anchorage

Anchorage emissions occur from vessels temporarily at anchor at sea, outside of the port. Typically, only the auxiliary engines and boilers operate at anchorage. Figure A4.3-HRA-16 shows the modeled anchorage location for all Modernization Project sources. Ships and barges¹³ anchor at the same location; therefore, these vessel types were modeled in the same spatial location. The anchorage location was provided by Chevron (Chevron Data Transmittal #26F, 2014). A single volume source was used to represent anchorage emissions. The initial lateral dimension was calculated based on the width of the volume source, following EPA AERMOD guidance for a single volume source.¹⁴ The release heights and initial vertical dimensions were identical to those used in Transiting. Details of the source parameters used in the air dispersion model are presented in Table A4.3-HRA-14a.

¹² As per the EPA AERMOD User's Guide, the initial vertical dimension of an elevated source not on or adjacent to a building is the vertical dimension of the source divided by 4.3 (EPA, 2004).

¹³ Tugs do not set anchor.

¹⁴ As per the EPA AERMOD User's Guide, the initial lateral dimension of a single volume source is the length of side divided by 4.3 (EPA, 2004).

Table A4.3-HRA-14c
Shipping at Berth Modeling Parameters
Chevron Modernization Project
Richmond, California

Source Description	Source Group	Source Type	X Coordinates	Y Coordinates	Stack Height	Stack temp.	Stack velocity	Stack diameter	Notes
			[m]	[m]	[m]	[K]	[m/s]	[m]	
Berth 1 Generator	B1_GEN	POINT	551844	4197275	23	618	7	0.6	1,2
Berth 2 Generator	B2_GEN	POINT	551707	4197456	23	618	7	0.6	1,2
Berth 3 Generator	B3_GEN	POINT	551662	4197516	23	618	7	0.6	1,2
Berth 4 Generator	B4_GEN	POINT	551497	4197737	23	618	7	0.6	1,2
Berth 1 Boiler	B1_BLR	POINT	551840	4197274	22.86	548	1.3	1.6	1,2
Berth 2 Boiler	B2_BLR	POINT	551704	4197455	22.86	548	1.3	1.6	1,2
Berth 3 Boiler	B3_BLR	POINT	551660	4197513	22.86	548	1.3	1.6	1,2
Berth 4 Boiler	B4_BLR	POINT	551491	4197734	22.86	548	1.3	1.6	1,2
Berth 9 Barge Generator	B9_BRG	POINT	551675	4197610	7.4	618	4	0.1	1,2
Berth 11 Barge Generator	B11_BRG	POINT	551596	4197720	7.4	618	4	0.1	1,2
Berth 2 Barge Generator	B2_BRG	POINT	551709	4197458	7.4	618	4	0.1	1,2
Berth 3 Barge Generator	B3_BRG	POINT	551665	4197517	7.4	618	4	0.1	1,2
Turbine Berth 1	B1_TURB	POINT	551844	4197270	25.11	618	1.7	1.72	1,2
Turbine Berth 2	B2_TURB	POINT	551708	4197453	25.11	618	1.7	1.72	1,2
Turbine Berth 3	B3_TURB	POINT	551660	4197520	25.11	618	1.7	1.72	1,2
Turbine Berth 4	B4_TURB	POINT	551492	4197737	25.11	618	1.7	1.72	1,2
Stand by Tug	SB_TUG	POINT	551965	4197355	5.9	618	2	0.1	1,2

Notes:

1. Source groups are the names used in the air dispersion modeling. Dispersion factors were generated for each of the source groups separately.
2. Sources' stack heights, stack temperatures, stack velocities and stack diameters were provided by Chevron.

Abbreviations:

m: meter

Table A4.3-HRA-14d
Modeled Building Input for Shipping¹
Chevron Modernization Project
Richmond, California

Building ID	Building Type	X	Y	Height
		Coordinates [m]	Coordinates [m]	[m]
N_WHARF	POLYGON	551493	4197781	3.81
	POLYGON	551519	4197802	3.81
	POLYGON	551833	4197384	3.81
	POLYGON	551805	4197365	3.81
SWHARF	POLYGON	551827	4197335	3.81
	POLYGON	551860	4197360	3.81
	POLYGON	551971	4197205	3.81
	POLYGON	551940	4197184	3.81
CENTERWH	POLYGON	551805	4197363	3.81
	POLYGON	552643	4197971	3.81
	POLYGON	552664	4197941	3.81
	POLYGON	552537	4197862	3.81
EASTWHAR	POLYGON	551827	4197335	3.81
	POLYGON	552643	4197976	3.81
	POLYGON	552709	4198191	3.81
	POLYGON	552782	4198138	3.81
	POLYGON	552754	4198044	3.81
	POLYGON	552721	4197992	3.81
	POLYGON	552667	4197941	3.81
OFFICE/W	POLYGON	552643	4197972	3.81
	POLYGON	551833	4197383	8.38
	POLYGON	551822	4197399	8.38
	POLYGON	551858	4197425	8.38
MACHINES	POLYGON	551869	4197408	8.38
	POLYGON	551941	4197420	7.32
	POLYGON	551950	4197407	7.32
	POLYGON	551991	4197438	7.32
BERTHAB	POLYGON	551983	4197451	7.32
	POLYGON	551929	4197412	3.81
	POLYGON	552012	4197304	3.81
	POLYGON	552026	4197313	3.81
BLDG	POLYGON	551941	4197420	3.81
	POLYGON	551914	4197399	7.32
	POLYGON	551928	4197381	7.32
	POLYGON	551944	4197393	7.32
B-ADD_18	POLYGON	551929	4197411	7.32
	POLYGON	551908	4197446	4.6
	POLYGON	551912	4197440	4.6
	POLYGON	551900	4197431	4.6
WHRFBLD2	POLYGON	551897	4197437	4.6
	POLYGON	552804	4198167	3.7
	POLYGON	552800	4198153	3.7
	POLYGON	552784	4198158	3.7
WHARFBLD	POLYGON	552788	4198171	3.7
	POLYGON	552771	4198173	3.7
	POLYGON	552766	4198159	3.7
	POLYGON	552745	4198167	3.7
	POLYGON	552744	4198160	3.7
	POLYGON	552735	4198163	3.7
	POLYGON	552738	4198174	3.7
	POLYGON	552729	4198176	3.7
	POLYGON	552732	4198184	3.7
	POLYGON	552733	4198184	3.7

Notes:

1. The building locations and dimentions were provided by Chevron.

Abbreviations:

m: meter

Table A4.3-HRA-15
Exposure Assumptions - Operations
Chevron Modernization Project
Richmond, California

Exposure Parameter	Units	Resident ¹	Worker ²	School Child ³	Daycare Child ⁴	Adult Patient ⁵	Child Patient ⁶	Recreational User ⁷	Community Center Child ⁸
Daily Breathing Rate (DBR)	[L/kg-day]	302	149	581	581	302	581	--	581
Hourly Breathing Rate (HBR)	[m ³ /hour]	--	--	--	--	--	--	1.56	--
Exposure Time (ET)	hours/24 hours	24	8	10	10	24	24	1	10
Exposure Frequency (EF)	[days/year]	350	245	180	245	365	365	52	245
Exposure Duration (ED)	[years]	70	40	9.0	5.9	1.0	1.0	70	5.9
Averaging Time (AT)	[days]	25550	25550	25550	25550	25550	25550	25550	25550
Intake Factor, Inhalation (IF _{inh})	[m ³ /kg-day]	0.29	0.057	0.015	0.014	0.0043	0.0083	0.0035	0.014

Notes:

- Exposure parameters reflect default values for residents from BAAQMD 2010.
- Exposure parameters reflect default values for workers from BAAQMD 2010. The daily breathing rate for a worker corresponds to an hourly breathing rate of 1.3 m³/hour for eight hours.
- Exposure parameters reflect default values for students from BAAQMD 2010.
- Daily breathing rates for day care child receptors reflect default breathing rates from BAAQMD 2010. The day care centers were assumed to operate 10 hours per day from 7 AM to 5 PM. The day care child receptor was assumed to be at a day care center while the parents are at work; 245 days reflects the default exposure frequency for a worker from BAAQMD 2010. It was assumed that a day care center would accept children from 6 weeks to 6 years old.
- Adult patient was assumed to be 16 years old and above, and stay in hospital for the whole year. Daily breathing rate and exposure time for adult patients reflect default values for resident adults from BAAQMD 2010.
- Child patient was assumed to be in hospital for the whole year. Daily breathing rate and exposure time for child patients reflect default values for resident children from BAAQMD 2010.
- Hourly breathing rates for recreational user receptors reflect recommended mean breathing rates based on moderate activities for short-term exposures for age groups from birth to 70 years from USEPA 2011. The recreational user receptors were conservatively assumed to be at a recreational location 1 hours per day, once a week, every week (52 weeks) of the year.
- For the child receptors at community center, the exposure parameters were conservatively assumed to be the same as those for day care child.

Equations:

Resident, Worker, School Child, Daycare Child, Community Center Child, and Patient:

$$IF_{inh} = DBR * ET * EF * ED * CF1 / AT$$

$$CF1 = 0.001 \text{ (m}^3\text{/L)}$$

Recreational User:

$$IF_{inh} = HBR * ET * EF * ED * CF2 / \text{Body Weight} / AT$$

Where: Body Weight_{adult} = 63 kg (Cal/EPA 2003)

$$CF2 = 24 \text{ hours/day}$$

Abbreviations:

BAAQMD = Bay Area Air Quality Management District

Cal/EPA = California Environmental Protection Agency

kg = kilogram

L = Liter

m³ = cubic meters

USEPA = US Environmental Protection Agency

Source:

Bay Area Air Quality Management District (BAAQMD). 2010. *BAAQMD Air Toxics NSR Program Health Risk Screening Analysis (HRSA)*

Office of Environmental Health Hazard Assessment (OEHHA). 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. August.

United States Environmental Protection Agency (USEPA), 2011. *Exposure Factors Handbook: 2011 Edition*. Table 6-2. September.



Figure A4.3-HRA-17
Chevron Refinery Modernization Project EIR
Shipping: Modeled Point Source Locations

Climate Data Center (NCDC) station (AWS ID 994036), located on the Refinery Pier just south of I-580 (“Wharf station”). Between these two stations lies a mountain ridge that extends in the southeast direction from Point San Pablo. Based on an evaluation of the wind patterns from these two stations, conditions at the Gertrude station are more representative of the majority of the Facility area (north and east of the mountain ridge), while conditions the Wharf station are more representative of the Facility area to the south and west of the mountain ridge.

Therefore, both datasets were processed using AERMET version 12345. The data from October 1, 2009 to September 30, 2010 for each station were processed to ensure the 90% completeness criteria required by EPA is met (40 CFR Part 51).¹⁶ The two on-site surface air stations, together with the surface pressure and cloud cover data from Oakland International Airport surface station, and upper air data from the Oakland International Airport upper air station, were used in the processing.

1.4.6.1 Operations

Dispersion of emissions from Facility sources and from operational mobile on-road sources located north and east of the mountain ridge was modeled using the Gertrude station meteorological data, while the Wharf meteorological data were used to model dispersion from Refinery Operations (i.e., tanks T1899 and T3100) located south and west of the mountain ridge. No operational on-road mobile sources are located south and west of the mountain ridge.

Because shipping operations occur along the Long Wharf and in the water south and west of the mountain ridge (with the exception of the northern sections of two shipping transit legs that run north of Point San Pablo), AERMOD-ready meteorological data processed for the Wharf station were used for air dispersion modeling of shipping emissions.

1.4.7 Terrain

AERMOD uses a terrain preprocessor, AERMAP version 11103,¹⁷ to determine elevations of the surrounding landscape. Data from the National Elevation Data (NED) set, available from the United States Geological Survey,¹⁸ were utilized to

¹⁶ More information on meteorological data processing performed for this analysis is presented in Attachment 2.

¹⁷ More information on the model and the executable is available at: http://www.epa.gov/ttn/scram/dispersion_related.htm.

¹⁸ NED data available at: <http://seamless.usgs.gov/website/seamless/viewer.htm>.

import the elevation information for sources and receptors. AERMAP was used to extract elevations from the NED dataset. NED 1/3 arc-second data do not provide sufficient resolution in elevations for the mountain ridge area near the Modernization Project site, where some of the modeled worker receptors are located. Although the higher resolution NED 1/9 arc-second data set does provide sufficient resolution for these receptors, it does not have elevation information over water. To ensure sufficient resolution and coverage for receptor elevations for the AERMAP run, NED 1/9 arc-second data were used, supplemented by the 1/3 arc-second data for water areas.

1.4.7.1 Rural or Urban Boundary Layer Options

An important consideration in an air dispersion modeling analysis is the selection of rural or urban dispersion coefficients, which are influenced by the level of development (i.e., height of buildings and urban heat island effect) in the vicinity of the Modernization Project. Due to the proximity of the project to open water (which has no buildings or any heat generating sources), the models use rural dispersion coefficients, which is consistent with EPA guidance (EPA, 2009).

1.4.8 Model Averaging Periods and Unit Emissions Dispersion Factor Method

Calculation of chemical concentrations for use in exposure analysis requires the selection of appropriate concentration averaging times. In accordance with OEHHA guidance (OEHHA, 2003), annual average concentrations were estimated and used to evaluate cancer risk, chronic non-cancer and PM_{2.5} impacts. Acute non-cancer impacts were estimated using the maximum 1-hr concentration. CO concentrations were estimated for 1-hour and 8-hour averaging periods.

Operational emissions were modeled using the unit emissions dispersion factor method, such that emission source groups are input to the model with unit average annual emission rates (i.e., 1 gram per second [g/s]), and the model estimates 1-hour maximum or annual average dispersion factors (with units of [µg/m³]/[g/s]). To calculate annual average ambient air concentrations, the annual average dispersion factors were multiplied by the annual emission rates. Details on the database used to estimate health impacts are contained in Attachment 3.

For acute non-cancer hazard analyses, the estimated 1-hour maximum dispersion factors for each source group were used. These dispersion factors were multiplied by the maximum 1-hour emission rate to determine the maximum 1-hour concentration for a given source group. Note that because the maximum emissions for each group are not expected to occur during the same hour of the year, summing the maximum 1-hour concentrations across all source

groups yields conservative (i.e., overestimates of) total air concentrations. Attachment contains the database inputs that were used to combine 1-hour maximum dispersion factors and actual emission rates to yield 1-hour air concentrations and to conduct further acute non-cancer hazard calculation. A similar method was used to estimate the short term CO concentrations.

The dispersion factors by source group for the MEIs, as well as the TAC emission rate for refinery, shipping and trucking are presented in Attachment 4.

1.4.9 Buildings

Turbulent eddies can form on the downwind side of buildings, and may cause a plume from a stack or point source located near the building to be drawn towards the ground to a greater degree than if the building were not present. This is referred to as the building downwash effect. The effect can increase the resulting ground-level pollutant concentrations downwind of a building. ENVIRON used the dimensions and locations of nearby buildings, to allow AERMOD to incorporate algorithms to evaluate the downwash effect on stack sources.

There are several Refinery Operations point sources located near buildings that could potentially cause downwash effects. In addition, dispersion of emissions from shipping point sources such as generators, boilers, and turbines¹⁹ aboard moored vessels at berth may be influenced by the Refinery Pier, Long Wharf, and buildings located on top of the Long Wharf. Thus, buildings and structures near operational point sources were included in the dispersion model in order to evaluate downwash effects. The coordinate and building height data provided by Chevron (Chevron Data Transmittal #6C, 2013) were verified visually using on-line tools (Bing maps, Google Earth), and through consultation with Chevron. Buildings included in the Shipping model are in Figure A4.3-HRA-18, and buildings included in the Refinery Operations model are in Figure A4.3-HRA-19. The building dimensions are also described in Tables A4.3-HRA-12e and 14d.

1.4.10 Model Adjustment Factors

Cal/EPA recommends applying an adjustment factor to air concentrations based on a continuous averaging period (i.e., 24 hours per day, 365 days per year) when the following three things are true: (1) the actual exposure occurs for less than 24 hours per day and/or less than 1 year; (2) emission activities occur for less than 24 hours per day and/or less than 1 year; and (3) exposures are entirely or partially concurrent with emitting activities (OEHHA, 2003). The model

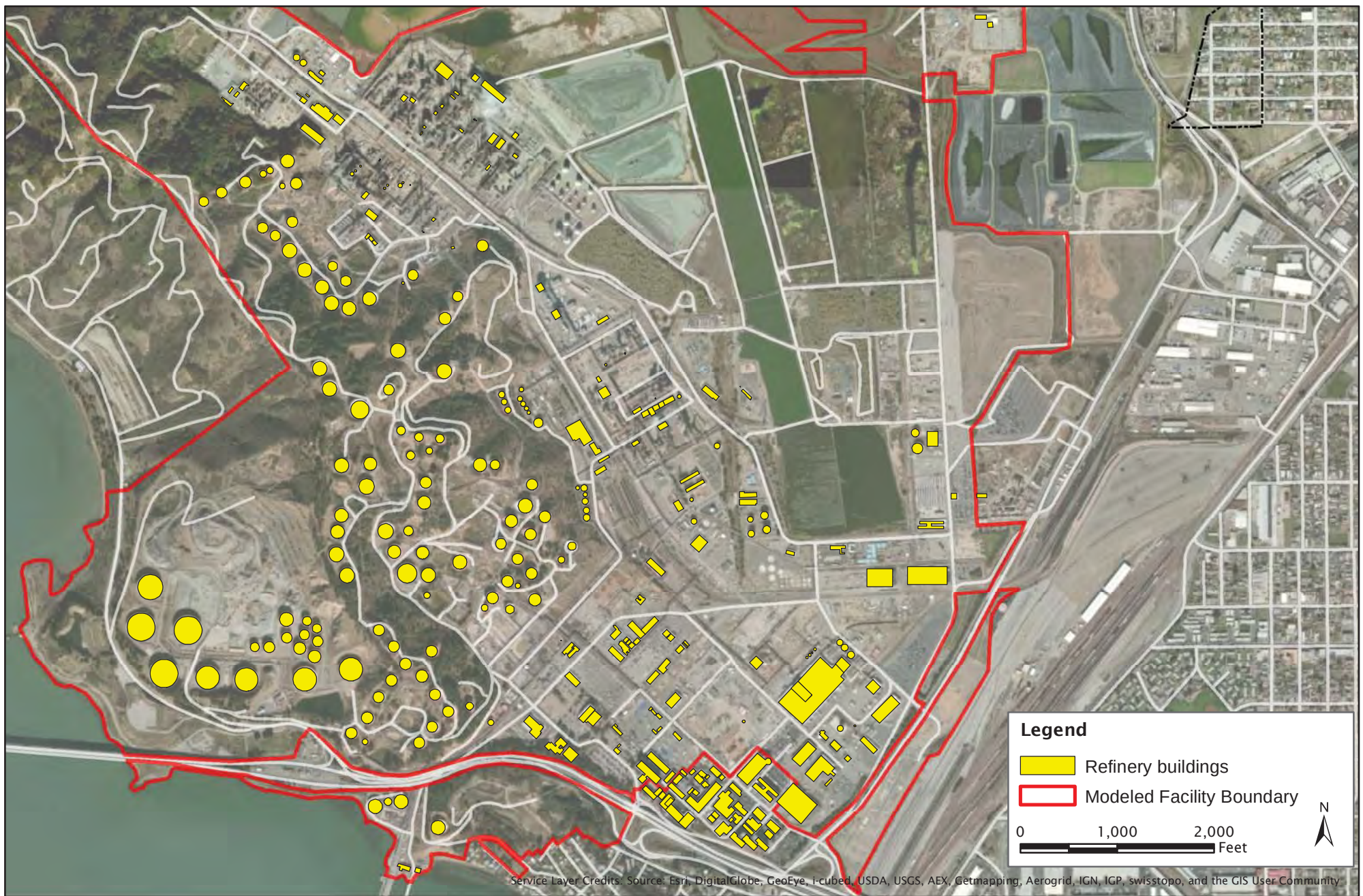
¹⁹ As indicated by ICF (Chevron Data Transmittal #26F, 2014), vessels with turbines only operate in the 2008-2010 scenario.



02.24.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\Fig_32 Shipping buildings2.mxd

Source: Chevron Transmittals

Figure A4.3-HRA-18
Chevron Refinery Modernization Project EIR
Modeled Shipping Buildings



02.24.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\CFig_37 Refinery buildings.mxd

Source: Chevron Transmittals

Figure A4.3-HRA-19
Chevron Refinery Modernization Project EIR
Modeled Refinery Buildings

averages the emissions over 24 hour per day over a year. The modeling adjustment factor is applied to the modeled annual average concentrations to reflect the fact that the actual exposure concentration the receptor is exposed to is higher than the average annual concentration.

1.4.10.1 Operations

Because operational activities occur at any time of day, a constant emission rate for 24 hours per day, 7 days per week was assumed for all operational sources. Therefore, no MAF was required for any receptor type.

1.5 HEALTH EFFECT CHARACTERIZATION METHODS

The following sections discuss the various components required for conducting this risk assessment in detail. Attachment 3 contains a description of SARAD, the Microsoft Access databases that were used to calculate air concentrations and to conduct further health risk estimations based on the methodology described below. SARAD databases mimic the calculation method used in the CARB Hotspots Analysis Reporting Program (HARP) and its On-Ramp extension. Attachment 3 describes in detail on how these databases works and the equivalency tests conducted to prove that the SARAD databases and HARP will generate same risk values when using the same inputs.

1.5.1 Exposure Assessment

1.5.1.1 Exposed Populations

As described earlier, the potentially exposed populations²⁰ evaluated in this assessment are:

- Residents (children and adults)
- School children
- Daycare children
- Community center children and adults
- Patient children and adults
- Recreational facility children and adults
- Adult workers

A maximum exposed individual sensitive receptor (MEISR) is identified as the sensitive receptor (among all of the potential exposed sensitive populations) with

²⁰ Although neither recreational adult or children nor workers are sensitive receptors under BAAQMD guidance, these receptors were included for completeness. Therefore the MEISR location includes recreational users and worker locations.

the highest estimated cancer risk, chronic non-cancer impact, or acute non-cancer health impact. In addition, a MEISR is also identified for the PM_{2.5} concentration. In order to identify the MEISR for each health impact, the impacts were calculated for all receptors in the modeling domain.²¹

In addition, a set of boundary receptors was also included in the model. Note that because no sensitive populations will reside at the boundary receptor locations for long periods, they would not experience chronic exposure; therefore, these boundary receptors were included for acute health impact analysis only.

The exposure parameters used for estimating excess lifetime cancer risks for all potentially exposed populations were obtained using risk assessment guidelines from OEHHA (2003) and BAAQMD (2010a), unless otherwise noted, and are presented in Tables A4.3-HRA-15. These exposure parameters are included in Attachment 3 for the risk calculation.

1.5.1.2 Operations

All receptor populations evaluated in this analysis were assumed to be exposed to operational emissions. The exposure parameters used for estimating excess lifetime cancer risks for all potentially exposed populations are presented in Table A4.3-HRA-15.

1.5.1.3 Calculation of Intake

The dose estimated for each exposure pathway is a function of the concentration of a chemical and the intake of that chemical.

The intake factor for inhalation, IF_{inh}, can be calculated as follows:

$$IF_{inh} = \frac{DBR * ET * EF * ED * CF}{AT}$$

Where:

$$IF_{inh} = \text{Intake Factor for Inhalation (m}^3\text{/kg-day)}$$

²¹ The only exception is shipping, for which 70-year age-specific sensitivity factors (ASF) weighted emissions provided by ICF (Chevron Data Transmittal #26F, 2014) were used. Health impacts for only residential and worker receptors were evaluated. Using the 70-year ASF weighted emissions for worker receptors were a conservative approach. In addition, health impacts to the 70-year residents are expected to be higher than that of the other populations.

DBR	=	Daily Breathing Rate (L/kg-day)
ET	=	Exposure Time (hours/24 hours)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
AT	=	Averaging Time (days)
CF	=	Conversion Factor, 0.001 (m ³ /L)

The chemical intake or dose is estimated by multiplying the inhalation intake factor, IF_{inh} , by the chemical concentration in the air, C_i . This calculation is based on the dose algorithm given in Office of Environmental Health Hazard Assessment (OEHHA) Hot Spots guidance (OEHHA, 2003).

1.5.2 Toxicity Assessment

The toxicity assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories – cancer and non-cancer endpoints. Toxicity values used to estimate the likelihood of adverse effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of a risk assessment.

All chemicals emitted from operations that were identified in the BAAQMD Regulation 2 Rule 5 were included in this analysis. Diesel exhaust, a complex mixture that includes hundreds of individual constituents, is identified by the State of California as a known carcinogen. Under California regulatory guidelines, DPM is used as a surrogate measure of carcinogen exposure for the mixture of chemicals that make up diesel exhaust as a whole. There is currently no acute non-cancer toxicity value available for DPM. Thus, no acute health impacts were calculated for diesel equipment operations in this evaluation. Besides DPM, 56 other TACs were also evaluated in this HRA. The chemicals and the toxicity values for the chemicals evaluated in this analysis are summarized in Table A4.3-HRA-1 and described below.

1.5.3 Operations

Human health impacts from Modernization Project operations are based on the TAC emissions from stationary sources, on-road mobile sources, and shipping marine vessels.

Table A4.3-HRA-15
Exposure Assumptions - Operations
Chevron Modernization Project
Richmond, California

Exposure Parameter	Units	Resident ¹	Worker ²	School Child ³	Daycare Child ⁴	Adult Patient ⁵	Child Patient ⁶	Recreational User ⁷	Community Center Child ⁸
Daily Breathing Rate (DBR)	[L/kg-day]	302	149	581	581	302	581	--	581
Hourly Breathing Rate (HBR)	[m ³ /hour]	--	--	--	--	--	--	1.56	--
Exposure Time (ET)	hours/24 hours	24	8	10	10	24	24	1	10
Exposure Frequency (EF)	[days/year]	350	245	180	245	365	365	52	245
Exposure Duration (ED)	[years]	70	40	9.0	5.9	1.0	1.0	70	5.9
Averaging Time (AT)	[days]	25550	25550	25550	25550	25550	25550	25550	25550
Intake Factor, Inhalation (IF _{inh})	[m ³ /kg-day]	0.29	0.057	0.015	0.014	0.0043	0.0083	0.0035	0.014

Notes:

- Exposure parameters reflect default values for residents from BAAQMD 2010.
- Exposure parameters reflect default values for workers from BAAQMD 2010. The daily breathing rate for a worker corresponds to an hourly breathing rate of 1.3 m³/hour for eight hours.
- Exposure parameters reflect default values for students from BAAQMD 2010.
- Daily breathing rates for day care child receptors reflect default breathing rates from BAAQMD 2010. The day care centers were assumed to operate 10 hours per day from 7 AM to 5 PM. The day care child receptor was assumed to be at a day care center while the parents are at work; 245 days reflects the default exposure frequency for a worker from BAAQMD 2010. It was assumed that a day care center would accept children from 6 weeks to 6 years old.
- Adult patient was assumed to be 16 years old and above, and stay in hospital for the whole year. Daily breathing rate and exposure time for adult patients reflect default values for resident adults from BAAQMD 2010.
- Child patient was assumed to be in hospital for the whole year. Daily breathing rate and exposure time for child patients reflect default values for resident children from BAAQMD 2010.
- Hourly breathing rates for recreational user receptors reflect recommended mean breathing rates based on moderate activities for short-term exposures for age groups from birth to 70 years from USEPA 2011. The recreational user receptors were conservatively assumed to be at a recreational location 1 hours per day, once a week, every week (52 weeks) of the year.
- For the child receptors at community center, the exposure parameters were conservatively assumed to be the same as those for day care child.

Equations:

Resident, Worker, School Child, Daycare Child, Community Center Child, and Patient:

$$IF_{inh} = DBR * ET * EF * ED * CF1 / AT$$

$$CF1 = 0.001 \text{ (m}^3\text{/L)}$$

Recreational User:

$$IF_{inh} = HBR * ET * EF * ED * CF2 / \text{Body Weight} / AT$$

Where: Body Weight_{adult} = 63 kg (Cal/EPA 2003)

$$CF2 = 24 \text{ hours/day}$$

Abbreviations:

BAAQMD = Bay Area Air Quality Management District

Cal/EPA = California Environmental Protection Agency

kg = kilogram

L = Liter

m³ = cubic meters

USEPA = US Environmental Protection Agency

Source:

Bay Area Air Quality Management District (BAAQMD). 2010. *BAAQMD Air Toxics NSR Program Health Risk Screening Analysis (HRSA)*

Office of Environmental Health Hazard Assessment (OEHHA). 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. August.

United States Environmental Protection Agency (USEPA), 2011. *Exposure Factors Handbook: 2011 Edition*. Table 6-2. September.

1.5.3.1 On-Road Mobile Sources

Cancer risk and chronic non-cancer hazard associated with on-road mobile sources are based on DPM concentrations from on-road diesel trucks. As discussed in *Appendix 4.3-TRANS*, all operational trucks are assumed to be diesel-fueled.

1.5.3.2 Shipping Sources

Consistent with direction from the BAAQMD, emissions from internal combustion engines, regardless of fuel used (diesel, heavy fuel oil, etc.) were characterized using the same emission factors and speciation profiles as those for diesel combustion. Shipping emissions from boilers were characterized using CARB profile 504 for reactive organic gases and a conservative²² hybrid profile for PM₁₀ that combines EPA profile 127102.5 (external combustion boilers on distillate or residual fuel oil) and EPA profile 5676 (Crude oil tanker at sea).

1.5.3.3 Refinery Operations Sources

Cancer risk, chronic non-cancer hazard, and acute non-cancer hazard associated with the stationary source operation are based on the TACs emitted through fuel combustion, material processing, and other miscellaneous emission sources.

1.6 CANCER RISK ADJUSTMENT FACTOR

The BAAQMD recommends estimation of cancer risk using methods from OEHHA's Technical Support Document for Cancer Potency Factors: Methodologies for Derivation, Listing of Available Values, and Adjustment to Allow for Early Life Stage Exposures (Cal/EPA, 2009). The OEHHA Technical Support Document proposes the use of age-specific sensitivity factors to account for an "anticipated sensitivity to carcinogens" of infants and children. Under the revised approach, cancer risk estimates are weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to 2 years of age and by a factor of 3 for exposures that occur from 2 years to 16 years of age. The cancer risk adjustment factor (CRAF) is the weighted factor over the entire exposure duration.

1.6.1 Operations

Cancer risks associated with operations were adjusted using CRAFs for the following receptors: 70-year lifetime resident, daycare child, community center

²² A conservative hybrid profile was created by using all profile constituents from both profiles, and choosing the greater fraction of constituent when both profiles had a specific constituent.

child, school child, patient child, and lifetime recreational user. The BAAQMD-recommended CRAF for a 70-year resident of 1.7 was applied to the cancer risk estimation for a lifetime resident and a lifetime recreational user.²³ All adult populations (i.e., adult patient and adult worker) were assumed to be over 16 years old; therefore, no weighting factor was applied in the cancer risks estimations for these populations. These factors are summarized in Table A4.3-HRA-16.

1.6.2 Health Effects

1.6.2.1 Estimation of Cancer Risks

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF). The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$$\text{Risk}_{\text{inh}} = \sum C_i \times CF \times \text{IF}_{\text{inh}} \times \text{CPF}_i \times \text{CRAF}$$

Where:

Risk_{inh}	=	Cancer Risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)
C_i	=	Annual Average Air Concentration for Chemical _i ($\mu\text{g}/\text{m}^3$)
CF	=	Conversion Factor ($\text{mg}/\mu\text{g}$)
IF_{inh}	=	Intake Factor for Inhalation ($\text{m}^3/\text{kg}\cdot\text{day}$)
CPF_i	=	Cancer Potency Factor for Chemical _i ($\text{mg chemical}/\text{kg body weight}\cdot\text{day})^{-1}$
CRAF	=	Cancer Risk Adjustment Factor (unitless)

²³ The only exception is shipping, for which 70-year ASF weighted emissions provided by ICF (Chevron Data Transmittal #26F, 2014) were used. As a result, no additional CRAF was applied for the residential receptors.

Table A4.3-HRA-16
Cancer Risk Adjustment Factors - Operations
Chevron Modernization Project
Richmond, California

Receptor	Cancer Risk Adjustment Factorsr (CRAF)	Note
Resident	1.7	a, b
Worker	1	a, c
School Child	3	a, d
Day Care Child	5.2	a, e
Adult Patient	1	a, f
Child Patient	10	a, g
Recreational User	1.7	a, h
Community Center Child	5.2	a, i

Notes:

- a. Based on BAAQMD 2010.
- b. A resident was assumed to be exposed for the whole lifetime.
- c. A worker was assumed to represent age 16 to age 70 years.
- d. A school child was assumed to be from 7 years old to 16 years old.
- e. Daycare centers were conservatively assumed to accept children from 6 weeks to 6 years old.
- f. An adult patient was assumed to be 16 years older and above.□
- g. A child patient was assumed to represent age third trimester to 2 years.□
- h. A recreational user was assumed to be exposed for the whole lifetime.□
- j. Community centers were conservatively assumed to accept children from 6 weeks to 6 years old.

Abbreviations:

BAAQMD: Bay Area Air Quality Management District

Source:

Bay Area Air Quality Management District (BAAQMD). 2010. *BAAQMD Air Toxics NSR Program Health Risk Screening Analysis (HRS) Guidelines*. January.

1.6.2.2 Estimation of Chronic Non-cancer Hazard Quotients/Indices

The potential for exposure to result in chronic non-cancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the chemical-specific non-cancer chronic reference exposure levels (RELs). When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient or HQ. To evaluate the potential for adverse chronic non-cancer health effects from simultaneous exposure to multiple chemicals, the HQs for all chemicals are summed, yielding an HI.

The equations used to calculate the chemical-specific HQs and the overall HI are:

$$\text{Chronic HQ}_i = C_i / \text{cREL}_i$$

$$\text{Chronic HI} = \sum \text{HQ}_i$$

Where:

Chronic HQ_i = Chronic Hazard Quotient for Chemical_i
(unitless)

Chronic HI = Hazard Index (unitless)

C_i = Annual Average Air Concentration for
Chemical_i (µg/m³)

cREL_i = Chronic Non-cancer Reference Exposure
Level for Chemical_i (µg/m³)

1.6.2.3 Estimation of Acute Non-cancer Hazard Quotients/Indices

The potential for exposure to result in acute non-cancer effects is evaluated by comparing the estimated 1-hour maximum air concentration to the chemical-specific non-cancer acute RELs. The estimation method for determining the 1-hour maximum concentration was described in the “Air Dispersion Modeling” section. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient or HQ. To evaluate the potential for adverse acute non-cancer health effects from simultaneous exposure to multiple chemicals, the HQs for all chemicals are summed, yielding an HI.

The equations used to calculate the chemical-specific HQs and the overall HI are:

$$\text{Acute HQ}_i = C_i / \text{aREL}_i$$

$$\text{Acute HI} = \sum \text{HQ}_i$$

Where:

Acute HQ_i	=	Acute Hazard Quotient for Chemical _i (unitless)
Acute HI	=	Hazard Index (unitless)
C_i	=	1-hour Maximum Air Concentration for Chemical _i ($\mu\text{g}/\text{m}^3$)
$aREL_i$	=	Acute Non-cancer Reference Exposure Level for Chemical _i ($\mu\text{g}/\text{m}^3$)

1.7 SUMMARY OF RESULTS

Tables A4.3-HRA-17a and b summarizes the cancer risk, chronic HI, $PM_{2.5}$ concentration, and acute HI impact at the off-site MEISR for the total, and for operational trucking, shipping, and Refinery Operations sources. Tables A4.3-HRA 18a-k show the highest contributing sources to the health impacts for each type of health impact each for Refinery Operations, shipping and trucking. These tables also show the reductions in health impacts that result from reductions in emissions of certain TACs as a result of the Modernization Project. These reductions are highlighted in the tables in blue. The listed percentages are the percent of the total increase or decrease, respectively.

Figures A4.3-HRA-20 to 35 present cancer risks, chronic HIs, $PM_{2.5}$ concentrations, and acute HIs at all modeled receptors and MEISRs from the combination of Refinery Operations, shipping and trucking for the four cases evaluated in this HRA.²⁴ Figures A4.3-HRA-36 to -59, presents cancer risks, chronic HIs, $PM_{2.5}$ concentrations and acute HIs at all modeled receptors each for the Refinery Operations, shipping and trucking for the 93% Utilization cases with Project Design Features.

1.7.1 Cancer Risks

The incremental excess cancer risk for the mitigated Project case is 4.0 in 1 million at the MEI. The excess lifetime cancer risk for carcinogenic compounds is calculated for those compounds considered by Cal/EPA to pose a carcinogenic risk to humans. This value represents the risk, or theoretical probability, of developing cancer from that chemical upon exposure to that medium. A cancer

²⁴ These figures are based on the analysis for the inhalation pathway because as described in Section 1.3, the cancer risks and non-cancer hazards associated with the multi-pathway exposures are small compared to the thresholds for cancer risks and non-cancer chronic hazards.

risk of one in one million means that in a population of one million people, not more than one additional person would be expected to develop cancer as the result of the exposure to the substance causing that risk.

As is shown in Table A4.3-HRA-17, the majority of the incremental risk comes from shipping activities, followed by Refinery Operations and trucking. The MEI is located in Point Richmond, near the Long Wharf as shown in Figure A4.3-HRA-20. DPM, emitted from the marine vessels, is the main risk driver. Risks at the MEI from shipping is 3.4 in 1 million at the berths. The risks at the MEI also represent the greatest shipping risks at any location. The shipping project design feature of replacing the PAL vessels' auxiliary engines with turbogenerators reduce the risks at the berth, as turbogenerators do not emit DPM. Risks at the MEI from Refinery Operations are 0.4 in 1 million and is also located in Point Richmond. Finally, risks from trucking emissions at the MEI are 0.1 in 1 million, and are driven by DPM emissions from trucking. The greatest risks from trucking are located near a truck on ramp distant from the MEI. These risks are overestimated, because the decrease in DPM emissions that result from increasing future regulation were not considered in this assessment.

1.7.2 Chronic Hazard Index

The incremental excess chronic HI for the mitigated Project case is 0.02 at the MEI, which is a worker receptor.²⁵ The maximally exposed residential receptor has a chronic HI far less than this value. This is well below the BAAQMD CEQA threshold of 1.0 for chronic HI, and below the de minimis threshold for No Net Increase of risk of 0.2. The HI represents the sum of the HQs developed for each individual chemical. The HQ is the ratio of the estimated dose from exposure to a compound in a medium, to a value that is believed not to produce adverse health effects for each chemical considered. The HQ is calculated for all compounds, carcinogenic as well as non-carcinogenic. This value is a measure of the non-carcinogenic toxicity of a compound; it is not a probability. Estimated HQs and HIs are expressed using decimal notation (e.g., 0.001). A value below 1.0 is believed to not cause adverse health impacts.

As is shown in Table A4.3-HRA-17, the majority of the incremental HI comes from diethanolamine and sulfur from the SRUs and the TKC. The MEI is located in Point Molate, to the east of the Refinery Operations. The HI at the MEI from shipping is 0.002 at the MEI, and results from DPM emitted from shipping activities. The HI from shipping is the greatest in Point Richmond, but is still

²⁵ The maximum non-cancer chronic hazard index considering all pathways is 0.1, still well below the CEQA threshold and NNI.

Table A4.3-HRA-17a
Health Impact - Operational Trucking, Shipping, and Refinery Sources
Chevron Modernization Project
Richmond, California

Project 100%

Population	Receptor Types	Receptor Sub-category	UTMx	UTMy	Excess Lifetime Cancer Risk ¹ (in a million)		Chronic HI ² (unitless)		PM _{2.5} Concentration ³ (µg/m3)		Acute HI ⁴ (unitless)	
			(m)		With PDF	Without PDF	With PDF	Without PDF	With PDF	Without PDF	With PDF	Without PDF
MEISR (Cancer)	BAAQMD Sensitive Receptors and Recreational Users	Resident	552,950	4,198,200	8.8	9.4	--	--	--	--	--	--
	Worker	Worker	--	--	--	--	--	--	--	--	--	--
MEISR (Chronic HI)	BAAQMD Sensitive Receptors	Resident	561,000	4,194,400	--	--	-0.001	-0.001	--	--	--	--
	Recreational Users	Recreational User	551,749	4,199,663	--	--	0.01	0.01	--	--	--	--
	Worker	Worker	551,200	4,200,600	--	--	0.02	0.02	--	--	--	--
MEISR (PM2.5)	BAAQMD Sensitive Receptors and Recreational Users	Resident	555,100	4,201,100	--	--	--	--	0.01	0.02	--	--
	Worker	Worker	552,450	4,199,270	--	--	--	--	0.16	0.16	--	--
MEISR (Acute HI)	All Receptors including Fenceline	fenceline	551,076	4,200,862	--	--	--	--	--	--	0.51	0.50
BAAQMD Threshold					10		1.0		0.3		1.0	

Project 93%

Population	Receptor Types	Receptor Sub-category	UTMx	UTMy	Excess Lifetime Cancer Risk ¹ (in a million)		Chronic HI ² (unitless)		PM _{2.5} Concentration ³ (µg/m3)		Acute HI ⁴ (unitless)	
			(m)		With PDF	Without PDF	With PDF	Without PDF	With PDF	Without PDF	With PDF	Without PDF
MEISR (Cancer)	BAAQMD Sensitive Receptors and Recreational Users	Resident	552,950	4,198,200	4.0	4.5	--	--	--	--	--	--
	Worker	Worker	--	--	--	--	--	--	--	--	--	--
MEISR (Chronic HI)	BAAQMD Sensitive Receptors	Resident	560,200	4,201,400	--	--	-0.001	-0.001	--	--	--	--
	Recreational Users	Recreational User	551,749	4,199,663	--	--	0.01	0.01	--	--	--	--
	Worker	Worker	551,200	4,200,600	--	--	0.02	0.02	--	--	--	--
MEISR (PM2.5)	BAAQMD Sensitive Receptors and Recreational Users	Resident	555,100	4,201,100	--	--	--	--	0.01	0.01	--	--
	Worker	Worker	552,450	4,199,270	--	--	--	--	0.05	0.05	--	--
MEISR (Acute HI)	All Receptors including Fenceline	fenceline	551,076	4,200,862	--	--	--	--	--	--	0.50	0.50
BAAQMD Threshold					10		1.0		0.3		1.0	

Max Light 100%

Population	Receptor Types	Receptor Sub-category	UTMx	UTMy	Excess Lifetime Cancer Risk ¹ (in a million)		Chronic HI ² (unitless)		PM _{2.5} Concentration ³ (µg/m3)		Acute HI ⁴ (unitless)	
			(m)		With PDF	Without PDF	With PDF	Without PDF	With PDF	Without PDF	With PDF	Without PDF
MEISR (Cancer)	BAAQMD Sensitive Receptors and Recreational Users	Resident	552,950	4,198,200	12.1	12.7	--	--	--	--	--	--
	Worker	Worker	--	--	--	--	--	--	--	--	--	--
MEISR (Chronic HI)	BAAQMD Sensitive Receptors	Resident	561,000	4,194,400	--	--	-0.001	-0.001	--	--	--	--
	Recreational Users	Recreational User	551,749	4,199,663	--	--	0.01	0.01	--	--	--	--
	Worker	Worker	551,200	4,200,600	--	--	0.03	0.03	--	--	--	--
MEISR (PM2.5)	BAAQMD Sensitive Receptors and Recreational Users	Resident	553,750	4,197,400	--	--	--	--	0.02	0.02	--	--
	Worker	Worker	552,450	4,199,270	--	--	--	--	0.16	0.16	--	--
MEISR (Acute HI)	All Receptors including Fenceline	fenceline	551,076	4,200,862	--	--	--	--	--	--	0.51	0.50
BAAQMD Threshold					10		1.0		0.3		1.0	

Max Light 93%

Population	Receptor Types	Receptor Sub-category	UTMx	UTMy	Excess Lifetime Cancer Risk ¹ (in a million)		Chronic HI ² (unitless)		PM _{2.5} Concentration ³ (µg/m3)		Acute HI ⁴ (unitless)	
			(m)		With PDF	Without PDF	With PDF	Without PDF	With PDF	Without PDF	With PDF	Without PDF
MEISR (Cancer)	BAAQMD Sensitive Receptors and Recreational Users	Resident	552,950	4,198,200	8.8	9.3	--	--	--	--	--	--
	Worker	Worker	--	--	--	--	--	--	--	--	--	--
MEISR (Chronic HI)	BAAQMD Sensitive Receptors	Resident	561,000	4,194,400	--	--	-0.001	-0.001	--	--	--	--
	Recreational Users	Recreational User	551,749	4,199,663	--	--	0.01	0.01	--	--	--	--
	Worker	Worker	551,200	4,200,600	--	--	0.02	0.02	--	--	--	--
MEISR (PM2.5)	BAAQMD Sensitive Receptors and Recreational Users	Resident	555,100	4,201,100	--	--	--	--	0.01	0.01	--	--
	Worker	Worker	551,800	4,197,400	--	--	--	--	0.10	0.10	--	--
MEISR (Acute HI)	All Receptors including Fenceline	fenceline	551,076	4,200,862	--	--	--	--	--	--	0.50	0.50
BAAQMD Threshold					10		1.0		0.3		1.0	

Notes:

1. The excess lifetime cancer risk assumes that an individual adjacent to the refinery operation activity is exposed to emissions from trucking, shipping, and refinery sources. Cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risks attributed to the TAC emissions associated with the Project were calculated based on the TAC exposure point concentration (C), the intake factors presented in Tables AQ-HRA-6c, the CPF presented in Table AQ-HRA-7, and the ASFs presented in Table AQ-HRA-8c.

Calculation:

$$Risk_{inh} = \sum (C_i \times MAF \times CF \times IF_{inh} \times CPF_i \times ASF)$$

Where:

- Risk_{inh} = Cancer Risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)
- C_i = Modeled Annual Average Concentration in air for Chemical I (µg/m³)
- MAF = Modeling Adjustment Factor
- CF = Conversion Factor (mg/µg)
- IF_{inh} = Intake Factor for Inhalation (m³/kg-day)
- CPF_i = Cancer Potency Factor for Chemical I (mg chemical/kg body weight-day)
- ASF = Age Sensitivity Factor

2. The potential for exposure to result in chronic noncancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the chemical-specific noncancer chronic RELs. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient. The hazard quotients were then summed for all chemicals to yield the hazard index. The hazard quotients were calculated based on the modeled annual average TAC concentrations and the chronic REL presented in Table AQ-HRA-8.

Calculation:

$$HQ_i = C_i / REL_i; HI = \sum HQ_i$$

Where:

- HI = Hazard Index
- HQ_i = Hazard Quotient for Chemical I
- C = Average Daily Air Concentration for Chemical I (µg/m³)
- REL_i = Noncancer Reference Exposure Level for Chemical I (µg/m³)

3. The MEISR is the offsite receptor location with the maximum annual average PM_{2.5} concentration from the modeled operational sources. The PM_{2.5} concentration takes into account emissions from trucking, shipping, and refinery sources.

4. ENVIRON evaluated the acute hazard indices (HIs) for the maximum hourly emissions scenarios. The potential for exposure to result in acute noncancer effects is evaluated by comparing the estimated maximum hourly air concentration to the chemical-specific noncancer acute RELs. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient. The acute HI is calculated by summing all hazard quotients.

Calculation:

$$Acute\ HI = \sum Acute\ HQ_i = \sum C_i / REL_i$$

Where:

- Acute HI = Acute Hazard Index
- Acute HQ_i = Acute Hazard Quotient for Chemical i
- C_i = Max hourly Air Concentration for Chemical i (µg/m3)
- REL_i = Noncancer Reference Exposure Level for Chemical i (µg/m3)

Abbreviations:

- µg: microgram
- CPF: Cancer Potency Factor
- HQ: Hazard Quotient
- HI: Hazard Index
- kg: kilogram
- m: meter
- MEISR: Maximally Exposed Individual Sensitive Receptor
- PDF: Project Design Feature
- REL: Reference Exposure Level
- TAC: Toxic Air Contaminants
- UTM: Universal Transverse Mercator

Table A4.3-HRA-17b
Health Impact Breakdown - Operational Trucking, Shipping, and Refinery Sources
Chevron Modernization Project
Richmond, California

Case	Emissions Types	Without PDF				With PDF			
		Cancer Risks (in a million)	Chronic HI (unit-less)	Acute HI (unit-less)	PM _{2.5} (µg/m ³)	Cancer Risks (in a million)	Chronic HI (unit-less)	Acute HI (unit-less)	PM _{2.5} (µg/m ³)
Project (93%) minus 2016 Baseline	Refinery	0.44	0.02	0.49	0.051	0.44	0.02	0.49	0.051
	Shipping	4.0	0.0018	0.0015	0.0014	3.4	0.0020	0.0051	0.00081
	Trucking	0.099	0.000022	--	0.000016	0.099	0.000022	--	0.000016
	Total	4.5	0.022	0.50	0.05	4.0	0.022	0.50	0.05
Project (100%) minus 2016 Baseline	Refinery	0.79	0.02	0.50	0.15	0.79	0.02	0.50	0.15
	Shipping	8.5	0.0038	0.0032	0.0028	7.9	0.0040	0.0071	0.0022
	Trucking	0.13	0.000028	--	0.000021	0.13	0.000028	--	0.000021
	Total	9.4	0.024	0.50	0.16	8.8	0.025	0.51	0.16
Lightest Case (93%) minus 2016 Baseline	Refinery	0.64	0.02	0.50	-0.01	0.64	0.02	0.50	-0.01
	Shipping	8.6	0.0038	0.0031	0.11	8.1	0.0041	0.0066	0.11
	Trucking	0.054	0.0000099	--	0.000054	0.054	0.0000099	--	0.000054
	Total	9.3	0.024	0.50	0.10	8.8	0.024	0.50	0.10
Lightest Case (100%) minus 2016 Baseline	Refinery	0.93	0.02	0.50	0.15	0.93	0.02	0.50	0.15
	Shipping	12	0.0052	0.0043	0.0040	11	0.0055	0.0082	0.0034
	Trucking	0.07	0.000012	--	0.0000099	0.07	0.000012	--	0.0000099
	Total	13	0.026	0.50	0.16	12	0.026	0.51	0.16

Abbreviations:

µg: microgram

HI: Hazard Index

m: meter

PDF: Project Design Feature

**TABLE A4.3-HRA-18A REFINERY OPERATIONS RISK CONTRIBUTORS, 93% UTILIZATION,
MAX HYDROGEN PRODUCTION**

Model Source ID	Description	Chemical	Incremental Cancer Risk (in 1 million)	Percent of Total Increase/ Decrease
t1899	Storage tanks	Benzene	0.24	47%
tkc	New FCC FHT equipment leaks	Naphthalene	0.05	9%
t3100	Storage tanks	Benzene	0.04	8%
newhp	New Hydrogen Plant equipment leaks	1,3-butadiene	0.03	7%
tkc	New FCC FHT equipment leaks	Benzene	0.03	7%
newhp	New Hydrogen Plant equipment leaks	Naphthalene	0.03	5%
t3213	Storage tanks	Benzene	0.02	3%
p_0116	Existing Hydrogen Plant stack	Chromium (hexavalent)	-0.0025	4%
p_0116	Existing Hydrogen Plant stack	PAHs (benzo[a]-pyrene equiv)	-0.004	6%
p_0130	Existing Hydrogen Plant stack	PAHs (benzo[a]-pyrene equiv)	-0.01	12%
p_0260	Existing Hydrogen Plant stack	PAHs (benzo[a]-pyrene equiv)	-0.01	14%
p_0129	Existing Hydrogen Plant stack	PAHs (benzo[a]-pyrene equiv)	-0.01	16%
p_0128	Existing Hydrogen Plant stack	PAHs (benzo[a]-pyrene equiv)	-0.01	17%
p_0127	Existing Hydrogen Plant stack	PAHs (benzo[a]-pyrene equiv)	-0.01	21%

Note: FCC FHT = fluid catalytic cracker feed hydrotreater.

**TABLE A4.3-HRA-18B SHIPPING RISK CONTRIBUTORS, 93% UTILIZATION, MAX
HYDROGEN PRODUCTION**

Model Source ID	Chemical	Incremental Cancer Risk (in 1 million)	Percent of Total Increase/ Decrease
Tug Maneuvering	DPM	1.28	33%
Tug Transit	DPM	0.60	15%
Tug Transit	DPM	0.59	15%
Barge Maneuvering	DPM	0.21	5%
Berth 1 Generator	DPM	0.14	4%
Tug Transit	DPM	0.14	4%
Berth 2 Barge	DPM	0.13	3%
Tug at Berth	DPM	0.13	3%
Tug Transit	DPM	0.12	3%
Berth 2 Generator	DPM	0.09	2%
Berth 3 Barge	DPM	0.08	2%
Berth 3 Generator	DPM	0.08	2%
Barge Transit	DPM	0.06	2%
Berth 4 Generator	DPM	-0.47	100%

TABLE A4.3-HRA-18C TRUCKING RISK CONTRIBUTORS, 93% UTILIZATION, MAX HYDROGEN PRODUCTION

Model Source ID	Description	Chemical	Incremental Cancer Risk (in 1 million)	Percent of Total Increase/Decrease
ITOO_1	On-site Oxygen Truck Route	DPM	0.05	49%
ITOO_2	On-site Oxygen Truck Route	DPM	0.01	13%
ETC_8	Off-site Truck Route on Richmond Parkway	DPM	0.01	8%
ETC_9	Off-site Truck Route on Richmond Parkway	DPM	0.01	8%
ITOS_1	On-site Sulfur Truck Route	DPM	0.0039	4%
ITC_IDL	Gate 31 Trucking Idling Point	DPM	0.0036	4%
ITOMR	On-site Marketing Rack Truck Route	DPM	0.0031	3%
ITO_LPG	On-site Propane Truck Route	DPM	0.0022	2%
RAMPST	Ramps to/from I-580	DPM	0.0018	2%

TABLE A4.3-HRA-18D REFINERY OPERATIONS CHRONIC NON-CANCER HAZARD CONTRIBUTORS, 93% UTILIZATION, MAX HYDROGEN PRODUCTION

Model Source ID	Description	Chemical	Incremental Chronic HI	Percent of Total Increase/Decrease
sru	New SRU equipment leaks	Diethanolamine	0.02	64%
sru	New SRU equipment leaks	Hydrogen Sulfide	0.0039	15%
tkc	New FCC FHT equipment leaks	Diethanolamine	0.0037	14%
sru2_e	Existing SRU stack	Sulfuric Acid mist pollutant	-0.0016	25%
sru3_e	Existing SRU stack	Sulfuric Acid mist pollutant	-0.0019	31%
sru1_e	Existing SRU stack	Sulfuric Acid mist pollutant	-0.0026	42%

Note: FCC FHT = fluid catalytic cracker feed hydrotreater.

TABLE A4.3-HRA-18E SHIPPING CHRONIC NON-CANCER HAZARD CONTRIBUTORS, 93% UTILIZATION, MAX HYDROGEN PRODUCTION

Model Source ID	Chemical	Incremental Chronic HI	Percent of Total Increase/ Decrease
Berth 4 Boiler	Nickel	0.0008	32%
Tug Maneuvering	DPM	0.0004	17%
Tug Transit	DPM	0.0002	6%
Tug Transit	DPM	0.0001	6%
Barge Maneuvering	DPM	0.00009	4%
Berth 2 Barge Generator	DPM	0.00008	3%
Berth 1 Boiler	Nickel	0.00008	3%
Berth 1 Generator	DPM	0.00008	3%
Berth 2 Generator	DPM	0.00006	3%
Berth 3 Boiler	DPM	0.00006	2%
Berth 3 Generator	DPM	0.00005	2%
Tug Transit Leg	DPM	0.00005	2%
Berth 2 Boiler	Nickel	0.00005	2%
Tug Transit Leg	DPM	0.00005	2%
Berth 3 Boiler	Nickel	0.00005	2%
Tug at Berth	DPM	0.00004	2%
Tug Maneuvering	Nickel	0.00004	2%
Berth 4 Generator	DPM	-0.0004	100%

TABLE A4.3-HRA-18F TRUCKING CHRONIC NON-CANCER HAZARD CONTRIBUTORS, 93% UTILIZATION, MAX HYDROGEN PRODUCTION

Model Source ID	Description	Chemical	Incremental Chronic HI	Percent of Total Increase/Decrease
ITOO_1	On-site Oxygen Truck Route	DPM	0.00001	60%
ITOO_3	On-site Oxygen Truck Route	DPM	0.000002	10%
ETC_8	Off-site Truck Route on Richmond Parkway	DPM	0.000002	10%
ITOO_2	On-site Oxygen Truck Route	DPM	0.000001	5%
ITOS_1	On-site Sulfur Truck Route	DPM	0.000001	5%
ETC_9	Off-site Truck Route on Richmond Parkway	DPM	0.0000008	4%
ETC_6	Off-site Truck Route on Richmond Parkway	DPM	0.0000004	2%

TABLE A4.3-HRA-18G REFINERY OPERATIONS ACUTE HAZARD CONTRIBUTORS, 93% UTILIZATION, MAX HYDROGEN PRODUCTION

Model Source ID	Description	Chemical	Incremental Acute HI	Percent of Total Increase/Decrease
sru	New SRU equipment leaks	Hydrogen Sulfide	0.41	78%
tkc	New FCC FHT equipment leaks	Hydrogen Sulfide	0.05	9%
newhp	New Hydrogen Plant equipment leaks	Hydrogen Sulfide	0.01	2%
h2train1	New Hydrogen Plant stack	Nickel pollutant	0.01	2%
h2train2	New Hydrogen Plant stack	Nickel pollutant	0.01	2%
sru2_e	Existing SRU stack	Sulfuric Acid mist pollutant	-0.01	21%
sru1_e	Existing SRU stack	Sulfuric Acid mist pollutant	-0.01	32%
sru3_e	Existing SRU stack	Sulfuric Acid mist pollutant	-0.01	39%

Note: FCC FHT = fluid catalytic cracker feed hydrotreater

TABLE A4.3-HRA-18H SHIPPING ACUTE HAZARD CONTRIBUTORS, 93% UTILIZATION, MAX HYDROGEN PRODUCTION

Model Source Name	Chemical	Incremental Acute HI	Percent of Total Increase/Decrease
Berth 4 Boiler	Nickel	0.0035	68%
Berth 1 Boiler	Nickel	0.0004	8%
Berth 4 Boiler	Sulfate	0.0004	7%
Berth 2 Boiler	Nickel	0.0002	5%
Berth 3 Boiler	Nickel	0.0002	4%
Tug Maneuvering	Nickel	0.0001	3%

**TABLE A4.3-HRA-18I REFINERY OPERATIONS PM_{2.5} CONTRIBUTORS, 93% UTILIZATION,
MAX HYDROGEN PRODUCTION**

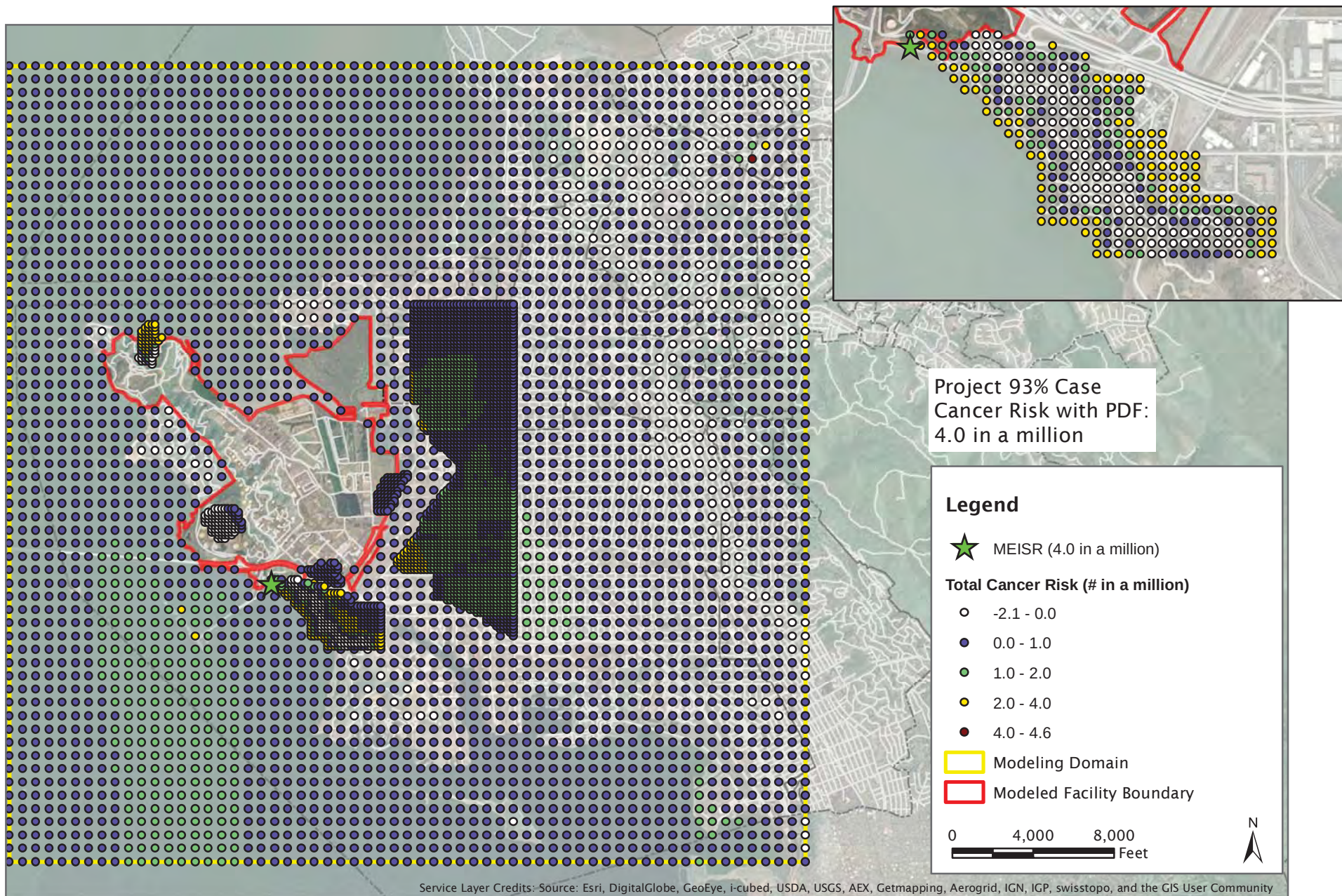
Model Source ID	Description	Incremental PM _{2.5} Concentration (µg/m ³)	Percent of Total Increase/ Decrease
fccu	Fluid Catalytic Cracker stack	0.06	33%
h2train1	New Hydrogen Plant stack	0.05	28%
h2train2	New Hydrogen Plant stack	0.04	23%
sru3_n	New SRU stack	0.0039	2%
p_0057	Crude Unit stack	0.0034	2%
p_0058	Crude Unit stack	0.0031	2%
p_0116	Existing Hydrogen Plant stack	-0.0007	1%
p_0130	Existing Hydrogen Plant stack	-0.0046	4%
p_0128	Existing Hydrogen Plant stack	-0.0046	4%
p_0129	Existing Hydrogen Plant stack	-0.0048	4%
p_0127	Existing Hydrogen Plant stack	-0.0049	4%
sru2_e	Existing SRU stack	-0.01	6%
sru1_e	Existing SRU stack	-0.01	6%
sru3_e	Existing SRU stack	-0.01	9%
p_0260	Existing Hydrogen Plant stack	-0.08	64%

**TABLE A4.3-HRA-18J SHIPPING PM_{2.5} CONTRIBUTORS, 93% UTILIZATION, MAX
HYDROGEN PRODUCTION**

Model Source ID	Incremental PM_{2.5} Concentration (µg/m³)	Percent of Total Increase/ Decrease
Berth 4 Boiler	0.0005	30%
Berth 1 Generator	0.0002	11%
Tug Maneuvering	0.0002	10%
Berth 2 Generator	0.0002	9%
Berth 3 Generator	0.0001	8%
Tug Transit	0.00008	4%
Tug Transit	0.00007	4%
Berth 1 Boiler	0.00005	3%
Berth 2 Barge	0.00005	3%
Barge Maneuvering	0.00004	2%
Berth 2 Boiler	0.00004	2%
Berth 3 Boiler	0.00003	2%
Ship Maneuvering	0.00003	2%
Berth 3 Barge	0.00003	2%
Berth 4 Generator	-0.0009	100%

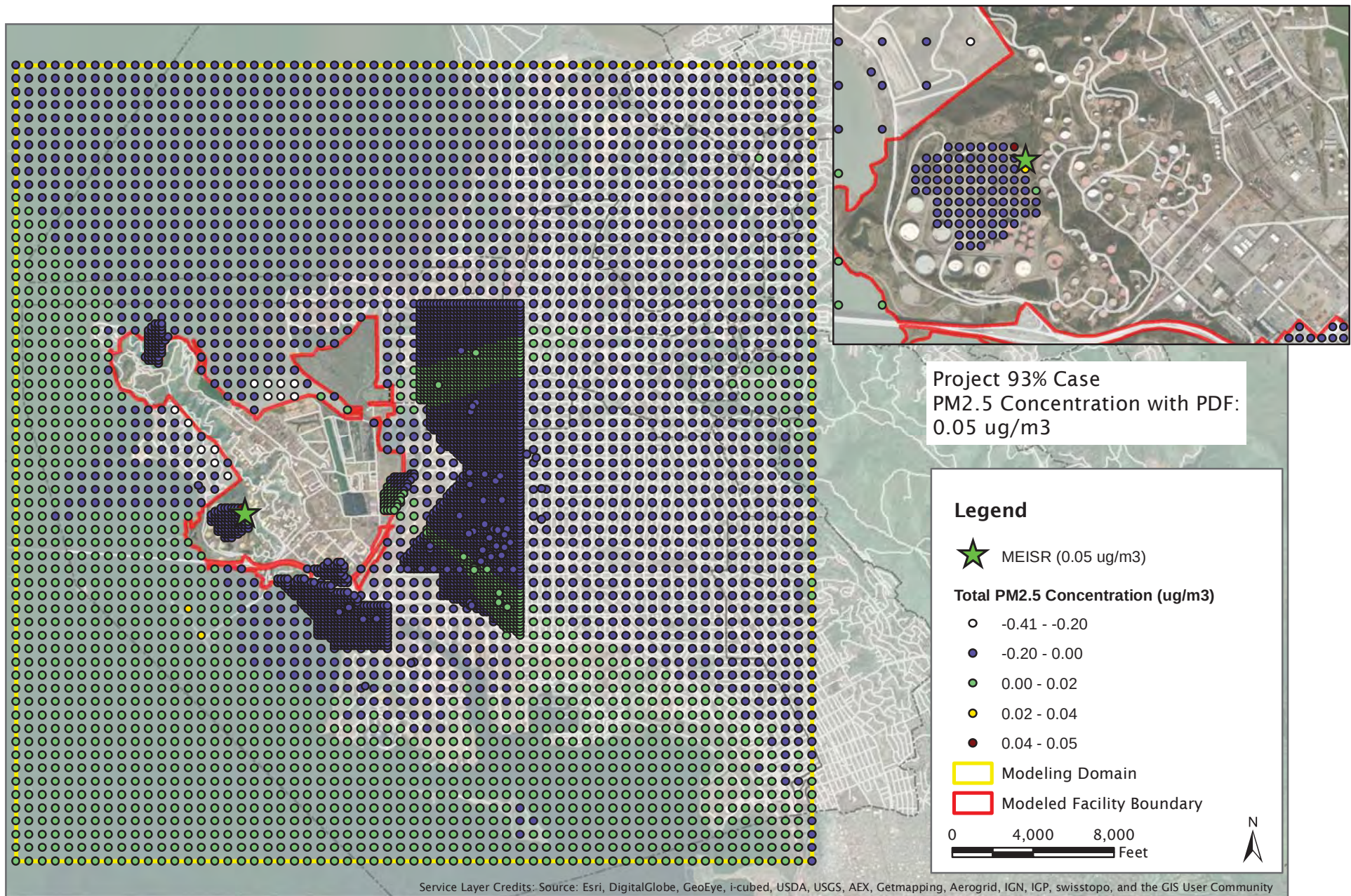
**TABLE A4.3-HRA-18K TRUCKING PM_{2.5} CONTRIBUTORS, 93% UTILIZATION, MAX
HYDROGEN PRODUCTION**

Model Source ID	Description	Incremental PM_{2.5} Concentration (µg/m³)	Percent of Total Increase/ Decrease
ITOO_1	On-site Oxygen Truck Route	0.000006	35%
ETC_8	Off-site Truck Route on Richmond Parkway	0.000005	30%
ETC_6	Off-site Truck Route on Richmond Parkway	0.000002	15%
ETC_9	Off-site Truck Route on Richmond Parkway	0.000001	7%
ITOO_3	On-site Oxygen Truck Route	0.0000008	5%
ITOS_1	On-site Sulfur Truck Route	0.0000005	3%



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\CFig_AQ-HRA-35_Project 93% Cancer with PDF Residents and Workers.mxd

Figure AQ-HRA-20
Chevron Refinery Modernization Project EIR
Project 93% Cancer Risk with PDF



02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\CFig-AQ-HRA-37_Project 93% PM25 with PDF.mxd

Figure AQ-HRA-21
Chevron Refinery Modernization Project EIR
Project 93% PM2.5 Concentration with PDF

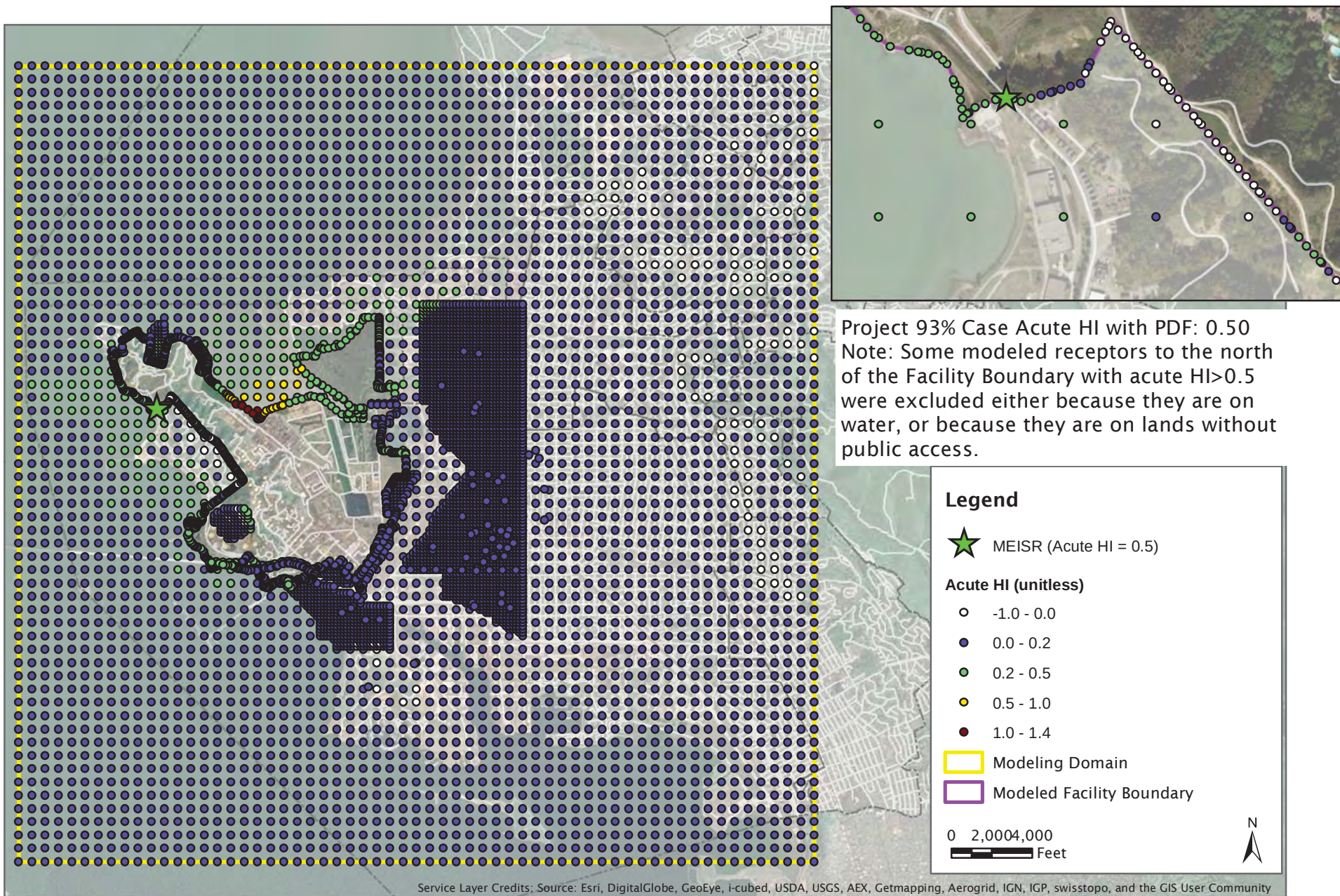
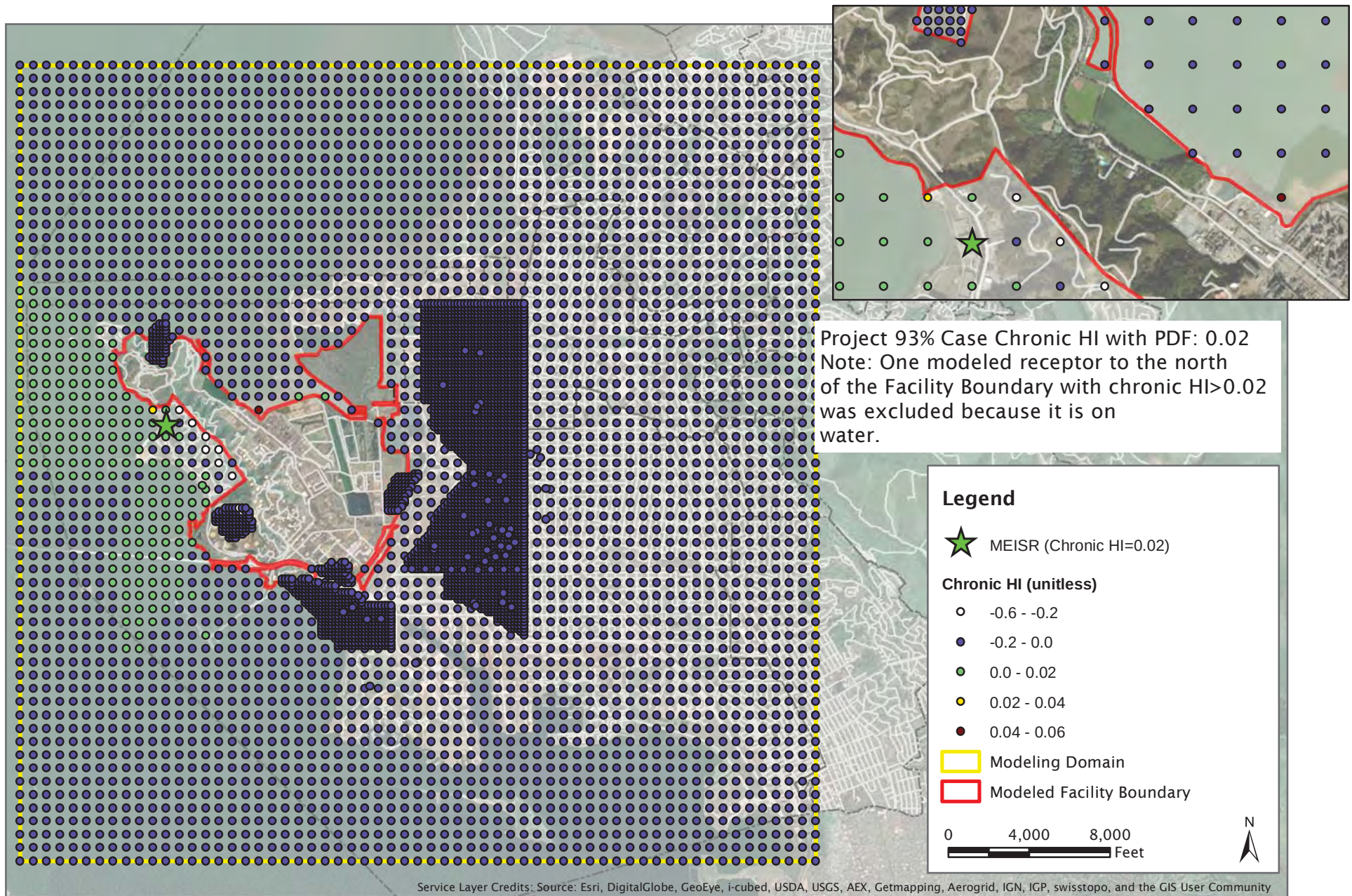
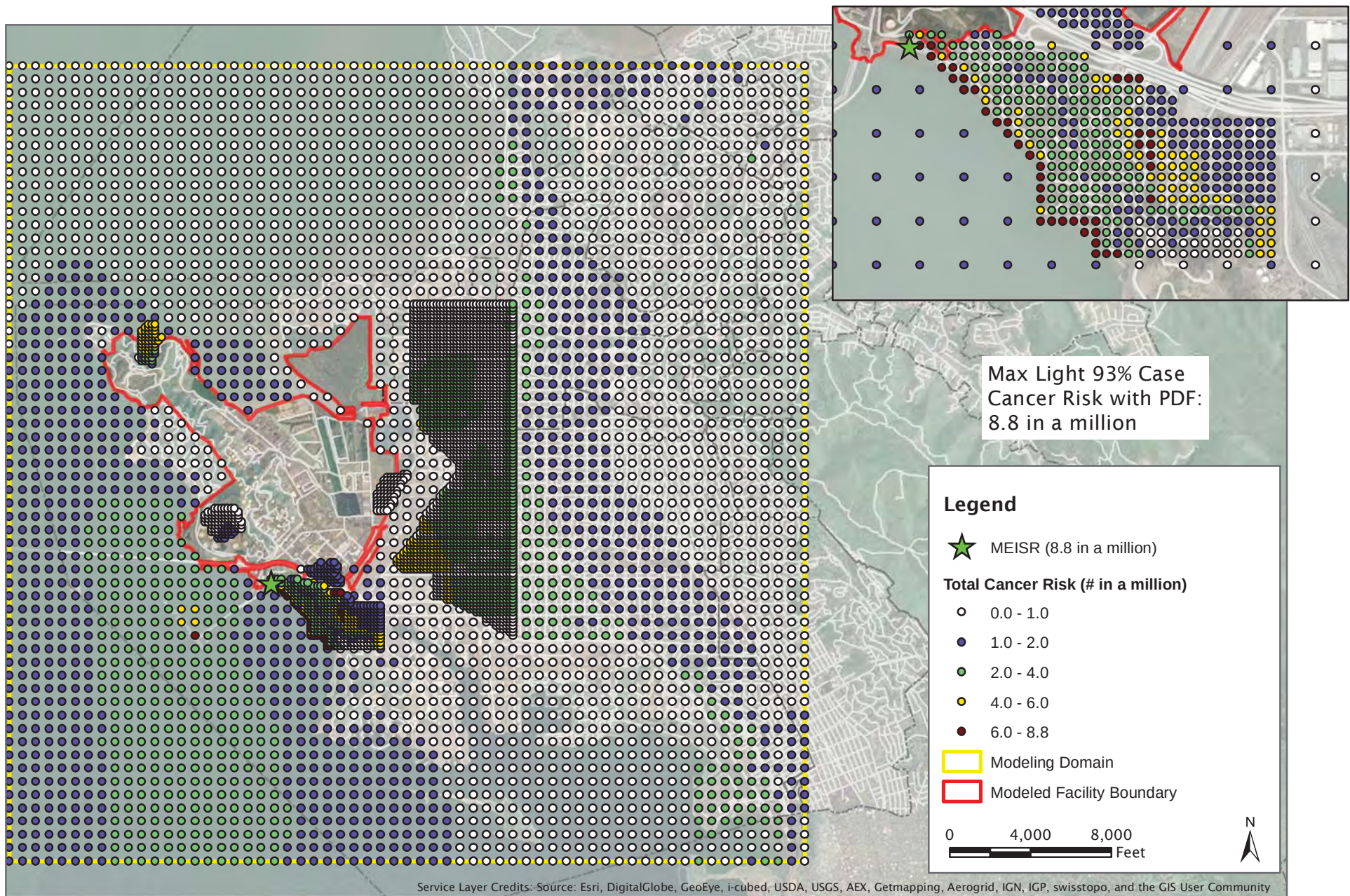


Figure AQ-HRA-22
 Chevron Refinery Modernization Project EIR
 Project 93% Acute HI with PDF



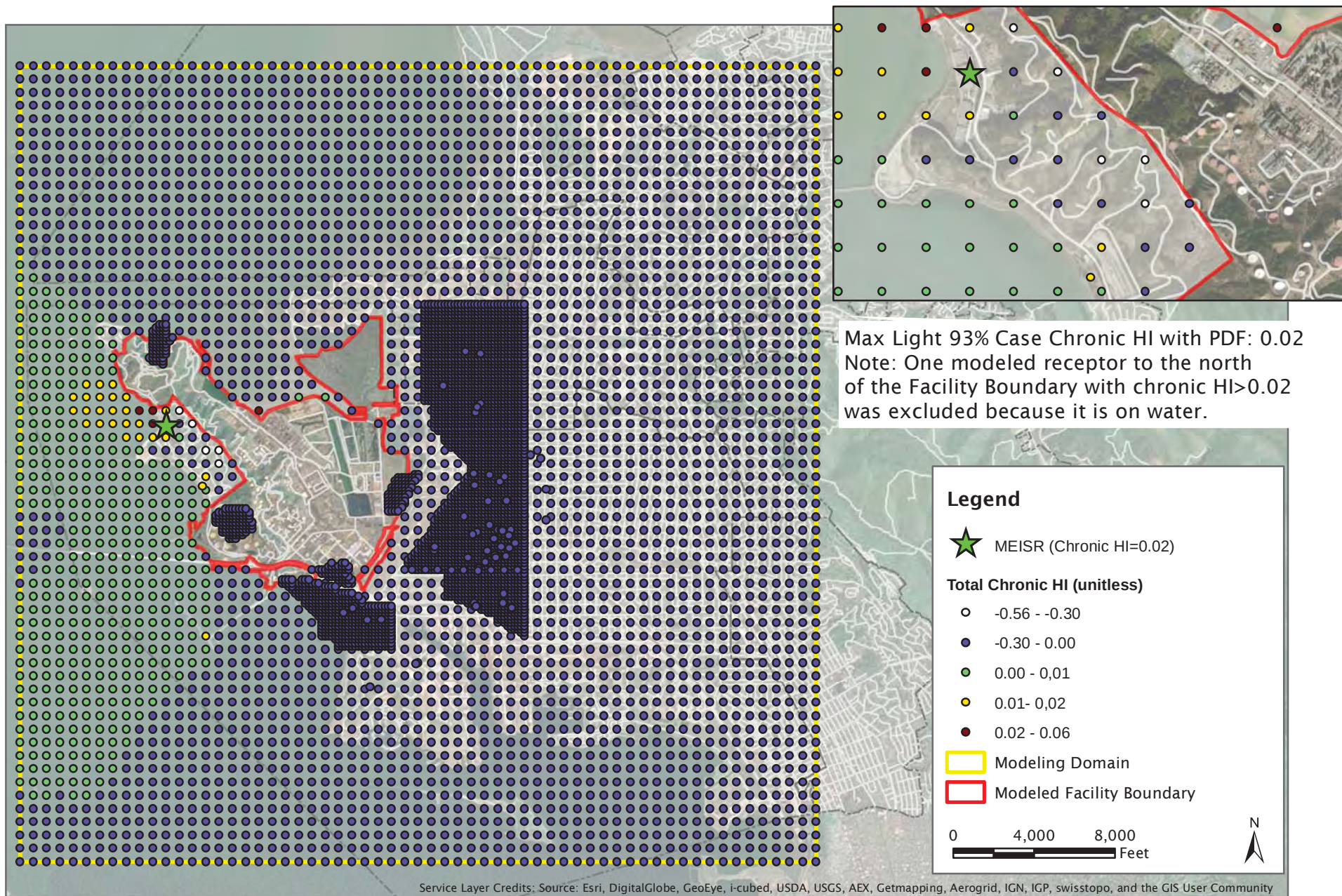
02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\CFig_AQ-HRA-41_Project 93% Chronic HI with PDF.mxd

Figure AQ-HRA-23
 Chevron Refinery Modernization Project EIR
 Project 93% Chronic HI with PDF



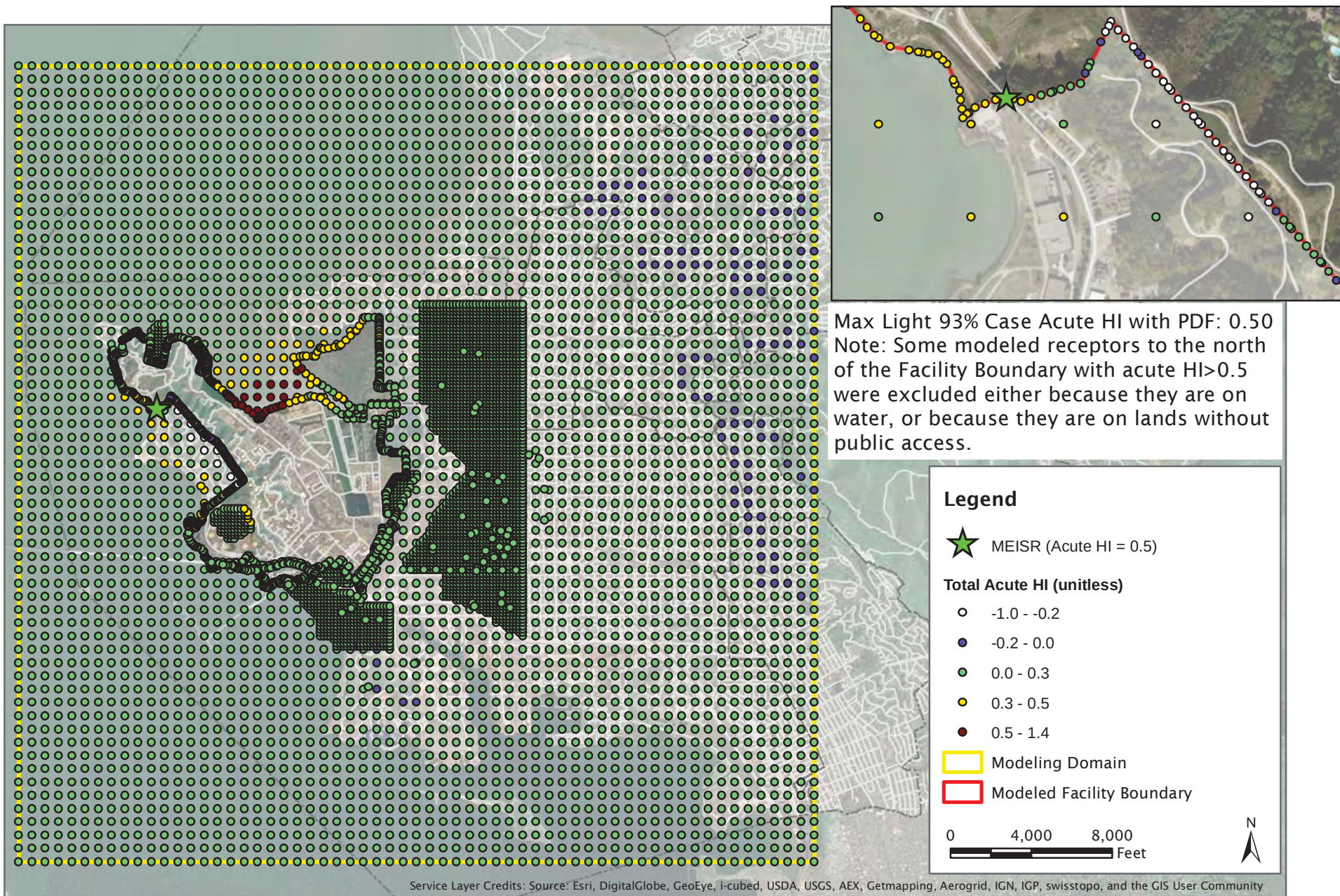
02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-13_Max Light 93% Cancer with PDF-Total.mxd

Figure A4.3-HRA-24
Chevron Refinery Modernization Project EIR
Max Light 93% Cancer Risk with PDF



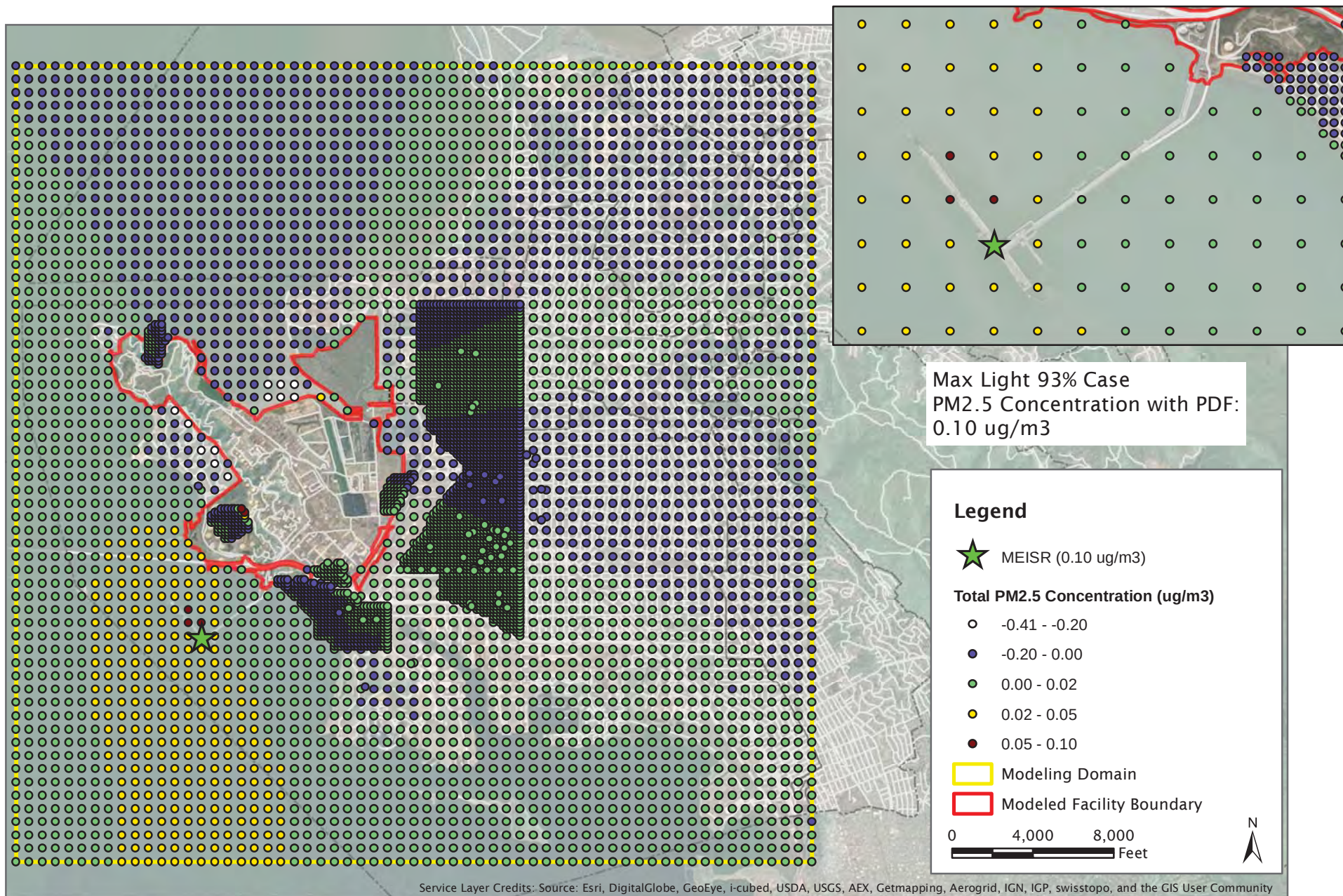
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-14_Project 93% Max Chronic HI with PDF-Total.mxd

Figure A4.3-HRA-25
 Chevron Refinery Modernization Project EIR
 Max Light 93% Chronic HI with PDF



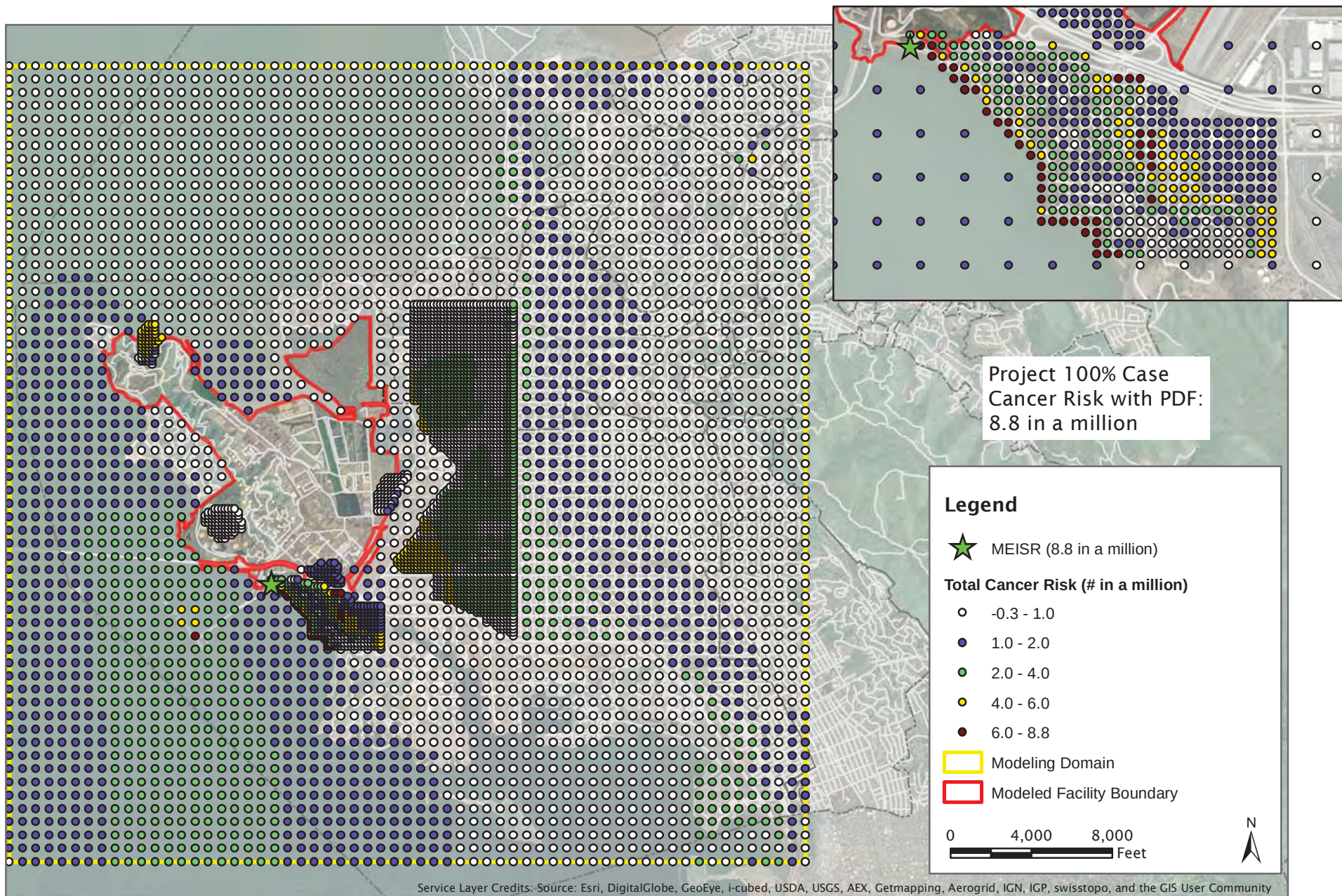
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-15_Project 93% Max Light Acute HI with PDF - Total.mxd

Figure A4.3-HRA-26
 Chevron Refinery Modernization Project EIR
 Max Light 93% Acute HI with PDF



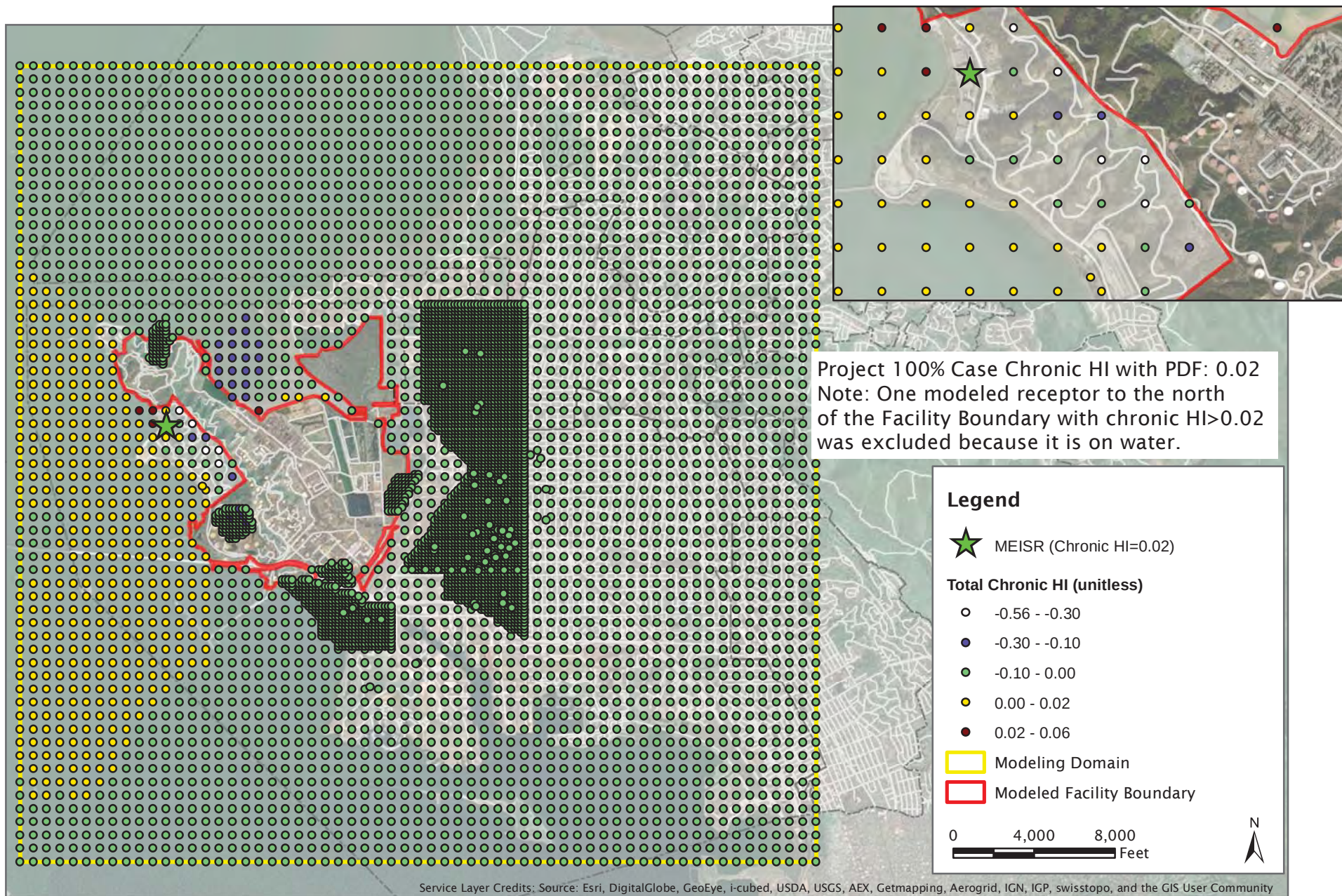
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-16_Project Max Light 93% PM25 with PDF - Total.mxd

Figure A4.3-HRA-27
Chevron Refinery Modernization Project EIR
Max Light 93% PM2.5 Concentration with PDF



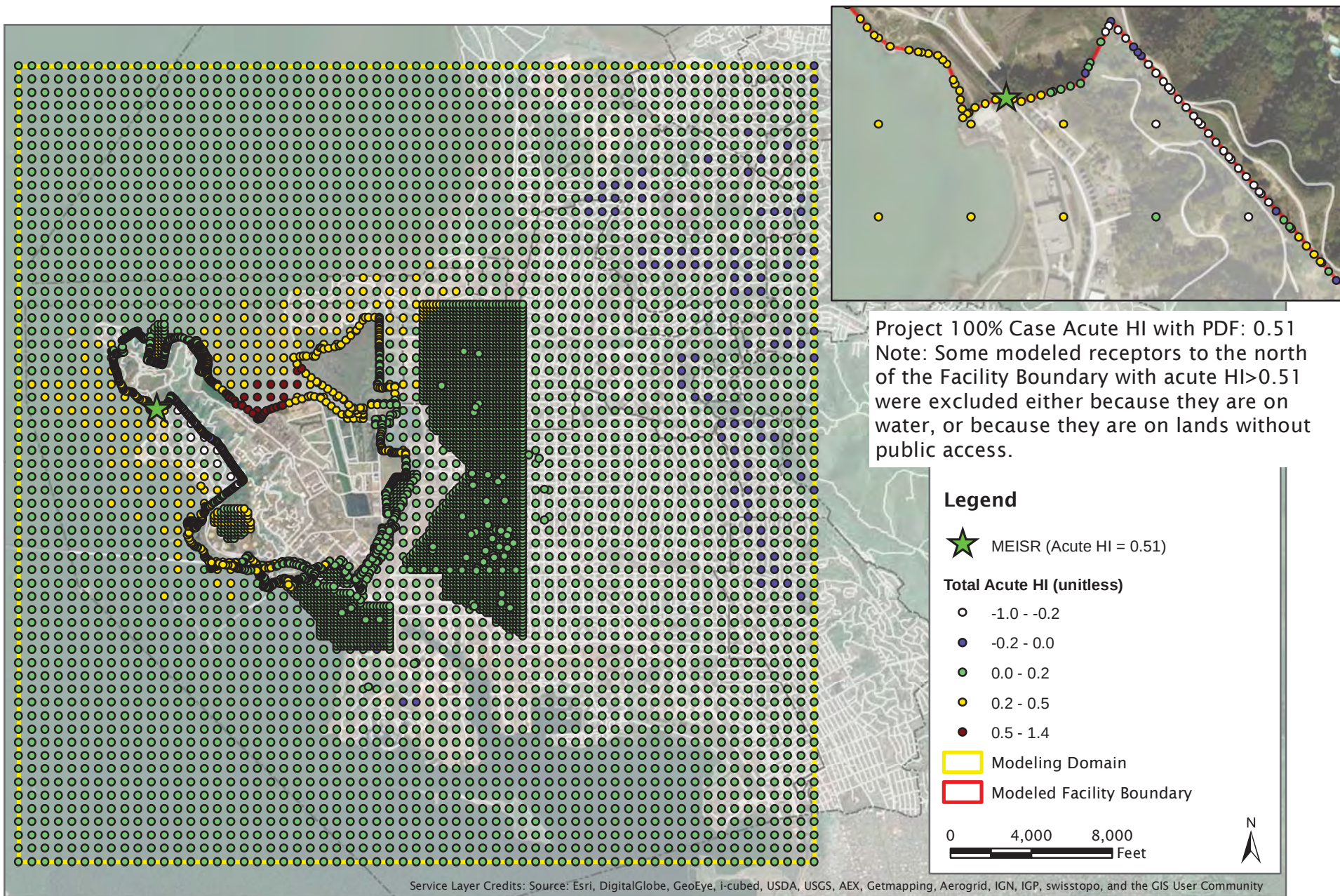
02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-17_Project 100% Cancer with PDF-Total.mxd

Figure A4.3-HRA-28
Chevron Refinery Modernization Project EIR
Project 100% Cancer Risk with PDF



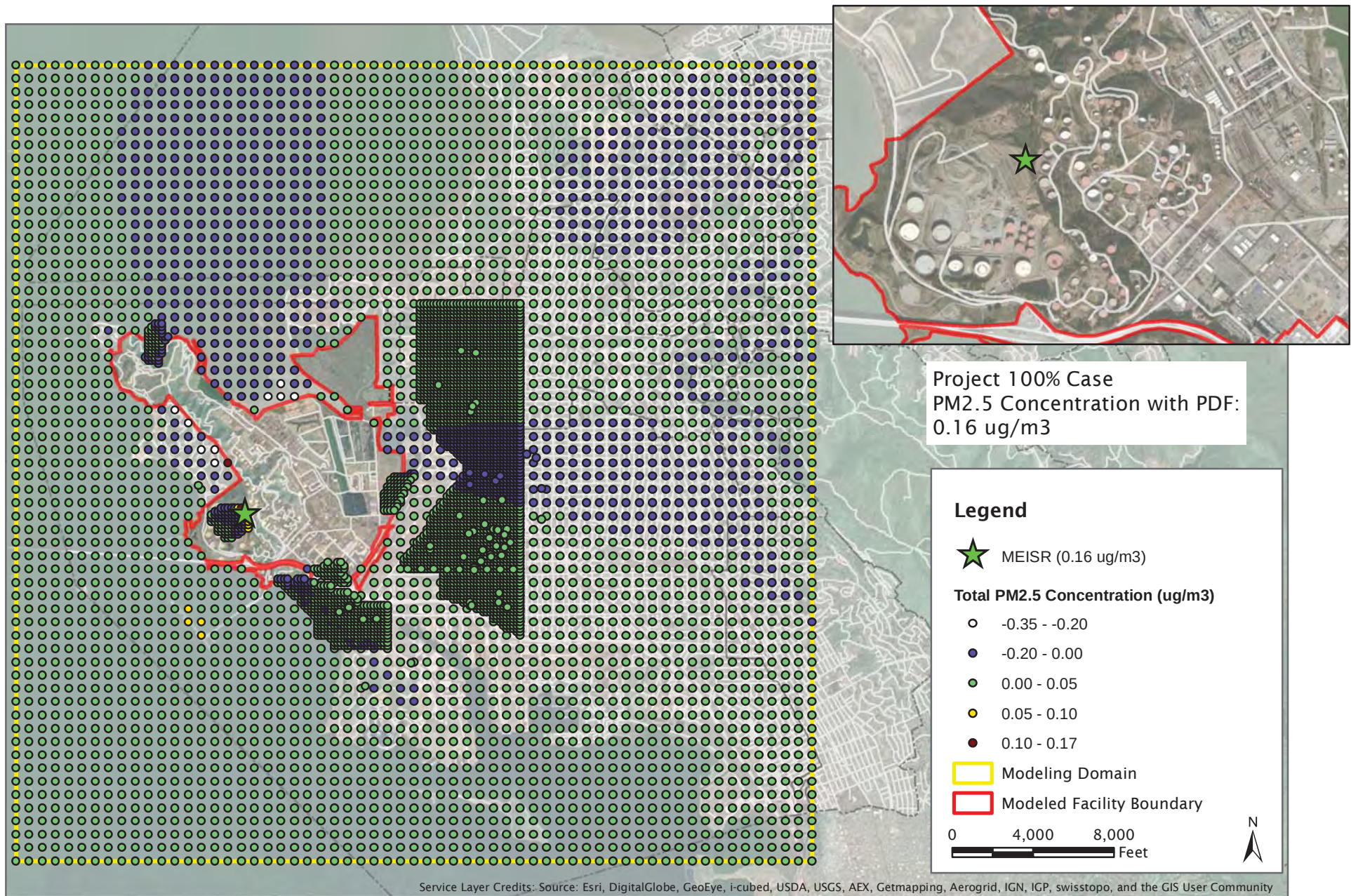
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-18_Project 100% Chronic HI with PDF-Total.mxd

Figure A4.3-HRA-29
 Chevron Refinery Modernization Project EIR
 Project 100% Chronic HI with PDF



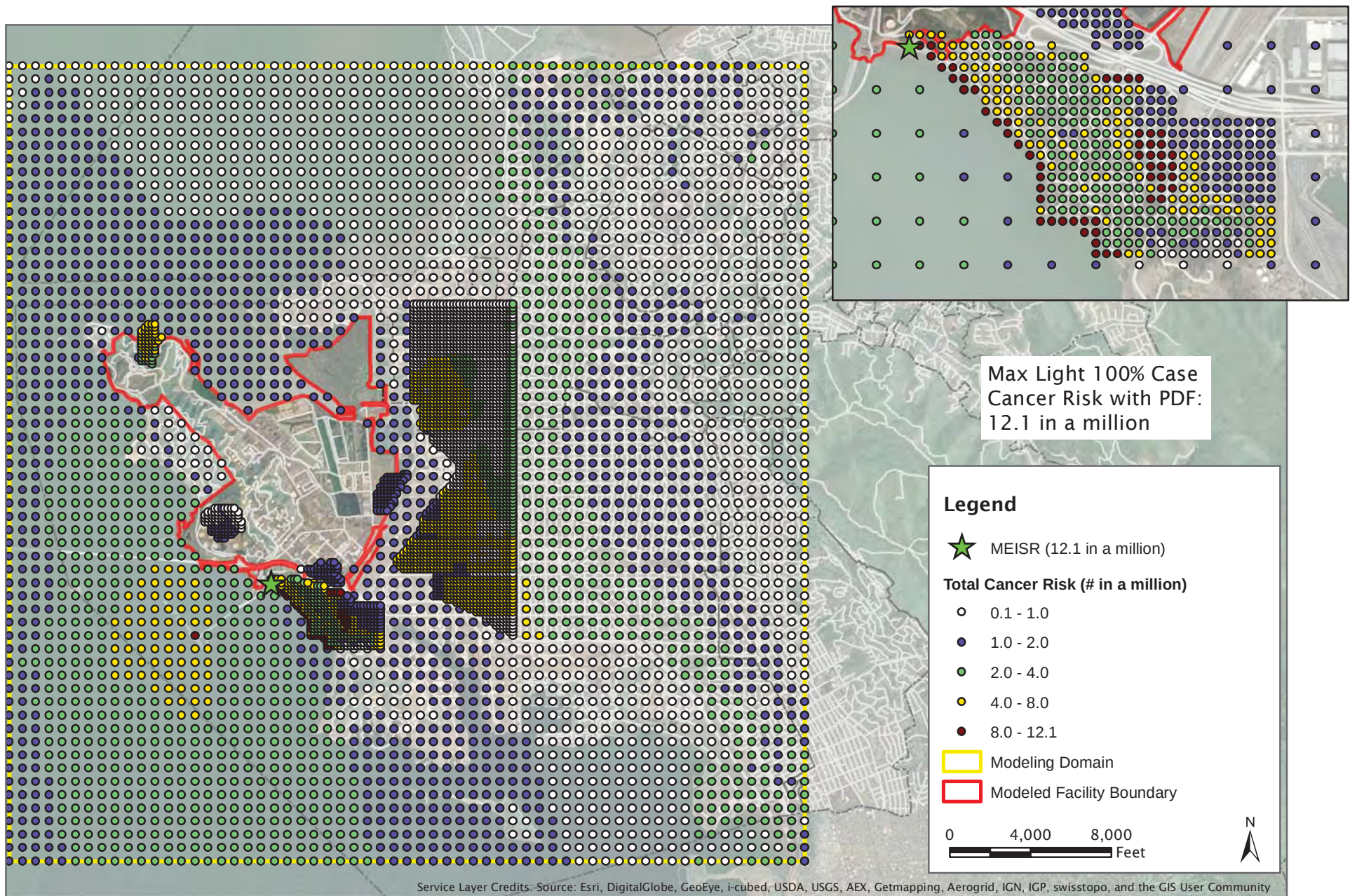
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-19_Project 100% Acute HI with PDF - Total.mxd

Figure A4.3-HRA-30
 Chevron Refinery Modernization Project EIR
 Project 100% Acute HI with PDF



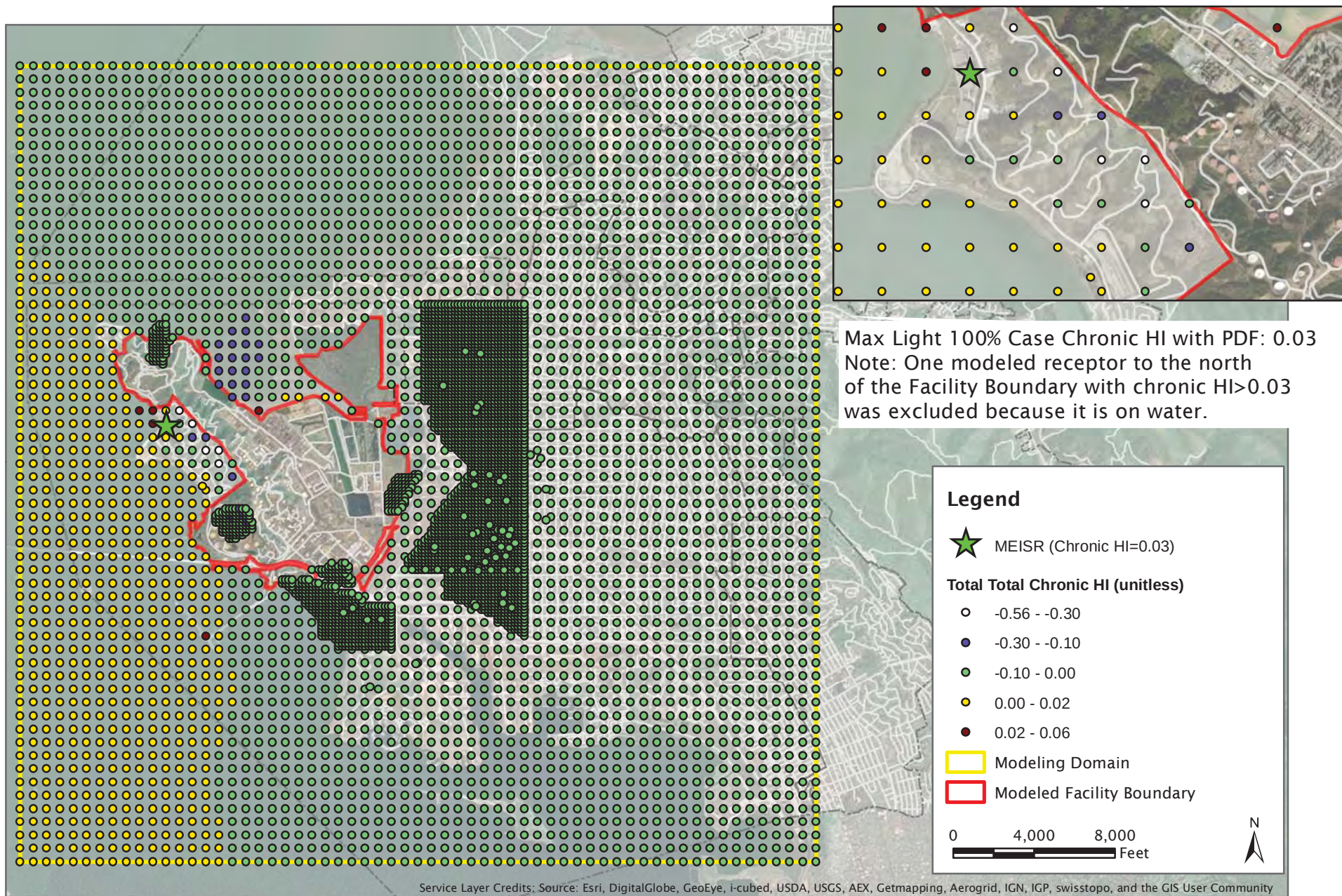
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-20_Project 100% PM25 with PDF - Total.mxd

Figure A4.3-HRA-31
Chevron Refinery Modernization Project EIR
Project 100% PM2.5 Concentration with PDF



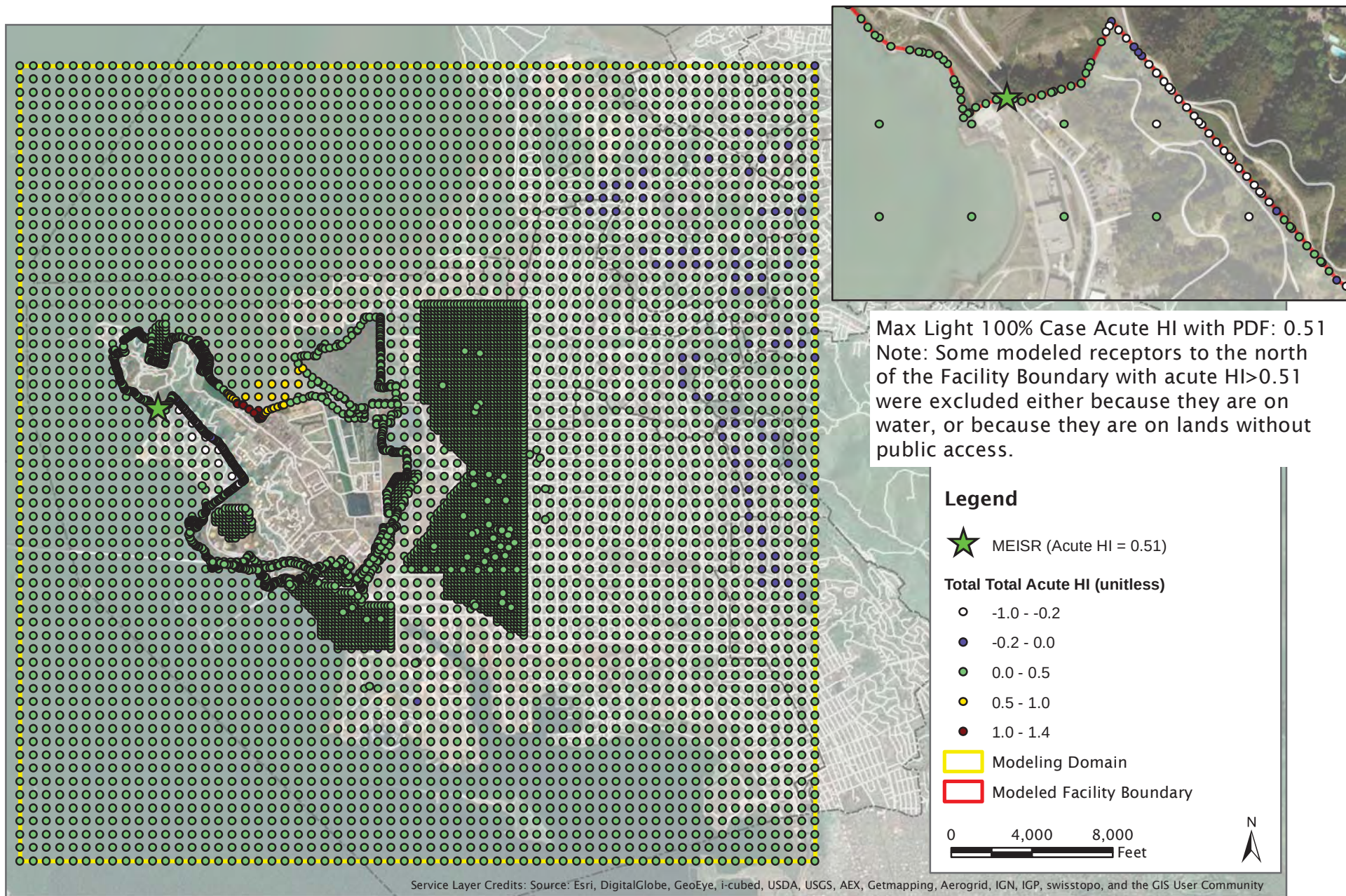
02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-21_Max Light 100% Cancer with PDF-Total.mxd

Figure A4.3-HRA-32
Chevron Refinery Modernization Project EIR
Max Light 100% Cancer Risk with PDF



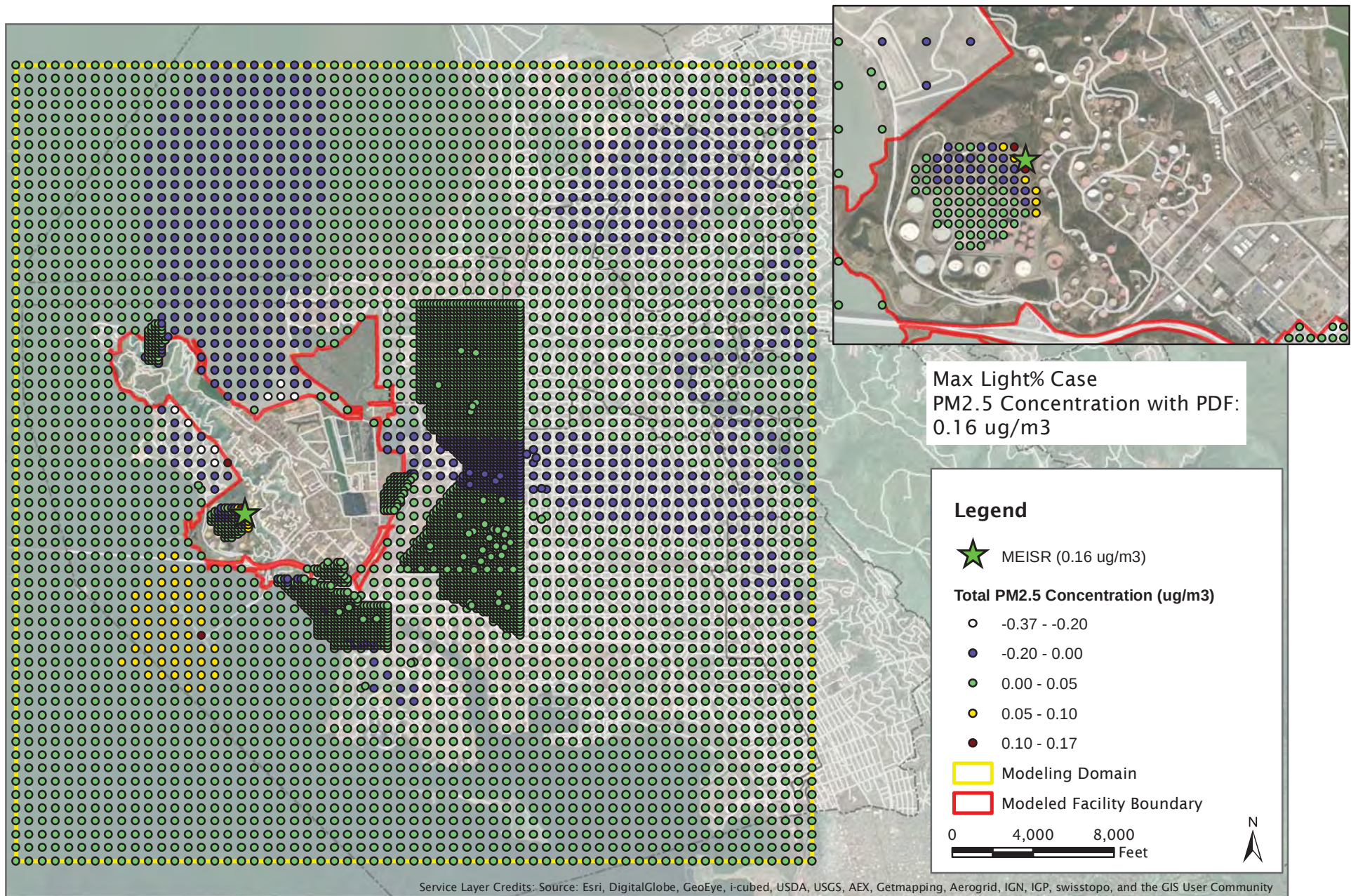
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-22_Project 100% Max Chronic HI with PDF-Total.mxd

Figure A4.3-HRA-33
 Chevron Refinery Modernization Project EIR
 Max Light 100% Chronic HI with PDF



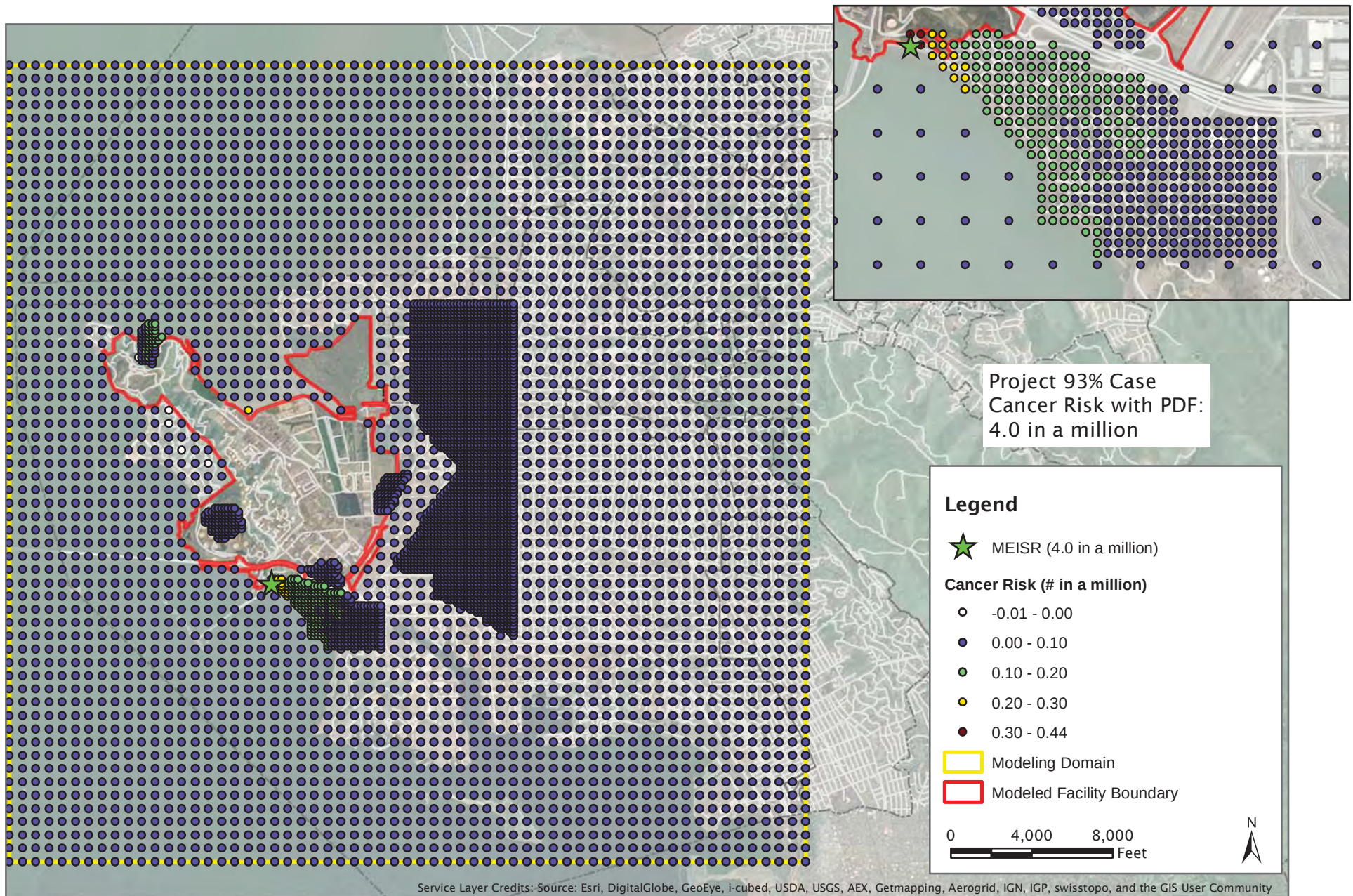
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-23_Project 100% Max Light Acute HI with PDF - Total.mxd

Figure A4.3-HRA-34
 Chevron Refinery Modernization Project EIR
 Max Light 100% Acute HI with PDF



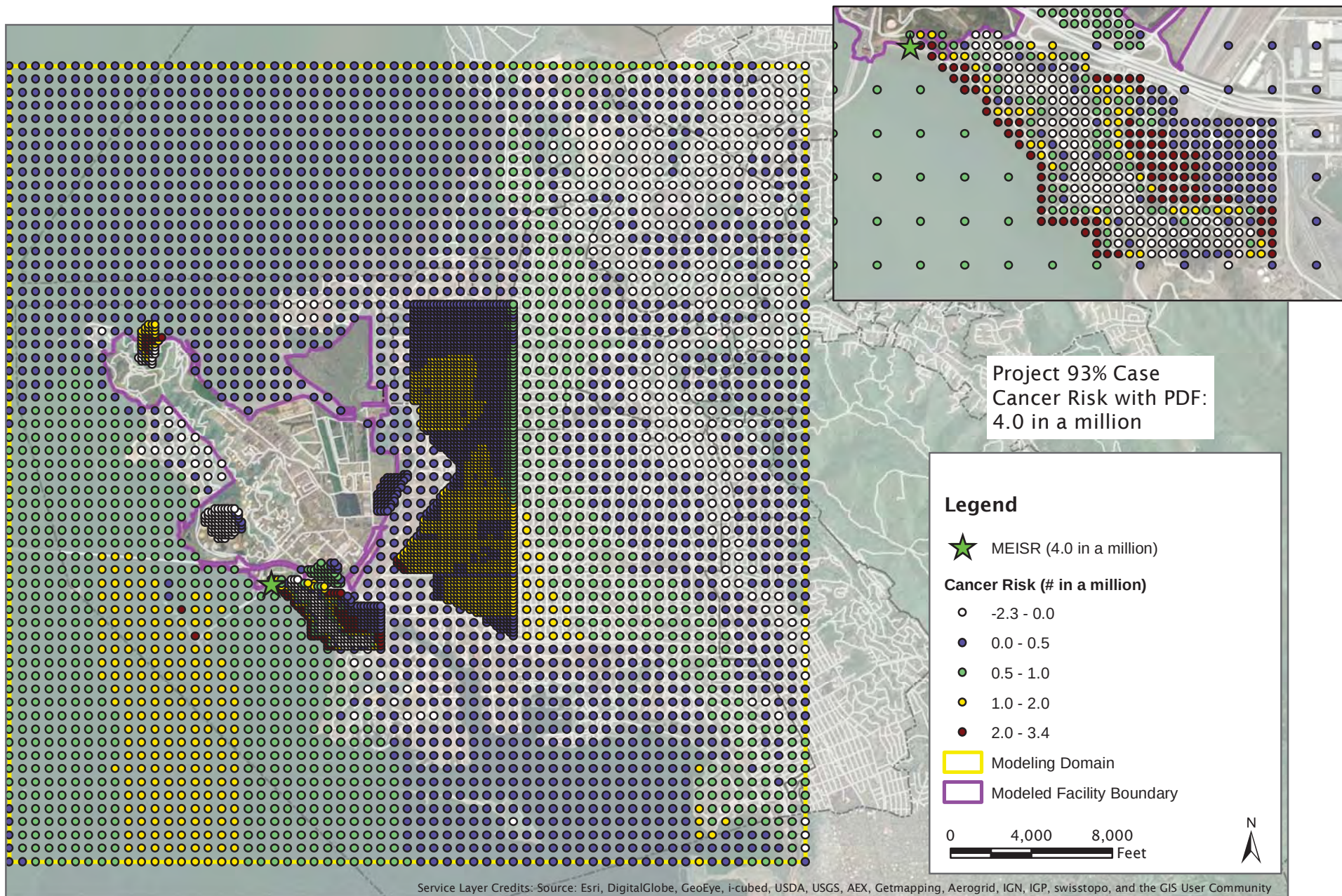
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-24_Project Max Light 100% PM25 with PDF - Total.mxd

Figure A4.3-HRA-35
Chevron Refinery Modernization Project EIR
Max Light 100% PM2.5 Concentration with PDF



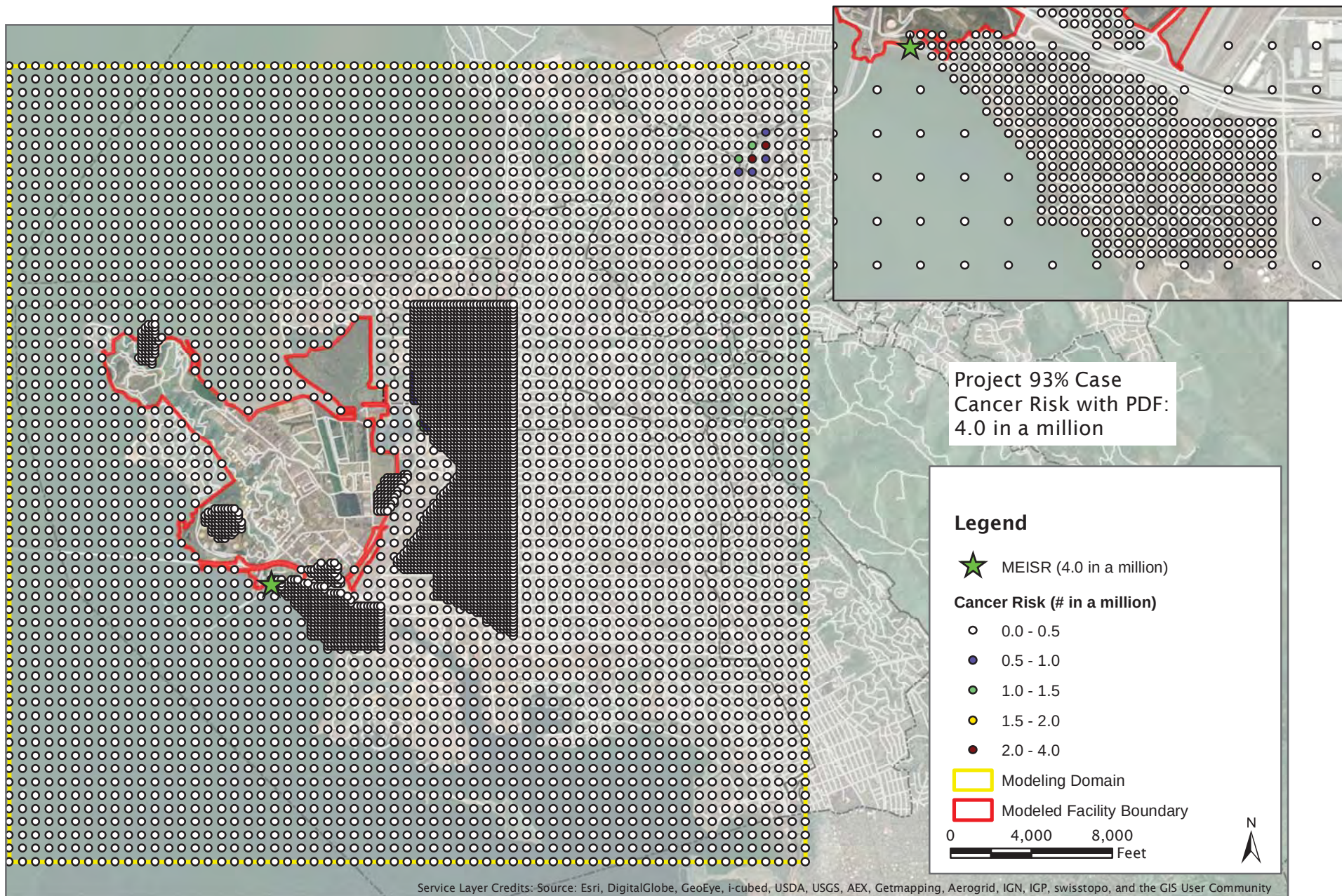
02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-1_Project 93% Cancer with PDF-Refinery.mxd

Figure A4.3-HRA-36
Chevron Refinery Modernization Project EIR
Project 93% Cancer Risk with PDF Source Contribution – Refinery



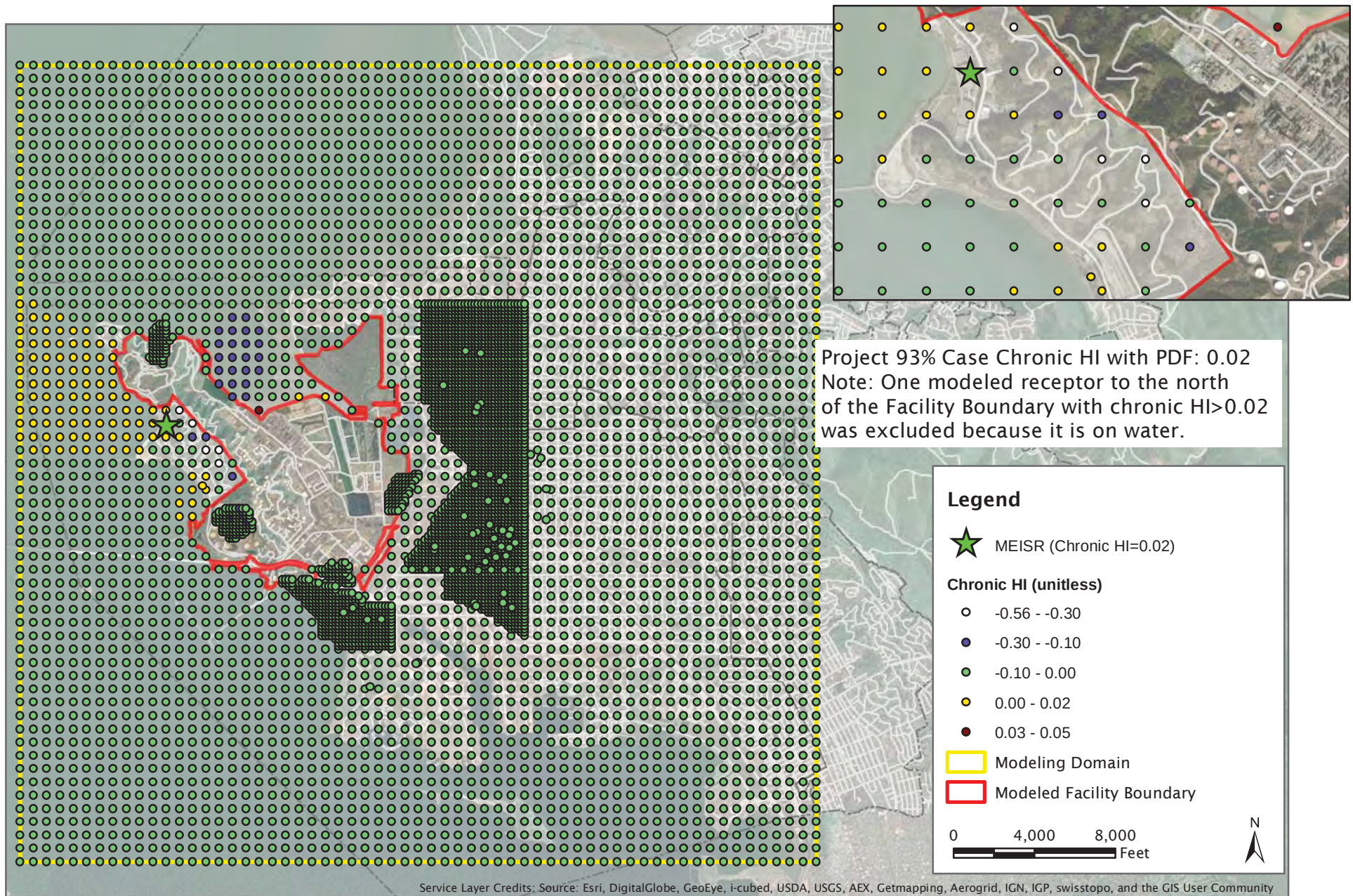
02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-2_Project 93% Cancer with PDF-Shipping.mxd

Figure A4.3-HRA-37
Chevron Refinery Modernization Project EIR
Project 93% Cancer Risk with PDF Source Contribution – Shipping



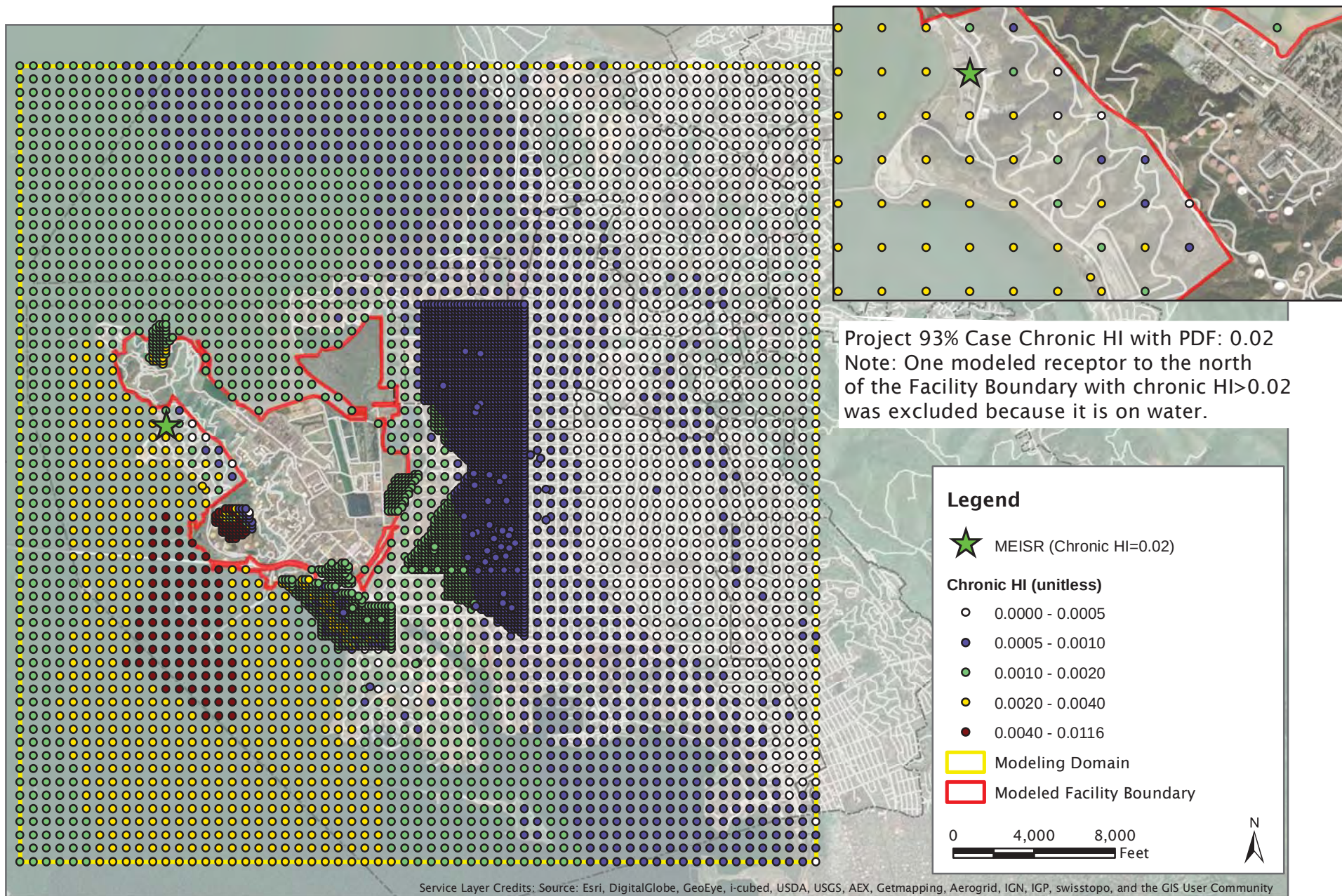
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-3_Project 93% Cancer with PDF-Trucking.mxd

Figure A4.3-HRA-38
Chevron Refinery Modernization Project EIR
Project 93% Cancer Risk with PDF Source Contribution - Operational Trucking



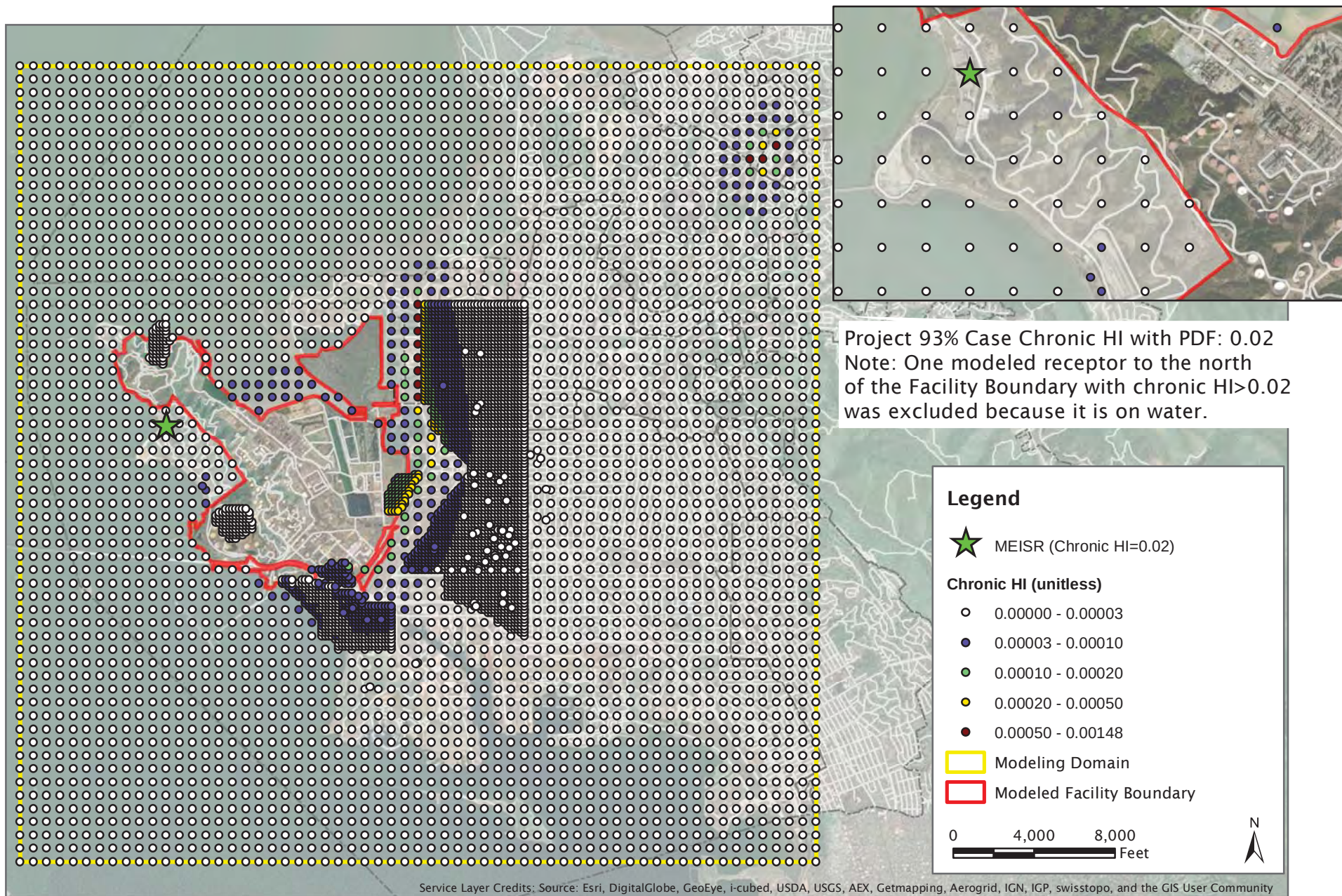
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-4_Project 93% Chronic HI with PDF-Refinery.mxd

Figure A4.3-HRA-39
 Chevron Refinery Modernization Project EIR
 Project 93% Chronic HI with PDF Source Contribution – Refinery



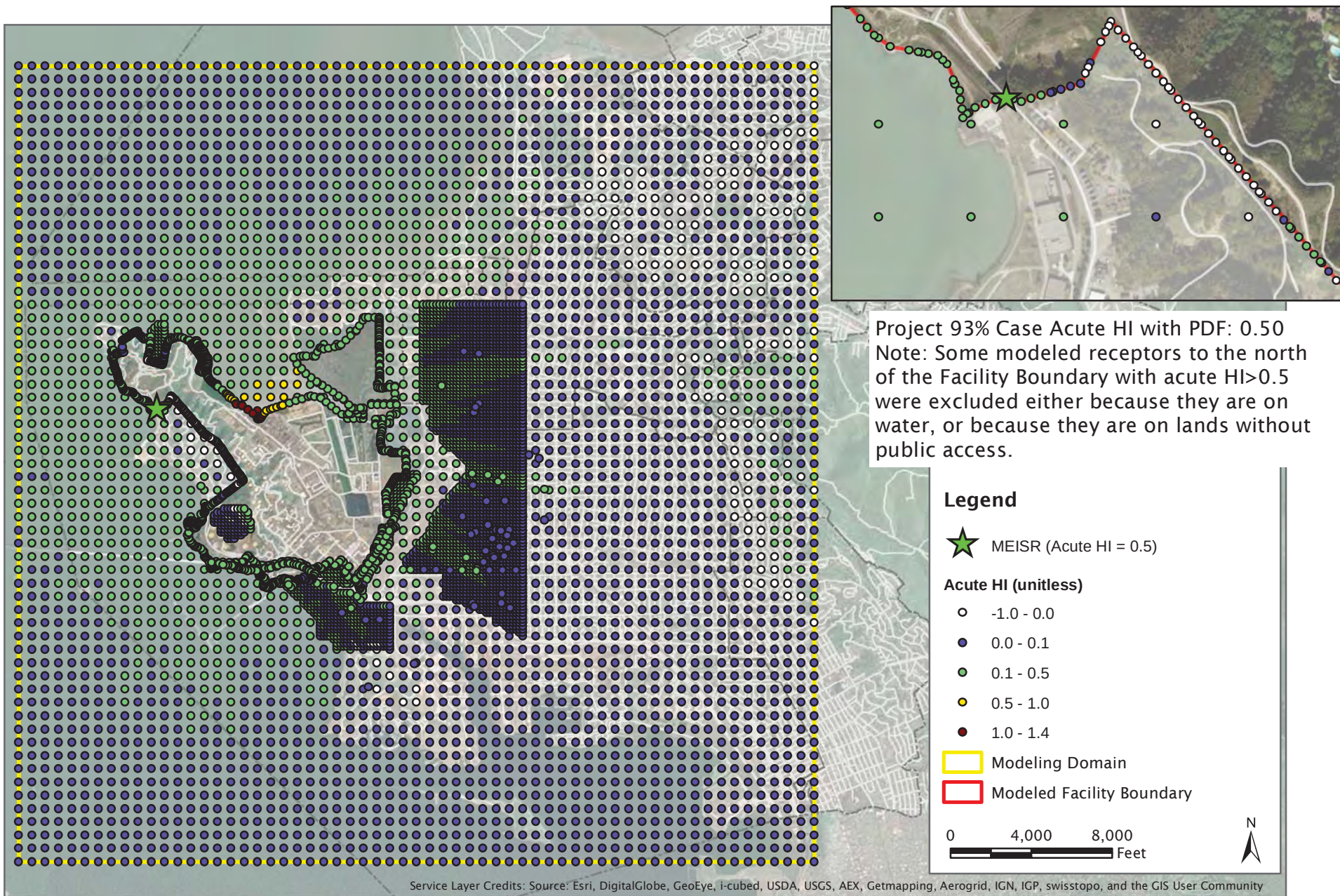
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-5_Project 93% Chronic HI with PDF-Shipping.mxd

Figure A4.3-HRA-40
 Chevron Refinery Modernization Project EIR
 Project 93% Chronic HI with PDF Source Contribution – Shipping



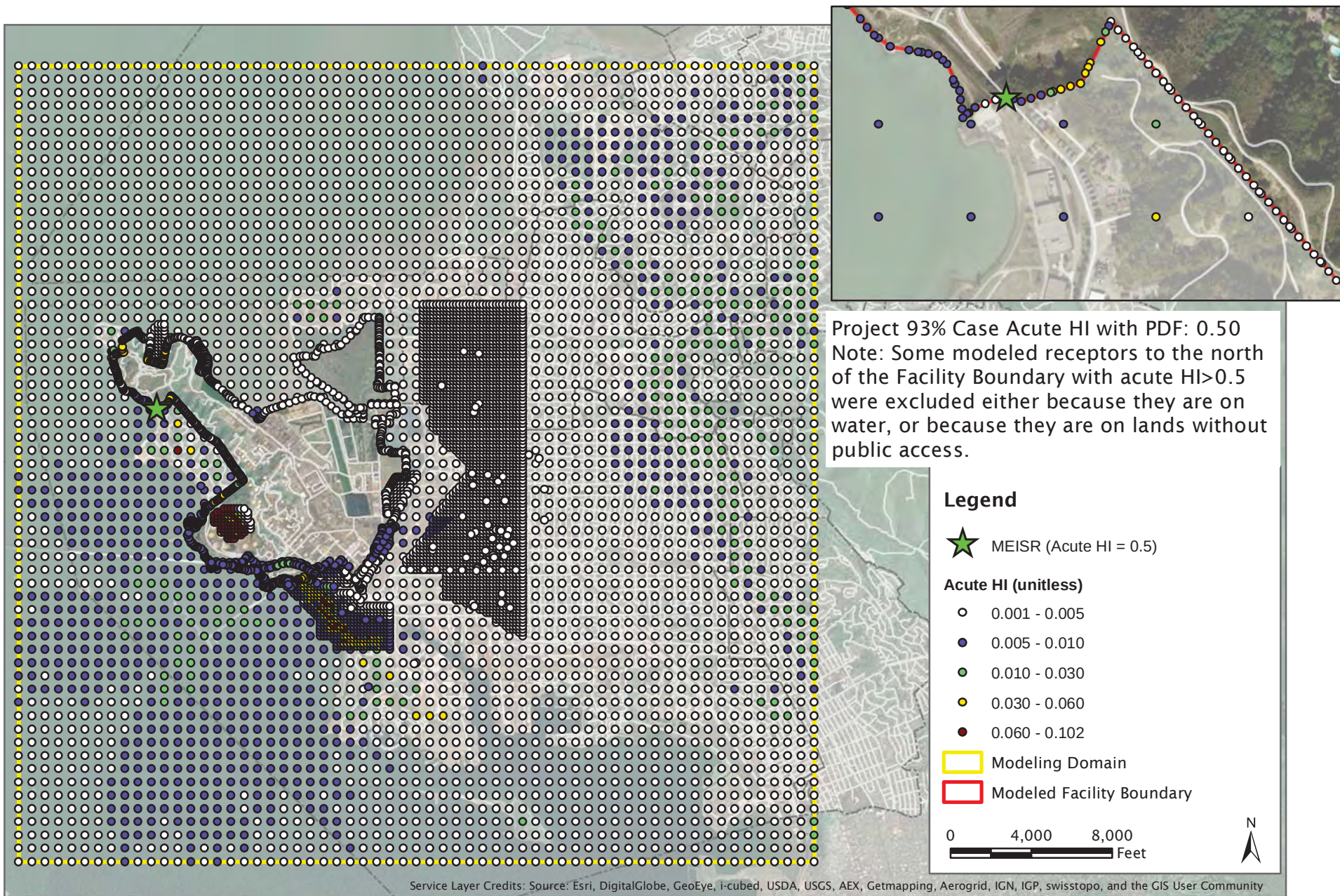
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-6_Project 93% Chronic HI with PDF-Trucking.mxd

Figure A4.3-HRA-41
 Chevron Refinery Modernization Project EIR
 Project 93% Chronic HI with PDF Source Contribution - Operational Trucking



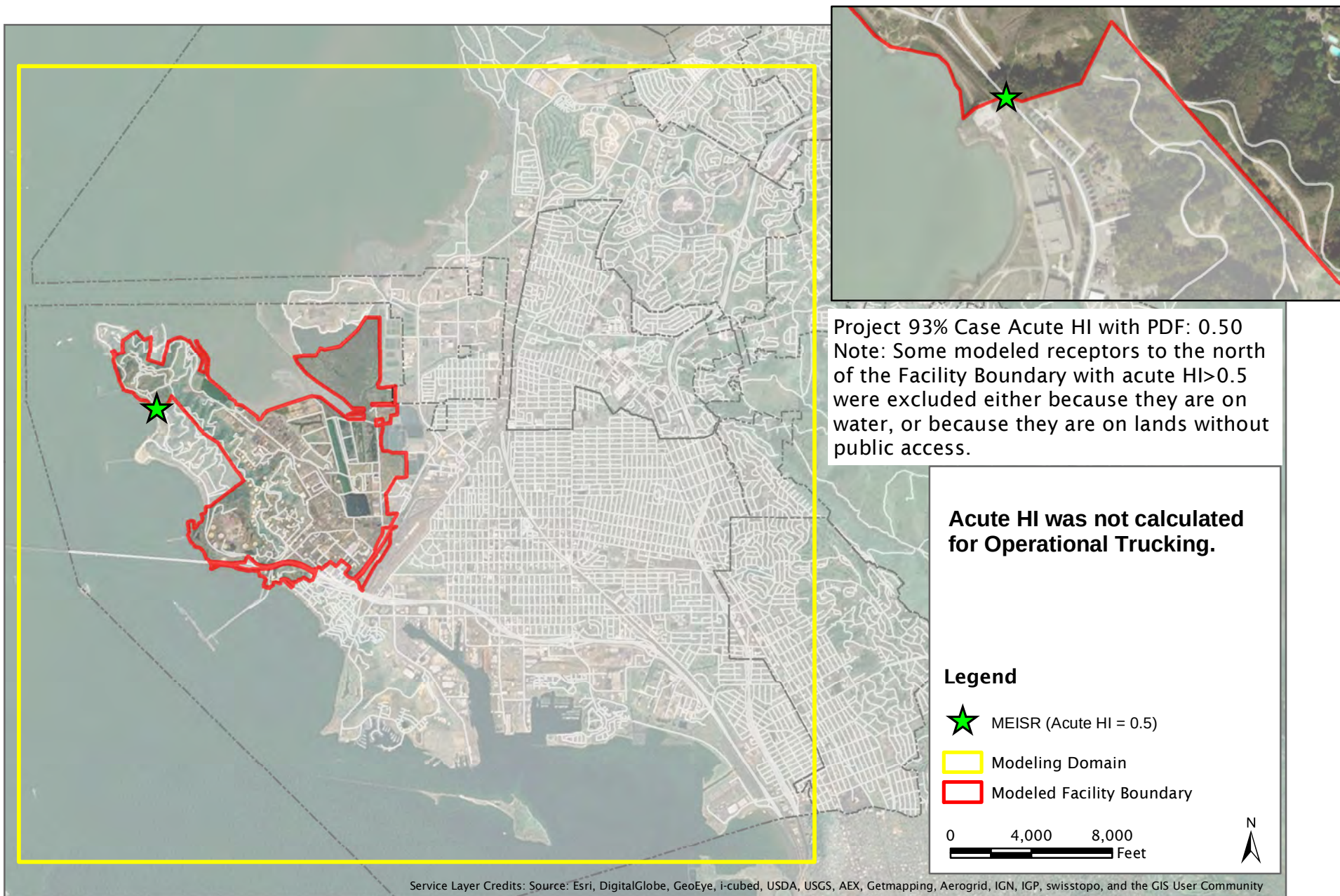
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-7_Project 93% Acute HI with PDF - Refinery.mxd

Figure A4.3-HRA-42
 Chevron Refinery Modernization Project EIR
 Project 93% Acute HI with PDF Source Contribution – Refinery



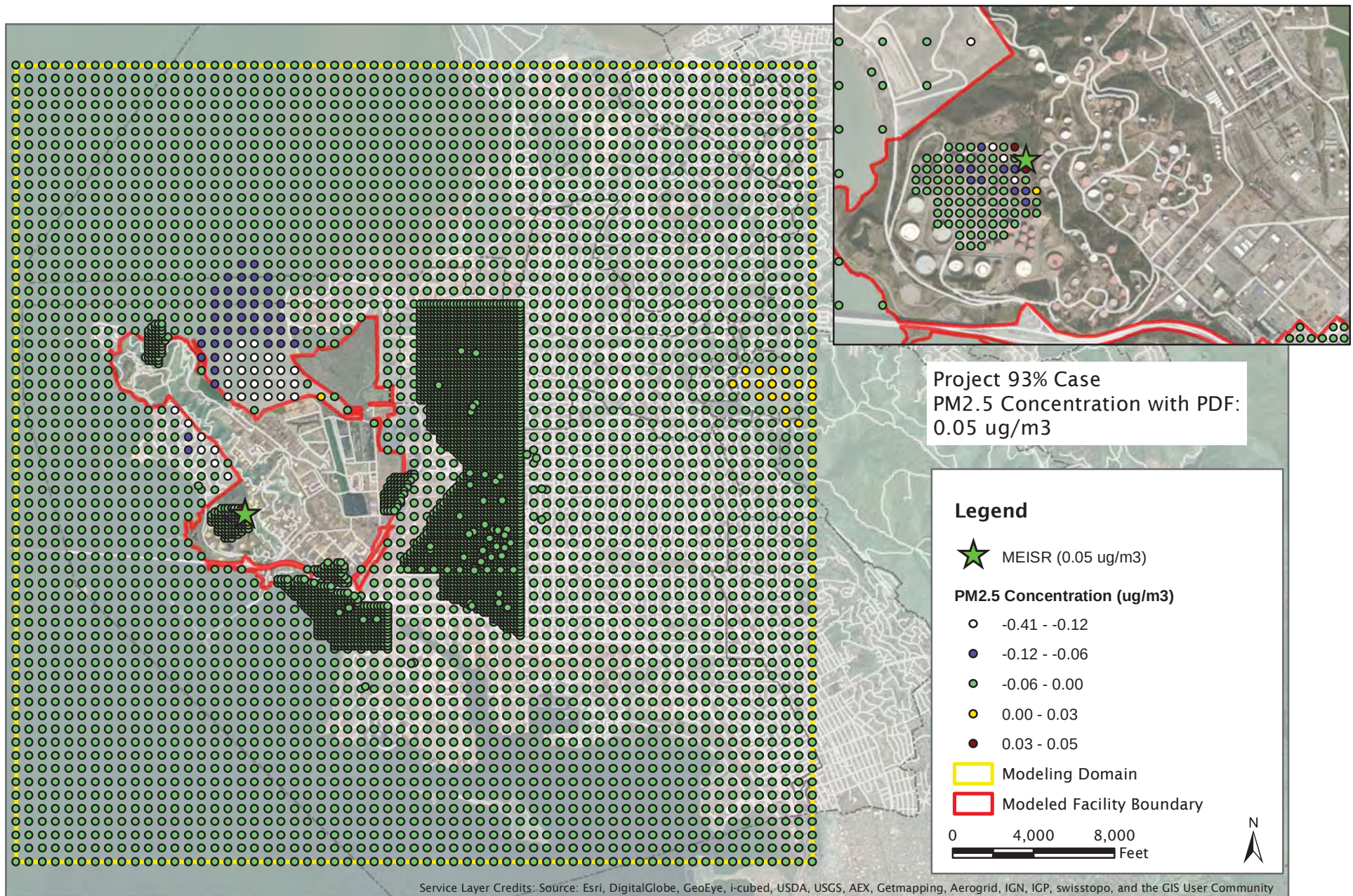
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-8_Project 93% Acute HI with PDF - Shipping.mxd

Figure A4.3-HRA-43
 Chevron Refinery Modernization Project EIR
 Project 93% Acute HI with PDF Source Contribution - Shipping



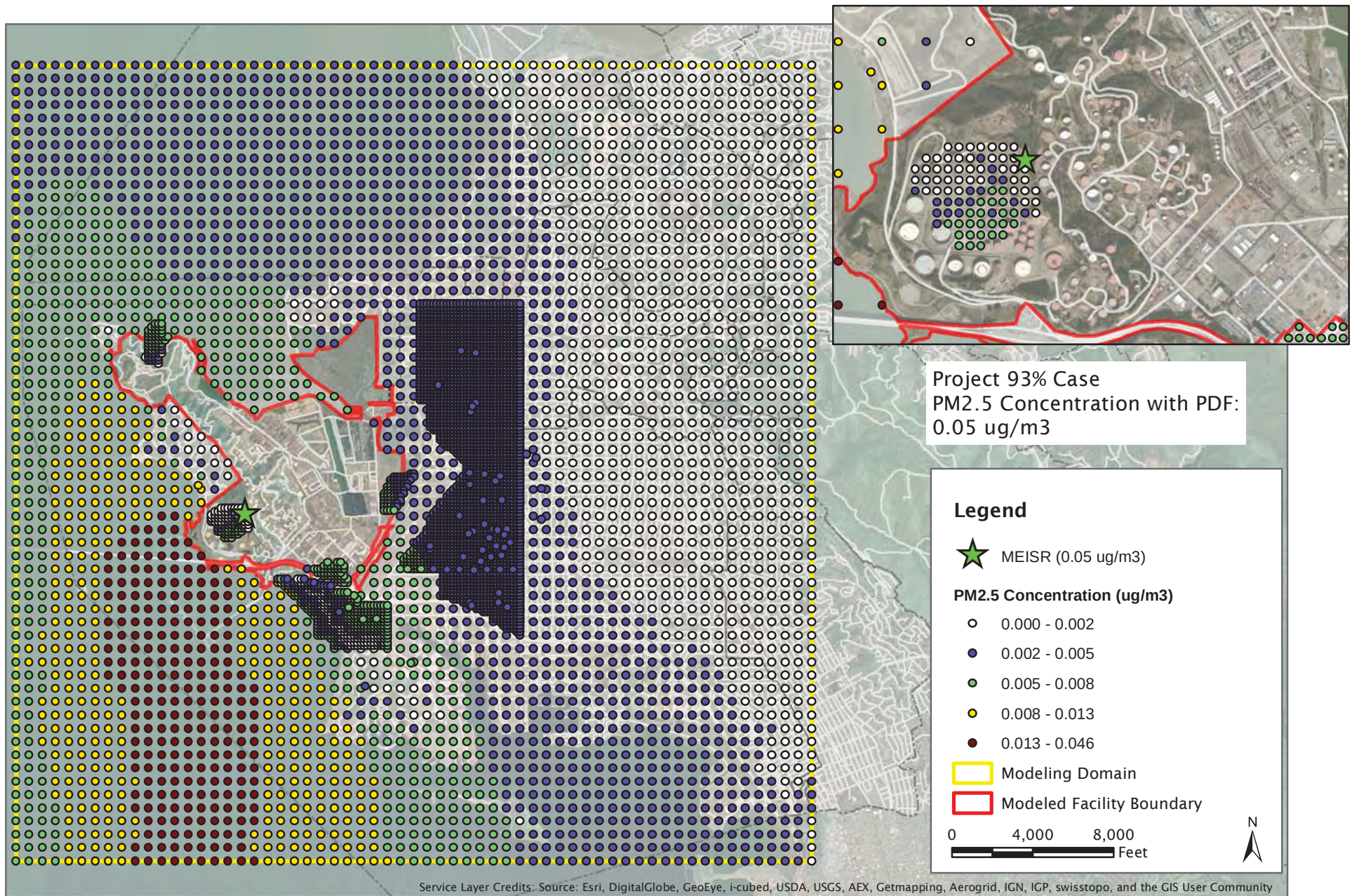
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-HRA\Figures for UPP\A4.3-HRA-44_Project 93% Acute HI with PDF - Trucking.mxd

Figure A4.3-HRA-44
 Chevron Refinery Modernization Project EIR
 Project 93% Acute HI with PDF Source Contribution - Operational Trucking



02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-10_Project 93% PM25 with PDF - Refinery.mxd

Figure A4.3-HRA-45
Chevron Refinery Modernization Project EIR
Project 93% PM2.5 Concentration with PDF Source Contribution - Refinery



02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-11_Project 93% PM25 with PDF - Shipping.mxd

Figure A4.3-HRA-46
Chevron Refinery Modernization Project EIR
Project 93% PM2.5 Concentration with PDF Source Contribution - Shipping

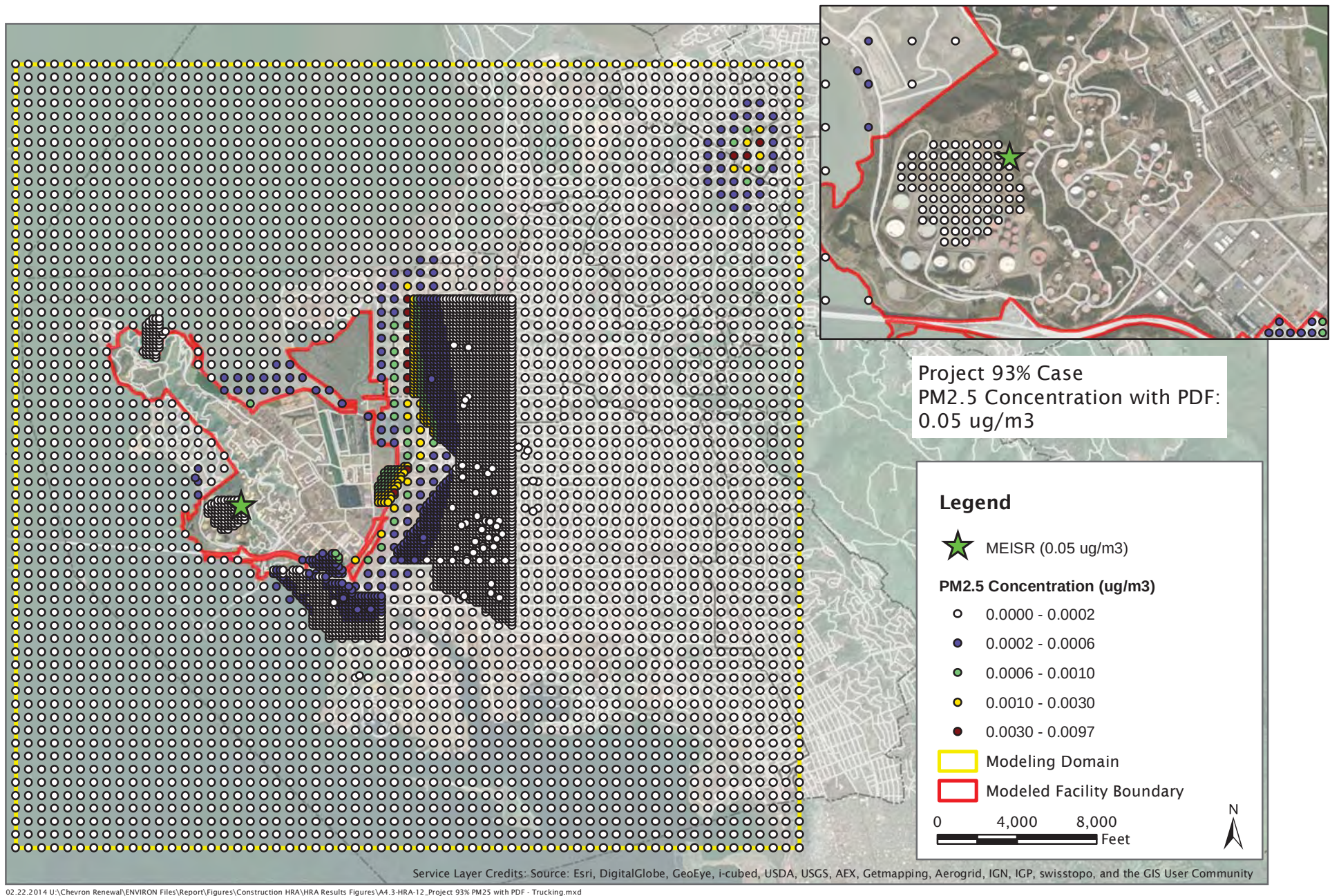
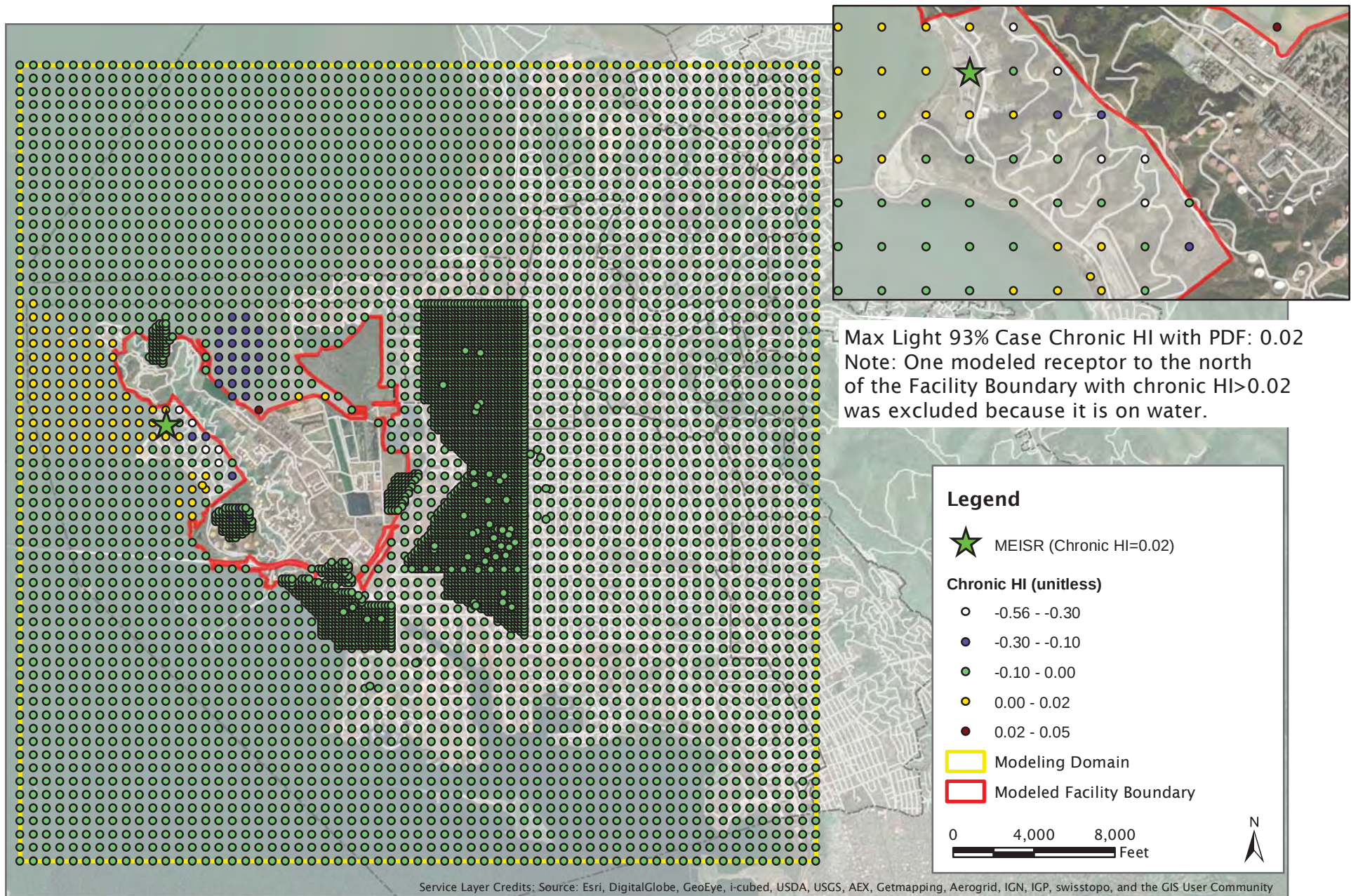
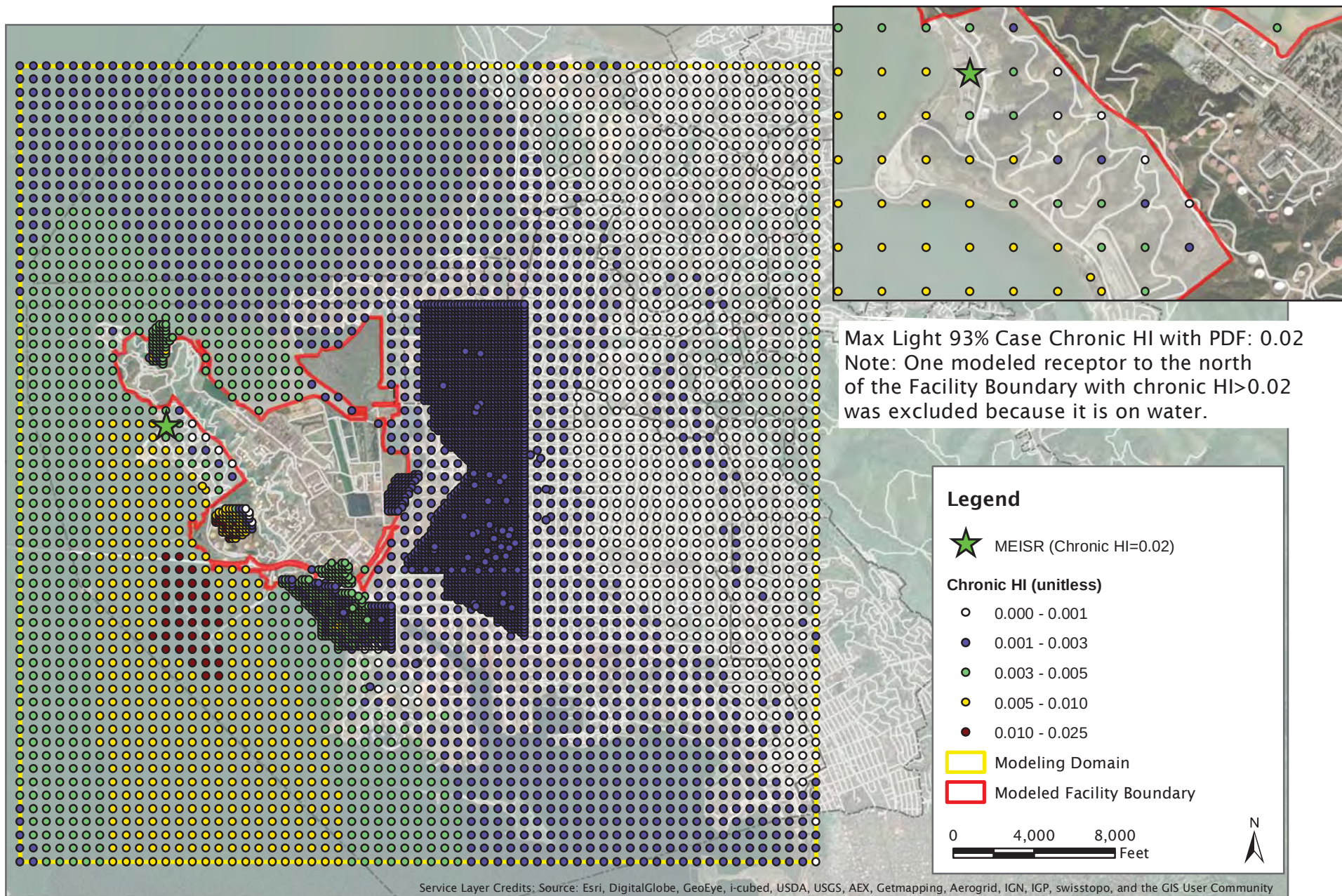


Figure A4.3-HRA-47
Chevron Refinery Modernization Project EIR
Project 93% PM2.5 Concentration with PDF Source Contribution - Operational Trucking



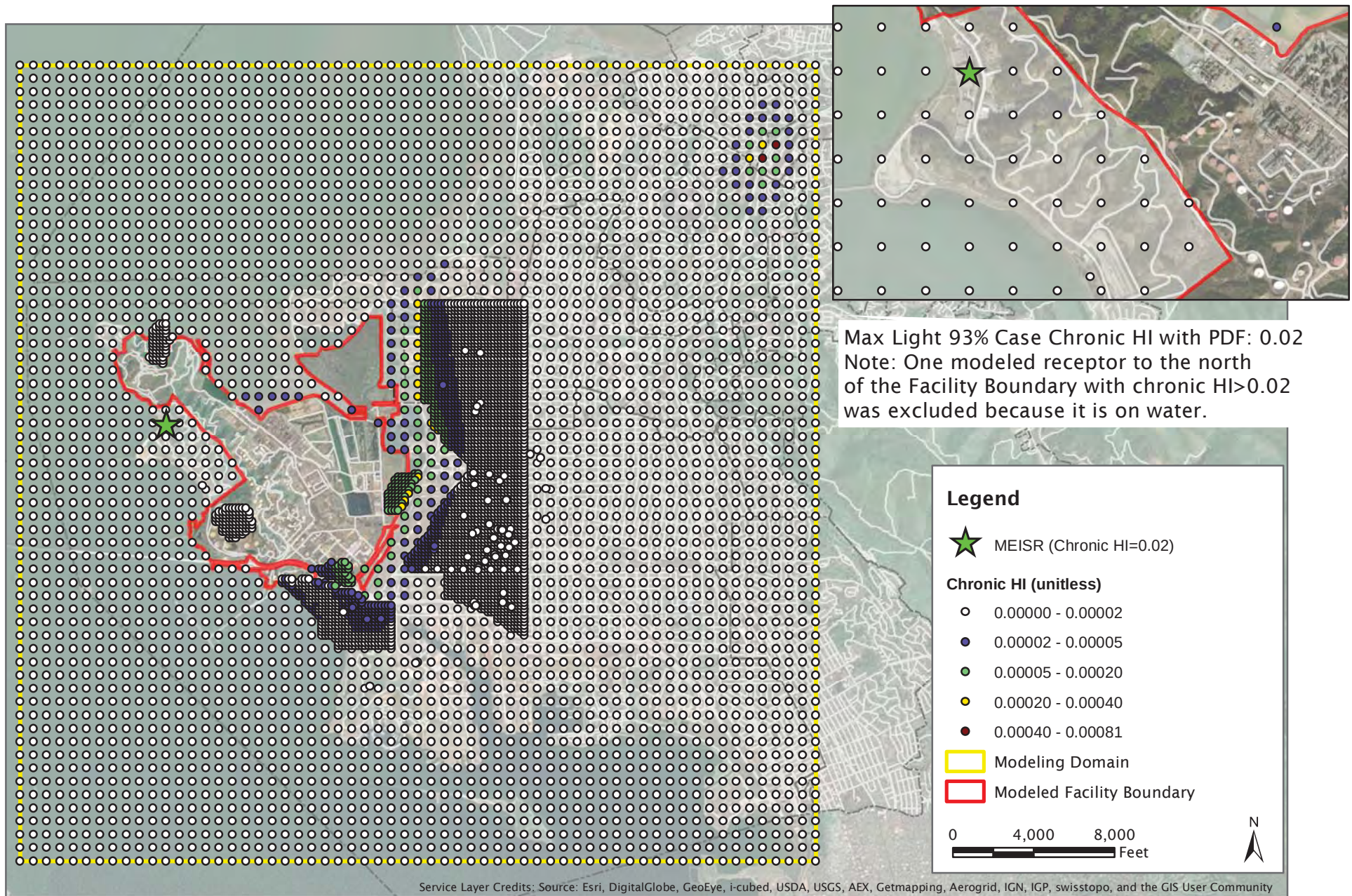
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-28_Project 93% Max Chronic HI with PDF-Refinery.mxd

Figure A4.3-HRA-48
 Chevron Refinery Modernization Project EIR
 Max Light 93% Chronic HI with PDF Source Contribution – Refinery



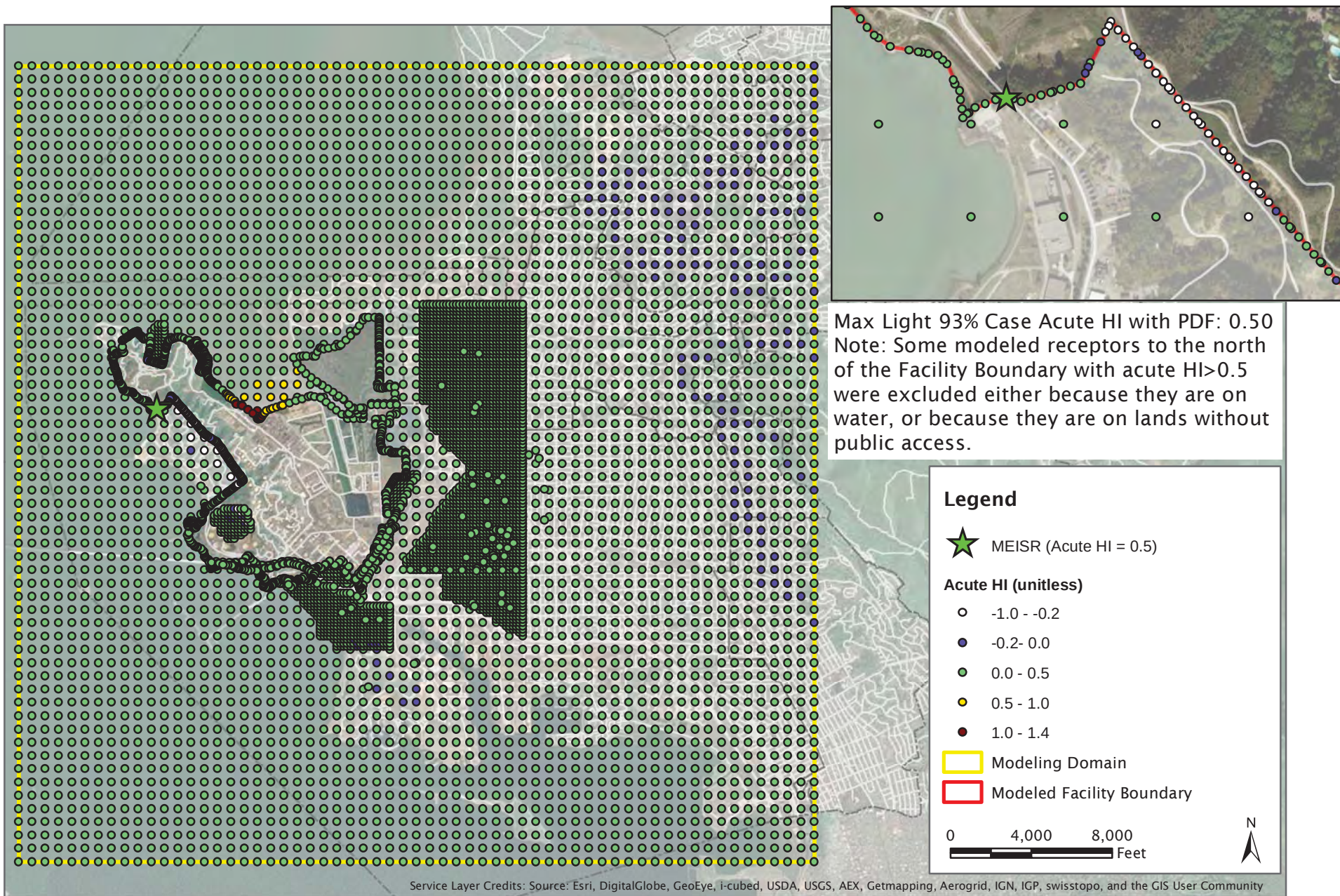
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-29_Project 93% Max Chronic HI with PDF-Shipping.mxd

Figure A4.3-HRA-49
 Chevron Refinery Modernization Project EIR
 Max Light 93% Chronic HI with PDF Source Contribution - Shipping



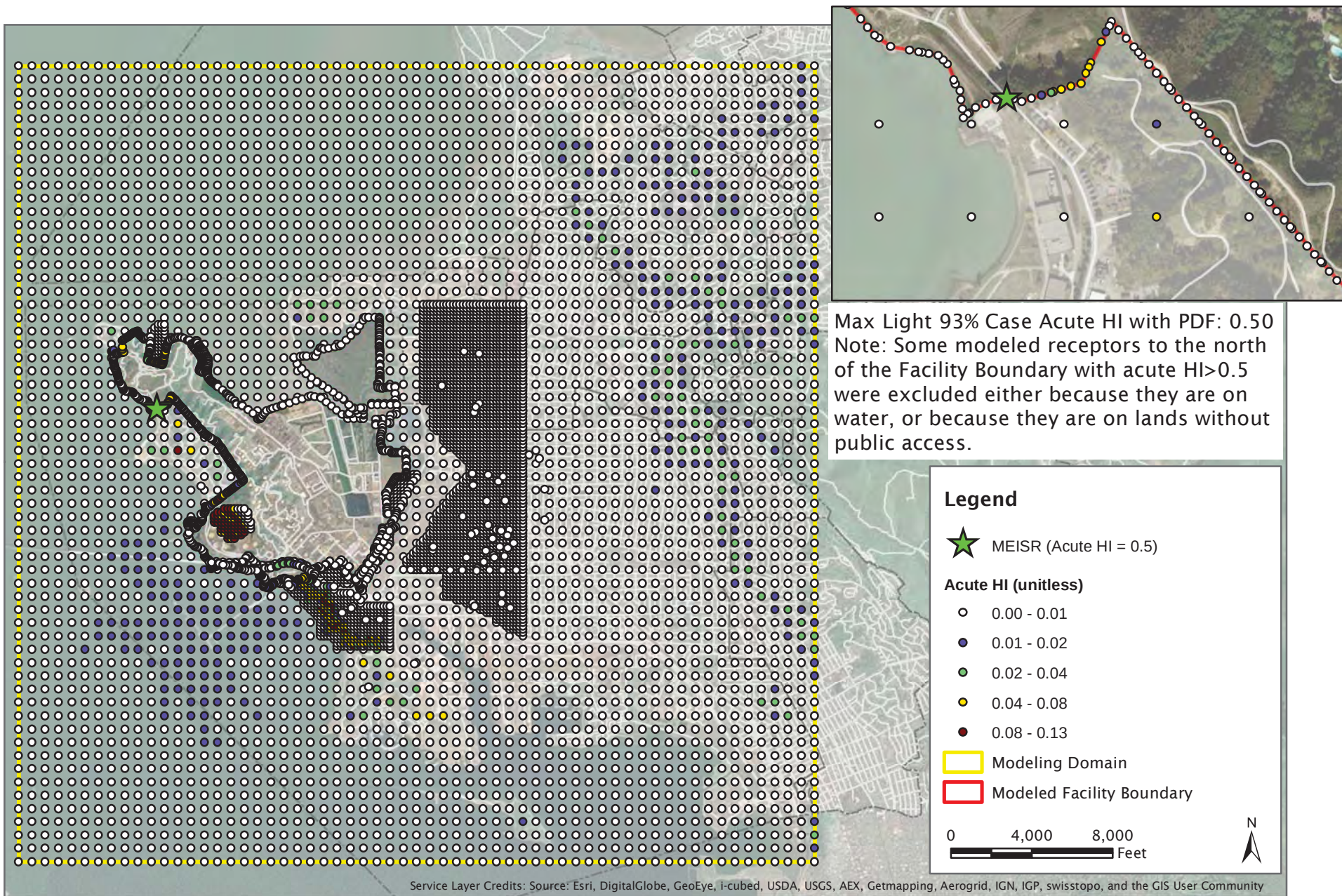
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-30_Project 93% Max Chronic HI with PDF-Trucking.mxd

Figure A4.3-HRA-50
 Chevron Refinery Modernization Project EIR
 Max Light 93% Chronic HI with PDF Source Contribution – Operational Trucking



02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-31_Max Light 93% Acute HI with PDF - Refinery.mxd

Figure A4.3-HRA-51
 Chevron Refinery Modernization Project EIR
 Max Light 93% Acute HI with PDF Source Contribution – Refinery



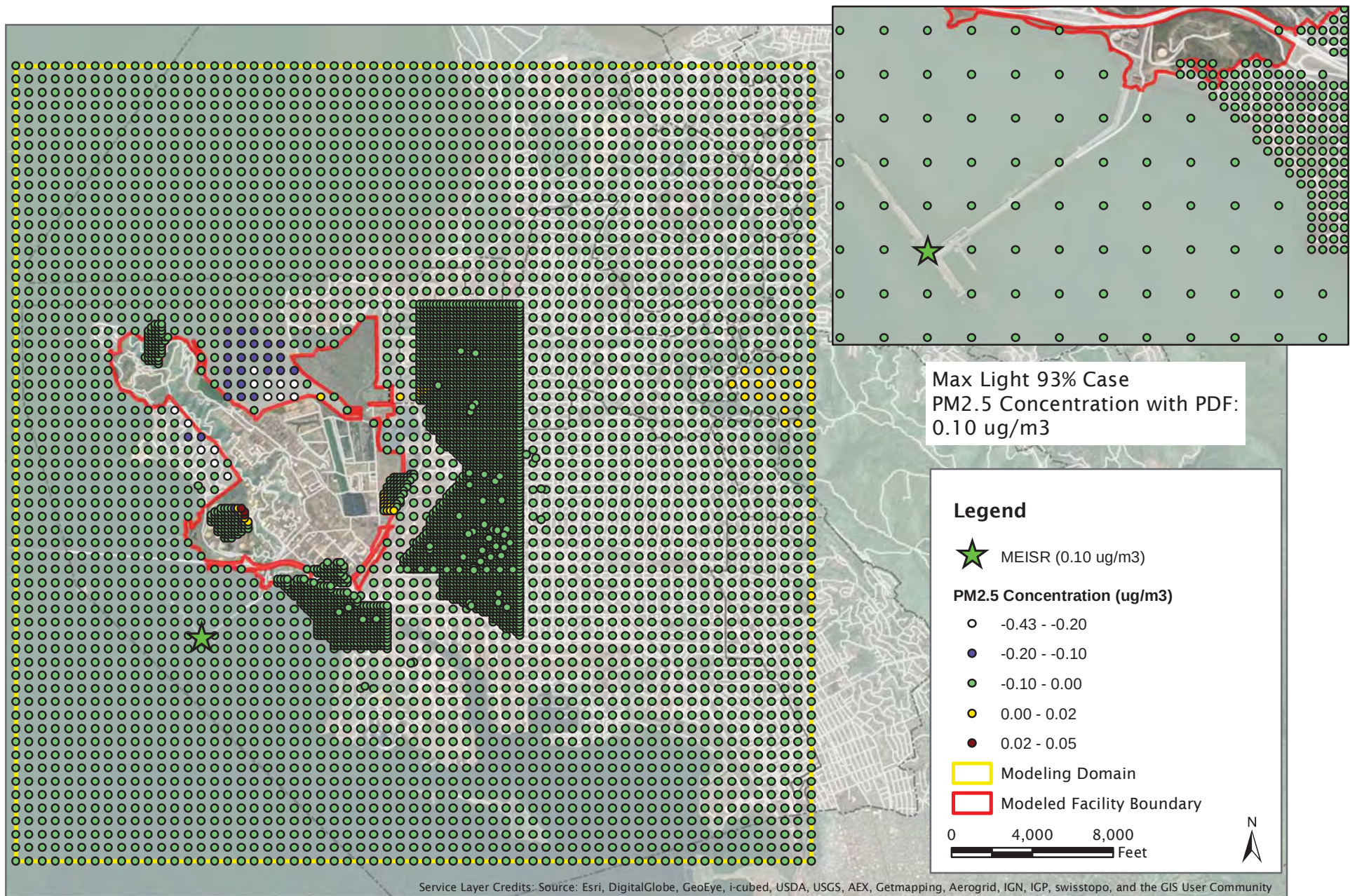
02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-32_Project 93% Max Light Acute HI with PDF - Shipping.mxd

Figure A4.3-HRA-52
 Chevron Refinery Modernization Project EIR
 Max Light 93% Acute HI with PDF Source Contribution – Shipping



02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-33_Project 93% Max Light Acute HI with PDF - Trucking.mxd

Figure A4.3-HRA-53
 Chevron Refinery Modernization Project EIR
 Max Light 93% Acute HI with PDF Source Contribution - Operational Trucking



02.22.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-34_Project Max Light 93% PM25 with PDF - Refinery.mxd

Figure A4.3-HRA-54
Chevron Refinery Modernization Project EIR
Max Light 93% PM2.5 Concentration with PDF Source Contribution - Refinery

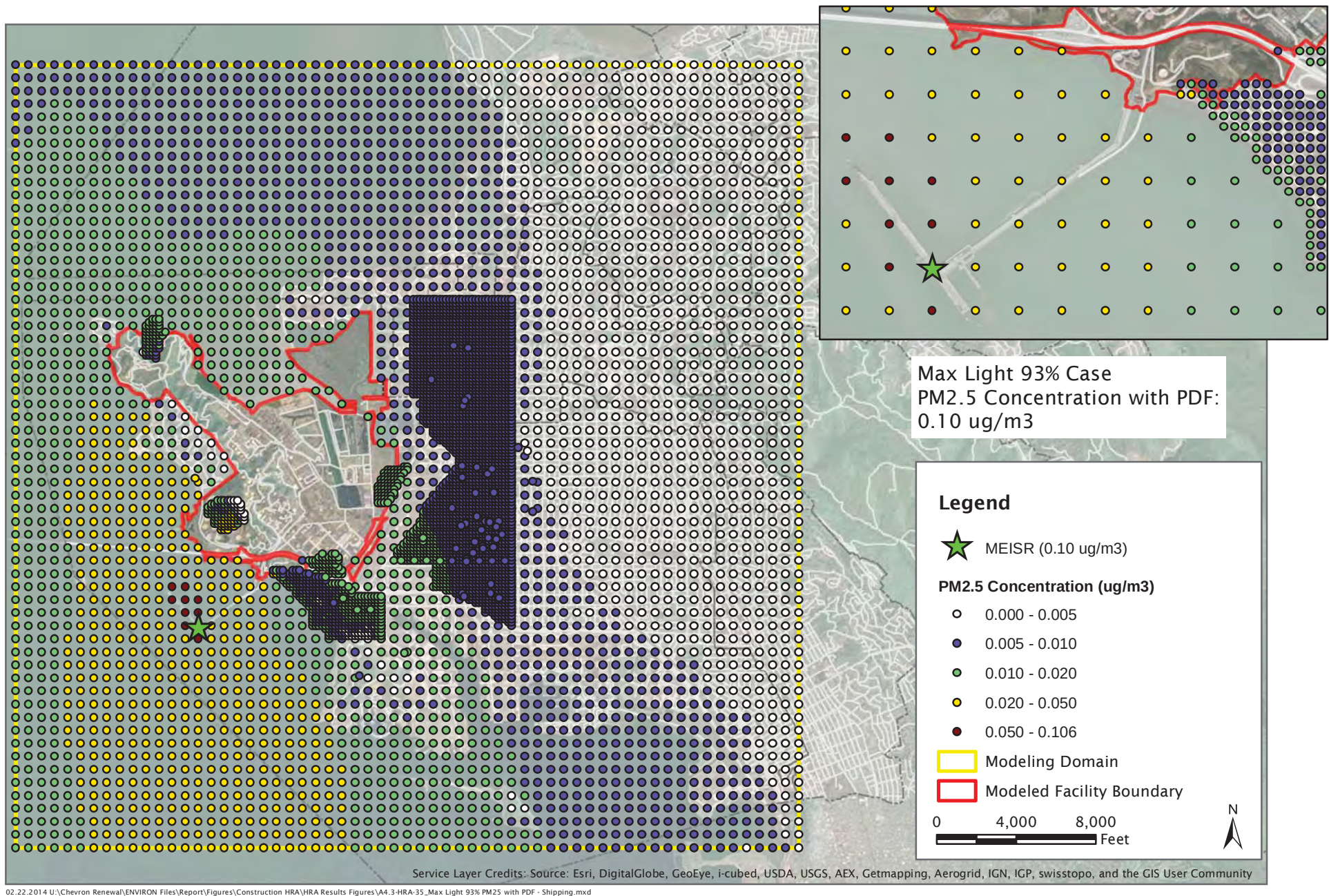


Figure A4.3-HRA-55
Chevron Refinery Modernization Project EIR
Max Light 93% PM2.5 Concentration with PDF Source Contribution - Shipping

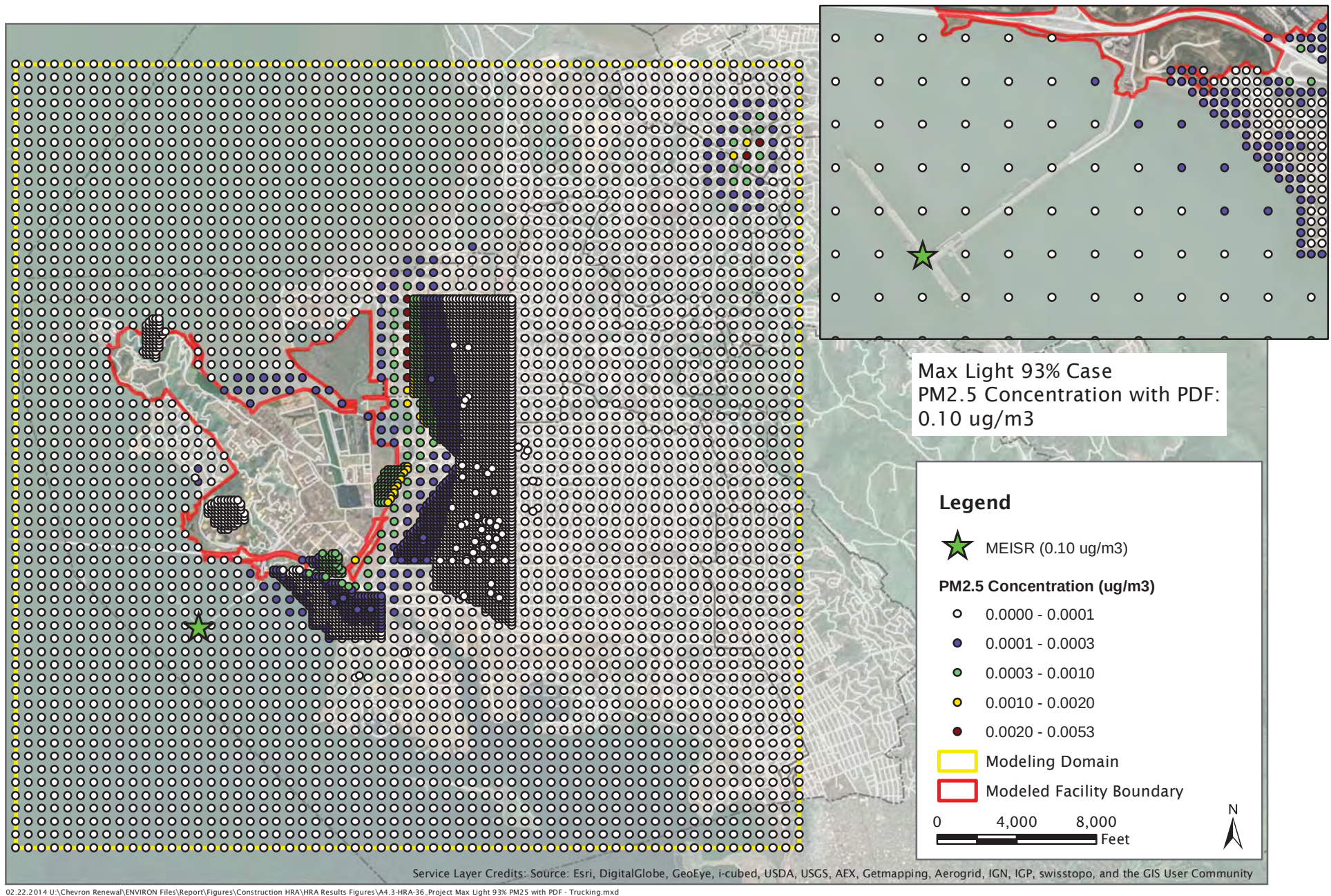
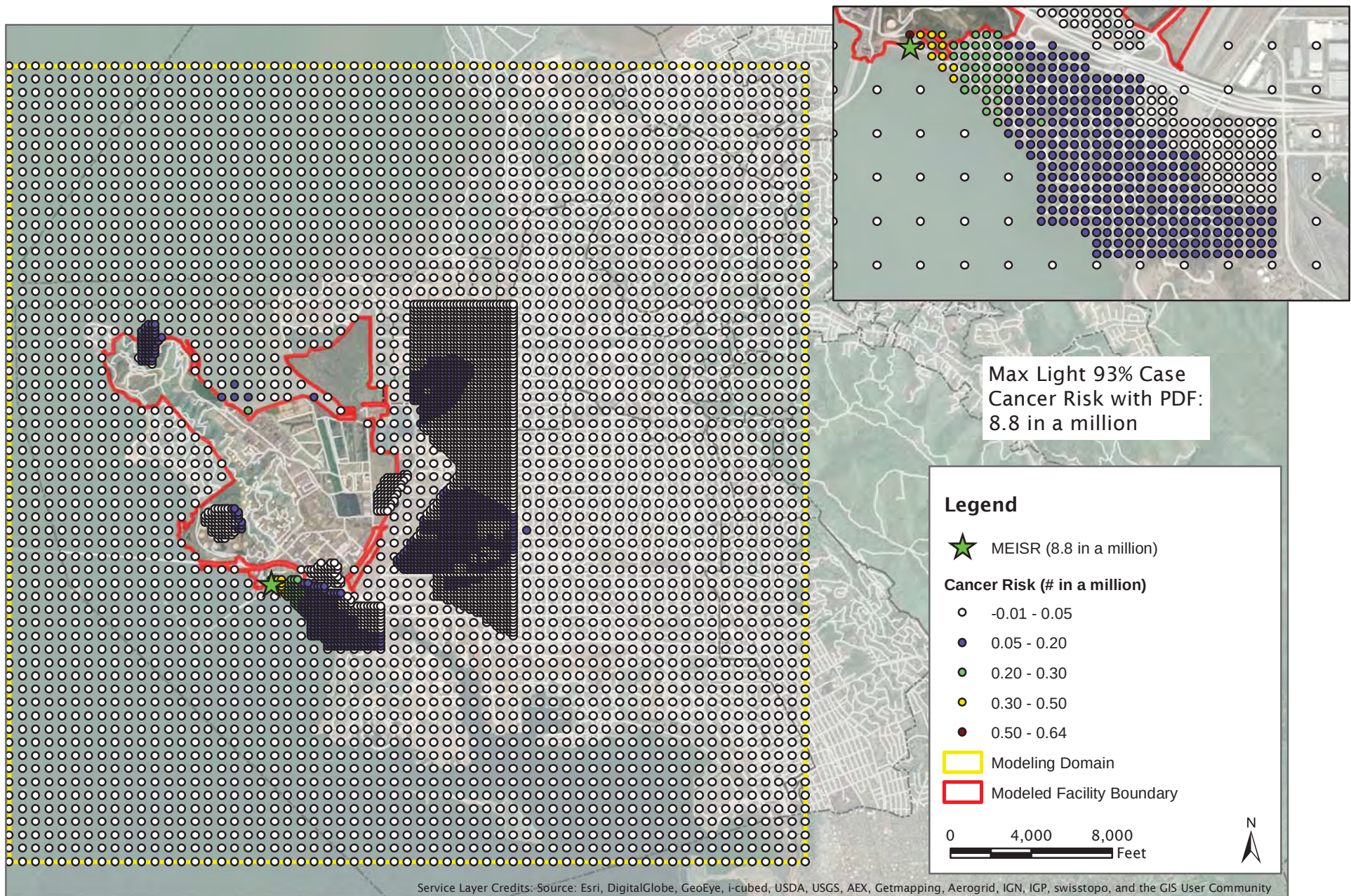
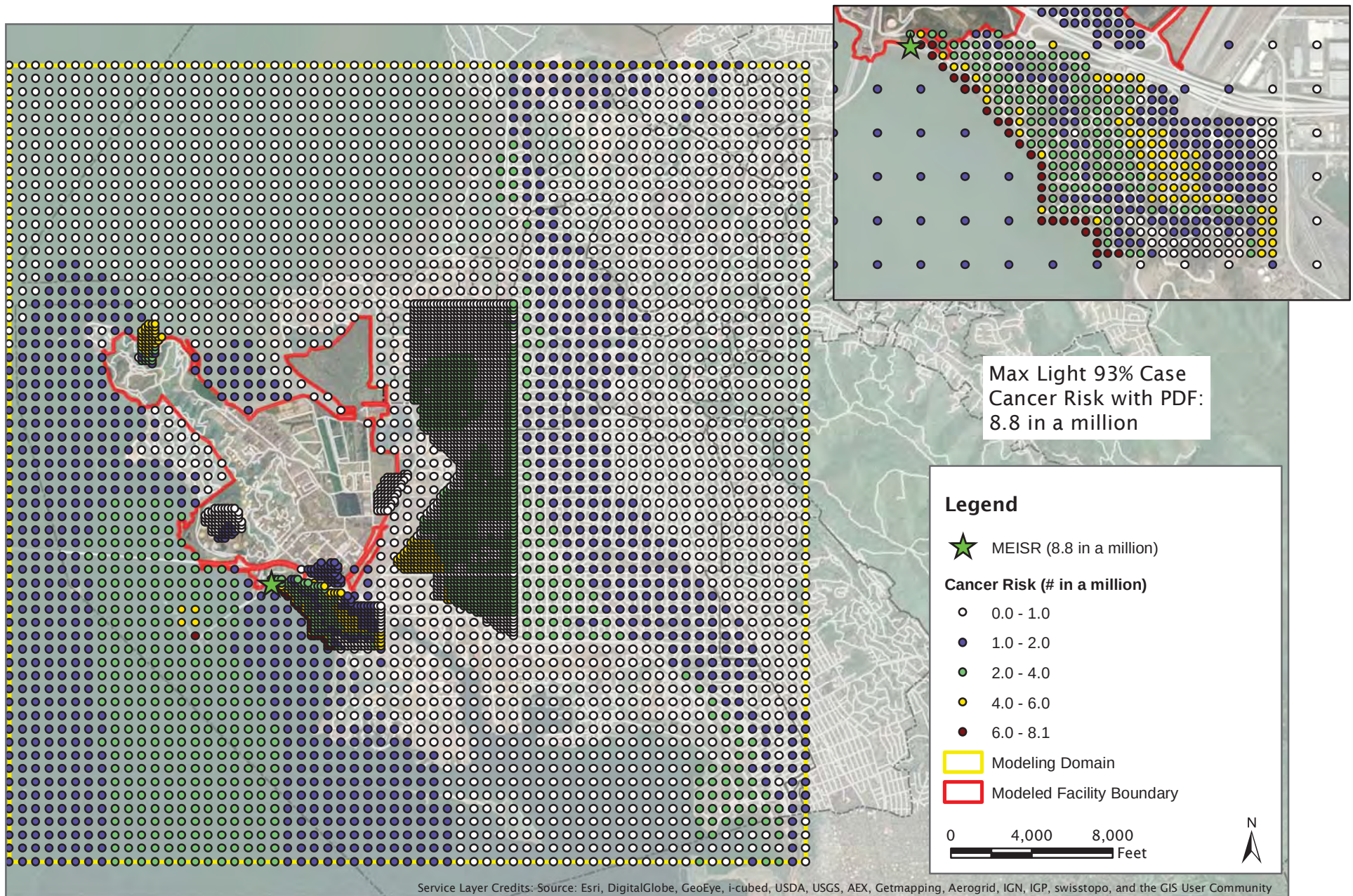


Figure A4.3-HRA-56
Chevron Refinery Modernization Project EIR
Max Light 93% PM2.5 Concentration with PDF Source Contribution - Operational Trucking



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-25_Max Light 93% Cancer with PDF-Refinery.mxd

Figure A4.3-HRA-57
Chevron Refinery Modernization Project EIR
Max Light 93% Cancer Risk with PDF Source Contribution – Refinery



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\Construction HRA\HRA Results Figures\A4.3-HRA-26_Max Light 93% Cancer with PDF-Shipping.mxd

Figure A4.3-HRA-58
Chevron Refinery Modernization Project EIR
Max Light 93% Cancer Risk with PDF Source Contribution - Shipping

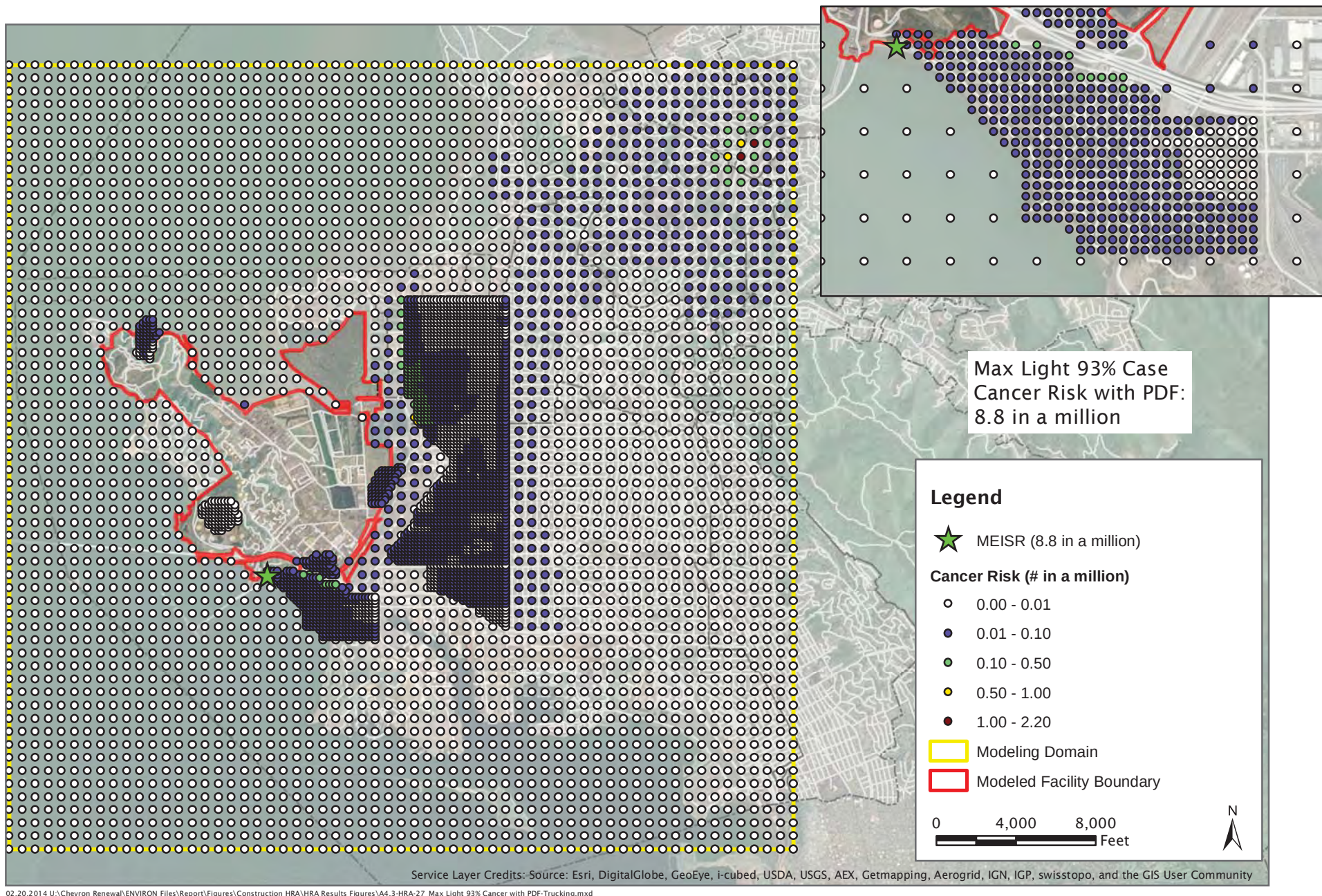


Figure A4.3-HRA-59
Chevron Refinery Modernization Project EIR
Max Light 93% Cancer Risk with PDF Source Contribution – Operational Trucking

below the very low level of 0.02. The HI from trucking at the MEI is less than 0.001, and results from DPM emissions. The greatest HI from trucking is located at a freeway onramp, and is still less than the very low value of 0.02.

1.7.3 Acute Hazard Index

The incremental excess acute hazard for the mitigated Project case is 0.5 at the MEI, which is a boundary receptor between the Facility and Point Molate. Although no one lives there, an individual could be present for an hour, which is the averaging duration for acute effects. This is below the BAAQMD CEQA significance threshold of 1.0 for acute non-cancer health effects. The HI represents the sum of the HQs developed for each individual chemical. The HQ is the ratio of the estimated dose from exposure to a compound in a medium, to a value that is believed not to produce adverse health effects for each chemical considered. The HQ is calculated for all compounds, carcinogenic as well as non-carcinogenic. This value is a measure of the non-carcinogenic toxicity of a compound; it is not a probability. Estimated HQs and HIs are expressed using decimal notation (e.g., 0.001). A value below 1.0 is believed to not cause adverse health impacts.

The maximally exposed residential receptor has an acute HI of 0.2, and is located in Point Richmond. These values are below the BAAQMD CEQA significance threshold of 1.0 for acute HI, and the residential receptor is at the de minimis threshold for No Net Increase of risk of 0.2.

More than 80% of the acute HI of 0.2 results from hydrogen sulfide concentrations at the residential MEI. The REL for hydrogen sulfide, which is the basis for the level at which no adverse health impacts is expected to occur, is based on the California Ambient Air Quality Standard (CAAQS) for hydrogen sulfide of 0.03 parts per million (ppm). According to OEHHA (2000), "The standard [CAAQS] was adopted in 1969 and was based on the geometric mean odor threshold measured in adults. The purpose of the standard was to decrease odor annoyance. The standard was reviewed in 1980 and 1984 (CARB, 1984), and was not changed since no new relevant information had emerged." Therefore, the REL was set to reduce odor annoyance, rather than to minimize health effects. OEHHA (2008) also notes, that "[a]t the current CAAQS of 0.03 ppm, the level would be detectable by 83% of the population and would be discomforting to 40% of the population", and goes on to state that, "[t]he World Health Organization reports that in order to avoid substantial complaints about odor annoyance among the exposed population, hydrogen sulfide concentrations should not be allowed to exceed 0.005 ppm (7 $\mu\text{g}/\text{m}^3$)."

Hydrogen sulfide is toxic at much higher doses. According to OEHHA (2000), “[m]ost information on H₂S toxicity comes from studies that used levels of H₂S orders of magnitude above the standard of 0.03 ppm.”²⁶

The EPA advises that short term exposures to hydrogen sulfide be limited to less than 0.51 ppm in their Acute Emergency Guideline Limit (AEGL). The AEGL is “the airborne concentration (expressed as ppm or mg/m³) of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic, nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.” The AEGL is approximately 100 times the incremental level that would be expected in residential areas near the Project.

The acute HI from shipping was less than 0.01 at the MEI, located in Point Molate. There was no acute HI from trucking, as DPM does not have an acute REL associated with it.

1.7.4 PM_{2.5} Concentrations

The incremental excess PM_{2.5} concentration for the mitigated Project case is 0.05 µg/m³ at the MEI, which is a worker receptor at a quarry surrounded by the Facility. The main driver of the PM_{2.5} concentration is emissions from the fluid catalytic cracker, but there are also reductions from removed sources that reduce the total PM_{2.5} concentration at that location. The maximally exposed residential receptor has a PM_{2.5} concentration far less than this value. This is well below the BAAQMD CEQA threshold of 0.3 µg/m³ for PM_{2.5} concentration.

As is shown in Table A4.3-HRA-17 the majority of the increase in PM_{2.5} concentration comes from Refinery Operations sources, specifically the fluid catalytic cracker and new hydrogen plant

1.8 CO CONCENTRATIONS FROM MODERNIZATION PROJECT OPERATION

Both the BAAQMD and the EPA have ambient air standards for CO concentration (BAAQMD, 2013; EPA, 2012c). The BAAQMD standards are more stringent than the EPA’s, with a 1-hour limit of 20 ppm and an 8-hour limit of 9 ppm. To compare the impacts of the Modernization Project to these standards, maximum hourly CO emissions were modelled.

²⁶ H₂S = hydrogen sulfide.

Maximum hourly emissions were assumed to be equal to annual average emissions multiplied by a factor of 2.4, consistent with the BAAQMD Engineering Evaluation for maximum hourly TAC emissions. Absolute Project emissions were used, as opposed to the “delta” between Project and Baseline, to determine the concentration from the entire Facility and not just the increase as a result of the Project. The maximum hourly emissions were modeled the same way as TAC emissions for the HRA. Concentrations in $\mu\text{g}/\text{m}^3$ were converted to ppm by the following equation:

$$C_{\text{ppm}} = C_{\mu\text{g}/\text{m}^3} \times \frac{24.45}{28.01} \times \frac{1}{1000}$$

Where:

24.45 = molar volume of an ideal gas at 25°C and 1 atm (L/mol)

28.01 = molar mass of CO (g/mol)

1000 = Unit conversion factor

The combined maximum 1-hour CO concentration from refinery and shipping sources is 2.6 ppm, well below the 20-ppm 1-hour standard. While 8-hour emissions were not estimated, the 1-hour concentration is a conservative estimate of 8-hour concentrations, and it is still less than the 9-ppm standard.

1.9 REFERENCES

Bay Area Air Quality Management District (BAAQMD). 2010a. *Air Toxics NSR Program Health Risk Screening Analysis Guidelines*. January.

Bay Area Air Quality Management District (BAAQMD). 2010b. *Health Risk Assessment & Land Use Presentation*.
<http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/CEQA%20HRA%20Guidelines%20-%20Statewide%20Workshops%204-28-10.ashx?la=en>

Bay Area Air Quality Management District (BAAQMD). 2010c. *Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants*. January.
<http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Rules%20and%20Regs/reg%2002/rg0205.ashx?la=en>

Bay Area Air Quality Management District (BAAQMD). 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May.

Bay Area Air Quality Management District (BAAQMD). 2013. *Air Quality Standards and Attainment Status*. Accessed February 17, 2014.
http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm.

California Air Resources Board (CARB), 1984. *California Surface Wind Climatology. Aerometric Data Division*.
http://gate1.baaqmd.gov/pdf/0635_California_Surface_Wind_Climatology_1984.pdf

California Department of Education (CDE). 2013. *California School Directory*.
<http://www.cde.ca.gov/re/sd/>

California Department of Social Services, Community Care Licensing Division (CCLD). 2012. *CCLD Facility Search Form*.
http://www.cclld.ca.gov/docs/cclld_search/cclld_search.aspx

California Environmental Protection Agency (Cal/EPA). 2009. *Technical Support Document for Cancer Potency Factors: methodologies for derivation, listing of available values, and adjustments to allow for early life stage exposures*. May. http://oehha.ca.gov/air/hot_spots/2009/TSDCancerPotency.pdf

California Office of Statewide Health Planning and Development (OSHPD). 2014. *Facility Listings*. <http://www.oshpd.ca.gov/HID/Products/Listings.html>

Chevron Data Transmittal #6C: HRA Modeling Inputs, 2013.

Chevron Data Transmittal #26A: Shipping AERMOD Data, 2012.

Chevron Data Transmittal #26C (Rev #3): More Shipping Model Inputs. 2014.

Chevron Data Transmittal #26F: Shipping Report, 2014.

Chevron Data Transmittal #38 (Rev #1): APNs, 2013

Office of Environmental Health Hazard Assessment (OEHHA). 2000. *Hydrogen Sulfide: Evaluation of Current California Air Quality Standards with Respect to Protection of Children*. September 1.

Office of Environmental Health Hazard Assessment (OEHHA). 2002. *Air Toxics Hot Spots Program Risk Assessment Guidelines: Part II Technical Support Document for Describing Available Cancer Potency Factors*.
http://oehha.ca.gov/air/hot_spots/pdf/TSDNov2002.pdf.

Office of Environmental Health Hazard Assessment (OEHHA). 2003. *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. http://oehha.ca.gov/air/hot_spots/pdf/HRAguidefinal.pdf.

Office of Environmental Health Hazard Assessment (OEHHA). 2008. *TSD for Noncancer RELs*. June.

Office of Environmental Health Hazard Assessment (OEHHA). 2012. *Air Toxics Hot Spots Program Risk Assessment Guidelines: Technical Support Document for Exposure Assessment and Stochastic Analysis*. http://oehha.ca.gov/air/hot_spots/pdf/2012tsd/TSDportfolio2012.pdf

Office of Environmental Health Hazard Assessment (OEHHA). 2014. *Consolidated Table of OEHHA/CARB Approved Risk Assessment Health Values*. Accessed February 21, 2014. <http://www.arb.ca.gov/toxics/healthval/contable.pdf>

RTI International (RTI). 2011. *Emission Estimation Protocol for Petroleum Refineries - Version 2.1.1*. May. http://www.epa.gov/ttnchie1/efpac/protocol/Emission_Estimation_Protocol_for_Petroleum_Refinerie_052011.pdf.

South Coast Air Quality Management District (SCAQMD). 2008. *Final Localized Significance Threshold (LST) Methodology*. July. http://www.aqmd.gov/ceqa/handbook/lst/Method_final.pdf.

U.S. Environmental Protection Agency (EPA). 1995. *User's Guide for the Industrial Source Complex (ISC3) Dispersion Models, Volume II – Description of Model Algorithms*. <http://www.epa.gov/scram001/userg/regmod/isc3v2.pdf>.

U.S. Environmental Protection Agency (EPA). 2004. *User's Guide for the AMS/EPA Regulatory Model – AERMOD*, Table 3-1. Accessed March 8, 2013. <http://www.epa.gov/scram001/7thconf/aermod/aermodugb.pdf>.

U.S. Environmental Protection Agency (EPA). 2009. *AERMOD Implementation Guide*. March 19. http://www.epa.gov/ttn/scram/7thconf/aermod/aermod_implmntn_guide_19March2009.pdf

U.S. Environmental Protection Agency (EPA). 2011. *Exposure Factors Handbook: 2011 Edition*. Table 6-2. September.

U.S. Environmental Protection Agency (EPA). 2012a. *About Air Toxics*. <http://www.epa.gov/oar/toxicair/newtoxics.html>.

U.S. Environmental Protection Agency (EPA). 2012b. *Memorandum – Haul Road Workgroup Final Report Submission to EPA-OAQPS*. Accessed March 8, 2013. http://www.epa.gov/scram001/reports/Haul_Road_Workgroup-Final_Report_Package-20120302.pdf.

U.S. Environmental Protection Agency (EPA). 2012c. *National Ambient Air Quality Standards (NAAQS)*. Accessed February 17, 2014. <http://www.epa.gov/air/criteria.html>.

ATTACHMENTS TO APPENDIX 4.3 - HRA

APPENDIX 4.3 - HRA

Attachment 1

Attachment 1 Example Modeling Input Shipping at Berth.ami
A4.3-HRA Attachment 1
Example Modeling Input File
Shipping At Berth
Chevron Modernization Project
Richmond, California

** BREEZE AERMOD
** Trinity Consultants
** VERSION 7.7

CO STARTING
CO TITLEONE CVRN_shipping_point sources
CO MODELOPT DFAULT CONC
CO RUNORNOT RUN
CO AVERTIME 1 8 24 MONTH PERIOD
CO POLLUTID OTHER
CO FLAGPOLE 1.8
CO FINISHED

SO STARTING
SO ELEVUNIT METERS
SO LOCATION B1_GEN POINT 551843.71 4197275.34 0
** SRCDESCR Berth 1 Generator
SO LOCATION B2_GEN POINT 551706.78 4197455.58 0
** SRCDESCR Berth 2 Generator
SO LOCATION B3_GEN POINT 551662.23 4197515.79 0
** SRCDESCR Berth 3 Generator
SO LOCATION B4_GEN POINT 551496.59 4197736.7 0
** SRCDESCR Berth 4 Generator
SO LOCATION B1_BLR POINT 551840.18 4197274.13 0
** SRCDESCR Berth 1 Boiler
SO LOCATION B2_BLR POINT 551704.39 4197454.66 0
** SRCDESCR Berth 2 Boiler
SO LOCATION B3_BLR POINT 551659.64 4197513.3 0
** SRCDESCR Berth 3 Boiler
SO LOCATION B4_BLR POINT 551491.45 4197733.95 0
** SRCDESCR Berth 4 Boiler
SO LOCATION B9_BRG POINT 551674.87 4197609.63 0
** SRCDESCR Berth 9 Barge Generator
SO LOCATION B11_BRG POINT 551595.97 4197720.08 0
** SRCDESCR Berth 11 Barge Generator
SO LOCATION B2_BRG POINT 551709.05 4197458.15 0
** SRCDESCR Berth 2 Barge Generator
SO LOCATION B3_BRG POINT 551665.07 4197516.51 0
** SRCDESCR Berth 3 Barge Generator
SO LOCATION B1_TURB POINT 551843.89 4197270.18 0
** SRCDESCR Turbine Berth 1
SO LOCATION B2_TURB POINT 551707.94 4197453.09 0
** SRCDESCR Turbine Berth 2
SO LOCATION B3_TURB POINT 551659.75 4197519.82 0
** SRCDESCR Turbine Berth 3
SO LOCATION B4_TURB POINT 551491.67 4197737.34 0
** SRCDESCR Turbine Berth 4
SO LOCATION SB_TUG POINT 551965.22 4197354.65 0
** SRCDESCR Stand by Tug
SO SRCPARAM B1_GEN 1 23 618 7 0.6
SO SRCPARAM B2_GEN 1 23 618 7 0.6
SO SRCPARAM B3_GEN 1 23 618 7 0.6
SO SRCPARAM B4_GEN 1 23 618 7 0.6
SO SRCPARAM B1_BLR 1 22.86 548 1.3 1.6
SO SRCPARAM B2_BLR 1 22.86 548 1.3 1.6
SO SRCPARAM B3_BLR 1 22.86 548 1.3 1.6

		Attachment 1 Example Moeling Input Shipping at Berth.ami						
SO	SRCPARAM	B4_BLR	1	22.86	548	1.3	1.6	
SO	SRCPARAM	B9_BRG	1	7.4	618	4	0.1	
SO	SRCPARAM	B11_BRG	1	7.4	618	4	0.1	
SO	SRCPARAM	B2_BRG	1	7.4	618	4	0.1	
SO	SRCPARAM	B3_BRG	1	7.4	618	4	0.1	
SO	SRCPARAM	B1_TURB	1	25.11	618	1.7	1.72	
SO	SRCPARAM	B2_TURB	1	25.11	618	1.7	1.72	
SO	SRCPARAM	B3_TURB	1	25.11	618	1.7	1.72	
SO	SRCPARAM	B4_TURB	1	25.11	618	1.7	1.72	
SO	SRCPARAM	SB_TUG	1	5.9	618	2	0.13	
SO	BUILDHGT	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDHGT	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDHGT	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDHGT	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDHGT	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDHGT	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDLN	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDLN	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDLN	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDLN	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDLN	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDLN	B1_GEN		0.00		0.00	0.00	0.00
SO	XBADJ	B1_GEN		0.00		0.00	0.00	0.00
SO	XBADJ	B1_GEN		0.00		0.00	0.00	0.00
SO	XBADJ	B1_GEN		0.00		0.00	0.00	0.00
SO	XBADJ	B1_GEN		0.00		0.00	0.00	0.00
SO	XBADJ	B1_GEN		0.00		0.00	0.00	0.00
SO	XBADJ	B1_GEN		0.00		0.00	0.00	0.00
SO	YBADJ	B1_GEN		0.00		0.00	0.00	0.00
SO	YBADJ	B1_GEN		0.00		0.00	0.00	0.00
SO	YBADJ	B1_GEN		0.00		0.00	0.00	0.00
SO	YBADJ	B1_GEN		0.00		0.00	0.00	0.00
SO	YBADJ	B1_GEN		0.00		0.00	0.00	0.00
SO	YBADJ	B1_GEN		0.00		0.00	0.00	0.00
SO	BUILDHGT	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDHGT	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDHGT	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDHGT	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDHGT	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDHGT	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDWID	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDLN	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDLN	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDLN	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDLN	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDLN	B2_GEN		0.00		0.00	0.00	0.00
SO	BUILDLN	B2_GEN		0.00		0.00	0.00	0.00
SO	XBADJ	B2_GEN		0.00		0.00	0.00	0.00
SO	XBADJ	B2_GEN		0.00		0.00	0.00	0.00
SO	XBADJ	B2_GEN		0.00		0.00	0.00	0.00
SO	XBADJ	B2_GEN		0.00		0.00	0.00	0.00
SO	XBADJ	B2_GEN		0.00		0.00	0.00	0.00

[illegible]

[illegible]

[illegible]

Attachment 1 Example Moeling Input Shipping at Berth.ami

SO BUILDHGT	B9_BRG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDHGT	B9_BRG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDHGT	B9_BRG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDHGT	B9_BRG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDWID	B9_BRG	403.68	455.29	493.08	515.87	523.00	521.78
SO BUILDWID	B9_BRG	508.75	480.27	437.20	380.84	312.91	235.48
SO BUILDWID	B9_BRG	150.88	61.71	95.48	183.32	265.60	339.80
SO BUILDWID	B9_BRG	403.68	455.29	493.08	515.87	523.00	521.78
SO BUILDWID	B9_BRG	508.75	480.27	437.20	380.84	312.91	235.48
SO BUILDWID	B9_BRG	150.88	61.71	95.48	183.32	265.60	339.80
SO BUILDLEN	B9_BRG	380.84	312.91	235.48	150.88	61.71	95.48
SO BUILDLEN	B9_BRG	183.32	265.60	339.80	403.68	455.29	493.08
SO BUILDLEN	B9_BRG	515.87	523.00	521.78	508.75	480.27	437.20
SO BUILDLEN	B9_BRG	380.84	312.91	235.48	150.88	61.71	95.48
SO BUILDLEN	B9_BRG	183.32	265.60	339.80	403.68	455.29	493.08
SO BUILDLEN	B9_BRG	515.87	523.00	521.78	508.75	480.27	437.20
SO XBADJ	B9_BRG	-218.46	-185.46	-146.81	-103.71	-57.46	-71.55
SO XBADJ	B9_BRG	-112.03	-149.12	-181.67	-208.70	-229.39	-243.12
SO XBADJ	B9_BRG	-249.45	-248.21	-244.53	-234.08	-216.51	-192.37
SO XBADJ	B9_BRG	-162.38	-127.46	-88.66	-47.17	-4.25	-23.93
SO XBADJ	B9_BRG	-71.29	-116.48	-158.13	-194.98	-225.90	-249.96
SO XBADJ	B9_BRG	-266.42	-274.79	-277.24	-274.67	-263.76	-244.83
SO YBADJ	B9_BRG	6.86	1.75	-3.42	-8.49	-13.29	-16.36
SO YBADJ	B9_BRG	-20.30	-23.62	-26.23	-28.04	-29.00	-29.08
SO YBADJ	B9_BRG	-28.27	-26.60	-23.81	-20.37	-16.32	-11.77
SO YBADJ	B9_BRG	-6.86	-1.75	3.42	8.49	13.29	16.36
SO YBADJ	B9_BRG	20.30	23.62	26.23	28.04	29.00	29.08
SO YBADJ	B9_BRG	28.27	26.60	23.81	20.37	16.32	11.77
SO BUILDHGT	B11_BRG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDHGT	B11_BRG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDHGT	B11_BRG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDHGT	B11_BRG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDHGT	B11_BRG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDHGT	B11_BRG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDWID	B11_BRG	403.68	455.29	493.08	515.87	523.00	521.78
SO BUILDWID	B11_BRG	508.75	480.27	437.20	380.84	312.91	235.48
SO BUILDWID	B11_BRG	150.88	1034.26	95.48	183.32	265.60	339.80
SO BUILDWID	B11_BRG	403.68	455.29	493.08	515.87	523.00	521.78
SO BUILDWID	B11_BRG	508.75	480.27	437.20	380.84	312.91	235.48
SO BUILDWID	B11_BRG	150.88	1034.26	95.48	183.32	265.60	339.80
SO BUILDLEN	B11_BRG	380.84	312.91	235.48	150.88	61.71	95.48
SO BUILDLEN	B11_BRG	183.32	265.60	339.80	403.68	455.29	493.08
SO BUILDLEN	B11_BRG	515.87	630.74	521.78	508.75	480.27	437.20
SO BUILDLEN	B11_BRG	380.84	312.91	235.48	150.88	61.71	95.48
SO BUILDLEN	B11_BRG	183.32	265.60	339.80	403.68	455.29	493.08
SO BUILDLEN	B11_BRG	515.87	630.74	521.78	508.75	480.27	437.20
SO XBADJ	B11_BRG	-313.53	-262.26	-203.02	-137.61	-68.01	-58.44
SO XBADJ	B11_BRG	-75.67	-90.60	-102.77	-111.82	-117.48	-119.56
SO XBADJ	B11_BRG	-118.01	-112.88	-109.43	-103.30	-94.04	-81.92
SO XBADJ	B11_BRG	-67.31	-50.65	-32.46	-13.28	6.31	-37.03
SO XBADJ	B11_BRG	-107.65	-175.00	-237.03	-291.86	-337.82	-373.51
SO XBADJ	B11_BRG	-397.86	-517.86	-412.35	-405.45	-386.23	-355.28
SO YBADJ	B11_BRG	-90.02	-110.17	-126.98	-139.92	-148.62	-151.46
SO YBADJ	B11_BRG	-151.07	-146.10	-136.68	-123.11	-105.80	-85.28
SO YBADJ	B11_BRG	-62.16	446.27	-10.70	15.99	42.20	67.13
SO YBADJ	B11_BRG	90.02	110.17	126.98	139.92	148.62	151.46
SO YBADJ	B11_BRG	151.07	146.10	136.68	123.11	105.80	85.28
SO YBADJ	B11_BRG	62.16	-446.27	10.70	-15.99	-42.20	-67.13
SO BUILDHGT	B2_BRG	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT	B2_BRG	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT	B2_BRG	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT	B2_BRG	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT	B2_BRG	0.00	0.00	0.00	0.00	0.00	0.00

[illegible]

[illegible]

Attachment 1 Example Moeling Input Shipping at Berth.ami							
SO BUILDWID	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDLEN	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDLEN	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDLEN	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDLEN	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDLEN	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO XBADJ	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO XBADJ	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO XBADJ	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO XBADJ	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO XBADJ	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO YBADJ	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO YBADJ	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO YBADJ	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO YBADJ	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO YBADJ	B3_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDLEN	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDLEN	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDLEN	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDLEN	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDLEN	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO XBADJ	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO XBADJ	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO XBADJ	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO XBADJ	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO XBADJ	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO YBADJ	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO YBADJ	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO YBADJ	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO YBADJ	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO YBADJ	B4_TURB	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT	SB_TUG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDHGT	SB_TUG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDHGT	SB_TUG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDHGT	SB_TUG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDHGT	SB_TUG	3.81	3.81	3.81	3.81	3.81	3.81
SO BUILDWID	SB_TUG	111.84	124.09	132.56	137.01	137.29	135.85
SO BUILDWID	SB_TUG	133.24	126.60	116.10	102.08	84.95	65.25
SO BUILDWID	SB_TUG	43.56	1034.26	34.06	56.71	77.63	96.20
SO BUILDWID	SB_TUG	111.84	124.09	132.56	137.01	137.29	135.85
SO BUILDWID	SB_TUG	133.24	126.60	116.10	102.08	84.95	65.25
SO BUILDWID	SB_TUG	43.56	1034.26	34.06	56.71	77.63	96.20
SO BUILDLEN	SB_TUG	102.08	84.95	65.25	43.56	20.54	34.06
SO BUILDLEN	SB_TUG	56.71	77.63	96.20	111.84	124.09	132.56

Attachment 1 Example Moeling Input Shipping at Berth.ami

SO BUILDLEN	SB_TUG	137.01	180.10	135.85	133.24	126.60	116.10
SO BUILDLEN	SB_TUG	102.08	84.95	65.25	43.56	20.54	34.06
SO BUILDLEN	SB_TUG	56.71	77.63	96.20	111.84	124.09	132.56
SO BUILDLEN	SB_TUG	137.01	180.10	135.85	133.24	126.60	116.10
SO XBADJ	SB_TUG	-41.77	-31.63	-20.52	-8.79	3.20	-2.55
SO XBADJ	SB_TUG	-14.18	-25.39	-35.82	-45.17	-53.14	-59.50
SO XBADJ	SB_TUG	-64.05	-109.46	-68.64	-69.68	-68.61	-65.45
SO XBADJ	SB_TUG	-60.30	-53.32	-44.72	-34.76	-23.75	-31.52
SO XBADJ	SB_TUG	-42.53	-52.25	-60.38	-66.68	-70.95	-73.07
SO XBADJ	SB_TUG	-72.96	-70.64	-67.20	-63.56	-57.99	-50.65
SO YBADJ	SB_TUG	-10.76	-8.91	-6.78	-4.46	-1.99	0.72
SO YBADJ	SB_TUG	3.06	5.31	7.40	9.26	10.85	12.10
SO YBADJ	SB_TUG	12.98	398.30	14.48	14.17	13.43	12.28
SO YBADJ	SB_TUG	10.76	8.91	6.78	4.46	1.99	-0.72
SO YBADJ	SB_TUG	-3.06	-5.31	-7.40	-9.26	-10.85	-12.10
SO YBADJ	SB_TUG	-12.98	-398.30	-14.48	-14.17	-13.43	-12.28
SO SRCGROUP	B1_GEN	B1_GEN					
SO SRCGROUP	B2_GEN	B2_GEN					
SO SRCGROUP	B3_GEN	B3_GEN					
SO SRCGROUP	B4_GEN	B4_GEN					
SO SRCGROUP	B1_BLR	B1_BLR					
SO SRCGROUP	B2_BLR	B2_BLR					
SO SRCGROUP	B3_BLR	B3_BLR					
SO SRCGROUP	B4_BLR	B4_BLR					
SO SRCGROUP	B9_BRG	B9_BRG					
SO SRCGROUP	B11_BRG	B11_BRG					
SO SRCGROUP	B2_BRG	B2_BRG					
SO SRCGROUP	B3_BRG	B3_BRG					
SO SRCGROUP	B1_TURB	B1_TURB					
SO SRCGROUP	B2_TURB	B2_TURB					
SO SRCGROUP	B3_TURB	B3_TURB					
SO SRCGROUP	B4_TURB	B4_TURB					
SO SRCGROUP	SB_TUG	SB_TUG					
SO FINISHED							

```

RE STARTING
RE ELEVUNIT METERS
RE GRIDCART REC1 STA
RE GRIDCART REC1 XYINC 549000 61 200 4194000 61 200
RE GRIDCART REC1 ELEV 1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 1 0.3 8.7 0.5 0.7 5.4 21.7
RE GRIDCART REC1 ELEV 2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 2 0.2 0.4 0.6 1.7 7.0 32.0
RE GRIDCART REC1 ELEV 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 16.1 10.4 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -0.1
RE GRIDCART REC1 ELEV 3 -0.1 0.2 0.2 0.3 0.8 1.8 6.2 39.1
RE GRIDCART REC1 ELEV 4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 31.8 17.3 0.0 0.0 0.0 0.0
RE GRIDCART REC1 ELEV 4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.9 3.7
RE GRIDCART REC1 ELEV 4 0.3 0.3 0.6 1.0 3.0 6.4 51.2

```

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE	GRIDCART	REC1	ELEV	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	5	-0.3	-0.2	-0.0	0.2	1.9	17.9	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	4.0
RE	GRIDCART	REC1	ELEV	5	4.6	6.6	2.1	4.3	3.0	4.1	3.6				
RE	GRIDCART	REC1	ELEV	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	2.0	0.4
RE	GRIDCART	REC1	ELEV	6	1.6	0.0	-0.3	-0.1	0.1	-0.1	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	3.7
RE	GRIDCART	REC1	ELEV	6	5.2	3.9	1.6	2.6	8.8	3.7	4.1				
RE	GRIDCART	REC1	ELEV	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.0	
RE	GRIDCART	REC1	ELEV	7	0.2	0.3	0.3	0.1	0.1	-0.1	-0.3	0.0	0.0	0.0	
RE	GRIDCART	REC1	ELEV	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
RE	GRIDCART	REC1	ELEV	7	5.5	3.9	1.4	3.6	3.8	20.0	13.9	5.8			
RE	GRIDCART	REC1	ELEV	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.5	0.9
RE	GRIDCART	REC1	ELEV	8	1.1	0.9	0.8	0.5	0.3	-0.2	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	6.2	2.8
RE	GRIDCART	REC1	ELEV	8	3.6	16.7	10.6	15.8	11.2	7.5					
RE	GRIDCART	REC1	ELEV	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.9	1.1	5.3
RE	GRIDCART	REC1	ELEV	9	5.3	4.9	1.1	0.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	4.1	1.7
RE	GRIDCART	REC1	ELEV	9	3.9	4.1	10.5	20.7	10.6	10.3					
RE	GRIDCART	REC1	ELEV	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	10	2.3	1.0	1.1	1.1	1.5	1.0	1.1	1.1	4.5	6.9	7.4
RE	GRIDCART	REC1	ELEV	10	5.5	4.7	1.2	1.1	1.0	0.4	-0.2	3.6	4.0	4.3	
RE	GRIDCART	REC1	ELEV	10	4.2	3.4	1.1	1.1	1.5	1.1	1.5	1.5	1.1	1.9	1.6
RE	GRIDCART	REC1	ELEV	10	4.9	2.7	3.7	18.3	20.4	11.9	12.8				
RE	GRIDCART	REC1	ELEV	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	11	0.0	1.8	4.4	4.6	2.9	2.1	1.5	3.9	16.4	8.4	
RE	GRIDCART	REC1	ELEV	11	7.8	5.1	4.3	1.1	1.5	4.5	4.4	0.9	0.0	1.1	1.3
RE	GRIDCART	REC1	ELEV	11	5.2	4.6	4.4	1.5	1.5	0.6	1.2	2.0	3.4	2.1	4.2
RE	GRIDCART	REC1	ELEV	11	2.7	3.4	4.9	7.5	10.2	12.4	15.0				
RE	GRIDCART	REC1	ELEV	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	12	0.0	1.0	3.8	25.8	28.8	3.6	4.2	15.5	49.7	34.4	
RE	GRIDCART	REC1	ELEV	12	40.6	3.8	3.6	1.2	3.8	4.6	4.5	1.1	0.8	1.1	
RE	GRIDCART	REC1	ELEV	12	1.5	5.0	5.0	3.8	4.5	1.2	5.3	5.4	3.8	3.6	1.7
RE	GRIDCART	REC1	ELEV	12	3.1	4.1	12.5	12.9	28.9	34.1	15.8	17.3			
RE	GRIDCART	REC1	ELEV	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	13	0.0	0.0	2.7	5.3	19.5	27.0	28.0	67.5	80.0		
RE	GRIDCART	REC1	ELEV	13	14.7	4.1	3.9	1.3	1.2	3.7	4.3	4.3	1.1	1.3	
RE	GRIDCART	REC1	ELEV	13	1.4	5.1	4.0	4.9	4.3	4.0	4.4	4.3	6.6	4.9	4.9
RE	GRIDCART	REC1	ELEV	13	5.1	6.5	6.7	13.4	39.6	36.1	22.1	20.0	23.8		
RE	GRIDCART	REC1	ELEV	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	14	0.0	0.0	1.2	2.6	4.0	69.3	96.1	82.0	67.9	10.4	
RE	GRIDCART	REC1	ELEV	14	4.1	3.9	4.0	1.1	3.7	3.9	4.1	3.6	3.4	4.0	3.2
RE	GRIDCART	REC1	ELEV	14	4.0	3.3	3.7	5.1	5.4	5.8	6.9	6.4	7.4	5.2	9.2
RE	GRIDCART	REC1	ELEV	14	27.7	14.8	20.6	29.2	20.5	24.2	27.5				
RE	GRIDCART	REC1	ELEV	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	15	0.0	0.0	1.2	3.0	5.0	26.8	56.9	6.8	6.2	4.5	

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE	GRIDCART	REC1	ELEV	15	4.2	3.6	1.1	1.1	3.3	3.7	3.9	4.0	4.2	4.4	4.0
RE	GRIDCART	REC1	ELEV	15	3.6	3.4	3.9	5.3	6.9	7.2	7.8	8.0	7.4	6.4	7.0
RE	GRIDCART	REC1	ELEV	15	9.5	16.0	15.8	19.5	21.4	26.5	31.6				
RE	GRIDCART	REC1	ELEV	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	16	0.0	0.0	1.2	3.6	50.3	69.9	7.4	5.2	4.0	3.8	
RE	GRIDCART	REC1	ELEV	16	3.9	1.1	3.3	2.3	3.5	2.8	3.2	3.6	3.8	3.6	3.9
RE	GRIDCART	REC1	ELEV	16	5.6	5.4	5.5	6.3	7.7	9.4	8.0	9.6	8.7	8.4	9.4
RE	GRIDCART	REC1	ELEV	16	9.7	17.8	15.8	18.6	21.9	26.3	32.7				
RE	GRIDCART	REC1	ELEV	17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	17	0.0	0.0	1.2	14.7	93.0	68.0	6.6	4.1	4.0	4.1	
RE	GRIDCART	REC1	ELEV	17	1.1	1.1	3.7	4.3	3.4	2.7	2.7	3.7	3.2	4.1	5.3
RE	GRIDCART	REC1	ELEV	17	6.3	6.4	6.0	5.6	8.4	5.7	9.9	11.0	9.8	10.8	
RE	GRIDCART	REC1	ELEV	17	11.0	11.8	16.3	16.6	20.1	24.9	30.8	42.3			
RE	GRIDCART	REC1	ELEV	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	18	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	18	0.0	1.1	8.2	50.6	21.2	25.7	4.6	3.4	1.1	1.1	
RE	GRIDCART	REC1	ELEV	18	2.8	1.6	3.8	4.0	3.2	-0.9	5.4	5.0	5.3	5.7	
RE	GRIDCART	REC1	ELEV	18	2.6	8.4	9.0	8.6	9.1	10.1	11.5	12.6	12.3	12.0	
RE	GRIDCART	REC1	ELEV	18	12.2	13.3	13.3	14.6	17.9	21.6	28.7	36.0	43.0		
RE	GRIDCART	REC1	ELEV	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	19	1.1	19.9	40.2	13.8	3.7	2.8	3.7	2.9	3.3	3.2	
RE	GRIDCART	REC1	ELEV	19	3.0	2.3	4.0	3.0	-0.0	3.7	3.8	6.1	6.7	7.1	
RE	GRIDCART	REC1	ELEV	19	8.7	13.7	12.5	10.5	10.6	11.8	11.8	13.6	14.1		
RE	GRIDCART	REC1	ELEV	19	13.0	12.8	14.6	18.9	16.4	19.2	24.4	31.5	38.3		
RE	GRIDCART	REC1	ELEV	19	60.0										
RE	GRIDCART	REC1	ELEV	20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1
RE	GRIDCART	REC1	ELEV	20	1.1	39.3	25.6	6.0	3.5	2.7	2.8	2.6	2.9	2.7	
RE	GRIDCART	REC1	ELEV	20	3.2	2.6	4.5	3.6	4.5	4.8	4.8	6.1	8.0	8.4	9.0
RE	GRIDCART	REC1	ELEV	20	9.9	11.6	12.1	12.4	12.9	13.8	14.3	15.3	15.5		
RE	GRIDCART	REC1	ELEV	20	14.8	16.8	16.2	19.3	25.2	34.6	49.3	51.8	104.2		
RE	GRIDCART	REC1	ELEV	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.0	1.1
RE	GRIDCART	REC1	ELEV	21	33.0	39.6	12.9	8.1	3.3	2.8	2.7	3.5	3.2	4.3	
RE	GRIDCART	REC1	ELEV	21	4.2	3.6	3.5	4.1	4.9	6.0	5.6	7.3	8.6	9.7	
RE	GRIDCART	REC1	ELEV	21	10.4	11.4	11.5	13.5	14.3	14.0	14.9	15.1	16.8		
RE	GRIDCART	REC1	ELEV	21	16.7	16.5	17.9	19.3	26.3	45.2	56.9	68.4	84.3		
RE	GRIDCART	REC1	ELEV	21	137.8										
RE	GRIDCART	REC1	ELEV	22	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	22	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	5.6	6.1	
RE	GRIDCART	REC1	ELEV	22	28.6	27.1	12.6	9.6	3.3	2.3	3.5	2.9	3.1	4.3	
RE	GRIDCART	REC1	ELEV	22	3.8	4.7	4.1	4.3	4.7	5.4	6.6	6.7	7.7	9.6	
RE	GRIDCART	REC1	ELEV	22	11.0	11.6	11.8	12.4	14.2	14.7	15.6	15.8	16.8		
RE	GRIDCART	REC1	ELEV	22	18.0	18.4	17.1	20.6	35.0	62.2	81.1	75.5	83.3		
RE	GRIDCART	REC1	ELEV	22	105.6	150.9									
RE	GRIDCART	REC1	ELEV	23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	23	0.0	0.0	0.0	1.1	1.1	1.0	1.3	3.7	10.3	43.7	
RE	GRIDCART	REC1	ELEV	23	36.1	15.6	2.9	3.1	3.3	3.1	4.1	3.6	3.0	3.6	
RE	GRIDCART	REC1	ELEV	23	3.8	4.3	4.8	5.0	5.4	6.2	6.9	9.2	9.0	9.6	
RE	GRIDCART	REC1	ELEV	23	11.5	12.4	15.6	15.6	15.4	16.9	18.8	18.5	18.4		
RE	GRIDCART	REC1	ELEV	23	17.6	17.3	20.1	23.6	35.9	45.6	66.2	90.5	116.6		
RE	GRIDCART	REC1	ELEV	23	140.7	162.0									
RE	GRIDCART	REC1	ELEV	24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	24	0.0	0.0	0.0	0.8	27.4	13.4	14.5	31.8	38.7		
RE	GRIDCART	REC1	ELEV	24	12.8	5.0	3.9	3.1	4.0	3.0	3.1	3.4	3.5	3.8	
RE	GRIDCART	REC1	ELEV	24	3.4	3.9	3.8	5.5	5.8	6.5	6.8	7.7	8.8	9.6	
RE	GRIDCART	REC1	ELEV	24	10.3	12.1	13.8	15.7	16.3	16.4	16.8	18.0	18.9		
RE	GRIDCART	REC1	ELEV	24	19.9	20.0	27.1	21.2	25.3	39.9	58.5	73.2	97.5		
RE	GRIDCART	REC1	ELEV	24	129.8	147.6	160.0								
RE	GRIDCART	REC1	ELEV	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE GRIDCART REC1 ELEV	25	0.0	0.0	0.9	20.4	30.5	29.6	32.7	28.6	75.7	
RE GRIDCART REC1 ELEV	25	18.3	5.3	3.0	3.1	2.9	3.3	3.6	2.6	4.0	3.5
RE GRIDCART REC1 ELEV	25	4.1	4.4	4.9	6.0	7.2	7.3	7.9	8.4	9.0	10.7
RE GRIDCART REC1 ELEV	25	12.7	12.9	13.4	15.6	17.1	19.2	18.4	19.3	19.8	
RE GRIDCART REC1 ELEV	25	21.4	21.3	21.5	24.1	29.2	42.8	55.5	80.3	122.1	
RE GRIDCART REC1 ELEV	25	129.4	146.8	167.2							
RE GRIDCART REC1 ELEV	26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 ELEV	26	0.0	0.0	6.3	28.6	32.4	34.5	35.8	98.3	33.6	
RE GRIDCART REC1 ELEV	26	19.7	22.0	4.2	3.6	3.0	2.9	3.0	2.2	9.4	4.1
RE GRIDCART REC1 ELEV	26	3.9	4.8	4.6	5.6	6.3	7.4	8.4	9.2	10.3	12.1
RE GRIDCART REC1 ELEV	26	13.2	14.2	14.4	17.1	18.4	19.8	20.8	20.5	21.9	
RE GRIDCART REC1 ELEV	26	23.3	23.8	30.3	27.4	36.5	51.4	70.5	87.3	109.3	
RE GRIDCART REC1 ELEV	26	123.5	158.4	174.1							
RE GRIDCART REC1 ELEV	27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 ELEV	27	0.0	0.0	0.9	7.9	39.1	60.2	85.0	81.1	51.0	
RE GRIDCART REC1 ELEV	27	40.9	56.7	11.9	3.4	0.8	2.8	3.3	3.7	4.4	2.3
RE GRIDCART REC1 ELEV	27	3.6	4.5	4.0	5.0	6.0	7.4	9.0	9.7	10.8	11.9
RE GRIDCART REC1 ELEV	27	12.9	15.0	15.6	16.8	19.3	21.3	22.0	21.5	23.8	
RE GRIDCART REC1 ELEV	27	24.8	25.7	24.4	29.9	52.7	60.9	71.8	92.6	107.4	
RE GRIDCART REC1 ELEV	27	127.1	153.3	178.6							
RE GRIDCART REC1 ELEV	28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 ELEV	28	0.0	0.0	0.9	1.7	41.8	71.2	95.4	97.6	88.4	
RE GRIDCART REC1 ELEV	28	72.3	53.9	4.0	3.7	1.4	2.4	2.4	3.5	2.9	2.8
RE GRIDCART REC1 ELEV	28	3.5	3.4	4.6	4.9	6.0	6.9	8.2	9.8	11.2	12.8
RE GRIDCART REC1 ELEV	28	14.1	15.3	17.3	17.6	20.1	22.3	24.2	23.6	27.4	
RE GRIDCART REC1 ELEV	28	27.3	27.2	27.4	27.4	55.4	64.8	78.2	96.0	112.2	
RE GRIDCART REC1 ELEV	28	128.0	152.2	148.1							
RE GRIDCART REC1 ELEV	29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 ELEV	29	0.0	0.0	0.1	6.2	18.1	37.3	102.5	109.7	82.6	
RE GRIDCART REC1 ELEV	29	48.8	9.5	4.1	3.5	2.5	1.5	3.3	3.4	3.3	3.3
RE GRIDCART REC1 ELEV	29	2.4	3.0	3.8	4.8	6.2	7.2	8.9	9.9	11.9	13.0
RE GRIDCART REC1 ELEV	29	14.3	16.3	18.1	19.0	21.1	23.2	26.0	25.6	36.6	
RE GRIDCART REC1 ELEV	29	29.1	30.6	29.5	24.7	38.8	63.1	80.3	96.5	116.1	
RE GRIDCART REC1 ELEV	29	132.3	127.9	81.1							
RE GRIDCART REC1 ELEV	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 ELEV	30	0.0	-0.1	2.6	11.9	28.7	87.7	115.1	69.3	89.7	
RE GRIDCART REC1 ELEV	30	39.5	5.7	4.1	4.2	2.7	2.9	5.1	3.4	3.7	1.6
RE GRIDCART REC1 ELEV	30	3.0	3.3	3.9	5.2	6.2	7.4	9.9	11.2	12.6	14.2
RE GRIDCART REC1 ELEV	30	15.5	17.3	19.3	21.2	22.0	23.9	28.1	28.2	28.3	
RE GRIDCART REC1 ELEV	30	30.9	32.3	31.6	24.2	34.6	45.7	72.6	90.0	122.6	
RE GRIDCART REC1 ELEV	30	120.1	79.2	113.3							
RE GRIDCART REC1 ELEV	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
RE GRIDCART REC1 ELEV	31	0.4	10.4	19.8	26.1	67.4	118.2	55.6	25.1	23.1	
RE GRIDCART REC1 ELEV	31	46.4	3.3	3.6	5.0	3.1	3.0	2.6	3.2	6.2	2.1
RE GRIDCART REC1 ELEV	31	5.1	2.8	3.9	4.2	9.7	7.6	8.8	11.4	12.7	13.8
RE GRIDCART REC1 ELEV	31	16.3	18.8	19.4	21.8	22.9	25.4	28.5	31.0	31.4	
RE GRIDCART REC1 ELEV	31	33.1	35.5	34.3	34.5	48.4	66.8	74.2	108.4		
RE GRIDCART REC1 ELEV	31	115.4	76.9	99.0	149.0						
RE GRIDCART REC1 ELEV	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.6	
RE GRIDCART REC1 ELEV	32	28.8	27.0	41.1	56.0	81.2	87.0	82.2	27.1	7.5	
RE GRIDCART REC1 ELEV	32	5.0	6.2	4.1	4.4	3.0	1.4	2.1	2.0	1.8	3.7
RE GRIDCART REC1 ELEV	32	6.1	2.8	4.4	4.8	6.3	10.4	10.3	11.6	12.8	14.7
RE GRIDCART REC1 ELEV	32	16.4	17.6	19.8	21.6	24.1	24.8	27.9	30.3	33.9	
RE GRIDCART REC1 ELEV	32	34.0	37.0	36.4	39.1	51.8	77.2	100.9	105.5		
RE GRIDCART REC1 ELEV	32	59.1	90.6	141.0	185.1						
RE GRIDCART REC1 ELEV	33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	5.1
RE GRIDCART REC1 ELEV	33	11.7	24.9	98.5	98.9	97.0	46.6	50.4	4.7	3.8	
RE GRIDCART REC1 ELEV	33	4.2	3.4	2.2	2.2	1.3	1.4	1.7	2.7	3.4	0.2
RE GRIDCART REC1 ELEV	33	9.5	3.6	4.5	5.8	7.3	9.5	11.0	13.0	14.9	16.2
RE GRIDCART REC1 ELEV	33	18.1	19.8	21.5	23.2	26.6	27.8	30.4	32.0	36.8	
RE GRIDCART REC1 ELEV	33	35.2	33.0	41.2	62.2	90.3	99.6	61.2	82.1	108.3	
RE GRIDCART REC1 ELEV	33	139.6	163.7								
RE GRIDCART REC1 ELEV	34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE	GRIDCART	REC1	ELEV	34	11.1	50.6	83.4	90.1	66.2	4.5	5.8	2.9	4.0	3.5
RE	GRIDCART	REC1	ELEV	34	3.0	2.7	2.3	0.4	1.7	2.2	3.0	3.7	3.5	2.6
RE	GRIDCART	REC1	ELEV	34	3.5	4.7	6.7	8.8	9.9	12.0	14.5	15.7	17.5	19.2
RE	GRIDCART	REC1	ELEV	34	20.7	22.7	23.8	25.5	27.4	29.2	31.5	33.3	31.4	
RE	GRIDCART	REC1	ELEV	34	37.3	43.7	59.8	75.2	57.6	73.6	94.9	125.4		
RE	GRIDCART	REC1	ELEV	34	149.3	180.1								
RE	GRIDCART	REC1	ELEV	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	9.2
RE	GRIDCART	REC1	ELEV	35	20.2	71.4	81.2	59.4	33.0	4.6	2.3	1.2	0.1	
RE	GRIDCART	REC1	ELEV	35	-0.6	0.1	0.1	1.7	1.6	1.6	1.4	4.4	4.9	0.6
RE	GRIDCART	REC1	ELEV	35	1.5	3.6	3.3	4.8	6.5	7.9	10.1	12.3	13.9	14.8
RE	GRIDCART	REC1	ELEV	35	16.8	18.8	20.9	23.0	24.6	24.7	27.1	28.8	31.5	
RE	GRIDCART	REC1	ELEV	35	33.8	37.7	39.5	50.5	54.7	70.0	109.5	94.9		
RE	GRIDCART	REC1	ELEV	35	117.5	145.3	192.3	208.5						
RE	GRIDCART	REC1	ELEV	36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	3.0	
RE	GRIDCART	REC1	ELEV	36	14.6	44.6	66.2	29.3	8.7	1.0	2.9	0.9	0.6	1.2
RE	GRIDCART	REC1	ELEV	36	0.9	1.7	0.9	1.6	1.8	1.8	2.0	4.1	2.3	3.2
RE	GRIDCART	REC1	ELEV	36	4.5	3.5	4.1	5.6	7.6	9.6	11.5	11.6	13.5	15.3
RE	GRIDCART	REC1	ELEV	36	17.4	19.0	20.5	21.3	24.0	24.8	29.9	34.3	39.7	
RE	GRIDCART	REC1	ELEV	36	47.1	69.8	75.6	89.6	117.9	128.9	129.7	156.5		
RE	GRIDCART	REC1	ELEV	36	173.2	197.9	168.1							
RE	GRIDCART	REC1	ELEV	37	0.0	0.0	0.0	0.0	0.0	0.0	0.6	14.9	10.4	
RE	GRIDCART	REC1	ELEV	37	23.6	66.2	31.4	4.4	1.0	0.4	0.0	0.0	0.0	0.8
RE	GRIDCART	REC1	ELEV	37	1.5	1.7	1.8	1.7	1.8	1.9	2.1	2.4	3.7	4.1
RE	GRIDCART	REC1	ELEV	37	3.9	3.6	4.2	5.1	7.2	9.0	10.8	10.2	12.0	14.1
RE	GRIDCART	REC1	ELEV	37	15.9	17.6	19.5	20.7	23.0	26.9	30.0	29.5	41.9	
RE	GRIDCART	REC1	ELEV	37	66.1	93.6	114.5	128.9	157.7	147.6	163.5	179.7		
RE	GRIDCART	REC1	ELEV	37	208.5	168.3	136.3							
RE	GRIDCART	REC1	ELEV	38	0.0	0.0	0.0	0.0	0.0	0.7	0.5	5.3	42.2	
RE	GRIDCART	REC1	ELEV	38	62.2	84.5	67.4	19.9	0.4	0.3	0.0	0.0	0.0	0.6
RE	GRIDCART	REC1	ELEV	38	1.9	1.6	1.8	1.8	1.5	1.9	1.7	2.4	2.3	3.6
RE	GRIDCART	REC1	ELEV	38	4.3	4.6	4.7	5.9	6.8	8.3	10.1	10.4	11.4	13.8
RE	GRIDCART	REC1	ELEV	38	15.2	16.8	17.6	19.1	23.3	18.2	21.0	35.0	39.9	
RE	GRIDCART	REC1	ELEV	38	65.6	97.5	125.2	121.7	122.7	148.8	145.1	180.3		
RE	GRIDCART	REC1	ELEV	38	181.2	122.0	109.6							
RE	GRIDCART	REC1	ELEV	39	0.0	0.0	0.0	0.0	0.6	0.5	0.5	0.4	33.9	58.3
RE	GRIDCART	REC1	ELEV	39	34.4	48.8	58.6	5.2	0.6	0.0	0.0	0.0	0.0	1.0
RE	GRIDCART	REC1	ELEV	39	1.8	1.8	1.8	1.7	1.8	1.8	1.8	2.2	1.8	2.8
RE	GRIDCART	REC1	ELEV	39	7.2	3.2	2.9	6.0	6.4	8.1	9.8	10.7	12.4	13.7
RE	GRIDCART	REC1	ELEV	39	15.6	16.3	16.6	18.5	19.0	19.6	19.5	29.3	39.5	
RE	GRIDCART	REC1	ELEV	39	64.1	84.0	87.4	91.7	98.3	101.6	90.6	125.6		
RE	GRIDCART	REC1	ELEV	39	114.1	89.4	81.6							
RE	GRIDCART	REC1	ELEV	40	0.0	0.0	0.0	0.5	0.4	0.4	0.5	10.7	59.4	31.9
RE	GRIDCART	REC1	ELEV	40	2.9	9.8	30.3	1.6	0.0	0.0	0.0	0.0	0.0	1.6
RE	GRIDCART	REC1	ELEV	40	1.5	1.4	1.6	1.4	1.3	1.9	1.9	1.6	2.5	2.9
RE	GRIDCART	REC1	ELEV	40	3.3	4.7	5.2	6.2	6.5	7.8	9.6	11.3	12.0	12.1
RE	GRIDCART	REC1	ELEV	40	14.0	15.3	16.1	17.0	17.7	16.3	20.6	30.5	22.3	
RE	GRIDCART	REC1	ELEV	40	36.8	47.3	51.4	58.1	47.9	60.2	57.9	75.0	75.7	
RE	GRIDCART	REC1	ELEV	40	66.4	50.3								
RE	GRIDCART	REC1	ELEV	41	0.0	0.0	0.0	0.0	0.0	0.4	4.6	41.7	7.1	0.5
RE	GRIDCART	REC1	ELEV	41	2.6	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
RE	GRIDCART	REC1	ELEV	41	1.7	1.4	8.1	2.3	1.4	1.7	2.0	2.2	3.2	4.0
RE	GRIDCART	REC1	ELEV	41	4.5	5.3	5.5	6.0	7.2	8.4	11.2	11.9	10.5	14.3
RE	GRIDCART	REC1	ELEV	41	14.2	15.9	17.1	17.9	19.2	20.9	23.3	24.1	25.2	
RE	GRIDCART	REC1	ELEV	41	25.6	34.4	30.5	30.4	35.2	33.4	36.1	67.8	49.3	
RE	GRIDCART	REC1	ELEV	41	62.4									
RE	GRIDCART	REC1	ELEV	42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	42	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.6	1.5	
RE	GRIDCART	REC1	ELEV	42	26.6	35.1	34.0	23.2	2.7	2.9	1.7	2.3	3.4	4.9
RE	GRIDCART	REC1	ELEV	42	4.1	6.3	5.4	4.9	5.9	6.9	8.4	10.3	10.5	11.4
RE	GRIDCART	REC1	ELEV	42	12.0	13.2	15.3	16.2	17.6	18.6	22.3	23.2	24.7	
RE	GRIDCART	REC1	ELEV	42	25.8	26.7	32.2	26.6	29.3	23.0	23.2	33.1	43.6	
RE	GRIDCART	REC1	ELEV	42	44.7	38.2								
RE	GRIDCART	REC1	ELEV	43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE	GRIDCART	REC1	ELEV	43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.6	2.5
RE	GRIDCART	REC1	ELEV	43	37.3	47.8	47.1	45.6	6.9	4.2	1.8	2.5	1.6	4.8
RE	GRIDCART	REC1	ELEV	43	3.6	4.2	5.3	2.5	7.3	3.6	8.8	8.1	8.3	10.5
RE	GRIDCART	REC1	ELEV	43	11.5	13.1	15.0	16.0	15.8	18.6	20.9	31.3	30.3	
RE	GRIDCART	REC1	ELEV	43	26.2	31.8	38.8	41.9	35.4	34.9	38.2	27.0	34.3	
RE	GRIDCART	REC1	ELEV	43	31.7	26.8								
RE	GRIDCART	REC1	ELEV	44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
RE	GRIDCART	REC1	ELEV	44	1.8	1.5	23.2	10.5	10.4	4.6	2.3	2.6	3.3	3.2
RE	GRIDCART	REC1	ELEV	44	3.2	4.2	5.1	5.7	7.1	7.4	7.8	8.8	10.0	11.5
RE	GRIDCART	REC1	ELEV	44	13.2	14.1	15.1	16.2	21.2	31.8	40.3	51.5	32.1	
RE	GRIDCART	REC1	ELEV	44	33.6	45.8	47.8	67.4	70.4	63.5	40.0	33.7	34.6	
RE	GRIDCART	REC1	ELEV	44	56.0									
RE	GRIDCART	REC1	ELEV	45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	45	0.0	1.7	5.8	7.4	7.1	2.1	2.3	2.4	2.5	2.7
RE	GRIDCART	REC1	ELEV	45	3.2	4.5	4.6	5.6	6.2	7.6	9.3	9.9	11.5	12.3
RE	GRIDCART	REC1	ELEV	45	13.0	14.7	21.6	24.6	54.2	59.2	46.2	63.8	43.3	
RE	GRIDCART	REC1	ELEV	45	52.0	55.1	70.0	67.9	75.4	62.1	63.2	40.6	35.5	
RE	GRIDCART	REC1	ELEV	46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	46	0.0	0.0	1.6	1.4	1.7	1.8	1.9	1.8	1.7	2.0
RE	GRIDCART	REC1	ELEV	46	3.4	3.9	4.3	5.7	7.4	8.4	8.9	10.2	10.9	10.9
RE	GRIDCART	REC1	ELEV	46	12.7	19.0	33.2	59.6	60.6	67.8	76.5	69.8	71.3	
RE	GRIDCART	REC1	ELEV	46	65.6	57.3	63.1	75.3	85.0	87.0	82.2	51.2	51.5	
RE	GRIDCART	REC1	ELEV	47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	47	0.0	0.0	0.0	1.5	1.9	1.8	1.7	1.5	1.4	1.9
RE	GRIDCART	REC1	ELEV	47	3.8	2.9	4.1	4.9	6.0	7.4	8.4	9.3	11.1	11.1
RE	GRIDCART	REC1	ELEV	47	13.8	30.6	48.4	62.8	69.9	77.1	73.9	74.7	71.5	
RE	GRIDCART	REC1	ELEV	47	80.7	82.6	70.1	82.8	90.3	103.1	87.7	81.4	62.5	
RE	GRIDCART	REC1	ELEV	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	2.2
RE	GRIDCART	REC1	ELEV	48	3.5	3.2	4.0	4.5	5.5	7.3	7.8	8.9	11.0	21.8
RE	GRIDCART	REC1	ELEV	48	40.5	41.3	68.2	63.3	74.5	75.5	74.5	73.0	79.2	
RE	GRIDCART	REC1	ELEV	48	88.5	87.2	83.4	89.6	101.4	107.3	101.3	99.2		
RE	GRIDCART	REC1	ELEV	48	95.6									
RE	GRIDCART	REC1	ELEV	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.6
RE	GRIDCART	REC1	ELEV	49	3.1	3.3	3.7	4.2	6.0	6.6	8.0	10.7	14.8	33.8
RE	GRIDCART	REC1	ELEV	49	43.0	47.8	71.1	79.5	79.4	69.9	63.1	62.1	70.7	
RE	GRIDCART	REC1	ELEV	49	81.9	87.2	88.2	98.2	92.6	95.4	85.2	101.4		
RE	GRIDCART	REC1	ELEV	49	102.9									
RE	GRIDCART	REC1	ELEV	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
RE	GRIDCART	REC1	ELEV	50	2.5	3.0	4.3	4.5	7.3	7.9	8.4	12.2	19.9	42.2
RE	GRIDCART	REC1	ELEV	50	58.1	74.4	66.1	72.7	76.2	60.2	57.0	61.9	64.6	
RE	GRIDCART	REC1	ELEV	50	67.2	56.9	49.9	75.8	70.6	68.2	70.2	72.2	86.9	
RE	GRIDCART	REC1	ELEV	51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	51	1.3	1.9	3.4	3.5	5.5	5.7	9.4	16.1	25.1	44.0
RE	GRIDCART	REC1	ELEV	51	63.5	75.6	75.1	79.1	62.4	57.0	60.9	57.6	57.4	
RE	GRIDCART	REC1	ELEV	51	57.6	52.5	58.7	81.2	61.9	71.6	85.0	73.1	101.2	
RE	GRIDCART	REC1	ELEV	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	52	0.0	1.1	2.5	2.9	3.8	6.0	9.4	14.2	31.8	40.5
RE	GRIDCART	REC1	ELEV	52	55.8	66.0	70.3	70.7	57.6	47.9	44.2	51.9	33.9	
RE	GRIDCART	REC1	ELEV	52	55.8	59.0	65.3	75.3	67.6	69.3	96.2	83.8	90.1	

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE	GRIDCART	REC1	ELEV	53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	53	0.0	2.8	3.9	2.7	2.8	4.5	9.3	22.9	27.3	32.7
RE	GRIDCART	REC1	ELEV	53	48.2	54.1	52.6	56.5	60.9	50.9	41.8	27.0	43.1	
RE	GRIDCART	REC1	ELEV	53	59.4	63.3	68.2	71.9	78.7	77.3	84.3	82.3	78.1	
RE	GRIDCART	REC1	ELEV	54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	54	0.0	0.0	1.2	2.0	2.0	4.4	10.8	30.7	40.6	34.9
RE	GRIDCART	REC1	ELEV	54	34.0	51.7	49.9	47.4	52.5	49.6	41.3	27.9	33.9	
RE	GRIDCART	REC1	ELEV	54	63.1	71.4	72.3	75.6	76.0	82.1	72.7	79.4	88.2	
RE	GRIDCART	REC1	ELEV	55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	55	0.0	0.0	1.3	1.3	2.1	8.1	15.9	31.6	39.6	43.8
RE	GRIDCART	REC1	ELEV	55	47.2	44.6	45.8	40.8	44.7	44.9	38.7	28.6	31.9	
RE	GRIDCART	REC1	ELEV	55	51.1	47.6	60.7	64.4	63.4	73.1	68.3	81.7	82.7	
RE	GRIDCART	REC1	ELEV	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	56	0.0	0.0	0.0	1.3	2.0	10.3	22.3	31.1	32.9	34.8
RE	GRIDCART	REC1	ELEV	56	37.6	44.4	37.7	37.0	42.0	40.6	35.6	20.6	30.3	
RE	GRIDCART	REC1	ELEV	56	25.9	42.0	50.1	61.4	41.0	52.0	64.9	72.6	64.6	
RE	GRIDCART	REC1	ELEV	57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	57	0.0	0.0	1.4	1.3	6.6	13.4	22.7	28.2	28.7	26.9
RE	GRIDCART	REC1	ELEV	57	26.2	33.4	25.5	27.9	32.9	35.3	36.7	34.5	15.4	
RE	GRIDCART	REC1	ELEV	57	18.3	39.0	52.1	32.4	51.0	65.8	55.5	64.7	55.1	
RE	GRIDCART	REC1	ELEV	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	58	0.0	0.0	1.6	6.5	19.4	21.3	23.0	21.7	26.4	
RE	GRIDCART	REC1	ELEV	58	24.7	17.1	18.3	9.3	24.5	29.2	28.9	26.9	34.8	
RE	GRIDCART	REC1	ELEV	58	20.2	11.9	38.2	39.1	26.3	38.0	49.4	50.9	41.0	
RE	GRIDCART	REC1	ELEV	58	58.9									
RE	GRIDCART	REC1	ELEV	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	59	0.0	1.6	2.6	20.0	19.6	20.0	19.9	19.4	18.4	
RE	GRIDCART	REC1	ELEV	59	14.7	14.7	14.7	13.8	19.9	15.8	17.4	20.3	29.5	
RE	GRIDCART	REC1	ELEV	59	34.6	19.7	11.6	31.7	20.7	30.7	39.2	37.2	43.9	
RE	GRIDCART	REC1	ELEV	59	61.5									
RE	GRIDCART	REC1	ELEV	60	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	60	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
RE	GRIDCART	REC1	ELEV	60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	60	0.0	0.0	-0.0	9.6	29.6	25.2	18.8	9.1	16.5	
RE	GRIDCART	REC1	ELEV	60	18.5	17.2	14.1	13.4	14.6	11.5	11.1	8.3	14.1	
RE	GRIDCART	REC1	ELEV	60	12.2	22.0	25.2	8.7	12.2	22.2	14.5	28.6	36.1	
RE	GRIDCART	REC1	ELEV	60	32.5	43.3	72.8							
RE	GRIDCART	REC1	ELEV	61	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	1.1
RE	GRIDCART	REC1	ELEV	61	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	ELEV	61	0.5	18.3	31.6	26.0	19.2	13.3	15.4	10.1	10.3	
RE	GRIDCART	REC1	ELEV	61	15.6	8.7	4.0	6.9	8.2	4.7	3.9	5.4	11.6	8.8
RE	GRIDCART	REC1	ELEV	61	6.4	7.7	8.6	12.5	17.2	31.4	31.5	50.9	79.8	
RE	GRIDCART	REC1	HILL	1	229.6	229.6	229.6	229.6	193.9	193.9	0.0	0.0		
RE	GRIDCART	REC1	HILL	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	1	1.7	0.0	0.2	11.0	8.7	103.6	103.6	103.6	103.6	

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE GRIDCART REC1 HILL	2	229.6	229.6	229.6	229.6	193.9	193.9	0.0	0.0				
RE GRIDCART REC1 HILL	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.1	51.1	51.1		
RE GRIDCART REC1 HILL	2	51.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	2	0.0	0.0	0.0	0.2	0.2	103.6	103.6	103.6	103.6			
RE GRIDCART REC1 HILL	2	103.6											
RE GRIDCART REC1 HILL	3	229.6	229.6	229.6	227.7	193.9	0.0	0.0	0.0	0.0			
RE GRIDCART REC1 HILL	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	3	0.0	0.0	0.0	0.0	0.0	51.1	51.1	51.1	51.1	51.1		
RE GRIDCART REC1 HILL	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	3	-0.1	4.7	0.2	0.2	103.6	103.6	103.6	103.6	103.6			
RE GRIDCART REC1 HILL	4	229.6	229.6	229.6	193.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	4	0.0	0.0	0.0	0.0	0.0	51.1	51.1	51.1	51.1	51.1		
RE GRIDCART REC1 HILL	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	4	25.6	25.6	0.3	0.3	103.6	103.6	103.6	103.6				
RE GRIDCART REC1 HILL	4	103.6											
RE GRIDCART REC1 HILL	5	229.6	229.6	229.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	0.0	
RE GRIDCART REC1 HILL	5	0.0	-0.3	0.0	-0.0	0.2	51.1	51.1	51.1	51.1	51.1	0.0	
RE GRIDCART REC1 HILL	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.6
RE GRIDCART REC1 HILL	5	25.6	6.3	7.5	101.2	103.6	103.6	103.6	103.6				
RE GRIDCART REC1 HILL	6	229.6	229.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	2.0
RE GRIDCART REC1 HILL	6	1.7	2.6	0.0	0.0	-0.1	0.1	51.1	51.1	0.0	0.0		
RE GRIDCART REC1 HILL	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8
RE GRIDCART REC1 HILL	6	4.8	5.2	3.9	10.9	103.6	103.6	103.6	103.6				
RE GRIDCART REC1 HILL	7	229.6	227.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	
RE GRIDCART REC1 HILL	7	-0.0	0.2	0.3	0.3	0.1	0.1	-0.1	-0.3	0.0	0.0		
RE GRIDCART REC1 HILL	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	7	4.0	6.8	3.9	1.4	25.5	29.3	29.5	103.6	307.0			
RE GRIDCART REC1 HILL	8	227.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	101.4	101.4	
RE GRIDCART REC1 HILL	8	101.3	0.9	5.8	0.9	0.8	0.5	0.3	-0.2	0.0	0.0		
RE GRIDCART REC1 HILL	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	8	1.1	6.2	4.3	3.6	25.5	25.5	17.4	307.7	307.7			
RE GRIDCART REC1 HILL	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	9	0.0	0.0	0.0	60.0	60.0	103.5	103.5	103.5	103.5			
RE GRIDCART REC1 HILL	9	103.4	101.4	5.3	4.9	1.1	0.9	0.6	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	9	1.1	4.1	1.7	3.9	6.2	25.8	307.0	307.7	307.7			
RE GRIDCART REC1 HILL	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	10	5.9	1.0	60.2	94.9	103.5	103.5	103.5	103.5				
RE GRIDCART REC1 HILL	10	103.5	103.5	103.4	101.4	4.7	1.2	1.1	1.0	0.4			
RE GRIDCART REC1 HILL	10	-0.2	8.1	5.5	4.3	4.2	5.3	1.1	1.1	1.5	1.1		
RE GRIDCART REC1 HILL	10	1.5	1.5	1.1	3.3	1.6	4.9	4.8	307.7	307.7			
RE GRIDCART REC1 HILL	10	307.7	307.7	307.7									
RE GRIDCART REC1 HILL	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	11	0.0	60.2	94.9	103.5	103.5	103.5	103.5	103.5				
RE GRIDCART REC1 HILL	11	103.5	103.5	103.5	103.4	101.4	1.1	4.7	4.5	4.4			
RE GRIDCART REC1 HILL	11	0.9	0.0	1.1	1.3	5.2	4.6	4.4	1.5	1.5	3.9	4.0	
RE GRIDCART REC1 HILL	11	2.8	3.4	2.8	4.2	4.7	307.7	307.7	307.7	307.7			

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE	GRIDCART	REC1	HILL	11	307.7	307.7								
RE	GRIDCART	REC1	HILL	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	12	0.0	94.9	113.7	100.9	103.5	113.7	113.7	103.5		
RE	GRIDCART	REC1	HILL	12	103.5	103.5	101.4	103.5	101.4	1.2	3.8	4.6	4.5	
RE	GRIDCART	REC1	HILL	12	1.1	0.8	1.1	1.5	5.5	5.0	3.8	4.5	1.2	5.3
RE	GRIDCART	REC1	HILL	12	3.8	3.6	10.8	5.3	307.7	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	12	307.7	307.7	307.7							
RE	GRIDCART	REC1	HILL	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	13	0.0	113.7	113.7	113.7	113.7	113.7	113.7	113.7	103.5	
RE	GRIDCART	REC1	HILL	13	103.4	103.5	103.5	103.5	103.4	1.2	3.7	4.3	4.3	
RE	GRIDCART	REC1	HILL	13	1.1	1.3	1.4	5.1	4.9	4.9	4.3	4.0	4.4	4.3
RE	GRIDCART	REC1	HILL	13	4.9	4.9	6.5	16.2	307.7	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	13	307.7	307.7	307.7							
RE	GRIDCART	REC1	HILL	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	14	113.7	113.7	113.7	113.7	113.7	100.9	100.7			
RE	GRIDCART	REC1	HILL	14	103.5	103.5	103.5	103.5	103.5	102.5	1.1	3.7		
RE	GRIDCART	REC1	HILL	14	3.9	4.1	3.6	3.4	4.0	3.2	4.0	3.3	3.7	5.1
RE	GRIDCART	REC1	HILL	14	5.8	7.0	6.4	7.4	5.2	32.7	32.8	307.7	307.7	
RE	GRIDCART	REC1	HILL	14	307.7	307.7	307.7	307.7						
RE	GRIDCART	REC1	HILL	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	15	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7		
RE	GRIDCART	REC1	HILL	15	113.7	113.7	113.7	113.7	103.5	103.5	101.4	1.1	3.3	
RE	GRIDCART	REC1	HILL	15	3.7	3.9	5.6	4.2	4.4	4.0	3.6	3.4	4.0	6.2
RE	GRIDCART	REC1	HILL	15	7.2	7.8	8.4	8.4	6.4	307.7	307.7	307.7	307.7	
RE	GRIDCART	REC1	HILL	15	307.7	307.7	307.7	307.7						
RE	GRIDCART	REC1	HILL	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
RE	GRIDCART	REC1	HILL	16	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7		
RE	GRIDCART	REC1	HILL	16	113.7	113.7	113.7	113.7	103.5	103.5	3.3	11.9		
RE	GRIDCART	REC1	HILL	16	3.5	3.7	3.8	3.6	3.8	3.6	3.9	5.6	5.4	5.5
RE	GRIDCART	REC1	HILL	16	7.7	9.4	11.6	9.6	8.7	8.4	307.7	307.7	307.7	
RE	GRIDCART	REC1	HILL	16	307.7	307.7	307.7	307.7	307.7					
RE	GRIDCART	REC1	HILL	17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	17	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	17	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7		
RE	GRIDCART	REC1	HILL	17	113.7	113.7	113.7	113.7	113.7	113.7	1.1	3.7	4.7	3.8
RE	GRIDCART	REC1	HILL	17	2.7	2.7	3.7	3.2	4.1	5.3	6.3	6.4	6.6	7.4
RE	GRIDCART	REC1	HILL	17	13.3	9.9	11.0	9.8	307.6	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	17	307.7	307.7	307.7	307.7	307.7					
RE	GRIDCART	REC1	HILL	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	18	0.0	0.0	0.0	5.1	4.8	0.0	0.0	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	18	113.7	113.7	113.7	113.7	113.7	113.7	113.7	113.7		
RE	GRIDCART	REC1	HILL	18	113.7	113.7	113.7	113.7	2.8	2.4	3.8	4.0	3.2	
RE	GRIDCART	REC1	HILL	18	3.4	5.7	5.0	5.3	5.7	8.9	9.2	9.0	8.6	9.1
RE	GRIDCART	REC1	HILL	18	10.1	11.5	12.6	12.3	12.0	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	18	307.7	307.7	307.7	307.7	307.7	307.7				
RE	GRIDCART	REC1	HILL	19	0.0	0.0	0.0	0.0	53.5	53.5	53.5	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	19	0.0	0.0	0.0	11.0	0.0	0.0	6.3	0.0	0.0	0.0
RE	GRIDCART	REC1	HILL	19	0.0	65.4	113.7	113.7	113.7	113.7	113.7	113.7	113.7	
RE	GRIDCART	REC1	HILL	19	113.7	113.7	113.7	113.7	3.0	2.3	4.0	3.7	7.5	
RE	GRIDCART	REC1	HILL	19	3.7	3.8	6.1	6.7	7.1	21.7	13.7	13.1	10.5	10.6
RE	GRIDCART	REC1	HILL	19	11.8	11.8	13.6	14.1	13.2	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	19	307.7	307.7	307.7	307.7	307.7	307.7				
RE	GRIDCART	REC1	HILL	20	0.0	0.0	0.0	53.5	53.5	53.5	53.5	53.5	0.0	0.0
RE	GRIDCART	REC1	HILL	20	0.0	0.0	14.1	14.1	0.0	0.0	0.0	5.3	0.0	0.0
RE	GRIDCART	REC1	HILL	20	1.1	65.4	113.7	65.4	113.7	113.7	113.7	113.7	113.7	
RE	GRIDCART	REC1	HILL	20	113.7	113.7	113.7	113.7	3.2	2.9	4.5	3.6	4.5	
RE	GRIDCART	REC1	HILL	20	4.8	4.8	6.1	8.0	8.4	9.0	9.9	11.6	12.1	12.4
RE	GRIDCART	REC1	HILL	20	12.9	13.8	14.3	15.3	15.5	307.7	307.7	307.7		

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE	GRIDCART	REC1	HILL	20	307.7	307.7	307.7	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	21	0.0	0.0	0.0	53.5	53.5	53.5	53.5	0.0 0.0
RE	GRIDCART	REC1	HILL	21	0.0	0.0	0.0	0.0	0.0	145.1	145.1	145.1
RE	GRIDCART	REC1	HILL	21	145.1	145.1	65.4	65.4	65.4	113.7	113.7	113.7
RE	GRIDCART	REC1	HILL	21	113.7	113.7	113.7	113.7	11.9	12.6	3.6	3.5 4.1
RE	GRIDCART	REC1	HILL	21	4.9	6.0	5.6	7.3	8.6	9.7	10.4	11.5 12.0 13.5
RE	GRIDCART	REC1	HILL	21	14.3	14.0	14.9	15.1	16.8	16.7	307.7	307.7
RE	GRIDCART	REC1	HILL	21	307.7	307.7	307.7	307.7	307.7	307.7	307.7	
RE	GRIDCART	REC1	HILL	22	0.0	0.0	0.0	53.5	53.5	53.5	53.5	0.0 0.0
RE	GRIDCART	REC1	HILL	22	0.0	0.0	0.0	145.1	145.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	22	150.1	150.1	145.1	59.9	53.9	65.4	65.4	113.7
RE	GRIDCART	REC1	HILL	22	113.7	113.7	113.7	3.1	4.3	3.8	4.7	4.1 4.3
RE	GRIDCART	REC1	HILL	22	4.7	5.4	6.6	6.7	7.7	9.6	11.0	12.3 12.8 13.0
RE	GRIDCART	REC1	HILL	22	14.2	14.9	15.6	16.0	16.8	18.0	18.4	307.7
RE	GRIDCART	REC1	HILL	22	307.7	307.7	307.7	307.7	307.7	307.7	307.7	
RE	GRIDCART	REC1	HILL	22	307.7							
RE	GRIDCART	REC1	HILL	23	0.0	0.0	0.0	53.5	53.5	53.5	53.5	0.0 0.0
RE	GRIDCART	REC1	HILL	23	0.0	0.0	145.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	23	150.1	150.1	59.9	59.9	59.9	65.4	65.4	4.5 3.9
RE	GRIDCART	REC1	HILL	23	4.1	3.6	3.0	3.6	3.8	4.3	5.4	5.9 6.9 8.7
RE	GRIDCART	REC1	HILL	23	11.3	9.0	13.0	13.1	13.5	16.2	16.3	16.0 16.9
RE	GRIDCART	REC1	HILL	23	18.8	19.0	19.0	21.1	28.4	213.1	307.7	307.7
RE	GRIDCART	REC1	HILL	23	307.7	307.7	307.7	307.7	307.7	307.7		
RE	GRIDCART	REC1	HILL	24	0.0	0.0	0.0	0.0	0.0	53.5	3.4	0.0 0.0 0.0
RE	GRIDCART	REC1	HILL	24	0.0	144.0	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	24	150.1	150.1	150.1	150.1	150.1	150.1	4.5	4.6
RE	GRIDCART	REC1	HILL	24	4.2	4.2	3.5	3.8	3.4	3.9	4.6	5.5 5.8 6.5 6.8
RE	GRIDCART	REC1	HILL	24	7.7	8.8	9.6	10.3	12.1	13.8	15.7	16.3 16.4
RE	GRIDCART	REC1	HILL	24	16.8	18.0	18.9	19.9	20.0	27.1	213.1	307.7
RE	GRIDCART	REC1	HILL	24	307.7	307.7	307.7	307.7	307.4	307.5	307.7	
RE	GRIDCART	REC1	HILL	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0 0.0
RE	GRIDCART	REC1	HILL	25	145.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	25	150.1	145.1	150.1	150.1	150.1	150.1	5.4	4.9
RE	GRIDCART	REC1	HILL	25	4.5	4.5	4.0	3.5	4.1	4.4	4.9	6.0 7.2 7.5 7.9
RE	GRIDCART	REC1	HILL	25	8.4	9.0	10.7	12.7	12.9	13.7	15.6	17.1 19.2
RE	GRIDCART	REC1	HILL	25	18.4	19.3	19.8	21.4	21.7	29.7	213.1	270.4
RE	GRIDCART	REC1	HILL	25	307.7	307.7	307.7	213.1	213.1	270.0	213.1	
RE	GRIDCART	REC1	HILL	26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0 0.0
RE	GRIDCART	REC1	HILL	26	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	26	145.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1 8.7
RE	GRIDCART	REC1	HILL	26	4.4	3.9	11.7	4.1	3.9	4.8	5.1	5.6 6.3 7.4
RE	GRIDCART	REC1	HILL	26	8.4	9.2	10.3	12.1	13.2	14.2	14.4	17.1 18.4
RE	GRIDCART	REC1	HILL	26	19.8	20.8	20.5	22.4	23.3	23.8	30.3	212.9
RE	GRIDCART	REC1	HILL	26	213.1	213.1	213.1	213.1	213.1	213.1	213.1	213.1
RE	GRIDCART	REC1	HILL	26	213.1							
RE	GRIDCART	REC1	HILL	27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0 0.0
RE	GRIDCART	REC1	HILL	27	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	27	150.1	150.1	150.1	150.1	150.1	150.1	150.1	4.5
RE	GRIDCART	REC1	HILL	27	3.9	4.1	7.0	3.6	3.6	4.5	4.9	5.4 6.6 7.4 9.0
RE	GRIDCART	REC1	HILL	27	9.7	11.4	11.9	12.9	15.0	15.6	16.8	19.3 21.3
RE	GRIDCART	REC1	HILL	27	22.0	21.9	24.1	24.8	25.7	30.4	198.1	198.1
RE	GRIDCART	REC1	HILL	27	213.0	213.1	213.1	213.1	213.1	212.9	198.1	
RE	GRIDCART	REC1	HILL	28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0 0.0
RE	GRIDCART	REC1	HILL	28	131.6	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	28	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	28	150.1	2.4	2.4	4.9	5.7	4.1	4.1	4.5 4.6 4.9
RE	GRIDCART	REC1	HILL	28	6.0	6.9	8.2	10.2	11.5	12.8	14.1	15.3 17.3
RE	GRIDCART	REC1	HILL	28	17.6	20.7	22.3	24.2	24.1	39.6	27.3	27.2 27.4
RE	GRIDCART	REC1	HILL	28	198.1	64.2	198.1	198.1	198.1	198.1	198.1	198.1 198.1
RE	GRIDCART	REC1	HILL	28	212.9							
RE	GRIDCART	REC1	HILL	29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 131.6
RE	GRIDCART	REC1	HILL	29	134.5	150.1	150.1	150.1	150.1	150.1	150.1	150.1
RE	GRIDCART	REC1	HILL	29	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE	GRIDCART	REC1	HILL	29	150.1	149.5	3.8	4.8	4.8	3.3	4.1	4.1	4.8	5.6
RE	GRIDCART	REC1	HILL	29	6.2	7.2	8.9	11.4	11.9	13.0	14.3	16.3	18.6	
RE	GRIDCART	REC1	HILL	29	19.0	21.1	23.2	26.0	26.2	43.1	29.8	30.6	29.5	
RE	GRIDCART	REC1	HILL	29	246.0	246.0	246.0	246.0	246.0	246.0	198.1	198.1		
RE	GRIDCART	REC1	HILL	29	323.5	326.3								
RE	GRIDCART	REC1	HILL	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	134.5	
RE	GRIDCART	REC1	HILL	30	134.5	150.1	150.1	150.1	150.1	150.1	150.1	150.1		
RE	GRIDCART	REC1	HILL	30	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1		
RE	GRIDCART	REC1	HILL	30	150.1	4.4	6.0	5.4	3.7	3.6	3.8	3.3	5.3	6.9
RE	GRIDCART	REC1	HILL	30	6.8	7.4	9.9	11.5	12.6	14.2	15.5	17.3	19.3	
RE	GRIDCART	REC1	HILL	30	21.2	22.0	24.3	28.1	28.2	28.3	30.9	32.3	31.6	
RE	GRIDCART	REC1	HILL	30	246.0	246.0	246.0	246.0	246.0	246.0	246.0	246.0		
RE	GRIDCART	REC1	HILL	30	326.3	326.3								
RE	GRIDCART	REC1	HILL	31	0.0	0.0	0.0	0.0	0.0	0.0	5.9	131.6	134.5	
RE	GRIDCART	REC1	HILL	31	134.5	150.1	150.1	150.1	150.1	150.1	150.1	120.0		
RE	GRIDCART	REC1	HILL	31	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1		
RE	GRIDCART	REC1	HILL	31	150.1	6.1	4.0	4.6	6.2	3.6	5.1	2.8	5.1	6.2
RE	GRIDCART	REC1	HILL	31	12.0	8.0	9.4	11.4	12.7	13.8	16.5	18.8	20.0	
RE	GRIDCART	REC1	HILL	31	21.8	22.9	25.4	28.5	31.7	31.4	33.1	35.8	245.6	
RE	GRIDCART	REC1	HILL	31	246.0	246.0	246.0	246.0	246.0	246.0	246.0	326.3		
RE	GRIDCART	REC1	HILL	31	326.3	323.5								
RE	GRIDCART	REC1	HILL	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	134.5	134.5	
RE	GRIDCART	REC1	HILL	32	134.5	134.5	134.5	134.5	134.5	134.5	134.5	134.5		
RE	GRIDCART	REC1	HILL	32	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1		
RE	GRIDCART	REC1	HILL	32	150.1	2.5	2.0	4.3	4.8	2.8	6.1	2.8	13.7	8.7
RE	GRIDCART	REC1	HILL	32	6.3	15.1	10.3	11.6	13.0	14.7	16.4	17.6	19.8	
RE	GRIDCART	REC1	HILL	32	21.6	24.1	24.8	27.9	30.9	33.9	34.0	222.2		
RE	GRIDCART	REC1	HILL	32	246.0	246.0	246.0	246.0	246.0	246.0	246.0	326.3		
RE	GRIDCART	REC1	HILL	32	323.5	323.5	246.0							
RE	GRIDCART	REC1	HILL	33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	134.5	134.5	
RE	GRIDCART	REC1	HILL	33	134.5	134.5	134.5	134.5	134.5	134.5	134.5	150.1		
RE	GRIDCART	REC1	HILL	33	150.1	150.1	150.1	150.1	150.1	150.1	150.1	150.1	6.4	
RE	GRIDCART	REC1	HILL	33	1.4	1.7	6.5	3.4	4.1	5.6	9.5	11.7	5.8	6.8
RE	GRIDCART	REC1	HILL	33	10.2	17.3	12.0	13.0	14.9	16.2	18.1	19.8	21.5	
RE	GRIDCART	REC1	HILL	33	23.2	26.6	27.8	30.4	33.1	36.8	223.0	246.0		
RE	GRIDCART	REC1	HILL	33	246.0	246.0	246.0	246.0	323.5	323.5	323.5			
RE	GRIDCART	REC1	HILL	33	323.5	323.1								
RE	GRIDCART	REC1	HILL	34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	134.5	134.5	
RE	GRIDCART	REC1	HILL	34	134.5	134.5	134.5	134.5	134.5	134.5	134.5	150.1		
RE	GRIDCART	REC1	HILL	34	150.1	150.1	150.1	150.1	150.1	150.1	150.1	129.9	6.7	
RE	GRIDCART	REC1	HILL	34	6.1	2.2	3.9	6.0	3.9	3.7	4.6	4.0	5.9	7.3
RE	GRIDCART	REC1	HILL	34	10.7	12.3	14.5	15.7	17.5	19.2	20.7	23.4	23.8	
RE	GRIDCART	REC1	HILL	34	25.5	27.4	29.2	31.5	223.0	228.0	246.0	246.0		
RE	GRIDCART	REC1	HILL	34	246.0	246.0	323.5	323.5	323.5	265.1	265.1			
RE	GRIDCART	REC1	HILL	34	246.0									
RE	GRIDCART	REC1	HILL	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	134.5	134.5	
RE	GRIDCART	REC1	HILL	35	134.5	134.5	134.5	134.5	134.5	134.5	134.5	150.1		
RE	GRIDCART	REC1	HILL	35	150.1	150.1	150.1	150.1	150.1	150.1	148.5	5.0	1.6	
RE	GRIDCART	REC1	HILL	35	1.6	6.2	4.4	4.9	1.8	5.8	3.6	3.9	5.5	6.8
RE	GRIDCART	REC1	HILL	35	10.1	15.9	13.9	15.0	16.8	18.8	20.9	23.0	24.6	
RE	GRIDCART	REC1	HILL	35	24.7	27.1	28.8	161.1	223.0	223.0	223.0	246.0	246.0	
RE	GRIDCART	REC1	HILL	35	246.0	246.0	246.0	246.0	246.0	246.0	246.0	246.0		
RE	GRIDCART	REC1	HILL	35	246.0									
RE	GRIDCART	REC1	HILL	36	0.0	0.0	0.0	0.0	0.0	5.6	101.5	131.6		
RE	GRIDCART	REC1	HILL	36	134.5	134.5	134.5	131.6	134.5	134.5	134.5	134.5		
RE	GRIDCART	REC1	HILL	36	150.1	150.1	150.1	150.1	148.5	4.0	6.0	1.6	1.8	
RE	GRIDCART	REC1	HILL	36	1.8	2.0	4.1	2.3	3.2	3.0	4.5	3.5	5.0	6.2
RE	GRIDCART	REC1	HILL	36	10.1	13.7	12.5	13.5	15.3	17.4	19.3	20.5	21.9	
RE	GRIDCART	REC1	HILL	36	24.0	24.8	143.0	161.1	223.0	223.0	223.0	223.0	228.0	
RE	GRIDCART	REC1	HILL	36	228.0	223.0	228.0	246.0	246.0	246.0	246.0	228.0		
RE	GRIDCART	REC1	HILL	36	265.1									
RE	GRIDCART	REC1	HILL	37	0.0	0.0	0.0	0.0	0.0	6.2	101.5	101.5		
RE	GRIDCART	REC1	HILL	37	131.6	131.6	101.5	134.5	134.5	134.5	134.5	134.5		

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE GRIDCART REC1 HILL	37	134.5	134.5	134.5	134.5	1.5	1.7	1.8	1.7	1.8
RE GRIDCART REC1 HILL	37	1.9	2.1	2.4	3.7	4.1	3.1	3.9	4.2	5.1
RE GRIDCART REC1 HILL	37	9.0	11.7	11.0	12.0	14.1	15.9	17.6	19.5	20.7
RE GRIDCART REC1 HILL	37	23.0	26.9	145.5	222.2	223.0	223.0	222.2	222.2	
RE GRIDCART REC1 HILL	37	222.2	161.1	223.0	223.0	223.0	223.0	246.0		
RE GRIDCART REC1 HILL	37	323.5								
RE GRIDCART REC1 HILL	38	0.0	0.0	0.0	0.0	0.0	74.0	101.5	101.5	
RE GRIDCART REC1 HILL	38	101.5	101.5	101.5	101.5	134.5	134.5	134.5		
RE GRIDCART REC1 HILL	38	134.5	134.5	134.5	134.5	1.9	1.6	1.8	1.8	1.5
RE GRIDCART REC1 HILL	38	1.9	1.7	2.4	2.3	4.3	4.5	4.3	4.6	5.3
RE GRIDCART REC1 HILL	38	8.3	10.1	10.7	11.4	13.8	15.2	17.2	17.9	19.1
RE GRIDCART REC1 HILL	38	23.3	26.5	161.1	222.2	223.0	223.0	161.1	145.5	
RE GRIDCART REC1 HILL	38	223.0	223.0	223.0	223.0	223.0	223.0	266.8		
RE GRIDCART REC1 HILL	38	323.5								
RE GRIDCART REC1 HILL	39	0.0	0.0	0.0	0.0	0.6	70.3	74.0	101.5	74.0
RE GRIDCART REC1 HILL	39	74.0	101.5	101.5	101.5	134.5	134.5	134.5	134.5	
RE GRIDCART REC1 HILL	39	134.5	134.5	1.0	1.8	1.8	1.8	1.7	1.8	1.8
RE GRIDCART REC1 HILL	39	2.2	3.6	2.8	4.5	7.2	7.9	6.5	6.7	7.1
RE GRIDCART REC1 HILL	39	10.7	12.4	14.1	15.6	16.3	16.6	18.5	19.0	19.6
RE GRIDCART REC1 HILL	39	145.5	222.2	223.0	222.9	222.8	223.0	223.0		
RE GRIDCART REC1 HILL	39	223.0	228.0	246.0	228.0	246.0	323.5	323.5		
RE GRIDCART REC1 HILL	40	0.0	0.0	0.0	7.8	7.4	70.3	73.7	74.0	70.3
RE GRIDCART REC1 HILL	40	101.5	101.5	101.5	101.5	128.6	134.5	134.5		
RE GRIDCART REC1 HILL	40	128.6	0.0	0.0	1.6	1.5	51.7	53.0	53.6	53.6
RE GRIDCART REC1 HILL	40	1.9	1.9	1.6	3.6	2.9	4.7	4.3	4.7	5.2
RE GRIDCART REC1 HILL	40	8.2	9.6	11.3	12.0	13.8	14.3	15.3	16.1	17.0
RE GRIDCART REC1 HILL	40	17.7	22.0	145.5	145.5	223.0	223.0	223.0	223.0	
RE GRIDCART REC1 HILL	40	228.0	246.0	246.0	266.8	266.8	323.2	323.5		
RE GRIDCART REC1 HILL	40	326.3								
RE GRIDCART REC1 HILL	41	0.0	0.0	0.0	0.0	0.0	70.3	70.3	44.4	101.5
RE GRIDCART REC1 HILL	41	101.5	101.5	101.5	101.5	101.5	101.5	101.5	101.5	0.0
RE GRIDCART REC1 HILL	41	0.0	0.0	3.2	53.0	53.0	53.6	53.6	53.6	53.6
RE GRIDCART REC1 HILL	41	1.8	2.0	2.2	3.4	4.0	4.6	7.0	7.1	5.5
RE GRIDCART REC1 HILL	41	8.4	11.2	11.9	15.4	14.3	14.2	15.9	17.1	17.9
RE GRIDCART REC1 HILL	41	19.2	20.9	222.2	223.0	223.0	223.0	228.0	246.0	
RE GRIDCART REC1 HILL	41	246.0	265.1	266.8	323.5	266.8	323.5	323.5		
RE GRIDCART REC1 HILL	42	0.0	0.0	0.0	0.0	0.0	44.4	70.3	70.3	74.0
RE GRIDCART REC1 HILL	42	101.5	101.5	101.5	101.5	101.5	101.5	101.5	0.0	0.0
RE GRIDCART REC1 HILL	42	0.0	1.8	50.0	53.0	53.0	53.0	53.6	53.6	53.6
RE GRIDCART REC1 HILL	42	53.6	1.7	2.3	3.4	4.9	4.1	11.4	5.4	5.3
RE GRIDCART REC1 HILL	42	6.9	8.4	10.3	10.5	11.4	12.0	13.9	15.3	16.2
RE GRIDCART REC1 HILL	42	18.6	18.6	22.3	23.2	222.8	223.0	223.0	223.0	
RE GRIDCART REC1 HILL	42	228.0	246.0	266.8	266.8	323.5	323.5	323.5		
RE GRIDCART REC1 HILL	42	323.5								
RE GRIDCART REC1 HILL	43	0.0	0.0	0.0	0.0	0.0	43.8	70.3	70.3	70.3
RE GRIDCART REC1 HILL	43	0.0	101.5	101.5	0.0	0.0	0.0	0.0	0.0	1.8
RE GRIDCART REC1 HILL	43	53.0	50.0	47.8	47.1	45.6	53.6	48.3	1.8	3.0
RE GRIDCART REC1 HILL	43	4.3	4.8	3.6	4.2	5.3	9.8	7.3	11.0	8.8
RE GRIDCART REC1 HILL	43	8.9	10.5	11.5	13.1	15.0	16.0	17.3	18.6	65.7
RE GRIDCART REC1 HILL	43	63.9	66.3	223.0	223.0	223.0	223.0	228.0	228.0	
RE GRIDCART REC1 HILL	43	246.0	266.8	323.5	323.5	323.5				
RE GRIDCART REC1 HILL	44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.0
RE GRIDCART REC1 HILL	44	53.0	53.6	53.6	50.3	53.6	26.1	25.7	2.3	2.6
RE GRIDCART REC1 HILL	44	3.3	3.2	3.2	4.2	5.3	7.0	7.1	7.4	8.4
RE GRIDCART REC1 HILL	44	10.0	11.5	13.2	14.6	16.5	82.9	82.9	65.7	66.3
RE GRIDCART REC1 HILL	44	66.3	77.7	222.7	222.9	223.0	223.0	223.0	223.0	
RE GRIDCART REC1 HILL	44	228.0	266.8	323.1	266.8					
RE GRIDCART REC1 HILL	45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.3
RE GRIDCART REC1 HILL	45	53.0	53.0	53.6	48.6	39.9	29.4	26.0	2.3	2.9
RE GRIDCART REC1 HILL	45	2.5	3.5	2.7	3.2	4.5	4.6	10.0	6.2	8.9
RE GRIDCART REC1 HILL	45	9.9	11.5	12.3	14.0	82.9	82.9	83.8	54.2	65.7

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE GRIDCART REC1 HILL	45	83.8	63.8	78.4	75.7	74.9	74.9	81.9	83.9	223.0	
RE GRIDCART REC1 HILL	45	223.0	223.0	266.8							
RE GRIDCART REC1 HILL	46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	46	0.0	0.0	39.9	39.9	1.7	1.8	1.9	1.8	1.7	2.0
RE GRIDCART REC1 HILL	46	4.4	3.4	3.9	4.3	5.7	7.4	8.4	8.9	10.2	11.1
RE GRIDCART REC1 HILL	46	11.7	88.7	88.7	88.7	82.9	83.8	83.8	76.5	69.8	
RE GRIDCART REC1 HILL	46	71.3	83.0	89.8	63.1	87.6	87.2	109.1	110.5		
RE GRIDCART REC1 HILL	46	112.1	110.5								
RE GRIDCART REC1 HILL	47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	47	0.0	0.0	0.0	1.5	1.9	1.8	1.7	1.5	1.4	1.9
RE GRIDCART REC1 HILL	47	3.8	2.9	4.5	4.9	6.8	7.4	8.4	9.3	11.1	79.4
RE GRIDCART REC1 HILL	47	88.7	88.7	88.7	82.9	82.9	77.1	76.4	74.7	74.1	
RE GRIDCART REC1 HILL	47	81.7	82.6	110.0	110.0	111.4	111.4	112.1	97.3		
RE GRIDCART REC1 HILL	47	107.3									
RE GRIDCART REC1 HILL	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	2.2
RE GRIDCART REC1 HILL	48	3.5	3.2	4.0	16.9	16.9	7.3	8.1	9.6	74.7	77.1
RE GRIDCART REC1 HILL	48	48.3	88.7	88.7	88.7	81.7	75.5	74.5	74.4	84.4	
RE GRIDCART REC1 HILL	48	90.7	89.6	86.3	110.0	107.5	110.0	108.2	99.2		
RE GRIDCART REC1 HILL	48	103.9									
RE GRIDCART REC1 HILL	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.6
RE GRIDCART REC1 HILL	49	11.9	3.9	4.2	4.8	7.7	6.9	8.0	10.7	77.5	77.3
RE GRIDCART REC1 HILL	49	78.6	88.7	88.7	88.6	81.2	69.9	74.1	69.1	88.8	
RE GRIDCART REC1 HILL	49	83.9	91.0	94.3	98.2	104.4	111.2	111.2	107.6		
RE GRIDCART REC1 HILL	49	102.9									
RE GRIDCART REC1 HILL	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
RE GRIDCART REC1 HILL	50	2.5	3.0	4.3	4.5	7.3	7.9	20.6	45.1	77.5	77.3
RE GRIDCART REC1 HILL	50	77.5	74.4	77.7	72.7	80.6	83.3	70.3	76.5	77.8	
RE GRIDCART REC1 HILL	50	93.3	95.6	110.0	109.1	110.0	111.2	111.2	107.6		
RE GRIDCART REC1 HILL	50	103.7									
RE GRIDCART REC1 HILL	51	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	51	0.0	1.3	1.9	3.4	3.7	7.0	8.8	9.4	45.1	73.4
RE GRIDCART REC1 HILL	51	74.8	75.1	78.5	77.1	80.4	77.2	57.0	66.1	76.2	
RE GRIDCART REC1 HILL	51	75.8	93.3	93.3	88.3	88.0	102.1	102.1	102.1		
RE GRIDCART REC1 HILL	51	108.7	101.2								
RE GRIDCART REC1 HILL	52	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	52	0.0	0.0	1.1	2.5	2.9	7.0	8.4	9.4	53.8	62.1
RE GRIDCART REC1 HILL	52	64.5	64.2	68.3	78.1	76.4	70.9	59.8	65.8	60.9	
RE GRIDCART REC1 HILL	52	83.8	83.8	83.8	88.3	88.3	86.8	102.1	97.0	98.1	
RE GRIDCART REC1 HILL	52	90.5									
RE GRIDCART REC1 HILL	53	108.1	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	53	0.0	0.0	2.8	3.9	2.7	7.2	9.2	9.6	26.2	47.8
RE GRIDCART REC1 HILL	53	64.1	62.3	69.8	78.1	56.5	60.9	57.9	57.9	75.7	
RE GRIDCART REC1 HILL	53	75.7	82.7	88.4	88.4	80.9	95.0	96.0	93.4	82.3	
RE GRIDCART REC1 HILL	53	80.1									
RE GRIDCART REC1 HILL	54	108.1	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	54	0.0	0.0	1.1	1.2	2.0	7.5	9.6	34.7	34.1	40.6
RE GRIDCART REC1 HILL	54	47.8	63.2	51.7	49.9	57.3	52.5	54.7	53.2	63.6	

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE GRIDCART REC1 HILL	54	88.2	70.5	88.2	88.4	87.1	93.4	83.6	88.5	79.4	
RE GRIDCART REC1 HILL	54	88.2									
RE GRIDCART REC1 HILL	55	108.1	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	55	0.0	0.0	0.0	1.3	1.8	2.1	8.1	27.8	33.4	41.5
RE GRIDCART REC1 HILL	55	43.8	49.9	52.6	52.1	40.8	44.7	44.9	52.6	53.1	
RE GRIDCART REC1 HILL	55	88.2	88.2	88.4	88.2	88.7	93.4	74.5	69.6	87.5	
RE GRIDCART REC1 HILL	55	91.0									
RE GRIDCART REC1 HILL	56	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	56	0.0	0.0	0.0	0.0	1.3	2.0	23.3	26.4	31.6	35.0
RE GRIDCART REC1 HILL	56	38.3	38.2	48.2	50.6	37.3	44.6	44.5	47.3	51.8	
RE GRIDCART REC1 HILL	56	32.0	88.4	88.2	87.1	61.4	93.4	93.4	72.9	72.6	
RE GRIDCART REC1 HILL	56	101.2									
RE GRIDCART REC1 HILL	57	108.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	57	0.0	0.0	0.0	1.4	1.9	13.8	20.8	27.5	28.2	29.6
RE GRIDCART REC1 HILL	57	31.8	48.0	48.0	35.8	27.9	32.9	37.3	37.1	37.0	
RE GRIDCART REC1 HILL	57	36.9	88.2	57.9	57.9	88.7	70.2	70.2	70.0	66.3	
RE GRIDCART REC1 HILL	57	81.8									
RE GRIDCART REC1 HILL	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	58	0.0	0.0	1.6	21.5	19.4	22.9	24.5	25.4	26.4	
RE GRIDCART REC1 HILL	58	32.4	26.5	18.3	33.4	33.4	30.9	28.9	37.8	39.1	
RE GRIDCART REC1 HILL	58	38.2	57.9	45.7	39.1	70.2	70.2	69.7	56.3	81.4	
RE GRIDCART REC1 HILL	58	58.9									
RE GRIDCART REC1 HILL	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	59	0.0	34.4	35.9	25.8	19.6	21.6	21.3	22.4	22.1	
RE GRIDCART REC1 HILL	59	27.7	14.7	20.9	33.1	27.3	28.6	22.8	29.3	32.2	
RE GRIDCART REC1 HILL	59	40.1	40.3	57.9	31.7	33.5	50.5	51.1	51.7	106.8	
RE GRIDCART REC1 HILL	59	106.8									
RE GRIDCART REC1 HILL	60	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	60	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	
RE GRIDCART REC1 HILL	60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	60	0.0	0.0	35.8	36.0	34.3	25.2	18.8	19.4	19.9	
RE GRIDCART REC1 HILL	60	20.0	17.2	14.1	13.4	14.8	11.5	11.1	9.2	14.1	
RE GRIDCART REC1 HILL	60	16.9	24.2	35.7	40.3	19.1	22.2	27.8	31.9	45.2	
RE GRIDCART REC1 HILL	60	106.8	106.8	106.8							
RE GRIDCART REC1 HILL	61	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	1.1
RE GRIDCART REC1 HILL	61	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
RE GRIDCART REC1 HILL	61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RE GRIDCART REC1 HILL	61	36.0	36.0	31.6	26.0	19.2	13.3	15.4	17.3	17.7	
RE GRIDCART REC1 HILL	61	15.9	12.3	4.0	8.1	8.2	6.8	6.9	21.3	25.8	34.2
RE GRIDCART REC1 HILL	61	6.4	16.8	76.0	76.8	81.0	81.4	106.8	106.8		
RE GRIDCART REC1 HILL	61	106.6									
RE GRIDCART REC1 FLAG	1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE GRIDCART REC1 FLAG	1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE GRIDCART REC1 FLAG	1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE GRIDCART REC1 FLAG	1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE GRIDCART REC1 FLAG	1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE GRIDCART REC1 FLAG	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE GRIDCART REC1 FLAG	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE GRIDCART REC1 FLAG	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE GRIDCART REC1 FLAG	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE GRIDCART REC1 FLAG	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE GRIDCART REC1 FLAG	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Attachment 1 Example Moeling Input Shipping at Berth.ami														
RE	GRIDCART	REC1	FLAG	55	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	55	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	55	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	56	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	56	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	56	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	56	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	56	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	56	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	57	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	57	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	57	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	57	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	57	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	57	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	58	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	58	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	58	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	58	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	58	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	58	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	59	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	59	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	59	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	59	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	59	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	59	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	60	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	60	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	60	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	60	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	60	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	60	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	61	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	61	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	61	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	61	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	61	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	FLAG	61	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
RE	GRIDCART	REC1	END											
RE	DISCCART	553800	4197250	1.2	113.66	1.8								
RE	DISCCART	553850	4197250	7.76	113.66	1.8								
RE	DISCCART	553900	4197250	7.52	113.66	1.8								
RE	DISCCART	553950	4197250	14.48	113.66	1.8								
RE	DISCCART	554000	4197250	13.22	113.66	1.8								
RE	DISCCART	554050	4197250	38.54	113.66	1.8								
RE	DISCCART	554100	4197250	67.1	113.66	1.8								
RE	DISCCART	554150	4197250	74.36	113.66	1.8								
RE	DISCCART	554200	4197250	80.55	113.66	1.8								
RE	DISCCART	554250	4197250	74.15	113.66	1.8								
RE	DISCCART	554300	4197250	77.64	113.66	1.8								
RE	DISCCART	554350	4197250	92.05	113.66	1.8								
RE	DISCCART	554400	4197250	80.35	113.66	1.8								
RE	DISCCART	554450	4197250	54.76	113.66	1.8								
RE	DISCCART	554500	4197250	13.66	113.66	1.8								
RE	DISCCART	554550	4197250	9.67	113.66	1.8								
RE	DISCCART	554600	4197250	7.91	113.66	1.8								
RE	DISCCART	553800	4197300	1.18	113.66	1.8								
RE	DISCCART	553850	4197300	18.96	113.66	1.8								
RE	DISCCART	553900	4197300	30.97	113.66	1.8								
RE	DISCCART	553950	4197300	25.99	113.66	1.8								
RE	DISCCART	554000	4197300	35.32	113.66	1.8								
RE	DISCCART	554050	4197300	52.71	113.66	1.8								

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	554100	4197300	65.84	113.66	1.8
RE DISCCART	554150	4197300	48.85	113.66	1.8
RE DISCCART	554200	4197300	54.07	113.66	1.8
RE DISCCART	554250	4197300	54.35	113.66	1.8
RE DISCCART	554300	4197300	64.01	113.66	1.8
RE DISCCART	554350	4197300	66.48	113.66	1.8
RE DISCCART	554400	4197300	59.88	113.66	1.8
RE DISCCART	554450	4197300	66.68	113.66	1.8
RE DISCCART	554500	4197300	16.29	113.66	1.8
RE DISCCART	554550	4197300	9.62	113.66	1.8
RE DISCCART	554600	4197300	8.08	113.66	1.8
RE DISCCART	553750	4197350	1.15	113.66	1.8
RE DISCCART	553800	4197350	3.36	113.66	1.8
RE DISCCART	553850	4197350	19.73	113.66	1.8
RE DISCCART	553900	4197350	38.01	113.66	1.8
RE DISCCART	553950	4197350	44.83	113.66	1.8
RE DISCCART	554000	4197350	55.77	113.66	1.8
RE DISCCART	554050	4197350	61.64	113.66	1.8
RE DISCCART	554100	4197350	56.79	113.66	1.8
RE DISCCART	554150	4197350	32.21	113.66	1.8
RE DISCCART	554200	4197350	32.62	113.66	1.8
RE DISCCART	554250	4197350	38.04	113.66	1.8
RE DISCCART	554300	4197350	53.98	113.66	1.8
RE DISCCART	554350	4197350	51.86	113.66	1.8
RE DISCCART	554400	4197350	41.81	113.66	1.8
RE DISCCART	554450	4197350	52.71	113.66	1.8
RE DISCCART	554500	4197350	29.66	113.66	1.8
RE DISCCART	554550	4197350	6.92	113.66	1.8
RE DISCCART	554600	4197350	6.24	113.66	1.8
RE DISCCART	553550	4197400	2.63	113.66	1.8
RE DISCCART	553600	4197400	1.12	113.66	1.8
RE DISCCART	553650	4197400	1.14	113.66	1.8
RE DISCCART	553700	4197400	1.12	113.66	1.8
RE DISCCART	553750	4197400	5.23	113.66	1.8
RE DISCCART	553800	4197400	8.18	113.66	1.8
RE DISCCART	553850	4197400	14.42	113.66	1.8
RE DISCCART	553900	4197400	26.54	113.66	1.8
RE DISCCART	553950	4197400	50.38	113.66	1.8
RE DISCCART	554000	4197400	50.55	113.66	1.8
RE DISCCART	554050	4197400	36.78	113.66	1.8
RE DISCCART	554100	4197400	45.44	113.66	1.8
RE DISCCART	554150	4197400	26.69	113.66	1.8
RE DISCCART	554200	4197400	21.2	113.66	1.8
RE DISCCART	554250	4197400	29.79	113.66	1.8
RE DISCCART	554300	4197400	42.17	113.66	1.8
RE DISCCART	554350	4197400	33.88	113.66	1.8
RE DISCCART	554400	4197400	25.65	113.66	1.8
RE DISCCART	554450	4197400	35.95	113.66	1.8
RE DISCCART	554500	4197400	27.78	113.66	1.8
RE DISCCART	554550	4197400	5.68	113.66	1.8
RE DISCCART	554600	4197400	4.61	113.66	1.8
RE DISCCART	553550	4197450	10.16	113.66	1.8
RE DISCCART	553600	4197450	17.45	113.66	1.8
RE DISCCART	553650	4197450	23	113.66	1.8
RE DISCCART	553700	4197450	20.31	113.66	1.8
RE DISCCART	553750	4197450	16.78	113.66	1.8
RE DISCCART	553800	4197450	16.18	113.66	1.8
RE DISCCART	553850	4197450	18.92	113.66	1.8
RE DISCCART	553900	4197450	35.57	113.66	1.8
RE DISCCART	553950	4197450	49.75	113.66	1.8
RE DISCCART	554000	4197450	33.37	113.66	1.8
RE DISCCART	554050	4197450	20.61	113.66	1.8
RE DISCCART	554100	4197450	23.28	113.66	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	554150	4197450	14.82	113.66	1.8
RE DISCCART	554200	4197450	13.79	113.66	1.8
RE DISCCART	554250	4197450	13.4	113.66	1.8
RE DISCCART	554300	4197450	20.09	113.66	1.8
RE DISCCART	554350	4197450	14.62	113.66	1.8
RE DISCCART	554400	4197450	12.46	113.66	1.8
RE DISCCART	554450	4197450	12.57	113.66	1.8
RE DISCCART	554500	4197450	16.3	113.66	1.8
RE DISCCART	554550	4197450	4.09	113.66	1.8
RE DISCCART	554600	4197450	4.64	113.66	1.8
RE DISCCART	556550	4197450	4.07	4.07	1.8
RE DISCCART	556600	4197450	4.13	4.73	1.8
RE DISCCART	553550	4197500	1.12	113.66	1.8
RE DISCCART	553600	4197500	18.23	113.66	1.8
RE DISCCART	553650	4197500	27.58	113.66	1.8
RE DISCCART	553700	4197500	31.01	113.66	1.8
RE DISCCART	553750	4197500	34.59	113.66	1.8
RE DISCCART	553800	4197500	32.37	113.66	1.8
RE DISCCART	553850	4197500	35.37	113.66	1.8
RE DISCCART	553900	4197500	43.32	113.66	1.8
RE DISCCART	553950	4197500	44.1	113.66	1.8
RE DISCCART	554000	4197500	27.35	113.66	1.8
RE DISCCART	554050	4197500	4.1	113.66	1.8
RE DISCCART	554100	4197500	6.41	113.66	1.8
RE DISCCART	554150	4197500	6.34	113.66	1.8
RE DISCCART	554200	4197500	7.24	113.66	1.8
RE DISCCART	554250	4197500	5.35	113.66	1.8
RE DISCCART	554300	4197500	2.92	113.66	1.8
RE DISCCART	554350	4197500	3.7	113.66	1.8
RE DISCCART	554400	4197500	4.48	113.66	1.8
RE DISCCART	554450	4197500	3.43	113.66	1.8
RE DISCCART	554500	4197500	3.3	113.66	1.8
RE DISCCART	554550	4197500	3.5	113.66	1.8
RE DISCCART	554600	4197500	3.77	113.66	1.8
RE DISCCART	556400	4197500	3.15	3.15	1.8
RE DISCCART	556450	4197500	3.13	3.13	1.8
RE DISCCART	556500	4197500	3.43	3.43	1.8
RE DISCCART	556550	4197500	3.68	3.68	1.8
RE DISCCART	556600	4197500	3.64	3.64	1.8
RE DISCCART	553550	4197550	1.11	113.66	1.8
RE DISCCART	553600	4197550	17.66	113.66	1.8
RE DISCCART	553650	4197550	23.7	113.66	1.8
RE DISCCART	553700	4197550	34.6	113.66	1.8
RE DISCCART	553750	4197550	40.31	113.66	1.8
RE DISCCART	553800	4197550	45.01	113.66	1.8
RE DISCCART	553850	4197550	49.18	113.66	1.8
RE DISCCART	553900	4197550	51.62	113.66	1.8
RE DISCCART	553950	4197550	38.55	113.66	1.8
RE DISCCART	554000	4197550	21.68	113.66	1.8
RE DISCCART	554050	4197550	12.71	113.66	1.8
RE DISCCART	554100	4197550	6.17	113.66	1.8
RE DISCCART	554150	4197550	4.48	113.66	1.8
RE DISCCART	554200	4197550	3.84	113.66	1.8
RE DISCCART	554250	4197550	3.33	113.66	1.8
RE DISCCART	554300	4197550	3.06	113.66	1.8
RE DISCCART	554350	4197550	3.02	113.66	1.8
RE DISCCART	554400	4197550	2.8	113.66	1.8
RE DISCCART	554450	4197550	3.24	113.66	1.8
RE DISCCART	554500	4197550	3.57	113.66	1.8
RE DISCCART	554550	4197550	3.68	113.66	1.8
RE DISCCART	554600	4197550	3.92	113.66	1.8
RE DISCCART	556350	4197550	3.41	3.41	1.8
RE DISCCART	556400	4197550	3.35	3.35	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556450	4197550	3.35	3.35	1.8
RE DISCCART	556500	4197550	3.51	3.51	1.8
RE DISCCART	556550	4197550	3.86	3.86	1.8
RE DISCCART	556600	4197550	3.66	3.66	1.8
RE DISCCART	553550	4197600	1.77	113.66	1.8
RE DISCCART	553600	4197600	19.94	113.66	1.8
RE DISCCART	553650	4197600	26.94	113.66	1.8
RE DISCCART	553700	4197600	40.24	65.41	1.8
RE DISCCART	553750	4197600	46.91	46.91	1.8
RE DISCCART	553800	4197600	40.18	113.66	1.8
RE DISCCART	553850	4197600	40.75	113.66	1.8
RE DISCCART	553900	4197600	35.86	113.66	1.8
RE DISCCART	553950	4197600	33.5	113.66	1.8
RE DISCCART	554000	4197600	13.8	113.66	1.8
RE DISCCART	554050	4197600	6.99	113.66	1.8
RE DISCCART	554100	4197600	5.03	113.66	1.8
RE DISCCART	554150	4197600	4.04	113.66	1.8
RE DISCCART	554200	4197600	3.72	113.66	1.8
RE DISCCART	554250	4197600	3.57	113.66	1.8
RE DISCCART	554300	4197600	2.89	113.66	1.8
RE DISCCART	554350	4197600	2.79	113.66	1.8
RE DISCCART	554400	4197600	2.82	113.66	1.8
RE DISCCART	554450	4197600	2.99	113.66	1.8
RE DISCCART	554500	4197600	3.73	113.66	1.8
RE DISCCART	554550	4197600	3.8	113.66	1.8
RE DISCCART	554600	4197600	3.68	113.66	1.8
RE DISCCART	556300	4197600	3.7	3.7	1.8
RE DISCCART	556350	4197600	3.68	3.68	1.8
RE DISCCART	556400	4197600	3.71	3.71	1.8
RE DISCCART	556450	4197600	3.61	3.61	1.8
RE DISCCART	556500	4197600	3.66	3.66	1.8
RE DISCCART	556550	4197600	4.28	4.28	1.8
RE DISCCART	556600	4197600	3.83	3.83	1.8
RE DISCCART	553550	4197650	1.14	113.66	1.8
RE DISCCART	553600	4197650	13.97	113.66	1.8
RE DISCCART	553650	4197650	21.75	113.66	1.8
RE DISCCART	553700	4197650	34.73	113.66	1.8
RE DISCCART	553750	4197650	46.58	65.29	1.8
RE DISCCART	553800	4197650	33.1	113.66	1.8
RE DISCCART	553850	4197650	31.65	113.66	1.8
RE DISCCART	553900	4197650	24.14	113.66	1.8
RE DISCCART	553950	4197650	23.02	113.66	1.8
RE DISCCART	554000	4197650	9.11	113.66	1.8
RE DISCCART	554050	4197650	4.95	113.66	1.8
RE DISCCART	554100	4197650	4.11	113.66	1.8
RE DISCCART	554150	4197650	3.93	113.66	1.8
RE DISCCART	554200	4197650	3.69	113.66	1.8
RE DISCCART	554250	4197650	3.16	113.66	1.8
RE DISCCART	554300	4197650	2.7	113.66	1.8
RE DISCCART	554350	4197650	2.82	113.66	1.8
RE DISCCART	554400	4197650	2.89	113.66	1.8
RE DISCCART	554450	4197650	3.02	113.66	1.8
RE DISCCART	554500	4197650	4.29	113.66	1.8
RE DISCCART	554550	4197650	4.1	113.66	1.8
RE DISCCART	554600	4197650	3.69	113.66	1.8
RE DISCCART	556200	4197650	3.62	3.62	1.8
RE DISCCART	556250	4197650	4.77	4.77	1.8
RE DISCCART	556300	4197650	4	4	1.8
RE DISCCART	556350	4197650	3.86	3.86	1.8
RE DISCCART	556400	4197650	3.78	3.78	1.8
RE DISCCART	556450	4197650	3.76	3.76	1.8
RE DISCCART	556500	4197650	3.87	3.87	1.8
RE DISCCART	556550	4197650	4.18	4.18	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556600	4197650	3.83	3.83	1.8
RE DISCCART	553500	4197700	1.09	113.66	1.8
RE DISCCART	553550	4197700	11.38	113.66	1.8
RE DISCCART	553600	4197700	25.53	113.49	1.8
RE DISCCART	553650	4197700	30.57	65.41	1.8
RE DISCCART	553700	4197700	36.9	65.41	1.8
RE DISCCART	553750	4197700	45.12	65.41	1.8
RE DISCCART	553800	4197700	28.79	113.66	1.8
RE DISCCART	553850	4197700	24.18	113.66	1.8
RE DISCCART	553900	4197700	19.66	113.66	1.8
RE DISCCART	553950	4197700	12.39	113.66	1.8
RE DISCCART	554000	4197700	6.59	113.66	1.8
RE DISCCART	554050	4197700	4.76	113.66	1.8
RE DISCCART	554100	4197700	3.98	113.66	1.8
RE DISCCART	554150	4197700	3.86	113.66	1.8
RE DISCCART	554200	4197700	2.94	113.66	1.8
RE DISCCART	554250	4197700	2.82	113.66	1.8
RE DISCCART	554300	4197700	2.68	113.66	1.8
RE DISCCART	554350	4197700	2.61	113.66	1.8
RE DISCCART	554400	4197700	2.55	113.66	1.8
RE DISCCART	554450	4197700	2.28	113.66	1.8
RE DISCCART	554500	4197700	2.57	113.66	1.8
RE DISCCART	554550	4197700	2.74	113.66	1.8
RE DISCCART	554600	4197700	2.48	113.66	1.8
RE DISCCART	556200	4197700	3.72	3.72	1.8
RE DISCCART	556250	4197700	3.86	3.86	1.8
RE DISCCART	556300	4197700	3.83	3.83	1.8
RE DISCCART	556350	4197700	3.77	3.77	1.8
RE DISCCART	556400	4197700	3.61	3.61	1.8
RE DISCCART	556450	4197700	3.64	3.64	1.8
RE DISCCART	556500	4197700	3.75	3.75	1.8
RE DISCCART	556550	4197700	3.95	3.95	1.8
RE DISCCART	556600	4197700	4.09	4.09	1.8
RE DISCCART	553450	4197750	1.09	113.66	1.8
RE DISCCART	553500	4197750	13.47	113.66	1.8
RE DISCCART	553550	4197750	16.09	113.66	1.8
RE DISCCART	553600	4197750	31.57	65.41	1.8
RE DISCCART	553650	4197750	44.22	65.41	1.8
RE DISCCART	553700	4197750	55.71	65.41	1.8
RE DISCCART	553750	4197750	48.27	65.41	1.8
RE DISCCART	553800	4197750	25.44	113.66	1.8
RE DISCCART	553850	4197750	19.74	113.66	1.8
RE DISCCART	553900	4197750	15.76	113.66	1.8
RE DISCCART	553950	4197750	10.31	113.66	1.8
RE DISCCART	554000	4197750	5.91	113.66	1.8
RE DISCCART	554050	4197750	4.78	113.66	1.8
RE DISCCART	554100	4197750	3.83	113.66	1.8
RE DISCCART	554150	4197750	3.77	113.66	1.8
RE DISCCART	554200	4197750	3.22	113.66	1.8
RE DISCCART	554250	4197750	2.7	113.66	1.8
RE DISCCART	554300	4197750	2.83	113.66	1.8
RE DISCCART	554350	4197750	2.84	113.66	1.8
RE DISCCART	554400	4197750	2.87	113.66	1.8
RE DISCCART	554450	4197750	2.82	113.66	1.8
RE DISCCART	554500	4197750	2.67	113.66	1.8
RE DISCCART	554550	4197750	2.47	113.66	1.8
RE DISCCART	554600	4197750	2.75	113.66	1.8
RE DISCCART	556050	4197750	3.58	7.41	1.8
RE DISCCART	556100	4197750	4.11	4.11	1.8
RE DISCCART	556150	4197750	3.91	3.91	1.8
RE DISCCART	556200	4197750	4.42	4.42	1.8
RE DISCCART	556250	4197750	3.86	3.86	1.8
RE DISCCART	556300	4197750	4.44	4.44	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556350	4197750	4.34	4.34	1.8
RE DISCCART	556400	4197750	4.26	4.26	1.8
RE DISCCART	556450	4197750	4.33	4.33	1.8
RE DISCCART	556500	4197750	4.39	4.39	1.8
RE DISCCART	556550	4197750	4.59	4.59	1.8
RE DISCCART	556600	4197750	4.57	4.57	1.8
RE DISCCART	553400	4197800	1.13	113.66	1.8
RE DISCCART	553450	4197800	11.37	65.41	1.8
RE DISCCART	553500	4197800	20.06	65.41	1.8
RE DISCCART	553550	4197800	30.45	65.41	1.8
RE DISCCART	553600	4197800	39.3	65.41	1.8
RE DISCCART	553650	4197800	59.79	65.41	1.8
RE DISCCART	553700	4197800	62.66	63.85	1.8
RE DISCCART	553750	4197800	43.34	65.41	1.8
RE DISCCART	553800	4197800	25.61	113.66	1.8
RE DISCCART	553850	4197800	17.85	113.66	1.8
RE DISCCART	553900	4197800	12.45	113.66	1.8
RE DISCCART	553950	4197800	8.61	113.66	1.8
RE DISCCART	554000	4197800	6.03	113.66	1.8
RE DISCCART	554050	4197800	4.87	113.66	1.8
RE DISCCART	554100	4197800	3.06	113.66	1.8
RE DISCCART	554150	4197800	3.87	113.66	1.8
RE DISCCART	554200	4197800	3.5	113.66	1.8
RE DISCCART	554250	4197800	2.99	113.66	1.8
RE DISCCART	554300	4197800	2.82	113.66	1.8
RE DISCCART	554350	4197800	2.88	113.66	1.8
RE DISCCART	554400	4197800	2.74	113.66	1.8
RE DISCCART	554450	4197800	2.66	113.66	1.8
RE DISCCART	554500	4197800	2.77	113.66	1.8
RE DISCCART	554550	4197800	2.74	113.66	1.8
RE DISCCART	554600	4197800	2.77	113.66	1.8
RE DISCCART	555950	4197800	3.56	3.56	1.8
RE DISCCART	556000	4197800	3.62	3.62	1.8
RE DISCCART	556050	4197800	4.11	4.11	1.8
RE DISCCART	556100	4197800	4.27	4.27	1.8
RE DISCCART	556150	4197800	4	4	1.8
RE DISCCART	556200	4197800	4.54	4.54	1.8
RE DISCCART	556250	4197800	4.05	4.05	1.8
RE DISCCART	556300	4197800	4.67	4.67	1.8
RE DISCCART	556350	4197800	4.74	4.74	1.8
RE DISCCART	556400	4197800	4.84	4.84	1.8
RE DISCCART	556450	4197800	5.15	5.15	1.8
RE DISCCART	556500	4197800	5.06	5.06	1.8
RE DISCCART	556550	4197800	5.13	5.13	1.8
RE DISCCART	556600	4197800	4.77	4.77	1.8
RE DISCCART	553350	4197850	1.11	65.41	1.8
RE DISCCART	553400	4197850	7.07	65.41	1.8
RE DISCCART	553450	4197850	10.79	65.41	1.8
RE DISCCART	553500	4197850	26.01	65.41	1.8
RE DISCCART	553550	4197850	38.65	65.41	1.8
RE DISCCART	553600	4197850	46.79	65.41	1.8
RE DISCCART	553650	4197850	56.03	65.41	1.8
RE DISCCART	553700	4197850	52	65.41	1.8
RE DISCCART	553750	4197850	40.9	65.41	1.8
RE DISCCART	553800	4197850	28.64	113.42	1.8
RE DISCCART	553850	4197850	16.39	113.66	1.8
RE DISCCART	553900	4197850	11.26	113.66	1.8
RE DISCCART	553950	4197850	8.15	113.66	1.8
RE DISCCART	554000	4197850	6.01	113.66	1.8
RE DISCCART	554050	4197850	4.84	113.66	1.8
RE DISCCART	554100	4197850	2.83	113.66	1.8
RE DISCCART	554150	4197850	3.8	113.66	1.8
RE DISCCART	554200	4197850	3.55	113.66	1.8

	Attachment 1 Example			Moeling	Input	Shipping at Berth.ami
RE DISCCART	554250	4197850	3.19	113.66	1.8	
RE DISCCART	554300	4197850	2.87	113.66	1.8	
RE DISCCART	554350	4197850	2.6	113.66	1.8	
RE DISCCART	554400	4197850	2.96	113.66	1.8	
RE DISCCART	554450	4197850	3.01	113.66	1.8	
RE DISCCART	554500	4197850	3.02	113.66	1.8	
RE DISCCART	554550	4197850	2.75	113.66	1.8	
RE DISCCART	554600	4197850	2.87	113.66	1.8	
RE DISCCART	555850	4197850	3.23	6.06	1.8	
RE DISCCART	555900	4197850	2.95	3.43	1.8	
RE DISCCART	555950	4197850	3.55	3.55	1.8	
RE DISCCART	556000	4197850	3.81	3.81	1.8	
RE DISCCART	556050	4197850	4.01	4.01	1.8	
RE DISCCART	556100	4197850	4.31	4.31	1.8	
RE DISCCART	556150	4197850	4.29	4.29	1.8	
RE DISCCART	556200	4197850	4.76	4.76	1.8	
RE DISCCART	556250	4197850	4.21	4.21	1.8	
RE DISCCART	556300	4197850	4.88	4.88	1.8	
RE DISCCART	556350	4197850	5.44	5.44	1.8	
RE DISCCART	556400	4197850	5.4	6.49	1.8	
RE DISCCART	556450	4197850	5.22	5.22	1.8	
RE DISCCART	556500	4197850	5.12	5.12	1.8	
RE DISCCART	556550	4197850	5.11	5.11	1.8	
RE DISCCART	556600	4197850	4.99	4.99	1.8	
RE DISCCART	553300	4197900	1.07	65.41	1.8	
RE DISCCART	553350	4197900	17.54	65.41	1.8	
RE DISCCART	553400	4197900	16.82	65.41	1.8	
RE DISCCART	553450	4197900	12.37	65.41	1.8	
RE DISCCART	553500	4197900	15.85	65.41	1.8	
RE DISCCART	553550	4197900	21.27	65.41	1.8	
RE DISCCART	553600	4197900	32.8	65.41	1.8	
RE DISCCART	553650	4197900	45.89	65.41	1.8	
RE DISCCART	553700	4197900	44.8	65.41	1.8	
RE DISCCART	553750	4197900	39.66	65.41	1.8	
RE DISCCART	553800	4197900	24.33	113.53	1.8	
RE DISCCART	553850	4197900	18.69	113.66	1.8	
RE DISCCART	553900	4197900	14.53	113.66	1.8	
RE DISCCART	553950	4197900	11.73	113.66	1.8	
RE DISCCART	554000	4197900	8.8	113.66	1.8	
RE DISCCART	554050	4197900	5.06	113.66	1.8	
RE DISCCART	554100	4197900	4.49	113.66	1.8	
RE DISCCART	554150	4197900	3.87	113.66	1.8	
RE DISCCART	555750	4197900	3.08	9.34	1.8	
RE DISCCART	555800	4197900	3.11	7.39	1.8	
RE DISCCART	555850	4197900	3.7	3.7	1.8	
RE DISCCART	555900	4197900	3.27	3.27	1.8	
RE DISCCART	555950	4197900	3.91	3.91	1.8	
RE DISCCART	556000	4197900	3.91	3.91	1.8	
RE DISCCART	556050	4197900	4.07	4.07	1.8	
RE DISCCART	556100	4197900	4.64	4.64	1.8	
RE DISCCART	556150	4197900	4.35	4.35	1.8	
RE DISCCART	556200	4197900	4.99	4.99	1.8	
RE DISCCART	556250	4197900	4.33	4.33	1.8	
RE DISCCART	556300	4197900	5.51	5.51	1.8	
RE DISCCART	556350	4197900	5.12	5.12	1.8	
RE DISCCART	556400	4197900	5.42	5.42	1.8	
RE DISCCART	556450	4197900	5.28	5.28	1.8	
RE DISCCART	556500	4197900	5.09	5.09	1.8	
RE DISCCART	556550	4197900	5.23	5.23	1.8	
RE DISCCART	556600	4197900	5.16	5.16	1.8	
RE DISCCART	553300	4197950	11.69	65.41	1.8	
RE DISCCART	553350	4197950	28.43	65.41	1.8	
RE DISCCART	553400	4197950	29.39	65.41	1.8	

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	553450	4197950	20.81	65.41	1.8
RE DISCCART	553500	4197950	21.15	65.41	1.8
RE DISCCART	553550	4197950	23.83	65.41	1.8
RE DISCCART	553600	4197950	38.27	65.41	1.8
RE DISCCART	553650	4197950	42.22	65.41	1.8
RE DISCCART	553700	4197950	32.1	65.41	1.8
RE DISCCART	553750	4197950	35.08	65.41	1.8
RE DISCCART	553800	4197950	21.01	65.41	1.8
RE DISCCART	553850	4197950	16.86	113.66	1.8
RE DISCCART	553900	4197950	22.16	113.66	1.8
RE DISCCART	553950	4197950	17.14	113.66	1.8
RE DISCCART	554000	4197950	11.91	113.66	1.8
RE DISCCART	554050	4197950	8.09	113.66	1.8
RE DISCCART	554100	4197950	4.27	113.66	1.8
RE DISCCART	554150	4197950	3.54	113.66	1.8
RE DISCCART	555600	4197950	3.4	11.53	1.8
RE DISCCART	555650	4197950	3.37	11.41	1.8
RE DISCCART	555700	4197950	3.38	10.23	1.8
RE DISCCART	555750	4197950	3.52	3.52	1.8
RE DISCCART	555800	4197950	3.3	3.3	1.8
RE DISCCART	555850	4197950	3.17	3.17	1.8
RE DISCCART	555900	4197950	3.29	3.29	1.8
RE DISCCART	555950	4197950	3.95	3.95	1.8
RE DISCCART	556000	4197950	3.91	3.91	1.8
RE DISCCART	556050	4197950	4.54	4.54	1.8
RE DISCCART	556100	4197950	4.82	4.82	1.8
RE DISCCART	556150	4197950	4.41	4.41	1.8
RE DISCCART	556200	4197950	5.17	5.17	1.8
RE DISCCART	556250	4197950	4.44	4.75	1.8
RE DISCCART	556300	4197950	5.42	5.42	1.8
RE DISCCART	556350	4197950	5.31	5.31	1.8
RE DISCCART	556400	4197950	5.43	5.43	1.8
RE DISCCART	556450	4197950	5.68	5.68	1.8
RE DISCCART	556500	4197950	5.24	5.24	1.8
RE DISCCART	556550	4197950	5.35	5.35	1.8
RE DISCCART	556600	4197950	5.35	5.35	1.8
RE DISCCART	553200	4198000	1.08	65.41	1.8
RE DISCCART	553250	4198000	4.91	65.41	1.8
RE DISCCART	553300	4198000	13.8	65.41	1.8
RE DISCCART	553350	4198000	23.38	65.41	1.8
RE DISCCART	553400	4198000	33	65.41	1.8
RE DISCCART	553450	4198000	33.83	65.41	1.8
RE DISCCART	553500	4198000	32.09	65.41	1.8
RE DISCCART	553550	4198000	33.23	65.41	1.8
RE DISCCART	553600	4198000	39.6	65.41	1.8
RE DISCCART	553650	4198000	36.7	65.41	1.8
RE DISCCART	553700	4198000	27.73	65.41	1.8
RE DISCCART	553750	4198000	18.76	65.41	1.8
RE DISCCART	553800	4198000	12.93	113.66	1.8
RE DISCCART	553850	4198000	11.69	113.66	1.8
RE DISCCART	553900	4198000	16.44	113.66	1.8
RE DISCCART	553950	4198000	13.49	113.66	1.8
RE DISCCART	554000	4198000	8.12	113.66	1.8
RE DISCCART	554050	4198000	4.68	113.66	1.8
RE DISCCART	554100	4198000	4.06	113.66	1.8
RE DISCCART	555450	4198000	3.54	3.54	1.8
RE DISCCART	555500	4198000	3.27	3.27	1.8
RE DISCCART	555550	4198000	3.04	11.53	1.8
RE DISCCART	555600	4198000	3.62	3.62	1.8
RE DISCCART	555650	4198000	3.46	3.46	1.8
RE DISCCART	555700	4198000	3.64	3.64	1.8
RE DISCCART	555750	4198000	3.58	3.58	1.8
RE DISCCART	555800	4198000	3.49	3.49	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555850	4198000	3.45	3.45	1.8
RE DISCCART	555900	4198000	3.39	3.74	1.8
RE DISCCART	555950	4198000	3.91	3.91	1.8
RE DISCCART	556000	4198000	4.13	4.13	1.8
RE DISCCART	556050	4198000	4.28	4.28	1.8
RE DISCCART	556100	4198000	4.77	4.77	1.8
RE DISCCART	556150	4198000	4.48	4.48	1.8
RE DISCCART	556200	4198000	4.95	4.95	1.8
RE DISCCART	556250	4198000	4.59	5.06	1.8
RE DISCCART	556300	4198000	5.86	5.86	1.8
RE DISCCART	556350	4198000	6.16	6.16	1.8
RE DISCCART	556400	4198000	6.03	6.03	1.8
RE DISCCART	556450	4198000	5.64	5.64	1.8
RE DISCCART	556500	4198000	5.46	5.46	1.8
RE DISCCART	556550	4198000	5.78	5.78	1.8
RE DISCCART	556600	4198000	5.62	5.62	1.8
RE DISCCART	553150	4198050	1.02	144.71	1.8
RE DISCCART	553200	4198050	7.62	65.41	1.8
RE DISCCART	553250	4198050	11.97	65.41	1.8
RE DISCCART	553300	4198050	16.78	65.41	1.8
RE DISCCART	553350	4198050	24.67	65.41	1.8
RE DISCCART	553400	4198050	36.44	47.72	1.8
RE DISCCART	553450	4198050	44.99	47.51	1.8
RE DISCCART	553500	4198050	45.92	47.72	1.8
RE DISCCART	553550	4198050	41.11	47.51	1.8
RE DISCCART	553600	4198050	42.33	46.14	1.8
RE DISCCART	553650	4198050	41.42	65.41	1.8
RE DISCCART	553700	4198050	29.65	65.41	1.8
RE DISCCART	553750	4198050	18.19	65.41	1.8
RE DISCCART	553800	4198050	9.95	113.66	1.8
RE DISCCART	553850	4198050	8.1	113.66	1.8
RE DISCCART	553900	4198050	5.42	113.66	1.8
RE DISCCART	553950	4198050	4.37	113.66	1.8
RE DISCCART	554000	4198050	3.91	113.66	1.8
RE DISCCART	555450	4198050	3.69	3.69	1.8
RE DISCCART	555500	4198050	3.61	3.61	1.8
RE DISCCART	555550	4198050	3.16	3.16	1.8
RE DISCCART	555600	4198050	3.59	3.59	1.8
RE DISCCART	555650	4198050	3.6	3.6	1.8
RE DISCCART	555700	4198050	3.76	3.76	1.8
RE DISCCART	555750	4198050	3.8	3.8	1.8
RE DISCCART	555800	4198050	3.76	3.76	1.8
RE DISCCART	555850	4198050	3.76	3.76	1.8
RE DISCCART	555900	4198050	3.57	3.74	1.8
RE DISCCART	555950	4198050	4.03	4.03	1.8
RE DISCCART	556000	4198050	4.29	4.29	1.8
RE DISCCART	556050	4198050	4.44	4.44	1.8
RE DISCCART	556100	4198050	4.67	4.67	1.8
RE DISCCART	556150	4198050	4.68	4.68	1.8
RE DISCCART	556200	4198050	5.04	5.04	1.8
RE DISCCART	556250	4198050	4.74	5.3	1.8
RE DISCCART	556300	4198050	5.5	5.5	1.8
RE DISCCART	556350	4198050	5.91	5.91	1.8
RE DISCCART	556400	4198050	6.08	6.08	1.8
RE DISCCART	556450	4198050	5.88	5.88	1.8
RE DISCCART	556500	4198050	5.7	5.7	1.8
RE DISCCART	556550	4198050	5.83	5.83	1.8
RE DISCCART	556600	4198050	5.79	5.79	1.8
RE DISCCART	553100	4198100	1.26	145.07	1.8
RE DISCCART	553150	4198100	10.82	59.92	1.8
RE DISCCART	553200	4198100	11.47	59.92	1.8
RE DISCCART	553250	4198100	16.26	59.92	1.8
RE DISCCART	553300	4198100	23.5	53.91	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	553350	4198100	31.7	47.72	1.8
RE DISCCART	553400	4198100	43.03	47.34	1.8
RE DISCCART	553450	4198100	40.59	47.72	1.8
RE DISCCART	553500	4198100	37.02	47.72	1.8
RE DISCCART	553550	4198100	28.06	65.41	1.8
RE DISCCART	553600	4198100	30.82	65.41	1.8
RE DISCCART	553650	4198100	38.33	46.14	1.8
RE DISCCART	553700	4198100	27.66	65.41	1.8
RE DISCCART	553750	4198100	17.01	65.41	1.8
RE DISCCART	555450	4198100	3.55	3.55	1.8
RE DISCCART	555500	4198100	3.56	3.56	1.8
RE DISCCART	555550	4198100	3.2	3.44	1.8
RE DISCCART	555600	4198100	3.74	3.74	1.8
RE DISCCART	555650	4198100	3.85	3.85	1.8
RE DISCCART	555700	4198100	3.8	3.8	1.8
RE DISCCART	555750	4198100	3.92	3.92	1.8
RE DISCCART	555800	4198100	3.88	3.88	1.8
RE DISCCART	555850	4198100	3.94	3.94	1.8
RE DISCCART	555900	4198100	3.69	3.83	1.8
RE DISCCART	555950	4198100	4.41	4.41	1.8
RE DISCCART	556000	4198100	4.44	4.44	1.8
RE DISCCART	556050	4198100	4.67	4.67	1.8
RE DISCCART	556100	4198100	4.84	4.84	1.8
RE DISCCART	556150	4198100	4.76	4.76	1.8
RE DISCCART	556200	4198100	5.11	5.11	1.8
RE DISCCART	556250	4198100	4.9	5.42	1.8
RE DISCCART	556300	4198100	5.91	5.91	1.8
RE DISCCART	556350	4198100	5.77	5.77	1.8
RE DISCCART	556400	4198100	5.99	5.99	1.8
RE DISCCART	556450	4198100	6.24	6.24	1.8
RE DISCCART	556500	4198100	6.1	6.1	1.8
RE DISCCART	556550	4198100	6.11	6.11	1.8
RE DISCCART	556600	4198100	6.13	6.13	1.8
RE DISCCART	553150	4198150	18.9	59.92	1.8
RE DISCCART	553200	4198150	19.1	59.92	1.8
RE DISCCART	553250	4198150	21.75	59.92	1.8
RE DISCCART	553300	4198150	36.02	52.26	1.8
RE DISCCART	553350	4198150	34.84	47.88	1.8
RE DISCCART	553400	4198150	35.55	47.34	1.8
RE DISCCART	553450	4198150	28.07	47.88	1.8
RE DISCCART	553500	4198150	22.81	65.41	1.8
RE DISCCART	553550	4198150	18.08	65.41	1.8
RE DISCCART	553600	4198150	17.82	65.41	1.8
RE DISCCART	553650	4198150	26.97	65.41	1.8
RE DISCCART	553700	4198150	25.39	65.41	1.8
RE DISCCART	553750	4198150	12.29	65.41	1.8
RE DISCCART	555450	4198150	4.03	4.03	1.8
RE DISCCART	555500	4198150	3.84	3.84	1.8
RE DISCCART	555550	4198150	3.26	3.64	1.8
RE DISCCART	555600	4198150	3.8	3.8	1.8
RE DISCCART	555650	4198150	3.94	3.94	1.8
RE DISCCART	555700	4198150	4.03	4.03	1.8
RE DISCCART	555750	4198150	4.27	4.27	1.8
RE DISCCART	555800	4198150	4.06	4.06	1.8
RE DISCCART	555850	4198150	4.45	4.45	1.8
RE DISCCART	555900	4198150	3.97	3.97	1.8
RE DISCCART	555950	4198150	4.44	4.44	1.8
RE DISCCART	556000	4198150	4.68	4.68	1.8
RE DISCCART	556050	4198150	4.76	4.76	1.8
RE DISCCART	556100	4198150	4.82	4.82	1.8
RE DISCCART	556150	4198150	4.91	4.91	1.8
RE DISCCART	556200	4198150	5.27	5.27	1.8
RE DISCCART	556250	4198150	5.09	5.09	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556300	4198150	6.03	6.03	1.8
RE DISCCART	556350	4198150	5.87	5.87	1.8
RE DISCCART	556400	4198150	6.13	6.13	1.8
RE DISCCART	556450	4198150	6.5	6.5	1.8
RE DISCCART	556500	4198150	6.57	6.57	1.8
RE DISCCART	556550	4198150	6.62	6.62	1.8
RE DISCCART	556600	4198150	6.44	6.44	1.8
RE DISCCART	553150	4198200	26.51	59.92	1.8
RE DISCCART	553200	4198200	28.55	59.92	1.8
RE DISCCART	553250	4198200	32.25	53.91	1.8
RE DISCCART	553300	4198200	41.7	47.61	1.8
RE DISCCART	553350	4198200	38.28	52.26	1.8
RE DISCCART	553400	4198200	27.13	53.91	1.8
RE DISCCART	553450	4198200	24.76	53.91	1.8
RE DISCCART	553500	4198200	15.23	65.41	1.8
RE DISCCART	553900	4198200	3.21	65.41	1.8
RE DISCCART	553950	4198200	2.92	113.66	1.8
RE DISCCART	555450	4198200	3.9	3.9	1.8
RE DISCCART	555500	4198200	3.89	3.89	1.8
RE DISCCART	555550	4198200	3.47	3.77	1.8
RE DISCCART	555600	4198200	4.05	4.05	1.8
RE DISCCART	555650	4198200	4.14	4.14	1.8
RE DISCCART	555700	4198200	4.14	4.14	1.8
RE DISCCART	555750	4198200	4.34	4.34	1.8
RE DISCCART	555800	4198200	4.26	4.26	1.8
RE DISCCART	555850	4198200	4.51	4.51	1.8
RE DISCCART	555900	4198200	4.13	4.13	1.8
RE DISCCART	555950	4198200	4.6	4.6	1.8
RE DISCCART	556000	4198200	4.74	4.74	1.8
RE DISCCART	556050	4198200	4.91	4.91	1.8
RE DISCCART	556100	4198200	5.28	5.28	1.8
RE DISCCART	556150	4198200	5.07	5.07	1.8
RE DISCCART	556200	4198200	5.41	5.41	1.8
RE DISCCART	556250	4198200	5.28	5.28	1.8
RE DISCCART	556300	4198200	5.97	5.97	1.8
RE DISCCART	556350	4198200	6.06	6.06	1.8
RE DISCCART	556400	4198200	6.64	6.64	1.8
RE DISCCART	556450	4198200	6.54	6.54	1.8
RE DISCCART	556500	4198200	6.74	6.74	1.8
RE DISCCART	556550	4198200	6.73	6.73	1.8
RE DISCCART	556600	4198200	6.73	6.73	1.8
RE DISCCART	553250	4198250	42.29	53.91	1.8
RE DISCCART	553300	4198250	46.94	46.94	1.8
RE DISCCART	553350	4198250	35.34	53.91	1.8
RE DISCCART	553800	4198250	4.89	65.41	1.8
RE DISCCART	553850	4198250	4.28	65.41	1.8
RE DISCCART	553900	4198250	3.58	65.41	1.8
RE DISCCART	553950	4198250	2.78	65.41	1.8
RE DISCCART	554000	4198250	3.12	65.41	1.8
RE DISCCART	555450	4198250	3.94	3.94	1.8
RE DISCCART	555500	4198250	4.08	4.08	1.8
RE DISCCART	555550	4198250	3.77	3.77	1.8
RE DISCCART	555600	4198250	4.24	4.24	1.8
RE DISCCART	555650	4198250	4.3	4.3	1.8
RE DISCCART	555700	4198250	4.29	4.29	1.8
RE DISCCART	555750	4198250	4.42	4.42	1.8
RE DISCCART	555800	4198250	4.34	4.34	1.8
RE DISCCART	555850	4198250	4.62	4.62	1.8
RE DISCCART	555900	4198250	4.39	4.39	1.8
RE DISCCART	555950	4198250	4.8	4.8	1.8
RE DISCCART	556000	4198250	5.04	5.04	1.8
RE DISCCART	556050	4198250	5.06	5.06	1.8
RE DISCCART	556100	4198250	5.35	5.35	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556150	4198250	5.27	5.27	1.8
RE DISCCART	556200	4198250	5.67	5.67	1.8
RE DISCCART	556250	4198250	5.57	5.57	1.8
RE DISCCART	556300	4198250	6.2	6.2	1.8
RE DISCCART	556350	4198250	6.45	6.45	1.8
RE DISCCART	556400	4198250	6.71	6.71	1.8
RE DISCCART	556450	4198250	6.68	6.68	1.8
RE DISCCART	556500	4198250	6.82	6.82	1.8
RE DISCCART	556550	4198250	7.07	7.07	1.8
RE DISCCART	556600	4198250	6.98	6.98	1.8
RE DISCCART	553650	4198300	3.75	65.41	1.8
RE DISCCART	553700	4198300	3.34	65.41	1.8
RE DISCCART	553750	4198300	3.28	65.41	1.8
RE DISCCART	553800	4198300	3.31	65.41	1.8
RE DISCCART	553850	4198300	3.53	65.41	1.8
RE DISCCART	553900	4198300	3.53	65.41	1.8
RE DISCCART	553950	4198300	3.18	65.41	1.8
RE DISCCART	555450	4198300	4.34	4.34	1.8
RE DISCCART	555500	4198300	4.34	4.34	1.8
RE DISCCART	555550	4198300	4.17	4.17	1.8
RE DISCCART	555600	4198300	4.33	4.33	1.8
RE DISCCART	555650	4198300	4.59	4.59	1.8
RE DISCCART	555700	4198300	4.43	4.43	1.8
RE DISCCART	555750	4198300	4.65	4.65	1.8
RE DISCCART	555800	4198300	4.5	4.5	1.8
RE DISCCART	555850	4198300	4.91	4.91	1.8
RE DISCCART	555900	4198300	4.56	4.56	1.8
RE DISCCART	555950	4198300	4.92	4.92	1.8
RE DISCCART	556000	4198300	5.04	5.04	1.8
RE DISCCART	556050	4198300	5.32	5.32	1.8
RE DISCCART	556100	4198300	5.4	5.4	1.8
RE DISCCART	556150	4198300	5.39	5.7	1.8
RE DISCCART	556200	4198300	5.93	5.93	1.8
RE DISCCART	556250	4198300	5.92	6.25	1.8
RE DISCCART	556300	4198300	6.42	6.42	1.8
RE DISCCART	556350	4198300	6.65	6.65	1.8
RE DISCCART	556400	4198300	6.76	6.76	1.8
RE DISCCART	556450	4198300	6.99	6.99	1.8
RE DISCCART	556500	4198300	7.01	7.33	1.8
RE DISCCART	556550	4198300	7.34	7.34	1.8
RE DISCCART	556600	4198300	7.16	7.64	1.8
RE DISCCART	553550	4198350	3.55	65.41	1.8
RE DISCCART	553600	4198350	3.97	65.41	1.8
RE DISCCART	553650	4198350	2.9	65.41	1.8
RE DISCCART	553700	4198350	3.05	65.41	1.8
RE DISCCART	553750	4198350	3.25	65.41	1.8
RE DISCCART	553800	4198350	3.38	65.41	1.8
RE DISCCART	553850	4198350	3.37	65.41	1.8
RE DISCCART	553900	4198350	3.01	65.41	1.8
RE DISCCART	555450	4198350	4.2	4.2	1.8
RE DISCCART	555500	4198350	4.32	4.32	1.8
RE DISCCART	555550	4198350	4.34	4.34	1.8
RE DISCCART	555600	4198350	4.52	4.52	1.8
RE DISCCART	555650	4198350	4.51	4.51	1.8
RE DISCCART	555700	4198350	4.73	4.73	1.8
RE DISCCART	555750	4198350	4.76	5.23	1.8
RE DISCCART	555800	4198350	5.03	5.03	1.8
RE DISCCART	555850	4198350	5.06	5.06	1.8
RE DISCCART	555900	4198350	4.99	4.99	1.8
RE DISCCART	555950	4198350	5.26	5.26	1.8
RE DISCCART	556000	4198350	5.22	5.22	1.8
RE DISCCART	556050	4198350	5.39	5.39	1.8
RE DISCCART	556100	4198350	5.56	5.56	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556150	4198350	5.82	6.43	1.8
RE DISCCART	556200	4198350	6.04	6.67	1.8
RE DISCCART	556250	4198350	6.37	6.77	1.8
RE DISCCART	556300	4198350	6.85	6.85	1.8
RE DISCCART	556350	4198350	6.67	6.67	1.8
RE DISCCART	556400	4198350	6.93	6.93	1.8
RE DISCCART	556450	4198350	7.15	7.15	1.8
RE DISCCART	556500	4198350	7.25	8.05	1.8
RE DISCCART	556550	4198350	7.37	8.08	1.8
RE DISCCART	556600	4198350	7.3	8.19	1.8
RE DISCCART	553500	4198400	3.81	145.07	1.8
RE DISCCART	553550	4198400	3.65	65.41	1.8
RE DISCCART	553600	4198400	2.94	65.41	1.8
RE DISCCART	553650	4198400	2.76	65.41	1.8
RE DISCCART	553700	4198400	3.08	65.41	1.8
RE DISCCART	553750	4198400	3.42	65.41	1.8
RE DISCCART	553800	4198400	3.15	65.41	1.8
RE DISCCART	553850	4198400	2.92	65.41	1.8
RE DISCCART	553900	4198400	4.31	4.5	1.8
RE DISCCART	553950	4198400	2.97	4.46	1.8
RE DISCCART	554950	4198400	2.39	3.7	1.8
RE DISCCART	555000	4198400	3.63	3.63	1.8
RE DISCCART	555050	4198400	3.71	3.71	1.8
RE DISCCART	555100	4198400	3.61	3.61	1.8
RE DISCCART	555150	4198400	3.59	3.59	1.8
RE DISCCART	555200	4198400	3.79	3.79	1.8
RE DISCCART	555250	4198400	3.72	3.72	1.8
RE DISCCART	555300	4198400	4.08	4.08	1.8
RE DISCCART	555350	4198400	4.26	4.26	1.8
RE DISCCART	555400	4198400	4.25	4.25	1.8
RE DISCCART	555450	4198400	4.56	4.56	1.8
RE DISCCART	555500	4198400	4.61	4.61	1.8
RE DISCCART	555550	4198400	4.69	4.69	1.8
RE DISCCART	555600	4198400	4.81	4.81	1.8
RE DISCCART	555650	4198400	5	5	1.8
RE DISCCART	555700	4198400	5.09	5.43	1.8
RE DISCCART	555750	4198400	5.01	5.43	1.8
RE DISCCART	555800	4198400	5.02	5.43	1.8
RE DISCCART	555850	4198400	5.4	5.66	1.8
RE DISCCART	555900	4198400	5.43	6.06	1.8
RE DISCCART	555950	4198400	5.72	6.31	1.8
RE DISCCART	556000	4198400	5.37	5.94	1.8
RE DISCCART	556050	4198400	5.67	6.94	1.8
RE DISCCART	556100	4198400	5.93	6.93	1.8
RE DISCCART	556150	4198400	5.67	6.93	1.8
RE DISCCART	556200	4198400	6.17	6.93	1.8
RE DISCCART	556250	4198400	6.76	6.76	1.8
RE DISCCART	556300	4198400	6.97	6.97	1.8
RE DISCCART	556350	4198400	7.08	7.4	1.8
RE DISCCART	556400	4198400	6.9	8.74	1.8
RE DISCCART	556450	4198400	7.06	8.61	1.8
RE DISCCART	556500	4198400	7.32	8.44	1.8
RE DISCCART	556550	4198400	7.69	10.75	1.8
RE DISCCART	556600	4198400	9.21	11.27	1.8
RE DISCCART	553650	4198450	2.94	53.91	1.8
RE DISCCART	553700	4198450	3.03	53.91	1.8
RE DISCCART	553750	4198450	3.04	45.98	1.8
RE DISCCART	553800	4198450	3.11	5.09	1.8
RE DISCCART	553850	4198450	3.28	4.8	1.8
RE DISCCART	553900	4198450	3.23	4.46	1.8
RE DISCCART	553950	4198450	3.14	4.46	1.8
RE DISCCART	554900	4198450	3.74	3.74	1.8
RE DISCCART	554950	4198450	3.69	3.69	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555000	4198450	3.34	3.34	1.8
RE DISCCART	555050	4198450	3.31	3.31	1.8
RE DISCCART	555100	4198450	3.45	3.45	1.8
RE DISCCART	555150	4198450	3.5	3.5	1.8
RE DISCCART	555200	4198450	3.35	3.35	1.8
RE DISCCART	555250	4198450	3.54	3.54	1.8
RE DISCCART	555300	4198450	3.72	3.72	1.8
RE DISCCART	555350	4198450	3.85	3.85	1.8
RE DISCCART	555400	4198450	3.78	3.78	1.8
RE DISCCART	555450	4198450	4.71	4.71	1.8
RE DISCCART	555500	4198450	4.7	4.7	1.8
RE DISCCART	555550	4198450	4.81	4.81	1.8
RE DISCCART	555600	4198450	4.7	4.7	1.8
RE DISCCART	555650	4198450	4.94	4.94	1.8
RE DISCCART	555700	4198450	5.07	5.07	1.8
RE DISCCART	555750	4198450	5	5.24	1.8
RE DISCCART	555800	4198450	5.42	5.42	1.8
RE DISCCART	555850	4198450	5.63	5.63	1.8
RE DISCCART	555900	4198450	5.73	5.73	1.8
RE DISCCART	555950	4198450	5.75	5.75	1.8
RE DISCCART	556000	4198450	5.63	6.17	1.8
RE DISCCART	556050	4198450	6.03	6.23	1.8
RE DISCCART	556100	4198450	6.43	6.66	1.8
RE DISCCART	556150	4198450	6.66	6.66	1.8
RE DISCCART	556200	4198450	6.31	6.83	1.8
RE DISCCART	556250	4198450	6.36	6.83	1.8
RE DISCCART	556300	4198450	6.8	6.8	1.8
RE DISCCART	556350	4198450	7.27	7.27	1.8
RE DISCCART	556400	4198450	7.27	7.27	1.8
RE DISCCART	556450	4198450	7.55	7.55	1.8
RE DISCCART	556500	4198450	7.43	7.43	1.8
RE DISCCART	556550	4198450	7.66	7.66	1.8
RE DISCCART	556600	4198450	7.7	7.7	1.8
RE DISCCART	553700	4198500	3.19	53.84	1.8
RE DISCCART	553850	4198500	3.34	4.67	1.8
RE DISCCART	553900	4198500	3.09	4.46	1.8
RE DISCCART	554850	4198500	3.59	3.59	1.8
RE DISCCART	554900	4198500	3.68	3.68	1.8
RE DISCCART	554950	4198500	3.63	3.63	1.8
RE DISCCART	555000	4198500	3.21	3.21	1.8
RE DISCCART	555050	4198500	3.01	3.01	1.8
RE DISCCART	555100	4198500	2.86	3.54	1.8
RE DISCCART	555150	4198500	3.32	3.32	1.8
RE DISCCART	555200	4198500	3.55	3.55	1.8
RE DISCCART	555250	4198500	3.4	3.4	1.8
RE DISCCART	555300	4198500	3.7	3.7	1.8
RE DISCCART	555350	4198500	3.86	3.86	1.8
RE DISCCART	555400	4198500	3.6	3.83	1.8
RE DISCCART	555450	4198500	4.38	4.38	1.8
RE DISCCART	555500	4198500	4.66	4.66	1.8
RE DISCCART	555550	4198500	4.95	4.95	1.8
RE DISCCART	555600	4198500	5.06	5.06	1.8
RE DISCCART	555650	4198500	4.96	4.96	1.8
RE DISCCART	555700	4198500	5.09	5.31	1.8
RE DISCCART	555750	4198500	5.16	5.47	1.8
RE DISCCART	555800	4198500	5.38	5.66	1.8
RE DISCCART	555850	4198500	5.66	5.66	1.8
RE DISCCART	555900	4198500	5.76	5.76	1.8
RE DISCCART	555950	4198500	5.84	5.84	1.8
RE DISCCART	556000	4198500	5.94	5.94	1.8
RE DISCCART	556050	4198500	6.07	6.07	1.8
RE DISCCART	556100	4198500	6.23	6.23	1.8
RE DISCCART	556150	4198500	6.29	6.29	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556200	4198500	6.57	6.57	1.8
RE DISCCART	556250	4198500	6.48	7.01	1.8
RE DISCCART	556300	4198500	6.89	6.89	1.8
RE DISCCART	556350	4198500	7.33	7.33	1.8
RE DISCCART	556400	4198500	7.53	7.53	1.8
RE DISCCART	556450	4198500	7.73	7.73	1.8
RE DISCCART	556500	4198500	7.84	7.84	1.8
RE DISCCART	556550	4198500	7.83	7.83	1.8
RE DISCCART	556600	4198500	7.94	7.94	1.8
RE DISCCART	554850	4198550	3.47	3.47	1.8
RE DISCCART	554900	4198550	3.69	3.69	1.8
RE DISCCART	554950	4198550	3.43	3.43	1.8
RE DISCCART	555000	4198550	2.98	2.98	1.8
RE DISCCART	555050	4198550	3.04	3.43	1.8
RE DISCCART	555100	4198550	3.28	3.28	1.8
RE DISCCART	555150	4198550	3.59	3.59	1.8
RE DISCCART	555200	4198550	3.78	3.78	1.8
RE DISCCART	555250	4198550	3.5	3.5	1.8
RE DISCCART	555300	4198550	3.94	3.94	1.8
RE DISCCART	555350	4198550	4.13	4.13	1.8
RE DISCCART	555400	4198550	3.74	4.23	1.8
RE DISCCART	555450	4198550	4.73	4.73	1.8
RE DISCCART	555500	4198550	4.89	4.89	1.8
RE DISCCART	555550	4198550	5.32	5.32	1.8
RE DISCCART	555600	4198550	5.37	5.37	1.8
RE DISCCART	555650	4198550	5.12	5.42	1.8
RE DISCCART	555700	4198550	5.27	5.47	1.8
RE DISCCART	555750	4198550	5.37	5.66	1.8
RE DISCCART	555800	4198550	5.51	5.89	1.8
RE DISCCART	555850	4198550	5.91	5.91	1.8
RE DISCCART	555900	4198550	5.96	5.96	1.8
RE DISCCART	555950	4198550	6.18	6.18	1.8
RE DISCCART	556000	4198550	6.12	6.12	1.8
RE DISCCART	556050	4198550	6.59	6.59	1.8
RE DISCCART	556100	4198550	6.5	6.5	1.8
RE DISCCART	556150	4198550	6.46	6.46	1.8
RE DISCCART	556200	4198550	6.5	6.5	1.8
RE DISCCART	556250	4198550	6.44	7.12	1.8
RE DISCCART	556300	4198550	7.08	7.08	1.8
RE DISCCART	556350	4198550	7.34	7.34	1.8
RE DISCCART	556400	4198550	7.6	7.6	1.8
RE DISCCART	556450	4198550	7.93	7.93	1.8
RE DISCCART	556500	4198550	7.89	7.89	1.8
RE DISCCART	556550	4198550	8.11	8.73	1.8
RE DISCCART	556600	4198550	8.26	8.26	1.8
RE DISCCART	554900	4198600	3.73	3.73	1.8
RE DISCCART	554950	4198600	3.64	3.64	1.8
RE DISCCART	555000	4198600	3.39	3.39	1.8
RE DISCCART	555050	4198600	3.27	3.27	1.8
RE DISCCART	555100	4198600	3.43	3.43	1.8
RE DISCCART	555150	4198600	3.74	3.74	1.8
RE DISCCART	555200	4198600	3.91	3.91	1.8
RE DISCCART	555250	4198600	3.69	3.69	1.8
RE DISCCART	555300	4198600	4.19	4.19	1.8
RE DISCCART	555350	4198600	4.34	4.34	1.8
RE DISCCART	555400	4198600	3.82	4.65	1.8
RE DISCCART	555450	4198600	5.25	5.25	1.8
RE DISCCART	555500	4198600	5.23	5.23	1.8
RE DISCCART	555550	4198600	5.57	5.57	1.8
RE DISCCART	555600	4198600	5.5	5.5	1.8
RE DISCCART	555650	4198600	5.56	5.56	1.8
RE DISCCART	555700	4198600	6.01	6.01	1.8
RE DISCCART	555750	4198600	5.77	5.77	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555800	4198600	5.8	5.8	1.8
RE DISCCART	555850	4198600	5.96	5.96	1.8
RE DISCCART	555900	4198600	6.2	6.2	1.8
RE DISCCART	555950	4198600	6.3	6.3	1.8
RE DISCCART	556000	4198600	6.46	6.46	1.8
RE DISCCART	556050	4198600	6.63	7.05	1.8
RE DISCCART	556100	4198600	6.88	6.88	1.8
RE DISCCART	556150	4198600	6.65	6.65	1.8
RE DISCCART	556200	4198600	6.81	6.81	1.8
RE DISCCART	556250	4198600	6.71	6.71	1.8
RE DISCCART	556300	4198600	6.95	6.95	1.8
RE DISCCART	556350	4198600	7.62	7.62	1.8
RE DISCCART	556400	4198600	7.66	7.66	1.8
RE DISCCART	556450	4198600	8.17	8.17	1.8
RE DISCCART	556500	4198600	8.13	8.13	1.8
RE DISCCART	556550	4198600	8.11	8.11	1.8
RE DISCCART	556600	4198600	8.77	8.77	1.8
RE DISCCART	554950	4198650	3.73	3.73	1.8
RE DISCCART	555000	4198650	3.74	3.74	1.8
RE DISCCART	555050	4198650	3.8	3.8	1.8
RE DISCCART	555100	4198650	3.52	3.75	1.8
RE DISCCART	555150	4198650	3.62	3.62	1.8
RE DISCCART	555200	4198650	4.06	4.06	1.8
RE DISCCART	555250	4198650	4.16	4.16	1.8
RE DISCCART	555300	4198650	4.16	4.16	1.8
RE DISCCART	555350	4198650	4.05	4.47	1.8
RE DISCCART	555400	4198650	4.58	4.87	1.8
RE DISCCART	555450	4198650	5.37	5.37	1.8
RE DISCCART	555500	4198650	5.6	5.6	1.8
RE DISCCART	555550	4198650	5.84	5.84	1.8
RE DISCCART	555600	4198650	5.97	5.97	1.8
RE DISCCART	555650	4198650	5.98	5.98	1.8
RE DISCCART	555700	4198650	6.29	6.29	1.8
RE DISCCART	555750	4198650	6.09	6.09	1.8
RE DISCCART	555800	4198650	6.28	6.28	1.8
RE DISCCART	555850	4198650	6.33	6.33	1.8
RE DISCCART	555900	4198650	6.56	6.56	1.8
RE DISCCART	555950	4198650	7.06	7.06	1.8
RE DISCCART	556000	4198650	6.83	6.83	1.8
RE DISCCART	556050	4198650	7.06	7.06	1.8
RE DISCCART	556100	4198650	7.03	7.03	1.8
RE DISCCART	556150	4198650	6.84	6.84	1.8
RE DISCCART	556200	4198650	7.14	7.14	1.8
RE DISCCART	556250	4198650	6.9	6.9	1.8
RE DISCCART	556300	4198650	7.38	7.38	1.8
RE DISCCART	556350	4198650	7.43	7.71	1.8
RE DISCCART	556400	4198650	7.76	7.95	1.8
RE DISCCART	556450	4198650	8.42	8.42	1.8
RE DISCCART	556500	4198650	8.31	8.31	1.8
RE DISCCART	556550	4198650	8.61	8.61	1.8
RE DISCCART	556600	4198650	8.83	8.83	1.8
RE DISCCART	555000	4198700	4.23	4.23	1.8
RE DISCCART	555050	4198700	4.15	4.15	1.8
RE DISCCART	555100	4198700	3.69	3.69	1.8
RE DISCCART	555150	4198700	3.95	3.95	1.8
RE DISCCART	555200	4198700	4.35	4.35	1.8
RE DISCCART	555250	4198700	4.34	4.34	1.8
RE DISCCART	555300	4198700	4.34	4.34	1.8
RE DISCCART	555350	4198700	4.77	4.77	1.8
RE DISCCART	555400	4198700	4.98	4.98	1.8
RE DISCCART	555450	4198700	5.35	5.35	1.8
RE DISCCART	555500	4198700	5.7	5.7	1.8
RE DISCCART	555550	4198700	5.87	5.87	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555600	4198700	6.06	6.06	1.8
RE DISCCART	555650	4198700	6.25	6.25	1.8
RE DISCCART	555700	4198700	6.35	6.35	1.8
RE DISCCART	555750	4198700	6.44	6.44	1.8
RE DISCCART	555800	4198700	6.53	6.53	1.8
RE DISCCART	555850	4198700	6.6	6.6	1.8
RE DISCCART	555900	4198700	6.72	6.72	1.8
RE DISCCART	555950	4198700	6.91	6.91	1.8
RE DISCCART	556000	4198700	6.89	6.89	1.8
RE DISCCART	556050	4198700	7.13	7.13	1.8
RE DISCCART	556100	4198700	7.05	7.05	1.8
RE DISCCART	556150	4198700	6.89	6.89	1.8
RE DISCCART	556200	4198700	6.88	6.88	1.8
RE DISCCART	556250	4198700	7.07	7.07	1.8
RE DISCCART	556300	4198700	7.15	7.8	1.8
RE DISCCART	556350	4198700	7.34	8.45	1.8
RE DISCCART	556400	4198700	7.65	8.19	1.8
RE DISCCART	556450	4198700	8.01	8.72	1.8
RE DISCCART	556500	4198700	8.28	8.28	1.8
RE DISCCART	556550	4198700	8.55	8.55	1.8
RE DISCCART	556600	4198700	8.81	8.81	1.8
RE DISCCART	555050	4198750	4.07	4.07	1.8
RE DISCCART	555100	4198750	4.26	4.26	1.8
RE DISCCART	555150	4198750	4.45	4.61	1.8
RE DISCCART	555200	4198750	4.1	4.1	1.8
RE DISCCART	555250	4198750	4.72	4.72	1.8
RE DISCCART	555300	4198750	4.32	4.32	1.8
RE DISCCART	555350	4198750	4.78	4.78	1.8
RE DISCCART	555400	4198750	5.29	5.29	1.8
RE DISCCART	555450	4198750	5.17	5.17	1.8
RE DISCCART	555500	4198750	5.69	5.69	1.8
RE DISCCART	555550	4198750	5.84	5.84	1.8
RE DISCCART	555600	4198750	5.95	5.95	1.8
RE DISCCART	555650	4198750	6.18	6.18	1.8
RE DISCCART	555700	4198750	6.31	6.31	1.8
RE DISCCART	555750	4198750	6.54	6.54	1.8
RE DISCCART	555800	4198750	6.72	6.72	1.8
RE DISCCART	555850	4198750	6.95	6.95	1.8
RE DISCCART	555900	4198750	6.96	6.96	1.8
RE DISCCART	555950	4198750	7.51	7.51	1.8
RE DISCCART	556000	4198750	7.16	7.16	1.8
RE DISCCART	556050	4198750	7.91	7.91	1.8
RE DISCCART	556100	4198750	7.64	7.64	1.8
RE DISCCART	556150	4198750	7.4	7.4	1.8
RE DISCCART	556200	4198750	7.5	7.5	1.8
RE DISCCART	556250	4198750	7.3	7.73	1.8
RE DISCCART	556300	4198750	8.13	8.13	1.8
RE DISCCART	556350	4198750	8.08	8.08	1.8
RE DISCCART	556400	4198750	8.27	8.27	1.8
RE DISCCART	556450	4198750	8.55	8.55	1.8
RE DISCCART	556500	4198750	8.77	8.77	1.8
RE DISCCART	556550	4198750	9.17	9.17	1.8
RE DISCCART	556600	4198750	9.07	9.07	1.8
RE DISCCART	555050	4198800	4.08	4.08	1.8
RE DISCCART	555100	4198800	4.36	4.36	1.8
RE DISCCART	555150	4198800	4.4	4.4	1.8
RE DISCCART	555200	4198800	4.42	4.42	1.8
RE DISCCART	555250	4198800	4.46	4.46	1.8
RE DISCCART	555300	4198800	4.68	4.68	1.8
RE DISCCART	555350	4198800	4.52	4.52	1.8
RE DISCCART	555400	4198800	4.94	4.94	1.8
RE DISCCART	555450	4198800	5.2	5.2	1.8
RE DISCCART	555500	4198800	5.48	5.48	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555550	4198800	5.39	5.82	1.8
RE DISCCART	555600	4198800	5.96	5.96	1.8
RE DISCCART	555650	4198800	6.15	6.15	1.8
RE DISCCART	555700	4198800	6.35	6.35	1.8
RE DISCCART	555750	4198800	6.62	6.62	1.8
RE DISCCART	555800	4198800	7.25	7.25	1.8
RE DISCCART	555850	4198800	6.87	6.87	1.8
RE DISCCART	555900	4198800	7.17	7.17	1.8
RE DISCCART	555950	4198800	7.75	7.75	1.8
RE DISCCART	556000	4198800	7.32	7.51	1.8
RE DISCCART	556050	4198800	8.2	8.2	1.8
RE DISCCART	556100	4198800	7.86	7.86	1.8
RE DISCCART	556150	4198800	7.84	7.84	1.8
RE DISCCART	556200	4198800	7.88	7.88	1.8
RE DISCCART	556250	4198800	7.62	8.04	1.8
RE DISCCART	556300	4198800	7.8	7.8	1.8
RE DISCCART	556350	4198800	8.28	8.28	1.8
RE DISCCART	556400	4198800	8.43	8.43	1.8
RE DISCCART	556450	4198800	8.46	8.46	1.8
RE DISCCART	556500	4198800	8.63	8.63	1.8
RE DISCCART	556550	4198800	8.83	8.83	1.8
RE DISCCART	556600	4198800	9.05	9.05	1.8
RE DISCCART	555100	4198850	4.15	4.15	1.8
RE DISCCART	555150	4198850	4.31	4.31	1.8
RE DISCCART	555200	4198850	4.53	4.53	1.8
RE DISCCART	555250	4198850	4.61	4.61	1.8
RE DISCCART	555300	4198850	4.81	4.81	1.8
RE DISCCART	555350	4198850	4.87	4.87	1.8
RE DISCCART	555400	4198850	5.14	5.14	1.8
RE DISCCART	555450	4198850	5.22	5.22	1.8
RE DISCCART	555500	4198850	5.31	5.31	1.8
RE DISCCART	555550	4198850	5.59	5.59	1.8
RE DISCCART	555600	4198850	5.83	5.83	1.8
RE DISCCART	555650	4198850	6.04	6.3	1.8
RE DISCCART	555700	4198850	6.28	6.58	1.8
RE DISCCART	555750	4198850	6.7	6.7	1.8
RE DISCCART	555800	4198850	6.91	6.91	1.8
RE DISCCART	555850	4198850	7.08	7.08	1.8
RE DISCCART	555900	4198850	7.27	7.27	1.8
RE DISCCART	555950	4198850	7.89	7.89	1.8
RE DISCCART	556000	4198850	7.55	7.55	1.8
RE DISCCART	556050	4198850	8.34	8.34	1.8
RE DISCCART	556100	4198850	8.3	8.3	1.8
RE DISCCART	556150	4198850	8.22	8.22	1.8
RE DISCCART	556200	4198850	8.39	8.39	1.8
RE DISCCART	556250	4198850	7.88	7.88	1.8
RE DISCCART	556300	4198850	8.06	8.06	1.8
RE DISCCART	556350	4198850	8.17	8.17	1.8
RE DISCCART	556400	4198850	8.29	8.29	1.8
RE DISCCART	556450	4198850	8.6	8.6	1.8
RE DISCCART	556500	4198850	8.59	8.59	1.8
RE DISCCART	556550	4198850	8.65	9.32	1.8
RE DISCCART	556600	4198850	9.26	9.26	1.8
RE DISCCART	555150	4198900	4.49	4.49	1.8
RE DISCCART	555200	4198900	4.67	4.67	1.8
RE DISCCART	555250	4198900	4.67	4.67	1.8
RE DISCCART	555300	4198900	4.86	4.86	1.8
RE DISCCART	555350	4198900	4.55	4.55	1.8
RE DISCCART	555400	4198900	5.1	5.1	1.8
RE DISCCART	555450	4198900	5.76	5.76	1.8
RE DISCCART	555500	4198900	5.45	5.45	1.8
RE DISCCART	555550	4198900	5.43	5.71	1.8
RE DISCCART	555600	4198900	5.93	5.93	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555650	4198900	5.99	6.22	1.8
RE DISCCART	555700	4198900	6.58	6.58	1.8
RE DISCCART	555750	4198900	6.4	6.8	1.8
RE DISCCART	555800	4198900	6.98	6.98	1.8
RE DISCCART	555850	4198900	7.15	7.15	1.8
RE DISCCART	555900	4198900	7.17	7.17	1.8
RE DISCCART	555950	4198900	7.9	7.9	1.8
RE DISCCART	556000	4198900	7.61	7.61	1.8
RE DISCCART	556050	4198900	7.94	7.94	1.8
RE DISCCART	556100	4198900	8.4	8.4	1.8
RE DISCCART	556150	4198900	8.47	8.47	1.8
RE DISCCART	556200	4198900	8.46	9.3	1.8
RE DISCCART	556250	4198900	8.33	8.33	1.8
RE DISCCART	556300	4198900	8.29	8.29	1.8
RE DISCCART	556350	4198900	8.4	8.4	1.8
RE DISCCART	556400	4198900	8.32	8.32	1.8
RE DISCCART	556450	4198900	8.41	8.41	1.8
RE DISCCART	556500	4198900	8.7	9.42	1.8
RE DISCCART	556550	4198900	8.8	9.62	1.8
RE DISCCART	556600	4198900	9.21	9.63	1.8
RE DISCCART	555200	4198950	4.49	4.49	1.8
RE DISCCART	555250	4198950	4.61	4.61	1.8
RE DISCCART	555300	4198950	4.47	4.62	1.8
RE DISCCART	555350	4198950	4.75	4.75	1.8
RE DISCCART	555400	4198950	4.92	4.92	1.8
RE DISCCART	555450	4198950	4.96	4.96	1.8
RE DISCCART	555500	4198950	5.34	5.34	1.8
RE DISCCART	555550	4198950	5.96	5.96	1.8
RE DISCCART	555600	4198950	5.7	5.87	1.8
RE DISCCART	555650	4198950	5.91	6.11	1.8
RE DISCCART	555700	4198950	6.41	6.41	1.8
RE DISCCART	555750	4198950	6.26	6.26	1.8
RE DISCCART	555800	4198950	6.77	6.77	1.8
RE DISCCART	555850	4198950	6.83	6.83	1.8
RE DISCCART	555900	4198950	6.86	6.86	1.8
RE DISCCART	555950	4198950	7.62	7.62	1.8
RE DISCCART	556000	4198950	7.5	7.5	1.8
RE DISCCART	556050	4198950	8.11	8.11	1.8
RE DISCCART	556100	4198950	8.19	8.19	1.8
RE DISCCART	556150	4198950	8.45	8.45	1.8
RE DISCCART	556200	4198950	8.83	8.83	1.8
RE DISCCART	556250	4198950	8.63	8.63	1.8
RE DISCCART	556300	4198950	8.55	8.55	1.8
RE DISCCART	556350	4198950	8.46	8.89	1.8
RE DISCCART	556400	4198950	8.81	8.81	1.8
RE DISCCART	556450	4198950	8.98	8.98	1.8
RE DISCCART	556500	4198950	9.09	9.63	1.8
RE DISCCART	556550	4198950	9.21	9.85	1.8
RE DISCCART	556600	4198950	10.18	10.18	1.8
RE DISCCART	555250	4199000	4.29	4.73	1.8
RE DISCCART	555300	4199000	4.38	4.83	1.8
RE DISCCART	555350	4199000	4.51	4.93	1.8
RE DISCCART	555400	4199000	4.63	5.07	1.8
RE DISCCART	555450	4199000	5	5	1.8
RE DISCCART	555500	4199000	5.17	5.17	1.8
RE DISCCART	555550	4199000	5.44	5.44	1.8
RE DISCCART	555600	4199000	5.64	5.64	1.8
RE DISCCART	555650	4199000	5.9	5.9	1.8
RE DISCCART	555700	4199000	5.96	5.96	1.8
RE DISCCART	555750	4199000	6.04	6.04	1.8
RE DISCCART	555800	4199000	6.25	6.25	1.8
RE DISCCART	555850	4199000	6.47	6.47	1.8
RE DISCCART	555900	4199000	6.51	7.2	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555950	4199000	6.94	7.5	1.8
RE DISCCART	556000	4199000	7.36	7.36	1.8
RE DISCCART	556050	4199000	7.72	7.72	1.8
RE DISCCART	556100	4199000	8.73	8.73	1.8
RE DISCCART	556150	4199000	8.46	8.46	1.8
RE DISCCART	556200	4199000	8.44	8.44	1.8
RE DISCCART	556250	4199000	8.71	8.71	1.8
RE DISCCART	556300	4199000	8.85	8.85	1.8
RE DISCCART	556350	4199000	9	9	1.8
RE DISCCART	556400	4199000	9.18	9.18	1.8
RE DISCCART	556450	4199000	9.31	9.31	1.8
RE DISCCART	556500	4199000	9.57	10.55	1.8
RE DISCCART	556550	4199000	10.19	10.19	1.8
RE DISCCART	556600	4199000	10.31	10.31	1.8
RE DISCCART	555250	4199050	4.28	4.79	1.8
RE DISCCART	555300	4199050	4.44	4.88	1.8
RE DISCCART	555350	4199050	4.54	4.93	1.8
RE DISCCART	555400	4199050	4.63	4.63	1.8
RE DISCCART	555450	4199050	4.8	4.8	1.8
RE DISCCART	555500	4199050	5.04	5.04	1.8
RE DISCCART	555550	4199050	5.21	5.21	1.8
RE DISCCART	555600	4199050	5.86	5.86	1.8
RE DISCCART	555650	4199050	5.59	5.59	1.8
RE DISCCART	555700	4199050	5.96	5.96	1.8
RE DISCCART	555750	4199050	6.05	6.05	1.8
RE DISCCART	555800	4199050	6.42	6.42	1.8
RE DISCCART	555850	4199050	6.87	6.87	1.8
RE DISCCART	555900	4199050	6.83	6.83	1.8
RE DISCCART	555950	4199050	6.54	7.53	1.8
RE DISCCART	556000	4199050	7.82	7.82	1.8
RE DISCCART	556050	4199050	8.22	8.22	1.8
RE DISCCART	556100	4199050	8.39	8.39	1.8
RE DISCCART	556150	4199050	9.07	9.07	1.8
RE DISCCART	556200	4199050	9.11	9.11	1.8
RE DISCCART	556250	4199050	8.92	8.92	1.8
RE DISCCART	556300	4199050	9.23	9.23	1.8
RE DISCCART	556350	4199050	9.79	9.79	1.8
RE DISCCART	556400	4199050	10.1	10.1	1.8
RE DISCCART	556450	4199050	10.77	10.77	1.8
RE DISCCART	556500	4199050	10.89	10.89	1.8
RE DISCCART	556550	4199050	10.84	10.84	1.8
RE DISCCART	556600	4199050	10.88	10.88	1.8
RE DISCCART	555250	4199100	3.99	4.84	1.8
RE DISCCART	555300	4199100	4.3	4.85	1.8
RE DISCCART	555350	4199100	4.18	4.85	1.8
RE DISCCART	555400	4199100	4.34	4.93	1.8
RE DISCCART	555450	4199100	4.69	4.69	1.8
RE DISCCART	555500	4199100	5.13	5.13	1.8
RE DISCCART	555550	4199100	5.04	5.04	1.8
RE DISCCART	555600	4199100	5.25	5.25	1.8
RE DISCCART	555650	4199100	5.38	5.38	1.8
RE DISCCART	555700	4199100	5.5	6.07	1.8
RE DISCCART	555750	4199100	5.84	6.44	1.8
RE DISCCART	555800	4199100	6.32	6.32	1.8
RE DISCCART	555850	4199100	6.74	6.74	1.8
RE DISCCART	555900	4199100	6.68	7.2	1.8
RE DISCCART	555950	4199100	6.91	7.49	1.8
RE DISCCART	556000	4199100	7.26	7.73	1.8
RE DISCCART	556050	4199100	8.37	8.37	1.8
RE DISCCART	556100	4199100	8.71	9.02	1.8
RE DISCCART	556150	4199100	8.91	8.91	1.8
RE DISCCART	556200	4199100	9.12	9.12	1.8
RE DISCCART	556250	4199100	9.1	9.1	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556300	4199100	9.41	9.41	1.8
RE DISCCART	556350	4199100	9.68	9.68	1.8
RE DISCCART	556400	4199100	10.04	10.04	1.8
RE DISCCART	556450	4199100	10.82	10.82	1.8
RE DISCCART	556500	4199100	10.96	10.96	1.8
RE DISCCART	556550	4199100	10.79	10.79	1.8
RE DISCCART	556600	4199100	10.92	10.92	1.8
RE DISCCART	555250	4199150	3.92	4.74	1.8
RE DISCCART	555300	4199150	4.04	4.84	1.8
RE DISCCART	555350	4199150	4.15	4.15	1.8
RE DISCCART	555400	4199150	4.25	4.93	1.8
RE DISCCART	555450	4199150	4.45	5.04	1.8
RE DISCCART	555500	4199150	4.75	5.21	1.8
RE DISCCART	555550	4199150	4.98	4.98	1.8
RE DISCCART	555600	4199150	4.94	5.43	1.8
RE DISCCART	555650	4199150	5.11	5.73	1.8
RE DISCCART	555700	4199150	5.35	6.05	1.8
RE DISCCART	555750	4199150	5.74	6.34	1.8
RE DISCCART	555800	4199150	6.05	6.72	1.8
RE DISCCART	555850	4199150	6.45	7.01	1.8
RE DISCCART	555900	4199150	6.67	7.19	1.8
RE DISCCART	555950	4199150	6.86	7.93	1.8
RE DISCCART	556000	4199150	7.41	7.41	1.8
RE DISCCART	556050	4199150	7.72	7.72	1.8
RE DISCCART	556100	4199150	8.03	8.64	1.8
RE DISCCART	556150	4199150	8.66	9.06	1.8
RE DISCCART	556200	4199150	9.09	9.09	1.8
RE DISCCART	556250	4199150	8.96	8.96	1.8
RE DISCCART	556300	4199150	9.21	9.21	1.8
RE DISCCART	556350	4199150	9.51	9.51	1.8
RE DISCCART	556400	4199150	9.69	9.69	1.8
RE DISCCART	556450	4199150	10.77	10.77	1.8
RE DISCCART	556500	4199150	10.9	10.9	1.8
RE DISCCART	556550	4199150	10.97	11.08	1.8
RE DISCCART	556600	4199150	10.91	11.3	1.8
RE DISCCART	555300	4199200	3.78	4.75	1.8
RE DISCCART	555350	4199200	3.88	4.73	1.8
RE DISCCART	555400	4199200	4.04	4.94	1.8
RE DISCCART	555450	4199200	4.5	5.03	1.8
RE DISCCART	555500	4199200	4.79	5.14	1.8
RE DISCCART	555550	4199200	5.06	5.06	1.8
RE DISCCART	555600	4199200	4.98	5.38	1.8
RE DISCCART	555650	4199200	4.88	5.73	1.8
RE DISCCART	555700	4199200	5.32	6.01	1.8
RE DISCCART	555750	4199200	5.88	6.32	1.8
RE DISCCART	555800	4199200	6.05	6.61	1.8
RE DISCCART	555850	4199200	6.29	6.9	1.8
RE DISCCART	555900	4199200	7.26	7.26	1.8
RE DISCCART	555950	4199200	6.74	7.81	1.8
RE DISCCART	556000	4199200	7.35	7.35	1.8
RE DISCCART	556050	4199200	7.43	7.43	1.8
RE DISCCART	556100	4199200	8.09	8.09	1.8
RE DISCCART	556150	4199200	8.48	8.48	1.8
RE DISCCART	556200	4199200	8.97	8.97	1.8
RE DISCCART	556250	4199200	8.84	8.84	1.8
RE DISCCART	556300	4199200	9.3	9.3	1.8
RE DISCCART	556350	4199200	9.77	9.77	1.8
RE DISCCART	556400	4199200	9.71	9.71	1.8
RE DISCCART	556450	4199200	10.39	10.39	1.8
RE DISCCART	556500	4199200	10.38	11.13	1.8
RE DISCCART	556550	4199200	11.15	11.15	1.8
RE DISCCART	556600	4199200	10.8	11.39	1.8
RE DISCCART	555300	4199250	3.9	4.73	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555350	4199250	3.76	4.83	1.8
RE DISCCART	555400	4199250	4.22	4.91	1.8
RE DISCCART	555450	4199250	4.65	4.93	1.8
RE DISCCART	555500	4199250	4.99	4.99	1.8
RE DISCCART	555550	4199250	4.84	5.24	1.8
RE DISCCART	555600	4199250	5.03	5.37	1.8
RE DISCCART	555650	4199250	5.06	5.65	1.8
RE DISCCART	555700	4199250	5.56	5.56	1.8
RE DISCCART	555750	4199250	5.68	6.22	1.8
RE DISCCART	555800	4199250	6.04	6.51	1.8
RE DISCCART	555850	4199250	6.65	6.65	1.8
RE DISCCART	555900	4199250	6.85	6.85	1.8
RE DISCCART	555950	4199250	6.97	6.97	1.8
RE DISCCART	556000	4199250	7.16	7.16	1.8
RE DISCCART	556050	4199250	7.5	7.5	1.8
RE DISCCART	556100	4199250	7.73	7.73	1.8
RE DISCCART	556150	4199250	8.24	8.24	1.8
RE DISCCART	556200	4199250	8.55	8.55	1.8
RE DISCCART	556250	4199250	8.84	8.84	1.8
RE DISCCART	556300	4199250	9.21	9.21	1.8
RE DISCCART	556350	4199250	9.58	9.58	1.8
RE DISCCART	556400	4199250	9.83	9.83	1.8
RE DISCCART	556450	4199250	10.48	10.48	1.8
RE DISCCART	556500	4199250	10.64	11.38	1.8
RE DISCCART	556550	4199250	11.48	11.48	1.8
RE DISCCART	556600	4199250	11.56	11.56	1.8
RE DISCCART	555350	4199300	4.21	4.83	1.8
RE DISCCART	555400	4199300	4.21	4.94	1.8
RE DISCCART	555450	4199300	4.67	4.93	1.8
RE DISCCART	555500	4199300	4.94	5.01	1.8
RE DISCCART	555550	4199300	4.65	5.19	1.8
RE DISCCART	555600	4199300	5.12	5.33	1.8
RE DISCCART	555650	4199300	5.06	5.59	1.8
RE DISCCART	555700	4199300	5.48	5.48	1.8
RE DISCCART	555750	4199300	5.86	5.86	1.8
RE DISCCART	555800	4199300	6.02	6.36	1.8
RE DISCCART	555850	4199300	6.29	6.55	1.8
RE DISCCART	555900	4199300	6.38	6.73	1.8
RE DISCCART	555950	4199300	6.69	6.69	1.8
RE DISCCART	556000	4199300	6.97	6.97	1.8
RE DISCCART	556050	4199300	7.37	7.37	1.8
RE DISCCART	556100	4199300	7.78	7.78	1.8
RE DISCCART	556150	4199300	8.13	8.13	1.8
RE DISCCART	556200	4199300	8.53	8.53	1.8
RE DISCCART	556250	4199300	8.75	8.75	1.8
RE DISCCART	556300	4199300	9.33	9.33	1.8
RE DISCCART	556350	4199300	9.42	9.42	1.8
RE DISCCART	556400	4199300	9.77	9.77	1.8
RE DISCCART	556450	4199300	10.26	10.26	1.8
RE DISCCART	556500	4199300	10.63	11.11	1.8
RE DISCCART	556550	4199300	11.32	11.32	1.8
RE DISCCART	556600	4199300	12.12	12.12	1.8
RE DISCCART	555400	4199350	4.06	4.94	1.8
RE DISCCART	555450	4199350	4.31	4.9	1.8
RE DISCCART	555500	4199350	4.62	4.93	1.8
RE DISCCART	555550	4199350	4.52	5.14	1.8
RE DISCCART	555600	4199350	4.96	5.34	1.8
RE DISCCART	555650	4199350	5.05	5.53	1.8
RE DISCCART	555700	4199350	5.69	5.69	1.8
RE DISCCART	555750	4199350	5.77	5.77	1.8
RE DISCCART	555800	4199350	5.9	6.25	1.8
RE DISCCART	555850	4199350	6.13	6.13	1.8
RE DISCCART	555900	4199350	6.46	6.46	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555950	4199350	6.5	6.5	1.8
RE DISCCART	556000	4199350	6.87	6.87	1.8
RE DISCCART	556050	4199350	7.46	7.46	1.8
RE DISCCART	556100	4199350	7.57	7.57	1.8
RE DISCCART	556150	4199350	8	8	1.8
RE DISCCART	556200	4199350	8.39	8.39	1.8
RE DISCCART	556250	4199350	8.55	8.55	1.8
RE DISCCART	556300	4199350	9.06	9.06	1.8
RE DISCCART	556350	4199350	9.34	9.34	1.8
RE DISCCART	556400	4199350	9.83	9.83	1.8
RE DISCCART	556450	4199350	10.25	10.72	1.8
RE DISCCART	556500	4199350	10.63	11.21	1.8
RE DISCCART	556550	4199350	11.45	11.45	1.8
RE DISCCART	556600	4199350	11.24	11.78	1.8
RE DISCCART	555450	4199400	3.94	4.83	1.8
RE DISCCART	555500	4199400	4.02	4.98	1.8
RE DISCCART	555550	4199400	4.53	5.13	1.8
RE DISCCART	555600	4199400	4.86	4.86	1.8
RE DISCCART	555650	4199400	4.93	5.54	1.8
RE DISCCART	555700	4199400	5.47	5.47	1.8
RE DISCCART	555750	4199400	5.64	5.64	1.8
RE DISCCART	555800	4199400	5.96	5.96	1.8
RE DISCCART	555850	4199400	6.15	6.15	1.8
RE DISCCART	555900	4199400	6.35	6.35	1.8
RE DISCCART	555950	4199400	6.59	6.59	1.8
RE DISCCART	556000	4199400	6.87	6.87	1.8
RE DISCCART	556050	4199400	7.45	7.45	1.8
RE DISCCART	556100	4199400	7.6	7.6	1.8
RE DISCCART	556150	4199400	7.99	7.99	1.8
RE DISCCART	556200	4199400	8.25	8.25	1.8
RE DISCCART	556250	4199400	8.68	8.68	1.8
RE DISCCART	556300	4199400	9.2	9.2	1.8
RE DISCCART	556350	4199400	9.49	9.49	1.8
RE DISCCART	556400	4199400	9.77	10.23	1.8
RE DISCCART	556450	4199400	10.35	10.9	1.8
RE DISCCART	556500	4199400	10.7	11.43	1.8
RE DISCCART	556550	4199400	12.02	12.02	1.8
RE DISCCART	556600	4199400	11.2	11.52	1.8
RE DISCCART	555500	4199450	4.09	4.97	1.8
RE DISCCART	555550	4199450	4.7	4.7	1.8
RE DISCCART	555600	4199450	4.92	4.92	1.8
RE DISCCART	555650	4199450	5.04	5.04	1.8
RE DISCCART	555700	4199450	5.48	5.48	1.8
RE DISCCART	555750	4199450	5.76	5.76	1.8
RE DISCCART	555800	4199450	5.93	5.93	1.8
RE DISCCART	555850	4199450	6.24	6.24	1.8
RE DISCCART	555900	4199450	6.47	6.47	1.8
RE DISCCART	555950	4199450	6.82	6.82	1.8
RE DISCCART	556000	4199450	6.91	6.91	1.8
RE DISCCART	556050	4199450	7.03	7.62	1.8
RE DISCCART	556100	4199450	7.64	7.64	1.8
RE DISCCART	556150	4199450	7.99	8.2	1.8
RE DISCCART	556200	4199450	8.43	8.43	1.8
RE DISCCART	556250	4199450	8.82	8.82	1.8
RE DISCCART	556300	4199450	9.18	9.18	1.8
RE DISCCART	556350	4199450	9.59	9.59	1.8
RE DISCCART	556400	4199450	9.87	10.42	1.8
RE DISCCART	556450	4199450	10.57	11.11	1.8
RE DISCCART	556500	4199450	10.58	11.53	1.8
RE DISCCART	556550	4199450	11.14	11.53	1.8
RE DISCCART	556600	4199450	11.73	11.73	1.8
RE DISCCART	555500	4199500	4.22	5.13	1.8
RE DISCCART	555550	4199500	4.61	4.61	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555600	4199500	4.87	4.87	1.8
RE DISCCART	555650	4199500	5.02	5.02	1.8
RE DISCCART	555700	4199500	5.39	5.39	1.8
RE DISCCART	555750	4199500	5.71	5.71	1.8
RE DISCCART	555800	4199500	6.18	6.18	1.8
RE DISCCART	555850	4199500	6.38	6.38	1.8
RE DISCCART	555900	4199500	6.61	6.61	1.8
RE DISCCART	555950	4199500	6.84	6.84	1.8
RE DISCCART	556000	4199500	7.02	7.02	1.8
RE DISCCART	556050	4199500	7.46	7.46	1.8
RE DISCCART	556100	4199500	7.69	8.01	1.8
RE DISCCART	556150	4199500	8.08	8.31	1.8
RE DISCCART	556200	4199500	8.79	8.79	1.8
RE DISCCART	556250	4199500	8.94	8.94	1.8
RE DISCCART	556300	4199500	9.28	9.28	1.8
RE DISCCART	556350	4199500	9.52	9.52	1.8
RE DISCCART	556400	4199500	9.99	10.56	1.8
RE DISCCART	556450	4199500	10.69	11.36	1.8
RE DISCCART	556500	4199500	11.74	11.74	1.8
RE DISCCART	556550	4199500	11.19	11.53	1.8
RE DISCCART	556600	4199500	12.05	12.05	1.8
RE DISCCART	555550	4199550	4.76	5.21	1.8
RE DISCCART	555600	4199550	4.9	4.9	1.8
RE DISCCART	555650	4199550	4.9	5.44	1.8
RE DISCCART	555700	4199550	5.45	5.45	1.8
RE DISCCART	555750	4199550	5.74	5.74	1.8
RE DISCCART	555800	4199550	6	6	1.8
RE DISCCART	555850	4199550	6.34	6.34	1.8
RE DISCCART	555900	4199550	6.73	6.73	1.8
RE DISCCART	555950	4199550	6.92	6.92	1.8
RE DISCCART	556000	4199550	7.17	7.17	1.8
RE DISCCART	556050	4199550	7.65	7.65	1.8
RE DISCCART	556100	4199550	7.93	8.1	1.8
RE DISCCART	556150	4199550	8.17	8.38	1.8
RE DISCCART	556200	4199550	8.77	8.77	1.8
RE DISCCART	556250	4199550	8.97	8.97	1.8
RE DISCCART	556300	4199550	9.5	9.5	1.8
RE DISCCART	556350	4199550	9.56	9.56	1.8
RE DISCCART	556400	4199550	10	10.74	1.8
RE DISCCART	556450	4199550	11.29	11.29	1.8
RE DISCCART	556500	4199550	11.31	11.31	1.8
RE DISCCART	556550	4199550	11.37	11.37	1.8
RE DISCCART	556600	4199550	12.16	12.16	1.8
RE DISCCART	555600	4199600	4.8	5.57	1.8
RE DISCCART	555650	4199600	4.76	5.55	1.8
RE DISCCART	555700	4199600	5.18	5.42	1.8
RE DISCCART	555750	4199600	5.62	5.81	1.8
RE DISCCART	555800	4199600	6.19	6.19	1.8
RE DISCCART	555850	4199600	6.17	6.48	1.8
RE DISCCART	555900	4199600	6.68	6.68	1.8
RE DISCCART	555950	4199600	6.96	6.96	1.8
RE DISCCART	556000	4199600	7.24	7.24	1.8
RE DISCCART	556050	4199600	7.97	7.97	1.8
RE DISCCART	556100	4199600	7.94	8.21	1.8
RE DISCCART	556150	4199600	8.27	8.53	1.8
RE DISCCART	556200	4199600	8.94	8.94	1.8
RE DISCCART	556250	4199600	8.97	9.48	1.8
RE DISCCART	556300	4199600	9.25	9.25	1.8
RE DISCCART	556350	4199600	9.63	9.63	1.8
RE DISCCART	556400	4199600	9.94	11.45	1.8
RE DISCCART	556450	4199600	11.52	11.52	1.8
RE DISCCART	556500	4199600	11.38	11.38	1.8
RE DISCCART	556550	4199600	11.34	11.34	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556600	4199600	11.94	11.94	1.8
RE DISCCART	555650	4199650	5.05	6.04	1.8
RE DISCCART	555700	4199650	5.34	5.34	1.8
RE DISCCART	555750	4199650	5.86	5.86	1.8
RE DISCCART	555800	4199650	6.08	6.08	1.8
RE DISCCART	555850	4199650	6	6.43	1.8
RE DISCCART	555900	4199650	6.69	6.69	1.8
RE DISCCART	555950	4199650	6.92	6.92	1.8
RE DISCCART	556000	4199650	7.16	7.16	1.8
RE DISCCART	556050	4199650	7.68	7.68	1.8
RE DISCCART	556100	4199650	8	8	1.8
RE DISCCART	556150	4199650	8.34	8.46	1.8
RE DISCCART	556200	4199650	8.53	8.53	1.8
RE DISCCART	556250	4199650	9.21	9.21	1.8
RE DISCCART	556300	4199650	11.36	14.44	1.8
RE DISCCART	556350	4199650	9.78	15.21	1.8
RE DISCCART	556400	4199650	10.13	11.55	1.8
RE DISCCART	556450	4199650	10.97	11.53	1.8
RE DISCCART	556500	4199650	10.85	11.53	1.8
RE DISCCART	556550	4199650	11.51	11.51	1.8
RE DISCCART	556600	4199650	12.09	12.09	1.8
RE DISCCART	555700	4199700	5.41	5.41	1.8
RE DISCCART	555750	4199700	5.9	5.9	1.8
RE DISCCART	555800	4199700	6.27	6.27	1.8
RE DISCCART	555850	4199700	6.23	6.23	1.8
RE DISCCART	555900	4199700	6.61	6.61	1.8
RE DISCCART	555950	4199700	6.9	6.9	1.8
RE DISCCART	556000	4199700	7.34	7.34	1.8
RE DISCCART	556050	4199700	7.82	7.82	1.8
RE DISCCART	556100	4199700	8.19	8.19	1.8
RE DISCCART	556150	4199700	8.37	8.37	1.8
RE DISCCART	556200	4199700	8.73	8.73	1.8
RE DISCCART	556250	4199700	9.72	9.72	1.8
RE DISCCART	556300	4199700	9.71	15.21	1.8
RE DISCCART	556350	4199700	10.36	15.21	1.8
RE DISCCART	556400	4199700	10.64	11.53	1.8
RE DISCCART	556450	4199700	11.37	11.37	1.8
RE DISCCART	556500	4199700	11.3	11.3	1.8
RE DISCCART	556550	4199700	11.69	11.69	1.8
RE DISCCART	556600	4199700	12.37	12.37	1.8
RE DISCCART	555700	4199750	5.5	6.48	1.8
RE DISCCART	555750	4199750	5.96	5.96	1.8
RE DISCCART	555800	4199750	6.48	6.48	1.8
RE DISCCART	555850	4199750	6.27	6.27	1.8
RE DISCCART	555900	4199750	6.77	6.77	1.8
RE DISCCART	555950	4199750	7.05	7.05	1.8
RE DISCCART	556000	4199750	7.52	7.52	1.8
RE DISCCART	556050	4199750	7.76	7.76	1.8
RE DISCCART	556100	4199750	8.19	8.19	1.8
RE DISCCART	556150	4199750	8.58	8.58	1.8
RE DISCCART	556200	4199750	8.87	8.87	1.8
RE DISCCART	556250	4199750	9.49	9.49	1.8
RE DISCCART	556300	4199750	9.56	10.2	1.8
RE DISCCART	556350	4199750	10.3	11.53	1.8
RE DISCCART	556400	4199750	10.84	11.53	1.8
RE DISCCART	556450	4199750	11	11.53	1.8
RE DISCCART	556500	4199750	11.36	11.75	1.8
RE DISCCART	556550	4199750	12.35	12.35	1.8
RE DISCCART	556600	4199750	12.81	12.81	1.8
RE DISCCART	555750	4199800	6.01	6.01	1.8
RE DISCCART	555800	4199800	6.24	6.82	1.8
RE DISCCART	555850	4199800	6.35	6.35	1.8
RE DISCCART	555900	4199800	6.99	6.99	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555950	4199800	7.1	7.1	1.8
RE DISCCART	556000	4199800	7.44	7.44	1.8
RE DISCCART	556050	4199800	7.53	7.9	1.8
RE DISCCART	556100	4199800	7.99	7.99	1.8
RE DISCCART	556150	4199800	8.52	8.52	1.8
RE DISCCART	556200	4199800	9.94	9.94	1.8
RE DISCCART	556250	4199800	9.51	9.51	1.8
RE DISCCART	556300	4199800	10.08	10.46	1.8
RE DISCCART	556350	4199800	10.73	11.69	1.8
RE DISCCART	556400	4199800	11.23	11.53	1.8
RE DISCCART	556450	4199800	10.74	11.53	1.8
RE DISCCART	556500	4199800	11.53	11.53	1.8
RE DISCCART	556550	4199800	12.09	12.09	1.8
RE DISCCART	556600	4199800	12.56	12.56	1.8
RE DISCCART	555800	4199850	6.09	6.09	1.8
RE DISCCART	555850	4199850	6.5	6.5	1.8
RE DISCCART	555900	4199850	6.79	6.79	1.8
RE DISCCART	555950	4199850	6.95	6.95	1.8
RE DISCCART	556000	4199850	7.34	7.61	1.8
RE DISCCART	556050	4199850	7.6	7.94	1.8
RE DISCCART	556100	4199850	7.94	8.28	1.8
RE DISCCART	556150	4199850	8.58	8.58	1.8
RE DISCCART	556200	4199850	8.94	8.94	1.8
RE DISCCART	556250	4199850	9.44	9.44	1.8
RE DISCCART	556300	4199850	10.12	10.78	1.8
RE DISCCART	556350	4199850	10.97	11.62	1.8
RE DISCCART	556400	4199850	11.13	11.53	1.8
RE DISCCART	556450	4199850	11.06	11.53	1.8
RE DISCCART	556500	4199850	11.13	11.53	1.8
RE DISCCART	556550	4199850	11.61	11.61	1.8
RE DISCCART	556600	4199850	12.02	12.02	1.8
RE DISCCART	555800	4199900	6.48	11.41	1.8
RE DISCCART	555850	4199900	6	6.76	1.8
RE DISCCART	555900	4199900	7.01	7.01	1.8
RE DISCCART	555950	4199900	7.11	7.41	1.8
RE DISCCART	556000	4199900	7.33	7.75	1.8
RE DISCCART	556050	4199900	8.06	8.06	1.8
RE DISCCART	556100	4199900	8.35	8.35	1.8
RE DISCCART	556150	4199900	8.74	8.74	1.8
RE DISCCART	556200	4199900	9.1	9.1	1.8
RE DISCCART	556250	4199900	9.4	9.73	1.8
RE DISCCART	556300	4199900	9.94	10.44	1.8
RE DISCCART	556350	4199900	10.53	11.56	1.8
RE DISCCART	556400	4199900	11.36	11.36	1.8
RE DISCCART	556450	4199900	12.01	12.01	1.8
RE DISCCART	556500	4199900	11.59	11.59	1.8
RE DISCCART	556550	4199900	11.83	11.83	1.8
RE DISCCART	556600	4199900	12.67	12.67	1.8
RE DISCCART	555800	4199950	8.6	11.88	1.8
RE DISCCART	555850	4199950	6.6	12.09	1.8
RE DISCCART	555900	4199950	7.17	7.17	1.8
RE DISCCART	555950	4199950	7.48	7.48	1.8
RE DISCCART	556000	4199950	7.55	7.9	1.8
RE DISCCART	556050	4199950	7.91	8.4	1.8
RE DISCCART	556100	4199950	8.32	8.6	1.8
RE DISCCART	556150	4199950	8.8	8.8	1.8
RE DISCCART	556200	4199950	8.99	8.99	1.8
RE DISCCART	556250	4199950	9.09	9.72	1.8
RE DISCCART	556300	4199950	10.1	10.1	1.8
RE DISCCART	556350	4199950	10.26	11.38	1.8
RE DISCCART	556400	4199950	11.12	11.35	1.8
RE DISCCART	556450	4199950	11.73	11.73	1.8
RE DISCCART	556500	4199950	12.36	12.36	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556550	4199950	12.2	12.2	1.8
RE DISCCART	556600	4199950	12.41	12.41	1.8
RE DISCCART	555800	4200000	9.71	11.97	1.8
RE DISCCART	555850	4200000	4.9	12.99	1.8
RE DISCCART	555900	4200000	7.25	7.25	1.8
RE DISCCART	555950	4200000	7.45	7.45	1.8
RE DISCCART	556000	4200000	7.61	7.99	1.8
RE DISCCART	556050	4200000	7.99	8.39	1.8
RE DISCCART	556100	4200000	8.25	8.78	1.8
RE DISCCART	556150	4200000	8.81	8.81	1.8
RE DISCCART	556200	4200000	8.84	9.44	1.8
RE DISCCART	556250	4200000	9.36	9.8	1.8
RE DISCCART	556300	4200000	10.15	11.22	1.8
RE DISCCART	556350	4200000	11.15	11.15	1.8
RE DISCCART	556400	4200000	11.42	11.42	1.8
RE DISCCART	556450	4200000	11.45	11.45	1.8
RE DISCCART	556500	4200000	11.93	11.93	1.8
RE DISCCART	556550	4200000	12.45	12.45	1.8
RE DISCCART	556600	4200000	12.69	12.69	1.8
RE DISCCART	555750	4200050	6.49	6.49	1.8
RE DISCCART	555800	4200050	6.48	12.53	1.8
RE DISCCART	555850	4200050	12.12	12.12	1.8
RE DISCCART	555900	4200050	6.96	13.36	1.8
RE DISCCART	555950	4200050	7.63	7.63	1.8
RE DISCCART	556000	4200050	7.87	8.51	1.8
RE DISCCART	556050	4200050	8.32	8.32	1.8
RE DISCCART	556100	4200050	8.94	9.31	1.8
RE DISCCART	556150	4200050	8.92	8.92	1.8
RE DISCCART	556200	4200050	9.56	9.56	1.8
RE DISCCART	556250	4200050	9.8	10.64	1.8
RE DISCCART	556300	4200050	11.13	11.13	1.8
RE DISCCART	556350	4200050	11.44	11.44	1.8
RE DISCCART	556400	4200050	11.36	11.36	1.8
RE DISCCART	556450	4200050	11.41	11.41	1.8
RE DISCCART	556500	4200050	12.06	12.06	1.8
RE DISCCART	556550	4200050	12.06	12.06	1.8
RE DISCCART	556600	4200050	12.75	12.75	1.8
RE DISCCART	555700	4200100	5.9	6.38	1.8
RE DISCCART	555750	4200100	6.15	7.39	1.8
RE DISCCART	555800	4200100	6.72	6.72	1.8
RE DISCCART	555850	4200100	7.04	13.36	1.8
RE DISCCART	555900	4200100	12.87	12.87	1.8
RE DISCCART	555950	4200100	7.81	14.05	1.8
RE DISCCART	556000	4200100	8.27	8.52	1.8
RE DISCCART	556050	4200100	8.55	8.55	1.8
RE DISCCART	556100	4200100	9.59	9.82	1.8
RE DISCCART	556150	4200100	9.65	9.65	1.8
RE DISCCART	556200	4200100	9.94	9.94	1.8
RE DISCCART	556250	4200100	10.76	10.76	1.8
RE DISCCART	556300	4200100	10.27	10.27	1.8
RE DISCCART	556350	4200100	11.5	11.5	1.8
RE DISCCART	556400	4200100	11.69	11.69	1.8
RE DISCCART	556450	4200100	11.45	11.45	1.8
RE DISCCART	556500	4200100	11.65	11.65	1.8
RE DISCCART	556550	4200100	12.13	12.13	1.8
RE DISCCART	556600	4200100	12.53	13.01	1.8
RE DISCCART	555650	4200150	5.88	5.88	1.8
RE DISCCART	555700	4200150	6.49	6.49	1.8
RE DISCCART	555750	4200150	6.06	6.06	1.8
RE DISCCART	555800	4200150	6.7	6.7	1.8
RE DISCCART	555850	4200150	6.76	6.76	1.8
RE DISCCART	555900	4200150	8.36	14.05	1.8
RE DISCCART	555950	4200150	13.83	13.83	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556000	4200150	8.62	14.62	1.8
RE DISCCART	556050	4200150	8.66	8.66	1.8
RE DISCCART	556100	4200150	9.88	9.88	1.8
RE DISCCART	556150	4200150	10.26	10.26	1.8
RE DISCCART	556200	4200150	10.11	10.11	1.8
RE DISCCART	556250	4200150	10.25	10.25	1.8
RE DISCCART	556300	4200150	11.1	11.1	1.8
RE DISCCART	556350	4200150	11.42	11.42	1.8
RE DISCCART	556400	4200150	11.57	11.57	1.8
RE DISCCART	556450	4200150	11.41	11.41	1.8
RE DISCCART	556500	4200150	12.35	12.35	1.8
RE DISCCART	556550	4200150	13.22	13.22	1.8
RE DISCCART	556600	4200150	13.63	13.63	1.8
RE DISCCART	555600	4200200	4.76	8.73	1.8
RE DISCCART	555650	4200200	4.44	6.05	1.8
RE DISCCART	555700	4200200	5.76	5.76	1.8
RE DISCCART	555750	4200200	6.32	6.32	1.8
RE DISCCART	555800	4200200	6.28	6.28	1.8
RE DISCCART	555850	4200200	7.17	7.17	1.8
RE DISCCART	555900	4200200	7.63	7.63	1.8
RE DISCCART	555950	4200200	8.24	14.93	1.8
RE DISCCART	556000	4200200	10.43	15.1	1.8
RE DISCCART	556050	4200200	9.79	15.17	1.8
RE DISCCART	556100	4200200	10.16	10.16	1.8
RE DISCCART	556150	4200200	10.31	10.31	1.8
RE DISCCART	556200	4200200	10.27	10.27	1.8
RE DISCCART	556250	4200200	10.11	10.11	1.8
RE DISCCART	556300	4200200	11.5	11.5	1.8
RE DISCCART	556350	4200200	11.19	11.19	1.8
RE DISCCART	556400	4200200	11.56	11.56	1.8
RE DISCCART	556450	4200200	11.7	11.7	1.8
RE DISCCART	556500	4200200	12.19	12.19	1.8
RE DISCCART	556550	4200200	12.63	12.63	1.8
RE DISCCART	556600	4200200	12.81	12.96	1.8
RE DISCCART	555500	4200250	10.36	12.69	1.8
RE DISCCART	555550	4200250	4.64	13.3	1.8
RE DISCCART	555600	4200250	4.85	5.94	1.8
RE DISCCART	555650	4200250	4.74	5.97	1.8
RE DISCCART	555700	4200250	5.07	6.16	1.8
RE DISCCART	555750	4200250	6.19	6.19	1.8
RE DISCCART	555800	4200250	6.24	6.24	1.8
RE DISCCART	555850	4200250	6.24	6.91	1.8
RE DISCCART	555900	4200250	7.71	7.71	1.8
RE DISCCART	555950	4200250	8.26	15.05	1.8
RE DISCCART	556000	4200250	7.37	15.55	1.8
RE DISCCART	556050	4200250	9.27	15.58	1.8
RE DISCCART	556100	4200250	9.79	15.48	1.8
RE DISCCART	556150	4200250	9.97	9.97	1.8
RE DISCCART	556200	4200250	10.43	10.43	1.8
RE DISCCART	556250	4200250	10.46	10.89	1.8
RE DISCCART	556300	4200250	11.5	11.5	1.8
RE DISCCART	556350	4200250	11.14	11.14	1.8
RE DISCCART	556400	4200250	11.28	11.28	1.8
RE DISCCART	556450	4200250	11.35	11.35	1.8
RE DISCCART	556500	4200250	11.72	11.72	1.8
RE DISCCART	556550	4200250	12.12	12.51	1.8
RE DISCCART	556600	4200250	12.48	12.82	1.8
RE DISCCART	555450	4200300	8.55	13.66	1.8
RE DISCCART	555500	4200300	4	13.66	1.8
RE DISCCART	555550	4200300	4.54	13.14	1.8
RE DISCCART	555600	4200300	4.36	5.87	1.8
RE DISCCART	555650	4200300	4.7	5.93	1.8
RE DISCCART	555700	4200300	5.47	6.39	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555750	4200300	6.03	6.03	1.8
RE DISCCART	555800	4200300	5.68	6.62	1.8
RE DISCCART	555850	4200300	6.26	6.84	1.8
RE DISCCART	555900	4200300	6.38	7.54	1.8
RE DISCCART	555950	4200300	7.83	7.83	1.8
RE DISCCART	556000	4200300	8.66	15.58	1.8
RE DISCCART	556050	4200300	10.27	15.83	1.8
RE DISCCART	556100	4200300	9.42	16.05	1.8
RE DISCCART	556150	4200300	10.47	10.47	1.8
RE DISCCART	556200	4200300	10.91	10.91	1.8
RE DISCCART	556250	4200300	10.84	10.84	1.8
RE DISCCART	556300	4200300	11.49	11.49	1.8
RE DISCCART	556350	4200300	11.26	11.26	1.8
RE DISCCART	556400	4200300	11.1	11.1	1.8
RE DISCCART	556450	4200300	11.54	11.54	1.8
RE DISCCART	556500	4200300	11.84	11.84	1.8
RE DISCCART	556550	4200300	12.2	12.61	1.8
RE DISCCART	556600	4200300	13.03	13.03	1.8
RE DISCCART	555400	4200350	4.43	13.66	1.8
RE DISCCART	555450	4200350	4.64	13.66	1.8
RE DISCCART	555500	4200350	4.53	13.36	1.8
RE DISCCART	555550	4200350	4.23	5.64	1.8
RE DISCCART	555600	4200350	3.88	5.84	1.8
RE DISCCART	555650	4200350	4.95	5.96	1.8
RE DISCCART	555700	4200350	5.28	6.14	1.8
RE DISCCART	555750	4200350	5.42	6.47	1.8
RE DISCCART	555800	4200350	6.44	6.72	1.8
RE DISCCART	555850	4200350	7.07	7.07	1.8
RE DISCCART	555900	4200350	7.17	7.31	1.8
RE DISCCART	555950	4200350	7.76	7.76	1.8
RE DISCCART	556000	4200350	7.44	8.1	1.8
RE DISCCART	556050	4200350	8.36	16.21	1.8
RE DISCCART	556100	4200350	15	16.05	1.8
RE DISCCART	556150	4200350	9.79	16.76	1.8
RE DISCCART	556200	4200350	9.96	9.96	1.8
RE DISCCART	556250	4200350	10.57	11.37	1.8
RE DISCCART	556300	4200350	11.5	11.5	1.8
RE DISCCART	556350	4200350	11.74	11.74	1.8
RE DISCCART	556400	4200350	11.09	11.09	1.8
RE DISCCART	556450	4200350	11.97	11.97	1.8
RE DISCCART	556500	4200350	12.33	12.33	1.8
RE DISCCART	556550	4200350	12.43	12.43	1.8
RE DISCCART	556600	4200350	12.98	12.98	1.8
RE DISCCART	555400	4200400	3.56	11.67	1.8
RE DISCCART	555450	4200400	3.81	4.49	1.8
RE DISCCART	555500	4200400	4.12	4.95	1.8
RE DISCCART	555550	4200400	4.31	5.43	1.8
RE DISCCART	555600	4200400	4.54	5.83	1.8
RE DISCCART	555650	4200400	5.26	5.99	1.8
RE DISCCART	555700	4200400	5.05	6.37	1.8
RE DISCCART	555750	4200400	5.74	6.56	1.8
RE DISCCART	555800	4200400	5.79	6.84	1.8
RE DISCCART	555850	4200400	6.31	7.07	1.8
RE DISCCART	555900	4200400	7.35	7.35	1.8
RE DISCCART	555950	4200400	7.2	7.77	1.8
RE DISCCART	556000	4200400	7.29	10.25	1.8
RE DISCCART	556050	4200400	8.4	16.19	1.8
RE DISCCART	556100	4200400	8.78	16.89	1.8
RE DISCCART	556150	4200400	16.05	16.65	1.8
RE DISCCART	556200	4200400	9.52	17.29	1.8
RE DISCCART	556250	4200400	10.89	10.89	1.8
RE DISCCART	556300	4200400	11.46	11.46	1.8
RE DISCCART	556350	4200400	11.8	11.8	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556400	4200400	11.05	12.01	1.8
RE DISCCART	556450	4200400	12.42	12.42	1.8
RE DISCCART	556500	4200400	12.24	12.24	1.8
RE DISCCART	556550	4200400	12.55	12.55	1.8
RE DISCCART	556600	4200400	12.97	12.97	1.8
RE DISCCART	555400	4200450	2.32	10.61	1.8
RE DISCCART	555450	4200450	4.34	4.34	1.8
RE DISCCART	555500	4200450	4.58	4.58	1.8
RE DISCCART	555550	4200450	4.3	4.85	1.8
RE DISCCART	555600	4200450	4.8	5.26	1.8
RE DISCCART	555650	4200450	5.62	6.7	1.8
RE DISCCART	555700	4200450	5.72	6.95	1.8
RE DISCCART	555750	4200450	5.97	6.8	1.8
RE DISCCART	555800	4200450	5.86	6.97	1.8
RE DISCCART	555850	4200450	6.43	7.22	1.8
RE DISCCART	555900	4200450	7.05	7.51	1.8
RE DISCCART	555950	4200450	7.82	7.82	1.8
RE DISCCART	556000	4200450	7.46	8.56	1.8
RE DISCCART	556050	4200450	8.09	11.04	1.8
RE DISCCART	556100	4200450	9.81	16.76	1.8
RE DISCCART	556150	4200450	9.41	17.39	1.8
RE DISCCART	556200	4200450	12.25	17.39	1.8
RE DISCCART	556250	4200450	10.63	17.47	1.8
RE DISCCART	556300	4200450	11.53	11.53	1.8
RE DISCCART	556350	4200450	11.68	11.68	1.8
RE DISCCART	556400	4200450	11.14	12.47	1.8
RE DISCCART	556450	4200450	12.8	12.8	1.8
RE DISCCART	556500	4200450	12.76	12.76	1.8
RE DISCCART	556550	4200450	12.85	12.85	1.8
RE DISCCART	556600	4200450	13.28	13.28	1.8
RE DISCCART	555300	4200500	5.38	5.38	1.8
RE DISCCART	555350	4200500	2.19	5.64	1.8
RE DISCCART	555400	4200500	3.14	3.67	1.8
RE DISCCART	555450	4200500	4.13	4.13	1.8
RE DISCCART	555500	4200500	4.7	4.7	1.8
RE DISCCART	555550	4200500	5.12	5.12	1.8
RE DISCCART	555600	4200500	4.63	5.57	1.8
RE DISCCART	555650	4200500	5.04	6.66	1.8
RE DISCCART	555700	4200500	6.33	6.84	1.8
RE DISCCART	555750	4200500	6.81	6.83	1.8
RE DISCCART	555800	4200500	6.32	7.11	1.8
RE DISCCART	555850	4200500	7.12	7.12	1.8
RE DISCCART	555900	4200500	7.25	7.72	1.8
RE DISCCART	555950	4200500	7.58	7.58	1.8
RE DISCCART	556000	4200500	8.22	8.22	1.8
RE DISCCART	556050	4200500	8.84	8.84	1.8
RE DISCCART	556100	4200500	9.72	9.72	1.8
RE DISCCART	556150	4200500	9.26	17.39	1.8
RE DISCCART	556200	4200500	9.82	17.47	1.8
RE DISCCART	556250	4200500	11.84	17.47	1.8
RE DISCCART	556300	4200500	11.45	17.47	1.8
RE DISCCART	556350	4200500	11.4	11.86	1.8
RE DISCCART	556400	4200500	11.38	14.49	1.8
RE DISCCART	556450	4200500	13.23	15.41	1.8
RE DISCCART	556500	4200500	12.84	12.84	1.8
RE DISCCART	556550	4200500	13.12	13.3	1.8
RE DISCCART	556600	4200500	13.34	13.6	1.8
RE DISCCART	555250	4200550	2.8	5.13	1.8
RE DISCCART	555300	4200550	2.48	3.1	1.8
RE DISCCART	555350	4200550	2.8	3.49	1.8
RE DISCCART	555400	4200550	3.22	3.92	1.8
RE DISCCART	555450	4200550	3.52	4.28	1.8
RE DISCCART	555500	4200550	4.28	4.76	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555550	4200550	4.17	5.34	1.8
RE DISCCART	555600	4200550	4.67	5.65	1.8
RE DISCCART	555650	4200550	5.31	6.25	1.8
RE DISCCART	555700	4200550	5.77	6.56	1.8
RE DISCCART	555750	4200550	6.43	6.98	1.8
RE DISCCART	555800	4200550	6.71	8.35	1.8
RE DISCCART	555850	4200550	7.22	7.22	1.8
RE DISCCART	555900	4200550	7.57	8.03	1.8
RE DISCCART	555950	4200550	8.18	8.18	1.8
RE DISCCART	556000	4200550	9	9	1.8
RE DISCCART	556050	4200550	8.64	8.64	1.8
RE DISCCART	556100	4200550	9.23	9.23	1.8
RE DISCCART	556150	4200550	9.06	9.71	1.8
RE DISCCART	556200	4200550	10.06	17.47	1.8
RE DISCCART	556250	4200550	12.37	17.47	1.8
RE DISCCART	556300	4200550	11.3	17.47	1.8
RE DISCCART	556350	4200550	11.75	11.75	1.8
RE DISCCART	556400	4200550	12.29	12.29	1.8
RE DISCCART	556450	4200550	12.89	12.89	1.8
RE DISCCART	556500	4200550	13.33	13.33	1.8
RE DISCCART	556550	4200550	13.87	13.87	1.8
RE DISCCART	556600	4200550	14.28	14.28	1.8
RE DISCCART	555250	4200600	2.47	2.47	1.8
RE DISCCART	555300	4200600	2.4	3.31	1.8
RE DISCCART	555350	4200600	2.85	3.64	1.8
RE DISCCART	555400	4200600	3.47	4.02	1.8
RE DISCCART	555450	4200600	3.76	4.41	1.8
RE DISCCART	555500	4200600	4.2	4.89	1.8
RE DISCCART	555550	4200600	4.54	5.54	1.8
RE DISCCART	555600	4200600	4.74	5.85	1.8
RE DISCCART	555650	4200600	5.18	6.24	1.8
RE DISCCART	555700	4200600	5.61	6.81	1.8
RE DISCCART	555750	4200600	6.23	7.11	1.8
RE DISCCART	555800	4200600	6.7	7.3	1.8
RE DISCCART	555850	4200600	7.29	7.79	1.8
RE DISCCART	555900	4200600	8.11	8.11	1.8
RE DISCCART	555950	4200600	8.73	8.73	1.8
RE DISCCART	556000	4200600	8.78	8.78	1.8
RE DISCCART	556050	4200600	8.63	9.04	1.8
RE DISCCART	556100	4200600	9.27	9.27	1.8
RE DISCCART	556150	4200600	9.51	9.8	1.8
RE DISCCART	556200	4200600	9.88	10.65	1.8
RE DISCCART	556250	4200600	10.67	17.47	1.8
RE DISCCART	556300	4200600	17.07	17.14	1.8
RE DISCCART	556350	4200600	11.49	17.35	1.8
RE DISCCART	556400	4200600	11.98	12.28	1.8
RE DISCCART	556450	4200600	12.43	12.99	1.8
RE DISCCART	556500	4200600	13.08	13.34	1.8
RE DISCCART	556550	4200600	13.92	13.92	1.8
RE DISCCART	556600	4200600	14.52	14.52	1.8
RE DISCCART	555250	4200650	2.69	2.69	1.8
RE DISCCART	555300	4200650	2.59	3.34	1.8
RE DISCCART	555350	4200650	2.92	3.73	1.8
RE DISCCART	555400	4200650	3.37	4.04	1.8
RE DISCCART	555450	4200650	3.55	4.59	1.8
RE DISCCART	555500	4200650	4.15	4.89	1.8
RE DISCCART	555550	4200650	5.07	5.07	1.8
RE DISCCART	555600	4200650	5.24	5.76	1.8
RE DISCCART	555650	4200650	5.84	5.84	1.8
RE DISCCART	555700	4200650	5.94	6.72	1.8
RE DISCCART	555750	4200650	6.42	7.11	1.8
RE DISCCART	555800	4200650	7.26	7.26	1.8
RE DISCCART	555850	4200650	7.87	7.87	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555900	4200650	7.84	8.3	1.8
RE DISCCART	555950	4200650	8.07	8.47	1.8
RE DISCCART	556000	4200650	8.83	8.83	1.8
RE DISCCART	556050	4200650	8.9	9.35	1.8
RE DISCCART	556100	4200650	8.73	9.85	1.8
RE DISCCART	556150	4200650	9.64	10.01	1.8
RE DISCCART	556200	4200650	10.25	10.82	1.8
RE DISCCART	556250	4200650	10.38	17.29	1.8
RE DISCCART	556300	4200650	10.97	17.35	1.8
RE DISCCART	556350	4200650	11.14	17.29	1.8
RE DISCCART	556400	4200650	11.94	11.94	1.8
RE DISCCART	556450	4200650	12.36	12.99	1.8
RE DISCCART	556500	4200650	13.07	13.07	1.8
RE DISCCART	556550	4200650	13.33	13.69	1.8
RE DISCCART	556600	4200650	13.7	13.7	1.8
RE DISCCART	555250	4200700	2.69	2.69	1.8
RE DISCCART	555300	4200700	2.74	3.32	1.8
RE DISCCART	555350	4200700	2.69	3.64	1.8
RE DISCCART	555400	4200700	3.19	4.04	1.8
RE DISCCART	555450	4200700	3.35	4.53	1.8
RE DISCCART	555500	4200700	3.98	4.97	1.8
RE DISCCART	555550	4200700	4.68	5.42	1.8
RE DISCCART	555600	4200700	5.14	5.74	1.8
RE DISCCART	555650	4200700	5.53	6.22	1.8
RE DISCCART	555700	4200700	5.78	6.72	1.8
RE DISCCART	555750	4200700	6.31	7.03	1.8
RE DISCCART	555800	4200700	7.36	7.36	1.8
RE DISCCART	555850	4200700	7.38	7.86	1.8
RE DISCCART	555900	4200700	8.08	8.41	1.8
RE DISCCART	555950	4200700	8.08	8.73	1.8
RE DISCCART	556000	4200700	8.52	8.92	1.8
RE DISCCART	556050	4200700	8.51	9.64	1.8
RE DISCCART	556100	4200700	9.56	9.95	1.8
RE DISCCART	556150	4200700	9.7	10.1	1.8
RE DISCCART	556200	4200700	10.05	10.35	1.8
RE DISCCART	556250	4200700	11.1	11.97	1.8
RE DISCCART	556300	4200700	12.02	16.94	1.8
RE DISCCART	556350	4200700	15.93	16.72	1.8
RE DISCCART	556400	4200700	12.06	12.06	1.8
RE DISCCART	556450	4200700	12.47	12.98	1.8
RE DISCCART	556500	4200700	13.45	13.45	1.8
RE DISCCART	556550	4200700	13.86	13.86	1.8
RE DISCCART	556600	4200700	13.93	13.93	1.8
RE DISCCART	555250	4200750	3.3	3.3	1.8
RE DISCCART	555300	4200750	2.39	3.32	1.8
RE DISCCART	555350	4200750	2.63	3.7	1.8
RE DISCCART	555400	4200750	2.91	4.09	1.8
RE DISCCART	555450	4200750	3.41	4.48	1.8
RE DISCCART	555500	4200750	3.82	4.86	1.8
RE DISCCART	555550	4200750	4.23	5.24	1.8
RE DISCCART	555600	4200750	4.65	5.64	1.8
RE DISCCART	555650	4200750	5	6.03	1.8
RE DISCCART	555700	4200750	5.5	6.43	1.8
RE DISCCART	555750	4200750	6.21	6.72	1.8
RE DISCCART	555800	4200750	6.8	7.11	1.8
RE DISCCART	555850	4200750	6.98	7.53	1.8
RE DISCCART	555900	4200750	7.24	8.09	1.8
RE DISCCART	555950	4200750	7.48	8.44	1.8
RE DISCCART	556000	4200750	7.97	8.79	1.8
RE DISCCART	556050	4200750	8.44	9.32	1.8
RE DISCCART	556100	4200750	8.92	9.85	1.8
RE DISCCART	556150	4200750	9.73	10.1	1.8
RE DISCCART	556200	4200750	9.97	10.39	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556250	4200750	9.98	12.12	1.8
RE DISCCART	556300	4200750	12.64	12.64	1.8
RE DISCCART	556350	4200750	12.39	16.49	1.8
RE DISCCART	556400	4200750	12.5	12.5	1.8
RE DISCCART	556450	4200750	13.23	13.23	1.8
RE DISCCART	556500	4200750	13.52	13.52	1.8
RE DISCCART	556550	4200750	14.13	14.13	1.8
RE DISCCART	556600	4200750	14.08	14.08	1.8
RE DISCCART	555250	4200800	3.38	3.38	1.8
RE DISCCART	555300	4200800	2.76	3.32	1.8
RE DISCCART	555350	4200800	3.08	3.62	1.8
RE DISCCART	555400	4200800	3.26	3.93	1.8
RE DISCCART	555450	4200800	3.45	4.37	1.8
RE DISCCART	555500	4200800	3.87	4.76	1.8
RE DISCCART	555550	4200800	4.29	5.14	1.8
RE DISCCART	555600	4200800	4.79	5.53	1.8
RE DISCCART	555650	4200800	5.29	5.89	1.8
RE DISCCART	555700	4200800	5.77	6.18	1.8
RE DISCCART	555750	4200800	6.33	6.51	1.8
RE DISCCART	555800	4200800	6.48	6.84	1.8
RE DISCCART	555850	4200800	6.5	7.3	1.8
RE DISCCART	555900	4200800	7.03	7.79	1.8
RE DISCCART	555950	4200800	7.66	7.66	1.8
RE DISCCART	556000	4200800	7.89	8.37	1.8
RE DISCCART	556050	4200800	8.71	8.71	1.8
RE DISCCART	556100	4200800	8.94	8.94	1.8
RE DISCCART	556150	4200800	9.68	9.68	1.8
RE DISCCART	556200	4200800	10.08	10.08	1.8
RE DISCCART	556250	4200800	11.01	14.65	1.8
RE DISCCART	556300	4200800	11.26	15.16	1.8
RE DISCCART	556350	4200800	11.86	16.12	1.8
RE DISCCART	556400	4200800	12.35	15.95	1.8
RE DISCCART	556450	4200800	12.79	12.79	1.8
RE DISCCART	556500	4200800	13.04	13.04	1.8
RE DISCCART	556550	4200800	13.49	13.49	1.8
RE DISCCART	556600	4200800	13.87	13.87	1.8
RE DISCCART	555250	4200850	3.39	3.39	1.8
RE DISCCART	555300	4200850	3.5	3.5	1.8
RE DISCCART	555350	4200850	3.13	3.72	1.8
RE DISCCART	555400	4200850	3.15	3.9	1.8
RE DISCCART	555450	4200850	3.22	4.27	1.8
RE DISCCART	555500	4200850	3.78	4.61	1.8
RE DISCCART	555550	4200850	3.99	5.09	1.8
RE DISCCART	555600	4200850	4.62	5.39	1.8
RE DISCCART	555650	4200850	5.17	5.56	1.8
RE DISCCART	555700	4200850	5.48	5.93	1.8
RE DISCCART	555750	4200850	6.12	6.12	1.8
RE DISCCART	555800	4200850	6.3	6.7	1.8
RE DISCCART	555850	4200850	6.37	7.15	1.8
RE DISCCART	555900	4200850	6.82	7.54	1.8
RE DISCCART	555950	4200850	7.21	7.93	1.8
RE DISCCART	556000	4200850	7.91	7.91	1.8
RE DISCCART	556050	4200850	8.33	8.33	1.8
RE DISCCART	556100	4200850	8.99	8.99	1.8
RE DISCCART	556150	4200850	9.64	9.64	1.8
RE DISCCART	556200	4200850	9.93	12.53	1.8
RE DISCCART	556250	4200850	10.84	15.16	1.8
RE DISCCART	556300	4200850	12.3	15.16	1.8
RE DISCCART	556350	4200850	11.35	15.77	1.8
RE DISCCART	556400	4200850	11.8	15.69	1.8
RE DISCCART	556450	4200850	12.08	12.41	1.8
RE DISCCART	556500	4200850	12.6	13.13	1.8
RE DISCCART	556550	4200850	13.13	13.13	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556600	4200850	13.38	13.38	1.8
RE DISCCART	555250	4200900	2.66	3.13	1.8
RE DISCCART	555300	4200900	2.97	3.27	1.8
RE DISCCART	555350	4200900	3.14	3.47	1.8
RE DISCCART	555400	4200900	3.24	3.79	1.8
RE DISCCART	555450	4200900	3.07	4.2	1.8
RE DISCCART	555500	4200900	3.33	4.47	1.8
RE DISCCART	555550	4200900	3.68	4.88	1.8
RE DISCCART	555600	4200900	4.09	5.14	1.8
RE DISCCART	555650	4200900	4.6	5.36	1.8
RE DISCCART	555700	4200900	5.06	5.72	1.8
RE DISCCART	555750	4200900	5.56	6.01	1.8
RE DISCCART	555800	4200900	6.04	6.54	1.8
RE DISCCART	555850	4200900	6.14	7.06	1.8
RE DISCCART	555900	4200900	6.85	6.85	1.8
RE DISCCART	555950	4200900	7.31	7.31	1.8
RE DISCCART	556000	4200900	7.84	7.84	1.8
RE DISCCART	556050	4200900	8.41	8.41	1.8
RE DISCCART	556100	4200900	8.64	8.64	1.8
RE DISCCART	556150	4200900	9.36	9.36	1.8
RE DISCCART	556200	4200900	10.16	10.16	1.8
RE DISCCART	556250	4200900	10.73	14.88	1.8
RE DISCCART	556300	4200900	11.36	14.96	1.8
RE DISCCART	556350	4200900	11.03	15.17	1.8
RE DISCCART	556400	4200900	11.44	14.85	1.8
RE DISCCART	556450	4200900	11.57	12.03	1.8
RE DISCCART	556500	4200900	12.23	12.55	1.8
RE DISCCART	556550	4200900	12.75	12.75	1.8
RE DISCCART	556600	4200900	12.56	13	1.8
RE DISCCART	555100	4200950	3.89	3.89	1.8
RE DISCCART	555150	4200950	3.56	3.56	1.8
RE DISCCART	555200	4200950	3.96	3.96	1.8
RE DISCCART	555250	4200950	3.63	3.63	1.8
RE DISCCART	555300	4200950	3.77	3.77	1.8
RE DISCCART	555350	4200950	3.26	3.59	1.8
RE DISCCART	555400	4200950	3.47	3.47	1.8
RE DISCCART	555450	4200950	3.05	3.86	1.8
RE DISCCART	555500	4200950	3.47	4.24	1.8
RE DISCCART	555550	4200950	3.85	4.75	1.8
RE DISCCART	555600	4200950	4.24	5.05	1.8
RE DISCCART	555650	4200950	4.59	5.25	1.8
RE DISCCART	555700	4200950	5.3	5.3	1.8
RE DISCCART	555750	4200950	5.71	5.71	1.8
RE DISCCART	555800	4200950	6.03	6.03	1.8
RE DISCCART	555850	4200950	6.17	6.83	1.8
RE DISCCART	555900	4200950	6.63	6.63	1.8
RE DISCCART	555950	4200950	7.06	7.63	1.8
RE DISCCART	556000	4200950	7.54	8.01	1.8
RE DISCCART	556050	4200950	8.07	8.4	1.8
RE DISCCART	556100	4200950	8.52	8.99	1.8
RE DISCCART	556150	4200950	9.16	9.58	1.8
RE DISCCART	556200	4200950	9.51	10.13	1.8
RE DISCCART	556250	4200950	10.37	14.88	1.8
RE DISCCART	556300	4200950	10.4	14.96	1.8
RE DISCCART	556350	4200950	10.27	14.44	1.8
RE DISCCART	556400	4200950	10.95	14.24	1.8
RE DISCCART	556450	4200950	11.26	11.77	1.8
RE DISCCART	556500	4200950	11.89	11.89	1.8
RE DISCCART	556550	4200950	12.21	12.21	1.8
RE DISCCART	556600	4200950	12.64	12.64	1.8
RE DISCCART	555100	4201000	3.95	4.09	1.8
RE DISCCART	555150	4201000	4.01	4.01	1.8
RE DISCCART	555200	4201000	4.51	4.51	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555250	4201000	3.93	3.93	1.8
RE DISCCART	555300	4201000	3.76	4.72	1.8
RE DISCCART	555350	4201000	3.56	3.56	1.8
RE DISCCART	555400	4201000	3.48	3.48	1.8
RE DISCCART	555450	4201000	3.41	3.41	1.8
RE DISCCART	555500	4201000	3.66	3.66	1.8
RE DISCCART	555550	4201000	3.82	4.64	1.8
RE DISCCART	555600	4201000	4.09	5.02	1.8
RE DISCCART	555650	4201000	4.91	4.91	1.8
RE DISCCART	555700	4201000	4.77	5.3	1.8
RE DISCCART	555750	4201000	5.74	5.74	1.8
RE DISCCART	555800	4201000	5.6	6.17	1.8
RE DISCCART	555850	4201000	5.84	6.73	1.8
RE DISCCART	555900	4201000	6.7	7.14	1.8
RE DISCCART	555950	4201000	7.1	7.51	1.8
RE DISCCART	556000	4201000	7.61	7.91	1.8
RE DISCCART	556050	4201000	7.95	8.4	1.8
RE DISCCART	556100	4201000	8.58	8.89	1.8
RE DISCCART	556150	4201000	9.07	9.46	1.8
RE DISCCART	556200	4201000	9.62	10.11	1.8
RE DISCCART	556250	4201000	9.65	10.09	1.8
RE DISCCART	556300	4201000	9.96	9.96	1.8
RE DISCCART	556350	4201000	10.5	13.63	1.8
RE DISCCART	556400	4201000	11.54	13.7	1.8
RE DISCCART	556450	4201000	11.2	11.2	1.8
RE DISCCART	556500	4201000	11.59	11.59	1.8
RE DISCCART	556550	4201000	11.85	11.85	1.8
RE DISCCART	556600	4201000	11.65	12.54	1.8
RE DISCCART	555100	4201050	4.35	4.35	1.8
RE DISCCART	555150	4201050	4.05	4.05	1.8
RE DISCCART	555200	4201050	4.28	4.28	1.8
RE DISCCART	555250	4201050	4.56	4.56	1.8
RE DISCCART	555300	4201050	4.38	4.38	1.8
RE DISCCART	555350	4201050	3.05	3.94	1.8
RE DISCCART	555400	4201050	3.48	4.03	1.8
RE DISCCART	555450	4201050	3.52	4.14	1.8
RE DISCCART	555500	4201050	3.96	4.03	1.8
RE DISCCART	555550	4201050	3.94	4.73	1.8
RE DISCCART	555600	4201050	4.07	4.93	1.8
RE DISCCART	555650	4201050	4.52	5.14	1.8
RE DISCCART	555700	4201050	4.37	5.38	1.8
RE DISCCART	555750	4201050	5.09	5.63	1.8
RE DISCCART	555800	4201050	5.47	6.15	1.8
RE DISCCART	555850	4201050	5.74	6.65	1.8
RE DISCCART	555900	4201050	6.81	6.81	1.8
RE DISCCART	555950	4201050	6.96	7.29	1.8
RE DISCCART	556000	4201050	7.6	7.6	1.8
RE DISCCART	556050	4201050	8.05	8.28	1.8
RE DISCCART	556100	4201050	8.28	8.64	1.8
RE DISCCART	556150	4201050	9.08	9.4	1.8
RE DISCCART	556200	4201050	9.18	9.69	1.8
RE DISCCART	556250	4201050	9.27	9.68	1.8
RE DISCCART	556300	4201050	9.69	9.69	1.8
RE DISCCART	556350	4201050	9.93	9.93	1.8
RE DISCCART	556400	4201050	11.13	13	1.8
RE DISCCART	556450	4201050	10.79	10.79	1.8
RE DISCCART	556500	4201050	11.22	11.22	1.8
RE DISCCART	556550	4201050	11.44	11.44	1.8
RE DISCCART	556600	4201050	11.15	11.97	1.8
RE DISCCART	555100	4201100	4.21	4.41	1.8
RE DISCCART	555150	4201100	4.1	4.28	1.8
RE DISCCART	555200	4201100	4	4	1.8
RE DISCCART	555250	4201100	3.94	3.94	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555300	4201100	3.03	3.63	1.8
RE DISCCART	555350	4201100	3.34	3.84	1.8
RE DISCCART	555400	4201100	3.45	4.03	1.8
RE DISCCART	555450	4201100	3.65	4.23	1.8
RE DISCCART	555500	4201100	3.94	4.53	1.8
RE DISCCART	555550	4201100	4.05	4.75	1.8
RE DISCCART	555600	4201100	4.08	5.02	1.8
RE DISCCART	555650	4201100	4.39	5.21	1.8
RE DISCCART	555700	4201100	4.19	5.37	1.8
RE DISCCART	555750	4201100	5.06	5.63	1.8
RE DISCCART	555800	4201100	5.31	6.04	1.8
RE DISCCART	555850	4201100	5.47	6.54	1.8
RE DISCCART	555900	4201100	6.37	6.79	1.8
RE DISCCART	555950	4201100	6.72	6.92	1.8
RE DISCCART	556000	4201100	7.5	7.5	1.8
RE DISCCART	556050	4201100	8.02	8.02	1.8
RE DISCCART	556100	4201100	8.06	8.46	1.8
RE DISCCART	556150	4201100	9.07	9.07	1.8
RE DISCCART	556200	4201100	9.12	9.12	1.8
RE DISCCART	556250	4201100	9.08	9.08	1.8
RE DISCCART	556300	4201100	9.61	9.61	1.8
RE DISCCART	556350	4201100	12.73	14.19	1.8
RE DISCCART	556400	4201100	10.79	12.56	1.8
RE DISCCART	556450	4201100	10.5	11.76	1.8
RE DISCCART	556500	4201100	10.88	10.88	1.8
RE DISCCART	556550	4201100	10.92	10.92	1.8
RE DISCCART	556600	4201100	11	11	1.8
RE DISCCART	555100	4201150	4.01	4.01	1.8
RE DISCCART	555150	4201150	3.88	3.88	1.8
RE DISCCART	555200	4201150	3.92	3.92	1.8
RE DISCCART	555250	4201150	3.91	3.91	1.8
RE DISCCART	555300	4201150	3.1	3.74	1.8
RE DISCCART	555350	4201150	3.5	3.94	1.8
RE DISCCART	555400	4201150	3.65	4.14	1.8
RE DISCCART	555450	4201150	3.65	4.36	1.8
RE DISCCART	555500	4201150	4.15	4.63	1.8
RE DISCCART	555550	4201150	4.05	4.84	1.8
RE DISCCART	555600	4201150	4.05	5.09	1.8
RE DISCCART	555650	4201150	4.22	5.33	1.8
RE DISCCART	555700	4201150	4.04	5.58	1.8
RE DISCCART	555750	4201150	4.43	5.76	1.8
RE DISCCART	555800	4201150	5.09	6.04	1.8
RE DISCCART	555850	4201150	5.32	6.43	1.8
RE DISCCART	555900	4201150	5.83	6.58	1.8
RE DISCCART	555950	4201150	6.44	6.76	1.8
RE DISCCART	556000	4201150	7.09	7.09	1.8
RE DISCCART	556050	4201150	7.54	7.54	1.8
RE DISCCART	556100	4201150	7.85	7.85	1.8
RE DISCCART	556150	4201150	8.55	8.55	1.8
RE DISCCART	556200	4201150	9.11	9.11	1.8
RE DISCCART	556250	4201150	8.55	9.45	1.8
RE DISCCART	556300	4201150	8.79	14.81	1.8
RE DISCCART	556350	4201150	9.62	14.81	1.8
RE DISCCART	556400	4201150	10.08	12.2	1.8
RE DISCCART	556450	4201150	10.74	11.34	1.8
RE DISCCART	556500	4201150	10.65	10.65	1.8
RE DISCCART	556550	4201150	10.43	11.24	1.8
RE DISCCART	556600	4201150	10.48	11.23	1.8
RE DISCCART	555100	4201200	3.79	3.79	1.8
RE DISCCART	555150	4201200	3.95	3.95	1.8
RE DISCCART	555200	4201200	3.89	3.89	1.8
RE DISCCART	555250	4201200	4.04	4.04	1.8
RE DISCCART	555300	4201200	3.19	3.93	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555350	4201200	3.68	4.03	1.8
RE DISCCART	555400	4201200	3.65	4.24	1.8
RE DISCCART	555450	4201200	3.83	4.44	1.8
RE DISCCART	555500	4201200	4.06	4.72	1.8
RE DISCCART	555550	4201200	4.12	4.93	1.8
RE DISCCART	555600	4201200	4.21	5.1	1.8
RE DISCCART	555650	4201200	4.27	5.34	1.8
RE DISCCART	555700	4201200	4.12	5.57	1.8
RE DISCCART	555750	4201200	4.72	5.84	1.8
RE DISCCART	555800	4201200	5.08	6.05	1.8
RE DISCCART	555850	4201200	5.57	6.32	1.8
RE DISCCART	555900	4201200	6.58	6.58	1.8
RE DISCCART	555950	4201200	6.95	6.95	1.8
RE DISCCART	556000	4201200	7.19	7.19	1.8
RE DISCCART	556050	4201200	7.53	7.53	1.8
RE DISCCART	556100	4201200	7.72	7.72	1.8
RE DISCCART	556150	4201200	8.2	8.2	1.8
RE DISCCART	556200	4201200	8.99	8.99	1.8
RE DISCCART	556250	4201200	8.61	9.78	1.8
RE DISCCART	556300	4201200	8.52	9.61	1.8
RE DISCCART	556350	4201200	8.89	9.83	1.8
RE DISCCART	556400	4201200	10.76	11.73	1.8
RE DISCCART	556450	4201200	10.32	11.27	1.8
RE DISCCART	556500	4201200	10.54	10.54	1.8
RE DISCCART	556550	4201200	10.61	10.61	1.8
RE DISCCART	556600	4201200	10.18	11.03	1.8
RE DISCCART	555100	4201250	4.06	4.06	1.8
RE DISCCART	555150	4201250	3.95	3.95	1.8
RE DISCCART	555200	4201250	3.85	3.85	1.8
RE DISCCART	555250	4201250	4.24	4.24	1.8
RE DISCCART	555300	4201250	3.26	4.05	1.8
RE DISCCART	555350	4201250	3.74	4.15	1.8
RE DISCCART	555400	4201250	3.74	4.36	1.8
RE DISCCART	555450	4201250	3.78	4.59	1.8
RE DISCCART	555500	4201250	4.16	4.83	1.8
RE DISCCART	555550	4201250	4.39	4.98	1.8
RE DISCCART	555600	4201250	4.42	5.13	1.8
RE DISCCART	555650	4201250	4.49	5.38	1.8
RE DISCCART	555700	4201250	4.29	5.64	1.8
RE DISCCART	555750	4201250	4.72	5.83	1.8
RE DISCCART	555800	4201250	5.6	5.6	1.8
RE DISCCART	555850	4201250	5.72	5.72	1.8
RE DISCCART	555900	4201250	6.26	6.26	1.8
RE DISCCART	555950	4201250	7.17	7.17	1.8
RE DISCCART	556000	4201250	6.86	6.86	1.8
RE DISCCART	556050	4201250	7.34	7.34	1.8
RE DISCCART	556100	4201250	7.92	7.92	1.8
RE DISCCART	556150	4201250	7.93	7.93	1.8
RE DISCCART	556200	4201250	9.24	9.24	1.8
RE DISCCART	556250	4201250	8.97	9.11	1.8
RE DISCCART	556300	4201250	8.81	9.29	1.8
RE DISCCART	556350	4201250	9.48	9.48	1.8
RE DISCCART	556400	4201250	11.1	11.1	1.8
RE DISCCART	556450	4201250	10.07	10.07	1.8
RE DISCCART	556500	4201250	10.34	10.34	1.8
RE DISCCART	556550	4201250	10.34	10.83	1.8
RE DISCCART	556600	4201250	9.83	10.94	1.8
RE DISCCART	555100	4201300	3.71	3.71	1.8
RE DISCCART	555150	4201300	3.9	3.9	1.8
RE DISCCART	555200	4201300	3.93	3.93	1.8
RE DISCCART	555250	4201300	4.45	4.45	1.8
RE DISCCART	555300	4201300	3.84	4.12	1.8
RE DISCCART	555350	4201300	3.8	4.34	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555400	4201300	4.03	4.43	1.8
RE DISCCART	555450	4201300	3.94	4.65	1.8
RE DISCCART	555500	4201300	4.16	4.84	1.8
RE DISCCART	555550	4201300	4.39	5.04	1.8
RE DISCCART	555600	4201300	4.46	5.2	1.8
RE DISCCART	555650	4201300	4.76	5.39	1.8
RE DISCCART	555700	4201300	4.44	5.63	1.8
RE DISCCART	555750	4201300	5.2	5.83	1.8
RE DISCCART	555800	4201300	5.51	5.51	1.8
RE DISCCART	555850	4201300	5.71	6.32	1.8
RE DISCCART	555900	4201300	6.47	6.47	1.8
RE DISCCART	555950	4201300	7.03	7.03	1.8
RE DISCCART	556000	4201300	6.94	6.94	1.8
RE DISCCART	556050	4201300	7.25	7.25	1.8
RE DISCCART	556100	4201300	7.74	7.74	1.8
RE DISCCART	556150	4201300	8.01	8.01	1.8
RE DISCCART	556200	4201300	9.27	9.27	1.8
RE DISCCART	556250	4201300	9.09	9.09	1.8
RE DISCCART	556300	4201300	9.21	9.21	1.8
RE DISCCART	556350	4201300	9.76	13.5	1.8
RE DISCCART	556400	4201300	10.82	10.82	1.8
RE DISCCART	556450	4201300	10.05	10.05	1.8
RE DISCCART	556500	4201300	10.17	10.54	1.8
RE DISCCART	556550	4201300	10.29	10.74	1.8
RE DISCCART	556600	4201300	9.97	10.84	1.8
RE DISCCART	555100	4201350	4.47	4.47	1.8
RE DISCCART	555150	4201350	3.85	3.85	1.8
RE DISCCART	555200	4201350	4.39	4.39	1.8
RE DISCCART	555250	4201350	4.17	4.17	1.8
RE DISCCART	555300	4201350	4.06	4.06	1.8
RE DISCCART	555350	4201350	4.15	4.15	1.8
RE DISCCART	555400	4201350	4.23	4.23	1.8
RE DISCCART	555450	4201350	4.03	4.73	1.8
RE DISCCART	555500	4201350	4.26	4.93	1.8
RE DISCCART	555550	4201350	4.37	5.11	1.8
RE DISCCART	555600	4201350	4.64	5.24	1.8
RE DISCCART	555650	4201350	4.81	5.44	1.8
RE DISCCART	555700	4201350	4.59	5.66	1.8
RE DISCCART	555750	4201350	5.19	5.93	1.8
RE DISCCART	555800	4201350	5.43	6.12	1.8
RE DISCCART	555850	4201350	5.89	6.34	1.8
RE DISCCART	555900	4201350	6.7	6.7	1.8
RE DISCCART	555950	4201350	6.84	6.84	1.8
RE DISCCART	556000	4201350	6.78	7.04	1.8
RE DISCCART	556050	4201350	7.16	7.16	1.8
RE DISCCART	556100	4201350	7.44	7.44	1.8
RE DISCCART	556150	4201350	7.87	7.87	1.8
RE DISCCART	556200	4201350	8.42	8.42	1.8
RE DISCCART	556250	4201350	9.14	9.14	1.8
RE DISCCART	556300	4201350	9.82	9.85	1.8
RE DISCCART	556350	4201350	10.94	13.5	1.8
RE DISCCART	556400	4201350	10.39	10.39	1.8
RE DISCCART	556450	4201350	10.65	10.65	1.8
RE DISCCART	556500	4201350	10.02	10.43	1.8
RE DISCCART	556550	4201350	10.09	10.63	1.8
RE DISCCART	556600	4201350	10.17	10.8	1.8
RE DISCCART	555100	4201400	3.03	3.9	1.8
RE DISCCART	555150	4201400	4.82	4.82	1.8
RE DISCCART	555200	4201400	4.32	4.32	1.8
RE DISCCART	555250	4201400	4.11	4.11	1.8
RE DISCCART	555300	4201400	4.32	4.32	1.8
RE DISCCART	555350	4201400	4.46	4.46	1.8
RE DISCCART	555400	4201400	4.58	4.58	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555450	4201400	4.11	4.73	1.8
RE DISCCART	555500	4201400	4.46	4.46	1.8
RE DISCCART	555550	4201400	4.79	5.28	1.8
RE DISCCART	555600	4201400	4.74	5.33	1.8
RE DISCCART	555650	4201400	4.94	5.43	1.8
RE DISCCART	555700	4201400	4.77	5.74	1.8
RE DISCCART	555750	4201400	5.56	5.56	1.8
RE DISCCART	555800	4201400	5.95	5.95	1.8
RE DISCCART	555850	4201400	6.03	6.35	1.8
RE DISCCART	555900	4201400	6.46	6.46	1.8
RE DISCCART	555950	4201400	6.69	6.89	1.8
RE DISCCART	556000	4201400	6.79	7.14	1.8
RE DISCCART	556050	4201400	6.89	7.39	1.8
RE DISCCART	556100	4201400	7.18	7.77	1.8
RE DISCCART	556150	4201400	7.62	9.74	1.8
RE DISCCART	556200	4201400	8.34	8.34	1.8
RE DISCCART	556250	4201400	9.31	9.31	1.8
RE DISCCART	556300	4201400	9.46	9.46	1.8
RE DISCCART	556350	4201400	9.92	9.92	1.8
RE DISCCART	556400	4201400	10.06	10.06	1.8
RE DISCCART	556450	4201400	10.68	10.68	1.8
RE DISCCART	556500	4201400	10.21	10.21	1.8
RE DISCCART	556550	4201400	10.25	10.25	1.8
RE DISCCART	556600	4201400	10.38	10.74	1.8
RE DISCCART	555100	4201450	5.36	5.36	1.8
RE DISCCART	555150	4201450	3.6	5.5	1.8
RE DISCCART	555200	4201450	2.74	5.22	1.8
RE DISCCART	555250	4201450	4.93	4.93	1.8
RE DISCCART	555300	4201450	4.5	4.5	1.8
RE DISCCART	555350	4201450	4.62	4.62	1.8
RE DISCCART	555400	4201450	4.69	4.69	1.8
RE DISCCART	555450	4201450	4.25	4.73	1.8
RE DISCCART	555500	4201450	4.48	4.91	1.8
RE DISCCART	555550	4201450	4.55	5.13	1.8
RE DISCCART	555600	4201450	4.76	5.33	1.8
RE DISCCART	555650	4201450	5	5.48	1.8
RE DISCCART	555700	4201450	5.02	5.76	1.8
RE DISCCART	555750	4201450	5.47	5.95	1.8
RE DISCCART	555800	4201450	6.09	6.09	1.8
RE DISCCART	555850	4201450	5.87	6.41	1.8
RE DISCCART	555900	4201450	6.38	6.64	1.8
RE DISCCART	555950	4201450	6.36	6.89	1.8
RE DISCCART	556000	4201450	6.49	7.27	1.8
RE DISCCART	556050	4201450	6.72	7.54	1.8
RE DISCCART	556100	4201450	7.12	7.84	1.8
RE DISCCART	556150	4201450	7.53	8.22	1.8
RE DISCCART	556200	4201450	7.8	8.49	1.8
RE DISCCART	556250	4201450	9.28	9.28	1.8
RE DISCCART	556300	4201450	9.29	10.51	1.8
RE DISCCART	556350	4201450	9.49	9.49	1.8
RE DISCCART	556400	4201450	9.15	10.77	1.8
RE DISCCART	556450	4201450	10.36	10.36	1.8
RE DISCCART	556500	4201450	10.07	10.07	1.8
RE DISCCART	556550	4201450	10.23	10.23	1.8
RE DISCCART	556600	4201450	10.42	10.42	1.8
RE DISCCART	551150	4201500	47.29	101.49	1.8
RE DISCCART	555100	4201500	7.07	7.07	1.8
RE DISCCART	555150	4201500	7.25	7.25	1.8
RE DISCCART	555200	4201500	6.04	6.89	1.8
RE DISCCART	555250	4201500	3.09	8	1.8
RE DISCCART	555300	4201500	3.74	5.14	1.8
RE DISCCART	555350	4201500	4.89	4.89	1.8
RE DISCCART	555400	4201500	4.95	4.95	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555450	4201500	4.35	4.73	1.8
RE DISCCART	555500	4201500	4.9	4.9	1.8
RE DISCCART	555550	4201500	4.77	5.09	1.8
RE DISCCART	555600	4201500	4.88	5.29	1.8
RE DISCCART	555650	4201500	5.15	5.48	1.8
RE DISCCART	555700	4201500	5.23	5.75	1.8
RE DISCCART	555750	4201500	5.48	6.02	1.8
RE DISCCART	555800	4201500	5.99	6.05	1.8
RE DISCCART	555850	4201500	5.63	6.4	1.8
RE DISCCART	555900	4201500	6.18	6.63	1.8
RE DISCCART	555950	4201500	6.26	6.89	1.8
RE DISCCART	556000	4201500	6.16	7.23	1.8
RE DISCCART	556050	4201500	7	7.43	1.8
RE DISCCART	556100	4201500	6.85	7.83	1.8
RE DISCCART	556150	4201500	7.48	8.12	1.8
RE DISCCART	556200	4201500	8.06	8.41	1.8
RE DISCCART	556250	4201500	9.24	9.24	1.8
RE DISCCART	556300	4201500	9.2	9.2	1.8
RE DISCCART	556350	4201500	9.2	9.2	1.8
RE DISCCART	556400	4201500	9.28	10.61	1.8
RE DISCCART	556450	4201500	9.66	9.66	1.8
RE DISCCART	556500	4201500	10.08	10.08	1.8
RE DISCCART	556550	4201500	10.18	10.18	1.8
RE DISCCART	556600	4201500	10.35	10.35	1.8
RE DISCCART	551000	4201550	27.84	101.49	1.8
RE DISCCART	551050	4201550	31.13	101.49	1.8
RE DISCCART	551100	4201550	22.51	101.49	1.8
RE DISCCART	551150	4201550	31.17	101.49	1.8
RE DISCCART	555100	4201550	6.98	6.98	1.8
RE DISCCART	555150	4201550	7.18	7.18	1.8
RE DISCCART	555200	4201550	7.64	7.64	1.8
RE DISCCART	555250	4201550	8.04	8.04	1.8
RE DISCCART	555300	4201550	4.22	8.99	1.8
RE DISCCART	555350	4201550	3.03	5.23	1.8
RE DISCCART	555400	4201550	5.1	5.45	1.8
RE DISCCART	555450	4201550	4.71	4.71	1.8
RE DISCCART	555500	4201550	4.91	4.91	1.8
RE DISCCART	555550	4201550	5.08	5.08	1.8
RE DISCCART	555600	4201550	5.03	5.33	1.8
RE DISCCART	555650	4201550	5.54	5.83	1.8
RE DISCCART	555700	4201550	5.47	5.47	1.8
RE DISCCART	555750	4201550	5.81	5.81	1.8
RE DISCCART	555800	4201550	5.72	6.37	1.8
RE DISCCART	555850	4201550	5.66	6.53	1.8
RE DISCCART	555900	4201550	5.78	6.74	1.8
RE DISCCART	555950	4201550	6.29	6.94	1.8
RE DISCCART	556000	4201550	6.29	7.23	1.8
RE DISCCART	556050	4201550	6.73	7.45	1.8
RE DISCCART	556100	4201550	6.95	7.73	1.8
RE DISCCART	556150	4201550	7.44	8.02	1.8
RE DISCCART	556200	4201550	7.94	7.94	1.8
RE DISCCART	556250	4201550	8.98	8.98	1.8
RE DISCCART	556300	4201550	9.23	9.23	1.8
RE DISCCART	556350	4201550	9.55	9.55	1.8
RE DISCCART	556400	4201550	9.43	9.43	1.8
RE DISCCART	556450	4201550	9.75	9.75	1.8
RE DISCCART	556500	4201550	10.06	10.06	1.8
RE DISCCART	556550	4201550	10.36	10.36	1.8
RE DISCCART	556600	4201550	10.5	10.5	1.8
RE DISCCART	550950	4201600	55.3	101.49	1.8
RE DISCCART	551000	4201600	34.45	101.49	1.8
RE DISCCART	551050	4201600	17.83	101.49	1.8
RE DISCCART	551100	4201600	14.05	122.41	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	551150	4201600	30.09	101.49	1.8
RE DISCCART	555100	4201600	3.38	4.02	1.8
RE DISCCART	555150	4201600	7.57	7.57	1.8
RE DISCCART	555200	4201600	7.23	7.23	1.8
RE DISCCART	555250	4201600	7.38	8.99	1.8
RE DISCCART	555300	4201600	7.15	7.15	1.8
RE DISCCART	555350	4201600	4.48	5.28	1.8
RE DISCCART	555400	4201600	3.22	7.92	1.8
RE DISCCART	555450	4201600	3.62	6.08	1.8
RE DISCCART	555500	4201600	3.42	9.03	1.8
RE DISCCART	555550	4201600	3.03	8.88	1.8
RE DISCCART	555600	4201600	2.95	6.54	1.8
RE DISCCART	555650	4201600	4.71	6.54	1.8
RE DISCCART	555700	4201600	6.31	6.31	1.8
RE DISCCART	555750	4201600	5.76	5.76	1.8
RE DISCCART	555800	4201600	5.98	6.75	1.8
RE DISCCART	555850	4201600	5.74	6.85	1.8
RE DISCCART	555900	4201600	6.45	6.8	1.8
RE DISCCART	555950	4201600	6.48	6.48	1.8
RE DISCCART	556000	4201600	6.4	7.13	1.8
RE DISCCART	556050	4201600	7.01	7.01	1.8
RE DISCCART	556100	4201600	7.18	7.18	1.8
RE DISCCART	556150	4201600	7.75	7.75	1.8
RE DISCCART	556200	4201600	8.12	8.12	1.8
RE DISCCART	556250	4201600	8.87	8.87	1.8
RE DISCCART	556300	4201600	8.95	8.95	1.8
RE DISCCART	556350	4201600	9.41	9.41	1.8
RE DISCCART	556400	4201600	9.83	9.83	1.8
RE DISCCART	556450	4201600	10.78	10.78	1.8
RE DISCCART	556500	4201600	10.91	10.91	1.8
RE DISCCART	556550	4201600	10.42	10.42	1.8
RE DISCCART	556600	4201600	10.67	10.67	1.8
RE DISCCART	551000	4201650	33.65	101.49	1.8
RE DISCCART	551050	4201650	12.92	101.49	1.8
RE DISCCART	551100	4201650	8.69	128.6	1.8
RE DISCCART	551150	4201650	29.47	101.49	1.8
RE DISCCART	551200	4201650	47.81	101.49	1.8
RE DISCCART	555100	4201650	3.36	4.03	1.8
RE DISCCART	555150	4201650	7.33	7.85	1.8
RE DISCCART	555200	4201650	7.17	7.17	1.8
RE DISCCART	555250	4201650	6.35	6.35	1.8
RE DISCCART	555300	4201650	4.94	5.9	1.8
RE DISCCART	555350	4201650	4.42	4.42	1.8
RE DISCCART	555400	4201650	4.86	8.32	1.8
RE DISCCART	555450	4201650	7.83	8.23	1.8
RE DISCCART	555500	4201650	8.46	9.03	1.8
RE DISCCART	555550	4201650	7.3	8.88	1.8
RE DISCCART	555600	4201650	5.75	8.14	1.8
RE DISCCART	555650	4201650	5.63	5.63	1.8
RE DISCCART	555700	4201650	4.41	6.9	1.8
RE DISCCART	555750	4201650	3.71	6.91	1.8
RE DISCCART	555800	4201650	4.33	7.46	1.8
RE DISCCART	555850	4201650	3.98	7.19	1.8
RE DISCCART	555900	4201650	3.47	7.53	1.8
RE DISCCART	555950	4201650	5.66	7.24	1.8
RE DISCCART	556000	4201650	6.64	6.64	1.8
RE DISCCART	556050	4201650	7.04	7.04	1.8
RE DISCCART	556100	4201650	7.24	7.24	1.8
RE DISCCART	556150	4201650	7.61	7.61	1.8
RE DISCCART	556200	4201650	8.16	8.16	1.8
RE DISCCART	556250	4201650	8.81	8.81	1.8
RE DISCCART	556300	4201650	9.17	9.17	1.8
RE DISCCART	556350	4201650	9.15	9.15	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556400	4201650	9.58	9.58	1.8
RE DISCCART	556450	4201650	10.8	10.8	1.8
RE DISCCART	556500	4201650	10.51	10.51	1.8
RE DISCCART	556550	4201650	11.04	11.04	1.8
RE DISCCART	556600	4201650	11.19	11.19	1.8
RE DISCCART	551000	4201700	20.71	101.49	1.8
RE DISCCART	551050	4201700	6.32	122.41	1.8
RE DISCCART	551100	4201700	4.98	122.41	1.8
RE DISCCART	551150	4201700	20.92	101.49	1.8
RE DISCCART	551200	4201700	38.92	101.49	1.8
RE DISCCART	555100	4201700	3.34	4.03	1.8
RE DISCCART	555150	4201700	3.11	4.13	1.8
RE DISCCART	555200	4201700	3.47	4.24	1.8
RE DISCCART	555250	4201700	3.77	4.22	1.8
RE DISCCART	555300	4201700	4.74	7.59	1.8
RE DISCCART	555350	4201700	4.49	4.49	1.8
RE DISCCART	555400	4201700	4.97	4.97	1.8
RE DISCCART	555450	4201700	5.08	5.08	1.8
RE DISCCART	555500	4201700	5.66	5.66	1.8
RE DISCCART	555550	4201700	5.75	5.75	1.8
RE DISCCART	555600	4201700	5.57	7.53	1.8
RE DISCCART	555650	4201700	5.18	5.18	1.8
RE DISCCART	555700	4201700	5.47	6.33	1.8
RE DISCCART	555750	4201700	5.28	6.55	1.8
RE DISCCART	555800	4201700	5.88	6.64	1.8
RE DISCCART	555850	4201700	6.13	6.74	1.8
RE DISCCART	555900	4201700	6.99	6.99	1.8
RE DISCCART	555950	4201700	6.85	6.85	1.8
RE DISCCART	556000	4201700	6.85	6.85	1.8
RE DISCCART	556050	4201700	4.25	8.23	1.8
RE DISCCART	556100	4201700	6.58	8.21	1.8
RE DISCCART	556150	4201700	8.02	8.02	1.8
RE DISCCART	556200	4201700	7.61	8.04	1.8
RE DISCCART	556250	4201700	5.76	9.47	1.8
RE DISCCART	556300	4201700	6.55	9.2	1.8
RE DISCCART	556350	4201700	8.23	9.32	1.8
RE DISCCART	556400	4201700	10.17	10.6	1.8
RE DISCCART	556450	4201700	7.77	10.93	1.8
RE DISCCART	556500	4201700	10.52	10.52	1.8
RE DISCCART	556550	4201700	11.25	11.36	1.8
RE DISCCART	556600	4201700	11.3	11.3	1.8
RE DISCCART	551000	4201750	7.8	101.49	1.8
RE DISCCART	551050	4201750	3.56	101.49	1.8
RE DISCCART	551100	4201750	3.45	122.41	1.8
RE DISCCART	551150	4201750	10.43	101.49	1.8
RE DISCCART	551200	4201750	29.23	101.49	1.8
RE DISCCART	555100	4201750	3.29	4.08	1.8
RE DISCCART	555150	4201750	3.4	4.13	1.8
RE DISCCART	555200	4201750	3.39	4.24	1.8
RE DISCCART	555250	4201750	3.55	4.34	1.8
RE DISCCART	555300	4201750	4.57	4.57	1.8
RE DISCCART	555350	4201750	4.48	4.48	1.8
RE DISCCART	555400	4201750	4.78	4.78	1.8
RE DISCCART	555450	4201750	4.95	7.42	1.8
RE DISCCART	555500	4201750	6.35	7.61	1.8
RE DISCCART	555550	4201750	6.85	6.85	1.8
RE DISCCART	555600	4201750	5.44	6.91	1.8
RE DISCCART	555650	4201750	4.98	5.63	1.8
RE DISCCART	555700	4201750	5.03	5.93	1.8
RE DISCCART	555750	4201750	5.63	6.21	1.8
RE DISCCART	555800	4201750	5.82	6.33	1.8
RE DISCCART	555850	4201750	6.26	6.53	1.8
RE DISCCART	555900	4201750	6.29	6.64	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555950	4201750	6.97	6.97	1.8
RE DISCCART	556000	4201750	6.94	6.94	1.8
RE DISCCART	556050	4201750	5.16	7.54	1.8
RE DISCCART	556100	4201750	3.75	7.52	1.8
RE DISCCART	556150	4201750	4.65	7.72	1.8
RE DISCCART	556200	4201750	4.82	9.77	1.8
RE DISCCART	556250	4201750	8.81	8.92	1.8
RE DISCCART	556300	4201750	8.95	8.95	1.8
RE DISCCART	556350	4201750	9.19	9.19	1.8
RE DISCCART	556400	4201750	9.78	9.78	1.8
RE DISCCART	556450	4201750	10.57	10.57	1.8
RE DISCCART	556500	4201750	7.93	11.68	1.8
RE DISCCART	556550	4201750	11.29	11.29	1.8
RE DISCCART	556600	4201750	11.25	11.25	1.8
RE DISCCART	551000	4201800	2.89	101.49	1.8
RE DISCCART	551050	4201800	0.63	101.49	1.8
RE DISCCART	551100	4201800	1.1	101.49	1.8
RE DISCCART	551150	4201800	4.54	101.49	1.8
RE DISCCART	551200	4201800	9.82	101.49	1.8
RE DISCCART	555100	4201800	3.05	4.03	1.8
RE DISCCART	555150	4201800	3.17	4.14	1.8
RE DISCCART	555200	4201800	3.3	4.27	1.8
RE DISCCART	555250	4201800	3.45	4.35	1.8
RE DISCCART	555300	4201800	4.85	4.85	1.8
RE DISCCART	555350	4201800	4.3	4.3	1.8
RE DISCCART	555400	4201800	4.68	4.68	1.8
RE DISCCART	555450	4201800	5.31	8	1.8
RE DISCCART	555500	4201800	7.47	7.47	1.8
RE DISCCART	555550	4201800	7.02	7.02	1.8
RE DISCCART	555600	4201800	5.21	5.21	1.8
RE DISCCART	555650	4201800	5.68	5.68	1.8
RE DISCCART	555700	4201800	5.93	6.68	1.8
RE DISCCART	555750	4201800	6.18	6.18	1.8
RE DISCCART	555800	4201800	6.18	6.18	1.8
RE DISCCART	555850	4201800	6.17	6.32	1.8
RE DISCCART	555900	4201800	6.23	6.53	1.8
RE DISCCART	555950	4201800	6.54	6.54	1.8
RE DISCCART	556000	4201800	6.54	6.95	1.8
RE DISCCART	556050	4201800	7.46	7.46	1.8
RE DISCCART	556100	4201800	7.23	7.52	1.8
RE DISCCART	556150	4201800	6.77	7.86	1.8
RE DISCCART	556200	4201800	7.84	8.2	1.8
RE DISCCART	556250	4201800	7.92	8.66	1.8
RE DISCCART	556300	4201800	8.87	8.87	1.8
RE DISCCART	556350	4201800	8.95	8.95	1.8
RE DISCCART	556400	4201800	9.64	9.64	1.8
RE DISCCART	556450	4201800	10.28	10.28	1.8
RE DISCCART	556500	4201800	11.15	11.15	1.8
RE DISCCART	556550	4201800	9.45	11.84	1.8
RE DISCCART	556600	4201800	11.3	11.3	1.8
RE DISCCART	551000	4201850	2.67	101.49	1.8
RE DISCCART	551050	4201850	0.55	101.49	1.8
RE DISCCART	551100	4201850	0.54	101.49	1.8
RE DISCCART	551150	4201850	0.52	101.49	1.8
RE DISCCART	551200	4201850	0.85	101.49	1.8
RE DISCCART	551250	4201850	2.28	101.49	1.8
RE DISCCART	555100	4201850	3.13	4	1.8
RE DISCCART	555150	4201850	3.19	4.14	1.8
RE DISCCART	555200	4201850	3.38	4.24	1.8
RE DISCCART	555250	4201850	3.86	3.86	1.8
RE DISCCART	555300	4201850	4.65	4.65	1.8
RE DISCCART	555350	4201850	4.47	4.47	1.8
RE DISCCART	555400	4201850	4.57	4.57	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555450	4201850	4.98	7.62	1.8
RE DISCCART	555500	4201850	5.02	7.51	1.8
RE DISCCART	555550	4201850	6.47	6.47	1.8
RE DISCCART	555600	4201850	5.36	5.65	1.8
RE DISCCART	555650	4201850	5.56	5.56	1.8
RE DISCCART	555700	4201850	5.47	5.47	1.8
RE DISCCART	555750	4201850	5.52	5.83	1.8
RE DISCCART	555800	4201850	5.89	6.02	1.8
RE DISCCART	555850	4201850	5.95	6.27	1.8
RE DISCCART	555900	4201850	6.21	6.21	1.8
RE DISCCART	555950	4201850	6.3	6.67	1.8
RE DISCCART	556000	4201850	6.57	6.57	1.8
RE DISCCART	556050	4201850	6.89	7.24	1.8
RE DISCCART	556100	4201850	9.24	9.89	1.8
RE DISCCART	556150	4201850	8.59	10.17	1.8
RE DISCCART	556200	4201850	7.59	9.7	1.8
RE DISCCART	556250	4201850	8.41	9.83	1.8
RE DISCCART	556300	4201850	8.84	8.84	1.8
RE DISCCART	556350	4201850	8.97	8.97	1.8
RE DISCCART	556400	4201850	9.08	9.08	1.8
RE DISCCART	556450	4201850	10.39	10.97	1.8
RE DISCCART	556500	4201850	11.24	11.24	1.8
RE DISCCART	556550	4201850	11.17	11.17	1.8
RE DISCCART	556600	4201850	10.54	10.54	1.8
RE DISCCART	551000	4201900	2.64	101.49	1.8
RE DISCCART	551050	4201900	0.52	101.49	1.8
RE DISCCART	551100	4201900	0.72	101.49	1.8
RE DISCCART	551150	4201900	0.49	101.49	1.8
RE DISCCART	551200	4201900	0.62	101.49	1.8
RE DISCCART	551250	4201900	1.14	101.49	1.8
RE DISCCART	551300	4201900	0.44	101.49	1.8
RE DISCCART	555100	4201900	3.05	3.84	1.8
RE DISCCART	555150	4201900	3.52	3.99	1.8
RE DISCCART	555200	4201900	4.03	4.03	1.8
RE DISCCART	555250	4201900	4.13	4.13	1.8
RE DISCCART	555300	4201900	4.45	4.45	1.8
RE DISCCART	555350	4201900	4.75	6.18	1.8
RE DISCCART	555400	4201900	4.63	4.85	1.8
RE DISCCART	555450	4201900	4.48	5	1.8
RE DISCCART	555500	4201900	4.39	5.03	1.8
RE DISCCART	555550	4201900	4.67	7.19	1.8
RE DISCCART	555600	4201900	5.7	5.7	1.8
RE DISCCART	555650	4201900	5.38	5.38	1.8
RE DISCCART	555700	4201900	5.33	5.61	1.8
RE DISCCART	555750	4201900	5.43	5.8	1.8
RE DISCCART	555800	4201900	5.89	5.89	1.8
RE DISCCART	555850	4201900	5.87	6.19	1.8
RE DISCCART	555900	4201900	6.1	6.1	1.8
RE DISCCART	555950	4201900	6.07	6.65	1.8
RE DISCCART	556000	4201900	6.54	6.54	1.8
RE DISCCART	556050	4201900	6.78	7.16	1.8
RE DISCCART	556100	4201900	8.44	8.44	1.8
RE DISCCART	556150	4201900	7.41	7.41	1.8
RE DISCCART	556200	4201900	10.62	11.68	1.8
RE DISCCART	556250	4201900	8.23	11.81	1.8
RE DISCCART	556300	4201900	7.55	8.85	1.8
RE DISCCART	556350	4201900	8.77	8.77	1.8
RE DISCCART	556400	4201900	8.96	8.96	1.8
RE DISCCART	556450	4201900	9.13	11.09	1.8
RE DISCCART	556500	4201900	10.57	10.57	1.8
RE DISCCART	556550	4201900	10.67	10.67	1.8
RE DISCCART	556600	4201900	10.89	10.89	1.8
RE DISCCART	551000	4201950	2.45	101.49	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	551050	4201950	0.48	101.49	1.8
RE DISCCART	551100	4201950	0.53	101.49	1.8
RE DISCCART	551150	4201950	0.49	101.49	1.8
RE DISCCART	551200	4201950	1.97	101.49	1.8
RE DISCCART	555100	4201950	3.85	3.85	1.8
RE DISCCART	555150	4201950	4.16	4.16	1.8
RE DISCCART	555200	4201950	4.35	4.35	1.8
RE DISCCART	555250	4201950	4.44	4.85	1.8
RE DISCCART	555300	4201950	4.39	4.39	1.8
RE DISCCART	555350	4201950	4.38	4.74	1.8
RE DISCCART	555400	4201950	4.35	4.82	1.8
RE DISCCART	555450	4201950	4.89	4.97	1.8
RE DISCCART	555500	4201950	5.04	5.04	1.8
RE DISCCART	555550	4201950	5.42	5.42	1.8
RE DISCCART	555600	4201950	5.36	5.36	1.8
RE DISCCART	555650	4201950	5.58	5.58	1.8
RE DISCCART	555700	4201950	5.65	5.65	1.8
RE DISCCART	555750	4201950	5.43	5.72	1.8
RE DISCCART	555800	4201950	5.65	5.65	1.8
RE DISCCART	555850	4201950	5.81	5.81	1.8
RE DISCCART	555900	4201950	5.83	6.27	1.8
RE DISCCART	555950	4201950	6.12	6.12	1.8
RE DISCCART	556000	4201950	6.15	6.83	1.8
RE DISCCART	556050	4201950	6.8	6.8	1.8
RE DISCCART	556100	4201950	7.01	7.01	1.8
RE DISCCART	556150	4201950	7.26	7.26	1.8
RE DISCCART	556200	4201950	7.32	8.27	1.8
RE DISCCART	556250	4201950	8.2	9.3	1.8
RE DISCCART	556300	4201950	8.72	9.28	1.8
RE DISCCART	556350	4201950	8.29	8.29	1.8
RE DISCCART	556400	4201950	8.79	8.79	1.8
RE DISCCART	556450	4201950	8.91	10.67	1.8
RE DISCCART	556500	4201950	10.84	10.84	1.8
RE DISCCART	556550	4201950	10.81	10.81	1.8
RE DISCCART	556600	4201950	11.3	11.3	1.8
RE DISCCART	551000	4202000	2.57	101.49	1.8
RE DISCCART	551050	4202000	0.85	101.49	1.8
RE DISCCART	551100	4202000	0.84	101.49	1.8
RE DISCCART	551150	4202000	0.42	101.49	1.8
RE DISCCART	551200	4202000	2.01	101.49	1.8
RE DISCCART	555100	4202000	4.18	4.18	1.8
RE DISCCART	555150	4202000	4.25	4.25	1.8
RE DISCCART	555200	4202000	4.6	4.6	1.8
RE DISCCART	555250	4202000	4.61	4.61	1.8
RE DISCCART	555300	4202000	4.76	4.76	1.8
RE DISCCART	555350	4202000	4.58	6.12	1.8
RE DISCCART	555400	4202000	4.53	7	1.8
RE DISCCART	555450	4202000	4.61	5.03	1.8
RE DISCCART	555500	4202000	5.06	5.06	1.8
RE DISCCART	555550	4202000	5.42	5.42	1.8
RE DISCCART	555600	4202000	5.27	7.14	1.8
RE DISCCART	555650	4202000	5.42	5.42	1.8
RE DISCCART	555700	4202000	5.51	5.51	1.8
RE DISCCART	555750	4202000	5.43	5.43	1.8
RE DISCCART	555800	4202000	5.52	5.52	1.8
RE DISCCART	555850	4202000	5.57	5.57	1.8
RE DISCCART	555900	4202000	5.61	6.18	1.8
RE DISCCART	555950	4202000	5.8	6.42	1.8
RE DISCCART	556000	4202000	6	6.62	1.8
RE DISCCART	556050	4202000	6.36	6.36	1.8
RE DISCCART	556100	4202000	6.71	6.71	1.8
RE DISCCART	556150	4202000	6.84	6.84	1.8
RE DISCCART	556200	4202000	7.16	7.88	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556250	4202000	7.23	9.56	1.8
RE DISCCART	556300	4202000	7.79	9.25	1.8
RE DISCCART	556350	4202000	8.12	8.52	1.8
RE DISCCART	556400	4202000	8.4	8.4	1.8
RE DISCCART	556450	4202000	10.44	10.44	1.8
RE DISCCART	556500	4202000	11.18	11.18	1.8
RE DISCCART	556550	4202000	10.02	10.02	1.8
RE DISCCART	556600	4202000	11.17	11.17	1.8
RE DISCCART	551050	4202050	2.42	101.49	1.8
RE DISCCART	551100	4202050	0.45	101.49	1.8
RE DISCCART	551150	4202050	0.45	101.49	1.8
RE DISCCART	551200	4202050	0.52	101.49	1.8
RE DISCCART	555100	4202050	4.33	4.33	1.8
RE DISCCART	555150	4202050	4.45	4.45	1.8
RE DISCCART	555200	4202050	4.81	4.81	1.8
RE DISCCART	555250	4202050	4.69	4.69	1.8
RE DISCCART	555300	4202050	4.81	4.81	1.8
RE DISCCART	555350	4202050	4.48	4.91	1.8
RE DISCCART	555400	4202050	4.52	5.07	1.8
RE DISCCART	555450	4202050	4.67	5.22	1.8
RE DISCCART	555500	4202050	5.03	5.03	1.8
RE DISCCART	555550	4202050	5.48	5.48	1.8
RE DISCCART	555600	4202050	5.25	6.47	1.8
RE DISCCART	555650	4202050	5.48	5.48	1.8
RE DISCCART	555700	4202050	5.58	5.58	1.8
RE DISCCART	555750	4202050	5.26	5.26	1.8
RE DISCCART	555800	4202050	5.44	5.44	1.8
RE DISCCART	555850	4202050	5.56	5.56	1.8
RE DISCCART	555900	4202050	5.32	6.05	1.8
RE DISCCART	555950	4202050	5.53	6.34	1.8
RE DISCCART	556000	4202050	6.07	6.52	1.8
RE DISCCART	556050	4202050	6.16	6.53	1.8
RE DISCCART	556100	4202050	6.6	6.6	1.8
RE DISCCART	556150	4202050	6.95	6.95	1.8
RE DISCCART	556200	4202050	7.38	7.62	1.8
RE DISCCART	556250	4202050	7.8	8.43	1.8
RE DISCCART	556300	4202050	8.09	9.11	1.8
RE DISCCART	556350	4202050	8.2	8.2	1.8
RE DISCCART	556400	4202050	8.46	8.46	1.8
RE DISCCART	556450	4202050	9.15	10.43	1.8
RE DISCCART	556500	4202050	10.95	10.95	1.8
RE DISCCART	556550	4202050	9.92	9.92	1.8
RE DISCCART	556600	4202050	8.07	11.73	1.8
RE DISCCART	551100	4202100	0.44	101.49	1.8
RE DISCCART	551150	4202100	0.41	101.49	1.8
RE DISCCART	551200	4202100	0.52	101.49	1.8
RE DISCCART	555100	4202100	4.75	4.75	1.8
RE DISCCART	555150	4202100	4.68	4.68	1.8
RE DISCCART	555200	4202100	4.78	4.78	1.8
RE DISCCART	555250	4202100	4.59	4.59	1.8
RE DISCCART	555300	4202100	4.92	4.92	1.8
RE DISCCART	555350	4202100	4.5	4.94	1.8
RE DISCCART	555400	4202100	4.8	5.23	1.8
RE DISCCART	555450	4202100	4.76	5.33	1.8
RE DISCCART	555500	4202100	4.98	6.05	1.8
RE DISCCART	555550	4202100	5.37	5.37	1.8
RE DISCCART	555600	4202100	5.15	7.3	1.8
RE DISCCART	555650	4202100	5.4	5.4	1.8
RE DISCCART	555700	4202100	5.48	5.48	1.8
RE DISCCART	555750	4202100	5.23	5.23	1.8
RE DISCCART	555800	4202100	5.39	5.39	1.8
RE DISCCART	555850	4202100	5.21	5.73	1.8
RE DISCCART	555900	4202100	5.4	5.4	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	555950	4202100	5.59	6.13	1.8
RE DISCCART	556000	4202100	5.82	6.31	1.8
RE DISCCART	556050	4202100	6.07	6.42	1.8
RE DISCCART	556100	4202100	6.56	6.56	1.8
RE DISCCART	556150	4202100	6.72	6.72	1.8
RE DISCCART	556200	4202100	7.3	7.3	1.8
RE DISCCART	556250	4202100	7.27	8.12	1.8
RE DISCCART	556300	4202100	7.78	9.08	1.8
RE DISCCART	556350	4202100	8	8.44	1.8
RE DISCCART	556400	4202100	8.37	8.45	1.8
RE DISCCART	556450	4202100	9.92	10.31	1.8
RE DISCCART	556500	4202100	9.25	9.25	1.8
RE DISCCART	556550	4202100	10.03	10.03	1.8
RE DISCCART	556600	4202100	10.09	13.55	1.8
RE DISCCART	555100	4202150	4.09	4.09	1.8
RE DISCCART	555150	4202150	4.15	4.15	1.8
RE DISCCART	555200	4202150	4.24	4.24	1.8
RE DISCCART	555250	4202150	4.11	4.11	1.8
RE DISCCART	555300	4202150	5.01	5.01	1.8
RE DISCCART	555350	4202150	4.83	11.37	1.8
RE DISCCART	555400	4202150	5.67	11.37	1.8
RE DISCCART	555450	4202150	5.26	11.37	1.8
RE DISCCART	555500	4202150	5.27	5.27	1.8
RE DISCCART	555550	4202150	5.16	5.16	1.8
RE DISCCART	555600	4202150	5.52	5.52	1.8
RE DISCCART	555650	4202150	5.49	7.85	1.8
RE DISCCART	555700	4202150	5.76	7.35	1.8
RE DISCCART	555750	4202150	5.26	5.26	1.8
RE DISCCART	555800	4202150	5.55	5.55	1.8
RE DISCCART	555850	4202150	5.63	5.99	1.8
RE DISCCART	555900	4202150	5.35	8.32	1.8
RE DISCCART	555950	4202150	5.6	6.06	1.8
RE DISCCART	556000	4202150	5.59	6.33	1.8
RE DISCCART	556050	4202150	6.18	6.43	1.8
RE DISCCART	556100	4202150	6.54	6.54	1.8
RE DISCCART	556150	4202150	6.53	6.78	1.8
RE DISCCART	556200	4202150	7.29	7.29	1.8
RE DISCCART	556250	4202150	7.25	7.99	1.8
RE DISCCART	556300	4202150	8.73	8.73	1.8
RE DISCCART	556350	4202150	8.03	8.42	1.8
RE DISCCART	556400	4202150	8.27	8.59	1.8
RE DISCCART	556450	4202150	7.96	8.77	1.8
RE DISCCART	556500	4202150	8.84	9.33	1.8
RE DISCCART	556550	4202150	9.48	9.48	1.8
RE DISCCART	556600	4202150	11.84	11.93	1.8
RE DISCCART	555100	4202200	4.17	4.17	1.8
RE DISCCART	555150	4202200	4.22	4.22	1.8
RE DISCCART	555200	4202200	4.09	4.09	1.8
RE DISCCART	555250	4202200	4.22	4.22	1.8
RE DISCCART	555300	4202200	4.8	4.8	1.8
RE DISCCART	555350	4202200	4.97	11.37	1.8
RE DISCCART	555400	4202200	6.31	11.37	1.8
RE DISCCART	555450	4202200	5.69	11.37	1.8
RE DISCCART	555500	4202200	5.43	5.43	1.8
RE DISCCART	555550	4202200	5.39	5.39	1.8
RE DISCCART	555600	4202200	5.42	5.42	1.8
RE DISCCART	555650	4202200	5.71	7.31	1.8
RE DISCCART	555700	4202200	5.66	7.1	1.8
RE DISCCART	555750	4202200	5.05	5.33	1.8
RE DISCCART	555800	4202200	4.86	5.33	1.8
RE DISCCART	555850	4202200	5.05	5.43	1.8
RE DISCCART	555900	4202200	5.19	8.32	1.8
RE DISCCART	555950	4202200	5.76	6.02	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556000	4202200	5.94	6.39	1.8
RE DISCCART	556050	4202200	6.53	6.53	1.8
RE DISCCART	556100	4202200	6.62	6.62	1.8
RE DISCCART	556150	4202200	6.44	6.44	1.8
RE DISCCART	556200	4202200	6.91	6.91	1.8
RE DISCCART	556250	4202200	8.01	8.01	1.8
RE DISCCART	556300	4202200	8.86	8.86	1.8
RE DISCCART	556350	4202200	8.18	8.18	1.8
RE DISCCART	556400	4202200	8.44	8.44	1.8
RE DISCCART	556450	4202200	8.65	8.65	1.8
RE DISCCART	556500	4202200	9	10.41	1.8
RE DISCCART	556550	4202200	9.3	9.3	1.8
RE DISCCART	556600	4202200	10.3	10.3	1.8
RE DISCCART	555100	4202250	4.37	4.37	1.8
RE DISCCART	555150	4202250	4.53	5.11	1.8
RE DISCCART	555200	4202250	4.58	4.58	1.8
RE DISCCART	555250	4202250	4.66	4.66	1.8
RE DISCCART	555300	4202250	4.85	6.66	1.8
RE DISCCART	555350	4202250	4.71	8.71	1.8
RE DISCCART	555400	4202250	6.05	6.05	1.8
RE DISCCART	555450	4202250	6.11	7.84	1.8
RE DISCCART	555500	4202250	5.51	5.51	1.8
RE DISCCART	555550	4202250	5.61	5.61	1.8
RE DISCCART	555600	4202250	5.65	5.65	1.8
RE DISCCART	555650	4202250	5.76	5.76	1.8
RE DISCCART	555700	4202250	5.59	8.04	1.8
RE DISCCART	555750	4202250	4.95	5.22	1.8
RE DISCCART	555800	4202250	4.92	5.33	1.8
RE DISCCART	555850	4202250	5.15	5.53	1.8
RE DISCCART	555900	4202250	5.28	5.74	1.8
RE DISCCART	555950	4202250	6.02	6.02	1.8
RE DISCCART	556000	4202250	5.69	6.2	1.8
RE DISCCART	556050	4202250	6.51	6.51	1.8
RE DISCCART	556100	4202250	6.27	6.27	1.8
RE DISCCART	556150	4202250	6.56	6.56	1.8
RE DISCCART	556200	4202250	8.27	8.84	1.8
RE DISCCART	556250	4202250	8.03	8.03	1.8
RE DISCCART	556300	4202250	8.82	8.82	1.8
RE DISCCART	556350	4202250	8.05	8.05	1.8
RE DISCCART	556400	4202250	8.46	8.46	1.8
RE DISCCART	556450	4202250	9.44	9.44	1.8
RE DISCCART	556500	4202250	9.64	10.53	1.8
RE DISCCART	556550	4202250	10.11	10.11	1.8
RE DISCCART	556600	4202250	10.01	10.01	1.8
RE DISCCART	555100	4202300	2.18	5.05	1.8
RE DISCCART	555150	4202300	1.96	5.26	1.8
RE DISCCART	555200	4202300	2.08	5.28	1.8
RE DISCCART	555250	4202300	2.21	5.24	1.8
RE DISCCART	555300	4202300	2.45	5.38	1.8
RE DISCCART	555350	4202300	2.18	8.71	1.8
RE DISCCART	555400	4202300	2.89	8.24	1.8
RE DISCCART	555450	4202300	5.44	5.44	1.8
RE DISCCART	555500	4202300	5.72	7.19	1.8
RE DISCCART	555550	4202300	5.18	8.06	1.8
RE DISCCART	555600	4202300	6.01	6.01	1.8
RE DISCCART	555650	4202300	5.95	5.95	1.8
RE DISCCART	555700	4202300	5.97	7.51	1.8
RE DISCCART	555750	4202300	5.1	5.33	1.8
RE DISCCART	555800	4202300	5.17	5.17	1.8
RE DISCCART	555850	4202300	5.41	5.41	1.8
RE DISCCART	555900	4202300	5.54	5.54	1.8
RE DISCCART	555950	4202300	5.94	5.94	1.8
RE DISCCART	556000	4202300	6.29	6.29	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556050	4202300	6.78	6.78	1.8
RE DISCCART	556100	4202300	6.59	6.59	1.8
RE DISCCART	556150	4202300	6.88	6.88	1.8
RE DISCCART	556200	4202300	7.75	10.83	1.8
RE DISCCART	556250	4202300	7.9	7.9	1.8
RE DISCCART	556300	4202300	8.63	8.86	1.8
RE DISCCART	556350	4202300	3.79	9.58	1.8
RE DISCCART	556400	4202300	8.87	8.87	1.8
RE DISCCART	556450	4202300	9.13	9.13	1.8
RE DISCCART	556500	4202300	10.04	10.04	1.8
RE DISCCART	556550	4202300	6.42	10.81	1.8
RE DISCCART	556600	4202300	9.82	9.82	1.8
RE DISCCART	555100	4202350	3.42	3.73	1.8
RE DISCCART	555150	4202350	3.75	3.75	1.8
RE DISCCART	555200	4202350	4.12	4.12	1.8
RE DISCCART	555250	4202350	4.31	4.31	1.8
RE DISCCART	555300	4202350	4.66	4.66	1.8
RE DISCCART	555350	4202350	5.39	5.39	1.8
RE DISCCART	555400	4202350	3.75	5.59	1.8
RE DISCCART	555450	4202350	2.01	5.22	1.8
RE DISCCART	555500	4202350	3.36	5.1	1.8
RE DISCCART	555550	4202350	3.21	7.02	1.8
RE DISCCART	555600	4202350	5.68	7.97	1.8
RE DISCCART	555650	4202350	5.83	5.83	1.8
RE DISCCART	555700	4202350	6.16	8.59	1.8
RE DISCCART	555750	4202350	5.5	5.5	1.8
RE DISCCART	555800	4202350	5.76	8.99	1.8
RE DISCCART	555850	4202350	5.82	9.81	1.8
RE DISCCART	555900	4202350	6.37	8.82	1.8
RE DISCCART	555950	4202350	6.58	6.58	1.8
RE DISCCART	556000	4202350	6.43	7.61	1.8
RE DISCCART	556050	4202350	7	7	1.8
RE DISCCART	556100	4202350	6.95	6.95	1.8
RE DISCCART	556150	4202350	7.51	7.51	1.8
RE DISCCART	556200	4202350	10.01	11	1.8
RE DISCCART	556250	4202350	6.9	10.9	1.8
RE DISCCART	556300	4202350	8.52	8.65	1.8
RE DISCCART	556350	4202350	8.89	8.89	1.8
RE DISCCART	556400	4202350	9.15	9.15	1.8
RE DISCCART	556450	4202350	3.69	10.89	1.8
RE DISCCART	556500	4202350	6.28	10.89	1.8
RE DISCCART	556550	4202350	10.19	10.19	1.8
RE DISCCART	556600	4202350	8.79	8.79	1.8
RE DISCCART	555100	4202400	3.21	3.53	1.8
RE DISCCART	555150	4202400	3.34	3.34	1.8
RE DISCCART	555200	4202400	3.63	3.63	1.8
RE DISCCART	555250	4202400	4.27	4.27	1.8
RE DISCCART	555300	4202400	4.05	4.05	1.8
RE DISCCART	555350	4202400	4.37	4.37	1.8
RE DISCCART	555400	4202400	4.21	4.21	1.8
RE DISCCART	555450	4202400	4.86	4.86	1.8
RE DISCCART	555500	4202400	5.45	5.45	1.8
RE DISCCART	555550	4202400	4.06	6.3	1.8
RE DISCCART	555600	4202400	5.26	5.26	1.8
RE DISCCART	555650	4202400	4.25	6.16	1.8
RE DISCCART	555700	4202400	2.32	8.59	1.8
RE DISCCART	555750	4202400	2.67	8.27	1.8
RE DISCCART	555800	4202400	2.47	9.81	1.8
RE DISCCART	555850	4202400	3.31	9.81	1.8
RE DISCCART	555900	4202400	5.3	8.82	1.8
RE DISCCART	555950	4202400	6.91	7.31	1.8
RE DISCCART	556000	4202400	7.31	7.31	1.8
RE DISCCART	556050	4202400	7.16	7.16	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556100	4202400	7.41	7.41	1.8
RE DISCCART	556150	4202400	4.1	11.04	1.8
RE DISCCART	556200	4202400	3.6	11.04	1.8
RE DISCCART	556250	4202400	6.39	9.89	1.8
RE DISCCART	556300	4202400	8.77	8.77	1.8
RE DISCCART	556350	4202400	8.84	8.84	1.8
RE DISCCART	556400	4202400	8.77	8.77	1.8
RE DISCCART	556450	4202400	8.97	8.97	1.8
RE DISCCART	556500	4202400	9.16	9.16	1.8
RE DISCCART	556550	4202400	9.69	9.69	1.8
RE DISCCART	556600	4202400	8.07	8.43	1.8
RE DISCCART	554439	4197648	2.67	113.66	1.8
RE DISCCART	554439	4197648	2.67	113.66	1.8
RE DISCCART	554439	4197648	2.67	113.66	1.8
RE DISCCART	554961	4196985	4.53	113.66	1.8
RE DISCCART	555373	4201175	3.62	4.06	1.8
RE DISCCART	555373	4201175	3.62	4.06	1.8
RE DISCCART	555752	4198581	5.68	5.68	1.8
RE DISCCART	555839	4199848	6.42	6.42	1.8
RE DISCCART	555839	4199848	6.42	6.42	1.8
RE DISCCART	555848	4199677	6.16	6.16	1.8
RE DISCCART	555848	4199677	6.16	6.16	1.8
RE DISCCART	555864	4200773	6.9	7.6	1.8
RE DISCCART	555864	4200773	6.9	7.6	1.8
RE DISCCART	555909	4198423	5.4	5.4	1.8
RE DISCCART	555909	4198423	5.4	5.4	1.8
RE DISCCART	555936	4201656	3.57	7.53	1.8
RE DISCCART	555936	4201656	3.57	7.53	1.8
RE DISCCART	555936	4201656	3.57	7.53	1.8
RE DISCCART	556012	4198519	5.9	5.9	1.8
RE DISCCART	556012	4198519	5.9	5.9	1.8
RE DISCCART	556039	4198685	7.05	7.05	1.8
RE DISCCART	556071	4199075	7.82	8.1	1.8
RE DISCCART	556071	4199075	7.82	8.1	1.8
RE DISCCART	556073	4199832	7.77	7.77	1.8
RE DISCCART	556139	4198868	8.19	8.19	1.8
RE DISCCART	556157	4198615	6.59	6.59	1.8
RE DISCCART	556157	4198615	6.59	6.59	1.8
RE DISCCART	556168	4198587	6.47	6.47	1.8
RE DISCCART	556201	4199005	8.63	8.63	1.8
RE DISCCART	556201	4199005	8.63	8.63	1.8
RE DISCCART	556232	4199726	8.94	9.29	1.8
RE DISCCART	556248	4198749	7.34	7.34	1.8
RE DISCCART	556253	4199006	8.81	8.81	1.8
RE DISCCART	556267	4198993	8.73	8.73	1.8
RE DISCCART	556323	4198606	7.01	7.47	1.8
RE DISCCART	556329	4199445	9.27	9.27	1.8
RE DISCCART	556401	4199005	9.21	9.21	1.8
RE DISCCART	556846	4200082	14.68	14.68	1.8
RE DISCCART	556289	4198041	5.47	5.47	1.8
RE DISCCART	556279	4197900	5.39	5.39	1.8
RE DISCCART	555894	4198971	6.94	6.94	1.8
RE DISCCART	554032	4197846	5.21	113.66	1.8
RE DISCCART	555890	4200868	6.89	7.39	1.8
RE DISCCART	555937	4200908	6.92	7.56	1.8
RE DISCCART	556302	4199802	10.15	10.15	1.8
RE DISCCART	555714	4201694	5.36	6.52	1.8
RE DISCCART	554273	4196633	20.54	113.66	1.8
RE DISCCART	556457	4198803	8.37	8.66	1.8
RE DISCCART	555826	4198935	6.75	6.75	1.8
RE DISCCART	556054	4199440	7.36	7.36	1.8
RE DISCCART	555692	4199207	5.36	5.93	1.8
RE DISCCART	554235	4197643	3.38	113.66	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	556413	4197826	4.93	4.93	1.8
RE DISCCART	555243	4198689	4.27	4.27	1.8
RE DISCCART	551749	4199663	4.92	150.1	1.8
RE DISCCART	556699	4200136	13.76	13.76	1.8
RE DISCCART	556367	4198914	8.35	8.35	1.8
RE DISCCART	556371	4198729	7.89	7.89	1.8
RE DISCCART	554018	4197818	5.55	113.66	1.8
RE DISCCART	553876	4197753	17.36	113.66	1.8
RE DISCCART	555846	4197900	3.69	3.69	1.8
RE DISCCART	555873	4197850	3.64	3.64	1.8
RE DISCCART	554907	4198399	2.61	2.61	1.8
RE DISCCART	555109	4198399	3.55	3.55	1.8
RE DISCCART	555297	4198399	4.07	4.07	1.8
RE DISCCART	555502	4198395	4.35	4.35	1.8
RE DISCCART	555691	4198392	5.26	5.26	1.8
RE DISCCART	555906	4198389	5.95	5.95	1.8
RE DISCCART	556104	4198392	6.44	6.93	1.8
RE DISCCART	556299	4198392	7.3	7.3	1.8
RE DISCCART	556501	4198395	7.42	8.45	1.8
RE DISCCART	556928	4199151	12.53	12.53	1.8
RE DISCCART	556925	4199611	13.77	13.77	1.8
RE DISCCART	555240	4198745	4.56	4.56	1.8
RE DISCCART	555248	4198745	4.69	4.69	1.8
RE DISCCART	555891	4200852	6.88	7.39	1.8
RE DISCCART	552150	4198870	33.14	150.1	1.8
RE DISCCART	552200	4198870	33.22	150.1	1.8
RE DISCCART	552250	4198870	33.44	150.1	1.8
RE DISCCART	552150	4198920	33.96	150.1	1.8
RE DISCCART	552200	4198920	33.94	150.1	1.8
RE DISCCART	552250	4198920	37.75	150.1	1.8
RE DISCCART	552300	4198920	38.15	150.1	1.8
RE DISCCART	552350	4198920	34.49	150.1	1.8
RE DISCCART	552050	4198970	30.82	150.1	1.8
RE DISCCART	552100	4198970	31.52	150.1	1.8
RE DISCCART	552150	4198970	33.79	150.1	1.8
RE DISCCART	552200	4198970	34.37	150.1	1.8
RE DISCCART	552250	4198970	34.75	150.1	1.8
RE DISCCART	552300	4198970	34.02	150.1	1.8
RE DISCCART	552350	4198970	34.65	150.1	1.8
RE DISCCART	552400	4198970	34.47	150.1	1.8
RE DISCCART	552050	4199020	32.47	150.1	1.8
RE DISCCART	552100	4199020	34.58	150.1	1.8
RE DISCCART	552150	4199020	34.16	150.1	1.8
RE DISCCART	552200	4199020	34.71	150.1	1.8
RE DISCCART	552250	4199020	34.77	150.1	1.8
RE DISCCART	552300	4199020	39.01	150.1	1.8
RE DISCCART	552350	4199020	34.99	150.1	1.8
RE DISCCART	552400	4199020	35.22	150.1	1.8
RE DISCCART	552450	4199020	41.35	150.1	1.8
RE DISCCART	552500	4199020	104.47	145.07	1.8
RE DISCCART	552050	4199070	33.01	150.1	1.8
RE DISCCART	552100	4199070	34.57	150.1	1.8
RE DISCCART	552150	4199070	34.43	150.1	1.8
RE DISCCART	552200	4199070	35.54	150.1	1.8
RE DISCCART	552250	4199070	35.81	150.1	1.8
RE DISCCART	552300	4199070	35.78	150.1	1.8
RE DISCCART	552350	4199070	35.54	150.1	1.8
RE DISCCART	552400	4199070	38.78	150.1	1.8
RE DISCCART	552450	4199070	55.78	150.1	1.8
RE DISCCART	552500	4199070	102.95	145.07	1.8
RE DISCCART	551950	4199120	34.48	150.1	1.8
RE DISCCART	552000	4199120	37.26	150.1	1.8
RE DISCCART	552050	4199120	36.26	150.1	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	552100	4199120	40.66	150.1	1.8
RE DISCCART	552150	4199120	44.73	150.1	1.8
RE DISCCART	552200	4199120	44.46	150.1	1.8
RE DISCCART	552250	4199120	41.94	150.1	1.8
RE DISCCART	552300	4199120	36.55	150.1	1.8
RE DISCCART	552350	4199120	36.07	150.1	1.8
RE DISCCART	552400	4199120	62.14	150.1	1.8
RE DISCCART	552450	4199120	88.3	150.1	1.8
RE DISCCART	552500	4199120	110.19	145.07	1.8
RE DISCCART	551950	4199170	41.91	150.1	1.8
RE DISCCART	552000	4199170	39.14	150.1	1.8
RE DISCCART	552050	4199170	48.85	150.1	1.8
RE DISCCART	552100	4199170	48.75	150.1	1.8
RE DISCCART	552150	4199170	52.82	150.1	1.8
RE DISCCART	552200	4199170	61.07	150.1	1.8
RE DISCCART	552250	4199170	58.29	150.1	1.8
RE DISCCART	552300	4199170	40.43	150.1	1.8
RE DISCCART	552350	4199170	43.98	150.1	1.8
RE DISCCART	552400	4199170	76.89	150.1	1.8
RE DISCCART	552450	4199170	109.26	149.89	1.8
RE DISCCART	551950	4199220	36.45	150.1	1.8
RE DISCCART	552000	4199220	41.21	150.1	1.8
RE DISCCART	552050	4199220	53.37	150.1	1.8
RE DISCCART	552100	4199220	50.34	150.1	1.8
RE DISCCART	552150	4199220	60.73	150.1	1.8
RE DISCCART	552200	4199220	60.02	150.1	1.8
RE DISCCART	552250	4199220	48.17	150.1	1.8
RE DISCCART	552300	4199220	37.78	150.1	1.8
RE DISCCART	552350	4199220	59.68	150.1	1.8
RE DISCCART	552400	4199220	91.35	150.1	1.8
RE DISCCART	552450	4199220	122.07	145.07	1.8
RE DISCCART	552000	4199270	38.42	150.1	1.8
RE DISCCART	552050	4199270	45.8	150.1	1.8
RE DISCCART	552100	4199270	51.95	150.1	1.8
RE DISCCART	552150	4199270	50.55	150.1	1.8
RE DISCCART	552200	4199270	46.96	150.1	1.8
RE DISCCART	552250	4199270	37.93	150.1	1.8
RE DISCCART	552300	4199270	53.59	150.1	1.8
RE DISCCART	552350	4199270	76.35	150.1	1.8
RE DISCCART	552400	4199270	104.87	150.1	1.8
RE DISCCART	552450	4199270	135.6	145.07	1.8
RE DISCCART	552100	4199320	45.9	150.1	1.8
RE DISCCART	552150	4199320	41.61	150.1	1.8
RE DISCCART	552200	4199320	41.55	150.1	1.8
RE DISCCART	552250	4199320	56.58	150.1	1.8
RE DISCCART	552300	4199320	79.6	150.1	1.8
RE DISCCART	552350	4199320	102.85	150.1	1.8
RE DISCCART	552400	4199320	125.29	145.07	1.8
RE DISCCART	554952	4199839	3.58	6.01	1.8
RE DISCCART	555002	4199839	3.76	5.79	1.8
RE DISCCART	554702	4199789	2.8	3.49	1.8
RE DISCCART	554752	4199789	2.62	3.95	1.8
RE DISCCART	554802	4199789	1.52	5.1	1.8
RE DISCCART	554852	4199789	3.05	3.05	1.8
RE DISCCART	554902	4199789	1.44	3.64	1.8
RE DISCCART	554952	4199789	1.51	3.48	1.8
RE DISCCART	555002	4199789	3.13	3.85	1.8
RE DISCCART	554652	4199739	3.34	3.87	1.8
RE DISCCART	554702	4199739	3.32	4.27	1.8
RE DISCCART	554752	4199739	3.46	3.95	1.8
RE DISCCART	554802	4199739	3.28	3.28	1.8
RE DISCCART	554852	4199739	3.5	3.5	1.8
RE DISCCART	554902	4199739	3.42	3.42	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	554952	4199739	1.62	3.95	1.8
RE DISCCART	554652	4199689	3.27	3.85	1.8
RE DISCCART	554702	4199689	3.33	3.85	1.8
RE DISCCART	554752	4199689	3.45	4.03	1.8
RE DISCCART	554802	4199689	3.51	3.51	1.8
RE DISCCART	554852	4199689	3.37	3.37	1.8
RE DISCCART	554902	4199689	3.35	3.35	1.8
RE DISCCART	554602	4199639	3.13	3.84	1.8
RE DISCCART	554652	4199639	3.16	3.85	1.8
RE DISCCART	554702	4199639	3.27	3.95	1.8
RE DISCCART	554752	4199639	3.34	4.1	1.8
RE DISCCART	554802	4199639	3.44	3.44	1.8
RE DISCCART	554852	4199639	2.95	3.65	1.8
RE DISCCART	554902	4199639	3.41	4.23	1.8
RE DISCCART	554602	4199589	3.22	4.76	1.8
RE DISCCART	554652	4199589	3.23	4.49	1.8
RE DISCCART	554702	4199589	3.22	4.48	1.8
RE DISCCART	554752	4199589	3.54	3.54	1.8
RE DISCCART	554802	4199589	3.14	3.14	1.8
RE DISCCART	554852	4199589	2.84	3.7	1.8
RE DISCCART	554552	4199539	3.46	4.38	1.8
RE DISCCART	554602	4199539	3.36	3.84	1.8
RE DISCCART	554652	4199539	3.3	3.86	1.8
RE DISCCART	554702	4199539	3.35	4.37	1.8
RE DISCCART	554752	4199539	3.39	3.93	1.8
RE DISCCART	554802	4199539	3.3	3.3	1.8
RE DISCCART	554852	4199539	3.31	3.31	1.8
RE DISCCART	554552	4199489	2.59	3.88	1.8
RE DISCCART	554602	4199489	3.18	3.85	1.8
RE DISCCART	554652	4199489	3.15	3.84	1.8
RE DISCCART	554702	4199489	3.23	3.89	1.8
RE DISCCART	554752	4199489	3	3.88	1.8
RE DISCCART	554802	4199489	2.92	3.58	1.8
RE DISCCART	554552	4199439	2.97	4.75	1.8
RE DISCCART	554602	4199439	3.06	5.31	1.8
RE DISCCART	554652	4199439	3.18	4.75	1.8
RE DISCCART	554702	4199439	3.19	4.47	1.8
RE DISCCART	554752	4199439	2.8	4.23	1.8
RE DISCCART	554802	4199439	2.69	3.84	1.8
RE DISCCART	554552	4199389	2.79	5.08	1.8
RE DISCCART	554602	4199389	3.02	5.69	1.8
RE DISCCART	554652	4199389	3.22	5.57	1.8
RE DISCCART	554702	4199389	3.45	4.86	1.8
RE DISCCART	554752	4199389	3.38	4.13	1.8
RE DISCCART	554552	4199339	2.96	4.87	1.8
RE DISCCART	554602	4199339	2.99	5.4	1.8
RE DISCCART	554652	4199339	3.41	5.08	1.8
RE DISCCART	554702	4199339	3.64	4.52	1.8
RE DISCCART	554752	4199339	2.99	4.18	1.8
RE DISCCART	554552	4199289	3.12	4.67	1.8
RE DISCCART	554602	4199289	3.6	5.26	1.8
RE DISCCART	554652	4199289	3.52	4.61	1.8
RE DISCCART	554702	4199289	3.36	4.46	1.8
RE DISCCART	553050	4198150	7.47	145.07	1.8
RE DISCCART	553100	4198150	14.39	59.92	1.8
RE DISCCART	552950	4198200	3.5	150.1	1.8
RE DISCCART	553000	4198200	6.13	145.07	1.8
RE DISCCART	553050	4198200	10.52	145.07	1.8
RE DISCCART	553100	4198200	20.51	59.92	1.8
RE DISCCART	552950	4198250	19.6	145.07	1.8
RE DISCCART	553000	4198250	13.54	145.07	1.8
RE DISCCART	553050	4198250	16.96	145.07	1.8
RE DISCCART	553100	4198250	24.08	59.92	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

```

** BOUNDARY BND1
RE DISCCART 552589.3 4200716.7 1.87 150.1 1.8
RE DISCCART 552598.1 4200679.4 2.44 150.1 1.8
RE DISCCART 552614.3 4200667.8 1.7 150.1 1.8
RE DISCCART 552637.5 4200674 2.97 150.1 1.8
RE DISCCART 552647.8 4200688.4 2.93 150.1 1.8
RE DISCCART 552658.4 4200703.4 2.74 150.1 1.8
RE DISCCART 552683.2 4200734.4 2.8 150.1 1.8
RE DISCCART 552704.8 4200763 2.77 150.1 1.8
RE DISCCART 552709 4200767.4 2.89 150.1 1.8
RE DISCCART 552735.8 4200795.5 2.96 150.1 1.8
RE DISCCART 552793.6 4200815.7 3.18 150.1 1.8
RE DISCCART 552831 4200828.8 2.55 150.1 1.8
RE DISCCART 552887.7 4200849.5 2.31 150.1 1.8
RE DISCCART 552951.7 4200872.9 2.21 150.1 1.8
RE DISCCART 552982 4200882.6 2.63 150.1 1.8
RE DISCCART 553077.2 4200913.3 2.89 150.1 1.8
RE DISCCART 553172.4 4200943.9 2.78 6.51 1.8
RE DISCCART 553267.6 4200974.6 2.56 4.9 1.8
RE DISCCART 553362.8 4201005.3 2.44 4.98 1.8
RE DISCCART 553404.3 4201018.6 3.17 5.64 1.8
RE DISCCART 553460.1 4201010.5 1.24 6.02 1.8
RE DISCCART 553546.7 4200998 0.42 0.42 1.8
RE DISCCART 553556.6 4200990.3 0.42 0.42 1.8
RE DISCCART 553635.6 4200929.1 1.16 1.16 1.8
RE DISCCART 553714.7 4200867.9 1.61 1.61 1.8
RE DISCCART 553793.7 4200806.6 1.21 1.72 1.8
RE DISCCART 553872.8 4200745.4 1.6 1.6 1.8
RE DISCCART 553951.9 4200684.2 1.69 6.35 1.8
RE DISCCART 553963.2 4200675.4 1.65 6.35 1.8
RE DISCCART 554048.8 4200676.9 1.18 6.03 1.8
RE DISCCART 554148.8 4200678.7 1.68 5.79 1.8
RE DISCCART 554198.2 4200679.6 1.57 6.2 1.8
RE DISCCART 554198.2 4200730.2 1.97 6.02 1.8
RE DISCCART 554198.2 4200751.6 1.89 6.21 1.8
RE DISCCART 554119.5 4200750.2 0.73 4.72 1.8
RE DISCCART 554019.5 4200748.5 1.46 4.5 1.8
RE DISCCART 553952.6 4200747.3 0.48 4.53 1.8
RE DISCCART 553983.3 4200759.8 0.38 4.5 1.8
RE DISCCART 554075.9 4200797.4 1.75 1.75 1.8
RE DISCCART 554088.1 4200802.4 1.82 1.82 1.8
RE DISCCART 554174.9 4200805.6 1.7 1.7 1.8
RE DISCCART 554200.3 4200806.6 1.47 6.21 1.8
RE DISCCART 554196.1 4200836.2 2.12 2.12 1.8
RE DISCCART 554151.4 4200836.8 1.94 1.94 1.8
RE DISCCART 554051.4 4200838 1.69 1.69 1.8
RE DISCCART 554020.4 4200838.3 1.68 1.68 1.8
RE DISCCART 553973.2 4200888.7 1.99 1.99 1.8
RE DISCCART 553904.9 4200961.7 1.91 1.91 1.8
RE DISCCART 553895.5 4200971.7 1.91 1.91 1.8
RE DISCCART 553823.5 4201019.3 1.89 1.89 1.8
RE DISCCART 553740.1 4201074.4 1.84 1.84 1.8
RE DISCCART 553656.7 4201129.6 1.86 1.86 1.8
RE DISCCART 553573.3 4201184.7 1.79 1.79 1.8
RE DISCCART 553508.1 4201227.8 1.85 1.85 1.8
RE DISCCART 553490.8 4201241.2 1.85 1.85 1.8
RE DISCCART 553411.6 4201302.2 1.71 1.71 1.8
RE DISCCART 553332.5 4201363.3 1.44 1.44 1.8
RE DISCCART 553332.4 4201363.3 1.44 1.44 1.8
RE DISCCART 553265.5 4201437.6 1.5 1.5 1.8
RE DISCCART 553199.1 4201511.4 1.91 1.91 1.8
RE DISCCART 553198.8 4201512.1 1.91 1.91 1.8
RE DISCCART 553150.9 4201599.9 2.8 2.8 1.8

```

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	553148.2	4201604.8	2.65	2.65	1.8
RE DISCCART	553241.4	4201619	2.24	2.75	1.8
RE DISCCART	553288.2	4201626	2.42	2.77	1.8
RE DISCCART	553340.9	4201626.1	2.35	2.63	1.8
RE DISCCART	553440.9	4201626.3	2.24	2.66	1.8
RE DISCCART	553471.3	4201626.4	1.92	3.17	1.8
RE DISCCART	553506.7	4201686.3	2.4	2.66	1.8
RE DISCCART	553542.8	4201747.1	2.58	2.58	1.8
RE DISCCART	553570.8	4201738.6	2.24	2.48	1.8
RE DISCCART	553603.9	4201728.5	1.86	1.86	1.8
RE DISCCART	553668	4201741.7	2.08	2.48	1.8
RE DISCCART	553765.9	4201761.8	2.63	2.63	1.8
RE DISCCART	553833	4201775.6	2.6	2.6	1.8
RE DISCCART	553856.5	4201796.5	2.66	2.66	1.8
RE DISCCART	553931.3	4201863	2.52	53.61	1.8
RE DISCCART	554006	4201929.5	2.34	53.61	1.8
RE DISCCART	554080.7	4201995.9	2.68	53.61	1.8
RE DISCCART	554094.6	4202008.3	2.7	53.61	1.8
RE DISCCART	554139.4	4202076.2	3.03	53.61	1.8
RE DISCCART	554194.4	4202159.7	3.01	53.61	1.8
RE DISCCART	554225.1	4202206.4	2.58	5.26	1.8
RE DISCCART	554269.3	4202207.1	1.74	1.74	1.8
RE DISCCART	554369.3	4202208.9	1.6	1.89	1.8
RE DISCCART	554433.7	4202210	3.07	3.18	1.8
RE DISCCART	554434	4202185.5	1.89	1.89	1.8
RE DISCCART	554434.1	4202174.4	1.72	1.72	1.8
RE DISCCART	554434.4	4202136.5	1.77	1.77	1.8
RE DISCCART	554434.6	4202111.9	1.67	1.67	1.8
RE DISCCART	554434.9	4202087.4	1.79	1.79	1.8
RE DISCCART	554435	4202074.4	1.83	1.83	1.8
RE DISCCART	554435.3	4202038.4	1.96	1.96	1.8
RE DISCCART	554435.6	4202013.9	1.9	1.9	1.8
RE DISCCART	554435.9	4201974.4	1.94	1.94	1.8
RE DISCCART	554436.2	4201940.4	1.92	1.92	1.8
RE DISCCART	554436.5	4201915.8	1.94	1.94	1.8
RE DISCCART	554436.8	4201874.4	1.84	1.84	1.8
RE DISCCART	554437.1	4201842.3	1.93	1.93	1.8
RE DISCCART	554437.4	4201817.8	1.92	1.92	1.8
RE DISCCART	554437.7	4201774.4	1.93	1.93	1.8
RE DISCCART	554437.8	4201768.8	1.93	1.93	1.8
RE DISCCART	554438.1	4201744.3	1.92	1.92	1.8
RE DISCCART	554438.3	4201719.8	1.94	1.94	1.8
RE DISCCART	554438.5	4201695.2	1.95	1.95	1.8
RE DISCCART	554438.7	4201674.4	1.94	1.94	1.8
RE DISCCART	554438.7	4201670.7	1.93	1.93	1.8
RE DISCCART	554439	4201646.2	1.89	1.89	1.8
RE DISCCART	554439.4	4201597.2	2.14	2.14	1.8
RE DISCCART	554439.7	4201574.4	2.3	2.3	1.8
RE DISCCART	554439.7	4201572.7	2.28	2.28	1.8
RE DISCCART	554440.3	4201499.2	2.33	2.33	1.8
RE DISCCART	554440.6	4201474.6	2.44	2.44	1.8
RE DISCCART	554440.6	4201474.4	2.44	2.44	1.8
RE DISCCART	554441.2	4201401.1	2.34	2.34	1.8
RE DISCCART	554441.5	4201376.6	2.33	4.28	1.8
RE DISCCART	554441.5	4201374.4	2.26	4.28	1.8
RE DISCCART	554441.9	4201327.6	3.05	4.4	1.8
RE DISCCART	554442.2	4201303.1	1.98	4.49	1.8
RE DISCCART	554442.4	4201278.5	1.95	4.65	1.8
RE DISCCART	554442.4	4201274.4	1.85	4.65	1.8
RE DISCCART	554442.6	4201254	2.28	4.37	1.8
RE DISCCART	554435.3	4201238.3	3.23	3.32	1.8
RE DISCCART	554409.4	4201204	2.21	3.46	1.8
RE DISCCART	554412.4	4201184.9	2.72	2.99	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	554417.9	4201150.4	2.85	2.85	1.8
RE DISCCART	554451.6	4201143.2	2.98	2.98	1.8
RE DISCCART	554482	4201146.3	2.98	2.98	1.8
RE DISCCART	554486.5	4201146.8	2.92	2.92	1.8
RE DISCCART	554530.5	4201149.8	3.01	3.01	1.8
RE DISCCART	554558.8	4201157.6	3.12	3.12	1.8
RE DISCCART	554580.8	4201158.3	3.08	3.08	1.8
RE DISCCART	554598	4201158.8	3.09	3.09	1.8
RE DISCCART	554671.6	4201167.4	3.64	3.64	1.8
RE DISCCART	554671.6	4201158.7	3.52	3.52	1.8
RE DISCCART	554672.1	4201058.7	3.65	3.65	1.8
RE DISCCART	554672.5	4200958.7	3.49	3.49	1.8
RE DISCCART	554672.8	4200908.3	2.35	3.22	1.8
RE DISCCART	554623.2	4200907.8	1.83	2.35	1.8
RE DISCCART	554610.9	4200907.7	1.81	2.34	1.8
RE DISCCART	554523.2	4200907.4	1.86	4.79	1.8
RE DISCCART	554427.2	4200907.1	1.69	5.5	1.8
RE DISCCART	554423.2	4200907	1.62	5.69	1.8
RE DISCCART	554323.2	4200904.1	1.55	6.24	1.8
RE DISCCART	554323.1	4200904	1.55	6.24	1.8
RE DISCCART	554322.3	4200886.9	2.32	6.24	1.8
RE DISCCART	554405	4200887.3	2.36	5.72	1.8
RE DISCCART	554505	4200887.8	2.79	5.24	1.8
RE DISCCART	554605	4200888.3	3.24	3.24	1.8
RE DISCCART	554699.1	4200888.7	3.06	3.53	1.8
RE DISCCART	554699.2	4200882.8	3.53	3.53	1.8
RE DISCCART	554700.5	4200782.9	3.99	4.46	1.8
RE DISCCART	554701	4200744.2	3.99	5.06	1.8
RE DISCCART	554640.5	4200734.1	3.84	3.84	1.8
RE DISCCART	554601.7	4200727.7	3.75	3.75	1.8
RE DISCCART	554599.8	4200666.9	3.89	3.89	1.8
RE DISCCART	554598.1	4200613.7	3.89	6.02	1.8
RE DISCCART	554551.3	4200612.5	3.04	5.75	1.8
RE DISCCART	554482.9	4200610.7	2.3	4.2	1.8
RE DISCCART	554482.6	4200642.3	2.97	4.02	1.8
RE DISCCART	554482.3	4200675	2.98	3.85	1.8
RE DISCCART	554415.1	4200671.7	2.61	4.32	1.8
RE DISCCART	554382.5	4200670.1	2.29	4.82	1.8
RE DISCCART	554383.4	4200602.8	2.89	4.06	1.8
RE DISCCART	554383.7	4200584.7	2.73	4.24	1.8
RE DISCCART	554465.7	4200586	0.93	4.49	1.8
RE DISCCART	554478.3	4200586.2	1.9	4.38	1.8
RE DISCCART	554482.7	4200541.1	2.21	5.1	1.8
RE DISCCART	554478.2	4200499.3	2.1	5.7	1.8
RE DISCCART	554476.9	4200487.1	2.14	5.69	1.8
RE DISCCART	554459.9	4200447.3	1.71	6.01	1.8
RE DISCCART	554457.4	4200411.8	1.76	5.84	1.8
RE DISCCART	554456.9	4200402.9	1.66	5.84	1.8
RE DISCCART	554455	4200370	1.65	5.59	1.8
RE DISCCART	554454	4200330.7	1.7	4.73	1.8
RE DISCCART	554456.8	4200303.1	1.76	4.46	1.8
RE DISCCART	554457.9	4200292.3	1.71	4.48	1.8
RE DISCCART	554465.7	4200266.5	1.81	4.43	1.8
RE DISCCART	554471.1	4200239.8	2.08	4.2	1.8
RE DISCCART	554478.7	4200205.7	2.43	4.48	1.8
RE DISCCART	554480	4200200.3	2.56	4.48	1.8
RE DISCCART	554504.5	4200198.8	3.02	3.74	1.8
RE DISCCART	554529.1	4200197.4	2.92	5.1	1.8
RE DISCCART	554574.2	4200194.8	2.43	5.4	1.8
RE DISCCART	554578.1	4200194.6	2.49	5.4	1.8
RE DISCCART	554615.9	4200167.8	2.86	6.02	1.8
RE DISCCART	554640.2	4200168.1	2.96	6.04	1.8
RE DISCCART	554664.5	4200168.3	2.88	6.02	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	554665.7	4200168.3	2.88	6.02	1.8
RE DISCCART	554688.8	4200168.5	3.17	5.91	1.8
RE DISCCART	554713.1	4200168.7	3.26	5.32	1.8
RE DISCCART	554737.5	4200168.9	3.33	3.68	1.8
RE DISCCART	554765.7	4200169.1	3.08	4.43	1.8
RE DISCCART	554834.7	4200169.7	3.85	3.85	1.8
RE DISCCART	554835.5	4200145.1	2.83	2.83	1.8
RE DISCCART	554835.7	4200138.7	2.69	3.1	1.8
RE DISCCART	554837.6	4200071	2.51	4.2	1.8
RE DISCCART	554838.4	4200046.4	2.57	4	1.8
RE DISCCART	554838.6	4200038.7	2.57	4	1.8
RE DISCCART	554840.5	4199972.3	2.57	3.88	1.8
RE DISCCART	554841.3	4199947.7	2.57	5.21	1.8
RE DISCCART	554841.5	4199938.8	2.66	4.03	1.8
RE DISCCART	554843.4	4199873.6	2.67	5.79	1.8
RE DISCCART	554844.2	4199849	3.13	3.13	1.8
RE DISCCART	554843.2	4199838.9	2.43	5.74	1.8
RE DISCCART	554840.4	4199811.2	1.31	3.78	1.8
RE DISCCART	554822.6	4199806	1.62	3.24	1.8
RE DISCCART	554804.9	4199800.7	1.52	3.56	1.8
RE DISCCART	554787.1	4199795.5	1.61	3.85	1.8
RE DISCCART	554770.5	4199795.2	2	3.9	1.8
RE DISCCART	554745.1	4199794.7	2.05	3.98	1.8
RE DISCCART	554724.2	4199794.3	2.12	3.86	1.8
RE DISCCART	554703.2	4199793.9	2.88	2.88	1.8
RE DISCCART	554682.2	4199793.5	2.79	2.79	1.8
RE DISCCART	554676.4	4199783.3	2.59	3.22	1.8
RE DISCCART	554670.6	4199773.1	2.83	2.83	1.8
RE DISCCART	554658.9	4199752.8	3.22	3.22	1.8
RE DISCCART	554647.3	4199732.4	3.13	4.09	1.8
RE DISCCART	554635.7	4199712	2.71	4.14	1.8
RE DISCCART	554626.7	4199696.5	2.98	3.86	1.8
RE DISCCART	554624	4199691.7	2.87	3.86	1.8
RE DISCCART	554612.4	4199671.3	2.8	3.9	1.8
RE DISCCART	554600.7	4199651	2.92	3.84	1.8
RE DISCCART	554589.1	4199630.6	2.9	4.04	1.8
RE DISCCART	554577.5	4199610.2	3.02	4.48	1.8
RE DISCCART	554577.2	4199609.7	3.01	4.48	1.8
RE DISCCART	554565.8	4199589.9	3.11	4.46	1.8
RE DISCCART	554532.3	4199553	2.72	4.51	1.8
RE DISCCART	554534.1	4199525.7	2.63	4.51	1.8
RE DISCCART	554537.6	4199471.9	2.58	4.2	1.8
RE DISCCART	554542.4	4199426.1	2.72	4.86	1.8
RE DISCCART	554544	4199411.1	2.55	5.06	1.8
RE DISCCART	554546.9	4199345.5	2.61	5.02	1.8
RE DISCCART	554548.3	4199326.3	2.56	4.76	1.8
RE DISCCART	554548.8	4199318.8	2.76	4.76	1.8
RE DISCCART	554548.3	4199287.2	3.09	4.53	1.8
RE DISCCART	554552.5	4199247.5	2.87	3.9	1.8
RE DISCCART	554573.4	4199248.7	2.83	7.03	1.8
RE DISCCART	554673.2	4199254.6	3.19	3.89	1.8
RE DISCCART	554701.6	4199256.2	3.29	4.15	1.8
RE DISCCART	554690	4199226.6	4.07	4.07	1.8
RE DISCCART	554669.9	4199192.2	5.14	5.75	1.8
RE DISCCART	554652.6	4199162.6	6.62	7.68	1.8
RE DISCCART	554620.2	4199105.4	8.31	10.77	1.8
RE DISCCART	554607.7	4199083.4	7.49	10.77	1.8
RE DISCCART	554586.5	4199042.6	2.66	11.94	1.8
RE DISCCART	554557.9	4199039.9	2.69	11.94	1.8
RE DISCCART	554483.2	4199032.7	2.83	4.16	1.8
RE DISCCART	554484.2	4199007.8	1.98	11.94	1.8
RE DISCCART	554485.2	4198983.4	2.17	11.94	1.8
RE DISCCART	554473.9	4198938	1.91	11.4	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	554460.3	4198912.6	1.9	10.44	1.8
RE DISCCART	554445	4198884	2.29	4.16	1.8
RE DISCCART	554413.4	4198824.3	2.55	4.46	1.8
RE DISCCART	554401.2	4198801.2	2.58	4.46	1.8
RE DISCCART	554370.7	4198737.7	2.61	4.16	1.8
RE DISCCART	554369.5	4198734.5	2.63	4.16	1.8
RE DISCCART	554358	4198704.5	2.69	7.38	1.8
RE DISCCART	554367.5	4198693.1	2.85	7.38	1.8
RE DISCCART	554384.8	4198688.2	3.18	4.16	1.8
RE DISCCART	554366.9	4198658.1	3.26	7.38	1.8
RE DISCCART	554362.3	4198650.5	3.34	7.38	1.8
RE DISCCART	554308.8	4198576.8	3.18	3.85	1.8
RE DISCCART	554254.5	4198502	3.13	4.96	1.8
RE DISCCART	554250.1	4198495.8	3.08	4.84	1.8
RE DISCCART	554192	4198414.5	3.17	5.03	1.8
RE DISCCART	554166.6	4198378.9	3.11	5.19	1.8
RE DISCCART	554125.1	4198340.7	3.57	5.68	1.8
RE DISCCART	554051.6	4198273	3.07	65.41	1.8
RE DISCCART	554043.5	4198265.5	2.76	65.41	1.8
RE DISCCART	553961.9	4198300.9	2.91	65.41	1.8
RE DISCCART	553961	4198301.3	2.91	65.41	1.8
RE DISCCART	553910.4	4198350.4	2.98	65.41	1.8
RE DISCCART	553928.9	4198372.2	3	65.41	1.8
RE DISCCART	553985.8	4198439.6	3.19	4.46	1.8
RE DISCCART	553976.9	4198447.4	3.03	4.46	1.8
RE DISCCART	553901.9	4198513.6	3.36	4.46	1.8
RE DISCCART	553861.1	4198549.7	3.19	4.46	1.8
RE DISCCART	553830.3	4198516.2	3.14	4.79	1.8
RE DISCCART	553775.6	4198456.7	3.01	5.09	1.8
RE DISCCART	553761.4	4198469.6	2.7	5.09	1.8
RE DISCCART	553692.5	4198532.2	2.98	53.5	1.8
RE DISCCART	553687.9	4198527	3.08	53.84	1.8
RE DISCCART	553639.1	4198471.9	3.03	53.91	1.8
RE DISCCART	553627.5	4198482	3.05	53.91	1.8
RE DISCCART	553620.5	4198473.6	2.99	54.13	1.8
RE DISCCART	553569.5	4198411.4	3	65.41	1.8
RE DISCCART	553554.7	4198424.3	3.23	145.07	1.8
RE DISCCART	553523.6	4198451.3	3.83	145.07	1.8
RE DISCCART	553489.8	4198417.9	3.59	145.07	1.8
RE DISCCART	553478.5	4198417.9	3.65	145.07	1.8
RE DISCCART	553472.4	4198417.9	3.72	145.07	1.8
RE DISCCART	553470.1	4198380.6	5.71	145.07	1.8
RE DISCCART	553463.3	4198399.1	8.48	145.07	1.8
RE DISCCART	553448.9	4198408.5	10.28	145.07	1.8
RE DISCCART	553429.2	4198409.5	10.74	145.07	1.8
RE DISCCART	553422.3	4198409.9	11.11	145.07	1.8
RE DISCCART	553340.5	4198452.9	18.97	145.07	1.8
RE DISCCART	553339.9	4198453.2	18.95	145.07	1.8
RE DISCCART	553288.5	4198484.1	20.69	145.07	1.8
RE DISCCART	553251.6	4198499.8	21.64	145.07	1.8
RE DISCCART	553239.2	4198505	22.97	145.07	1.8
RE DISCCART	553154.9	4198524.3	19.8	150.1	1.8
RE DISCCART	553151.6	4198525.1	19.08	150.1	1.8
RE DISCCART	553090.6	4198532.1	20.7	150.1	1.8
RE DISCCART	553055.5	4198529.6	24.83	150.1	1.8
RE DISCCART	552976.6	4198524	23.55	150.1	1.8
RE DISCCART	552956.5	4198518	21.14	150.1	1.8
RE DISCCART	552860.7	4198489.4	16.28	150.1	1.8
RE DISCCART	552800.8	4198471.5	12.89	150.1	1.8
RE DISCCART	552764.3	4198463.2	16.72	150.1	1.8
RE DISCCART	552757.8	4198461.7	16.89	150.1	1.8
RE DISCCART	552684.4	4198461.9	15.3	150.1	1.8
RE DISCCART	552665	4198466.6	14.14	150.1	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	552583.7	4198486.2	11.65	150.1	1.8
RE DISCCART	552571.9	4198497.6	12.5	150.1	1.8
RE DISCCART	552535.9	4198532.3	11.49	150.1	1.8
RE DISCCART	552500	4198567.1	13.07	150.1	1.8
RE DISCCART	552464	4198602.1	15.56	150.1	1.8
RE DISCCART	552450.8	4198610.2	15.46	150.1	1.8
RE DISCCART	552428.4	4198584.3	13.49	150.1	1.8
RE DISCCART	552421.4	4198576.2	12.44	150.1	1.8
RE DISCCART	552404.8	4198519.3	11.37	150.1	1.8
RE DISCCART	552375	4198515.8	11.4	150.1	1.8
RE DISCCART	552362.6	4198514.3	11.51	150.1	1.8
RE DISCCART	552275.1	4198510.3	12.74	150.1	1.8
RE DISCCART	552259.7	4198509.6	10.4	150.1	1.8
RE DISCCART	552203.9	4198505.3	4.44	150.1	1.8
RE DISCCART	552175.4	4198507.1	5.97	150.1	1.8
RE DISCCART	552075.6	4198513.4	5.78	150.1	1.8
RE DISCCART	551975.8	4198519.6	5.69	150.1	1.8
RE DISCCART	551876	4198525.9	1.38	150.1	1.8
RE DISCCART	551870.3	4198526.3	1.03	150.1	1.8
RE DISCCART	551859.9	4198547.7	1.12	150.1	1.8
RE DISCCART	551844.5	4198564.2	1.08	150.1	1.8
RE DISCCART	551819.8	4198576.2	0.87	150.1	1.8
RE DISCCART	551814.5	4198592	0.57	150.1	1.8
RE DISCCART	551813.2	4198595.6	0.62	150.1	1.8
RE DISCCART	551808.5	4198609.5	0.93	150.1	1.8
RE DISCCART	551803.5	4198635.5	1.06	150.1	1.8
RE DISCCART	551796.7	4198658.5	1.07	150.1	1.8
RE DISCCART	551787.4	4198669.5	0.53	150.1	1.8
RE DISCCART	551778	4198680.5	0.36	150.1	1.8
RE DISCCART	551774.3	4198685.2	0.46	150.1	1.8
RE DISCCART	551748.6	4198718.5	1.08	150.1	1.8
RE DISCCART	551698.8	4198743.5	1.04	150.1	1.8
RE DISCCART	551696.7	4198742.8	0.89	150.1	1.8
RE DISCCART	551684.8	4198738.3	0.72	150.1	1.8
RE DISCCART	551653.9	4198750.4	0.9	150.1	1.8
RE DISCCART	551637.4	4198772.4	0.93	150.1	1.8
RE DISCCART	551621.3	4198793.5	1.14	150.1	1.8
RE DISCCART	551612.1	4198805.5	0.97	150.1	1.8
RE DISCCART	551585.6	4198836.3	0.66	150.1	1.8
RE DISCCART	551566.9	4198876	1.95	150.1	1.8
RE DISCCART	551566.7	4198876.3	1.95	150.1	1.8
RE DISCCART	551540.5	4198924.4	0.47	150.1	1.8
RE DISCCART	551565.8	4198956.4	0.53	150.1	1.8
RE DISCCART	551565.3	4198960.8	0.36	150.1	1.8
RE DISCCART	551554.6	4199060.2	1.13	150.1	1.8
RE DISCCART	551553.4	4199071	1.18	150.1	1.8
RE DISCCART	551544.8	4199102.1	0.28	150.1	1.8
RE DISCCART	551552.8	4199125.9	0.99	150.1	1.8
RE DISCCART	551570	4199133.9	1.15	150.1	1.8
RE DISCCART	551582.1	4199137.8	1.1	150.1	1.8
RE DISCCART	551590.5	4199140.5	0.94	150.1	1.8
RE DISCCART	551613	4199139.8	1.28	150.1	1.8
RE DISCCART	551630.2	4199138.5	1.6	150.1	1.8
RE DISCCART	551638.1	4199130.6	1.61	150.1	1.8
RE DISCCART	551638.8	4199106.1	1.6	150.1	1.8
RE DISCCART	551638.4	4199090.3	1.84	150.1	1.8
RE DISCCART	551638.1	4199073.7	1.61	150.1	1.8
RE DISCCART	551635.4	4199045.9	1.74	150.1	1.8
RE DISCCART	551638.1	4199030.7	1.95	150.1	1.8
RE DISCCART	551648	4199030.7	1.7	150.1	1.8
RE DISCCART	551661.9	4199038	1.66	150.1	1.8
RE DISCCART	551673.6	4199046.4	1.64	150.1	1.8
RE DISCCART	551673.8	4199046.6	1.66	150.1	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	551691.7	4199069.1	1.73	150.1	1.8
RE DISCCART	551702.4	4199082.5	1.55	150.1	1.8
RE DISCCART	551703.6	4199098.5	1.02	150.1	1.8
RE DISCCART	551715.5	4199105.5	1.01	150.1	1.8
RE DISCCART	551732.4	4199116.5	1.1	150.1	1.8
RE DISCCART	551735.6	4199118.6	1.24	150.1	1.8
RE DISCCART	551749.3	4199127.5	3.15	150.1	1.8
RE DISCCART	551757.7	4199142.5	4.92	150.1	1.8
RE DISCCART	551766.2	4199157.5	6.62	150.1	1.8
RE DISCCART	551767.5	4199177	2.13	150.1	1.8
RE DISCCART	551768.7	4199196.5	1.79	150.1	1.8
RE DISCCART	551760.7	4199202.8	1.23	150.1	1.8
RE DISCCART	551756.7	4199205.9	0.85	150.1	1.8
RE DISCCART	551743.9	4199239.6	0.42	150.1	1.8
RE DISCCART	551791.2	4199255	3.32	150.1	1.8
RE DISCCART	551797.7	4199261.4	3	150.1	1.8
RE DISCCART	551800.6	4199264.2	3.14	150.1	1.8
RE DISCCART	551815.3	4199278.5	4.16	150.1	1.8
RE DISCCART	551814.7	4199302.2	2.77	150.1	1.8
RE DISCCART	551814.2	4199325.8	2.32	150.1	1.8
RE DISCCART	551813.6	4199349.5	2.54	150.1	1.8
RE DISCCART	551816.3	4199353	2.58	150.1	1.8
RE DISCCART	551818.4	4199355.5	2.58	150.1	1.8
RE DISCCART	551839.1	4199357.8	7.09	150.1	1.8
RE DISCCART	551859.8	4199360.2	11.51	150.1	1.8
RE DISCCART	551880.5	4199362.5	15.15	150.1	1.8
RE DISCCART	551907.7	4199383.2	19.77	150.1	1.8
RE DISCCART	551939	4199406.9	24.77	150.1	1.8
RE DISCCART	551958.5	4199421.7	30.85	150.1	1.8
RE DISCCART	551987.4	4199443.7	43.72	150.1	1.8
RE DISCCART	551997.5	4199451.3	46.78	150.1	1.8
RE DISCCART	552017.1	4199466.2	49.88	150.1	1.8
RE DISCCART	552036.6	4199481	49.62	150.1	1.8
RE DISCCART	552067	4199504.2	42.76	150.1	1.8
RE DISCCART	552075.6	4199510.6	39.18	150.1	1.8
RE DISCCART	552095.1	4199525.4	31.86	150.1	1.8
RE DISCCART	552134.1	4199555	29.26	150.1	1.8
RE DISCCART	552146.7	4199564.6	30.69	150.1	1.8
RE DISCCART	552153.6	4199569.8	31.29	150.1	1.8
RE DISCCART	552173.1	4199584.6	33.2	150.1	1.8
RE DISCCART	552192.6	4199599.4	36.02	150.1	1.8
RE DISCCART	552212.1	4199614.2	39.88	150.1	1.8
RE DISCCART	552226.4	4199625.1	42.75	150.1	1.8
RE DISCCART	552231.6	4199629	44.2	150.1	1.8
RE DISCCART	552251.1	4199643.8	48.41	150.1	1.8
RE DISCCART	552270.7	4199658.7	55	150.1	1.8
RE DISCCART	552290.2	4199673.5	65.24	150.1	1.8
RE DISCCART	552306	4199685.5	74	150.1	1.8
RE DISCCART	552309.7	4199688.3	76.43	150.1	1.8
RE DISCCART	552348.7	4199717.9	97.31	150.1	1.8
RE DISCCART	552368.2	4199732.7	106.52	150.1	1.8
RE DISCCART	552385.7	4199746	115.8	150.1	1.8
RE DISCCART	552387.7	4199747.5	117.03	150.1	1.8
RE DISCCART	552374	4199767.5	112.23	150.1	1.8
RE DISCCART	552360.2	4199787.5	114.46	150.1	1.8
RE DISCCART	552346.5	4199807.5	114.07	150.1	1.8
RE DISCCART	552332.7	4199827.5	115.91	150.1	1.8
RE DISCCART	552332.4	4199827.8	115.9	150.1	1.8
RE DISCCART	552319	4199847.5	116.34	150.1	1.8
RE DISCCART	552305.2	4199867.5	116.76	122.8	1.8
RE DISCCART	552291.5	4199887.5	114.7	122.8	1.8
RE DISCCART	552277.7	4199907.5	112.5	122.8	1.8
RE DISCCART	552275.8	4199910.3	111.67	122.8	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	552264	4199927.5	104.97	150.1	1.8
RE DISCCART	552250.2	4199947.5	106.3	122.8	1.8
RE DISCCART	552236.5	4199967.5	112.65	120.03	1.8
RE DISCCART	552222.7	4199987.5	118.82	120.03	1.8
RE DISCCART	552219.2	4199992.7	119.47	119.47	1.8
RE DISCCART	552209	4200007.5	117.15	120.03	1.8
RE DISCCART	552195.2	4200027.5	110.91	120.03	1.8
RE DISCCART	552181.5	4200047.5	100.38	120.03	1.8
RE DISCCART	552167.7	4200067.5	106.66	120.03	1.8
RE DISCCART	552162.5	4200075.1	109.3	120.03	1.8
RE DISCCART	552154	4200087.5	112.66	113.48	1.8
RE DISCCART	552140.2	4200107.5	113.88	113.88	1.8
RE DISCCART	552126.5	4200127.5	113.27	114.18	1.8
RE DISCCART	552112.7	4200147.5	111.82	114.7	1.8
RE DISCCART	552105.9	4200157.5	111.1	114.7	1.8
RE DISCCART	552099	4200167.5	110.55	114.7	1.8
RE DISCCART	552085.2	4200187.5	110.43	110.79	1.8
RE DISCCART	552071.5	4200207.5	109.91	123.81	1.8
RE DISCCART	552057.7	4200227.5	110.08	123.81	1.8
RE DISCCART	552049.2	4200239.9	108.64	123.81	1.8
RE DISCCART	552044	4200247.5	107.52	123.81	1.8
RE DISCCART	552030.2	4200267.5	104.18	134.46	1.8
RE DISCCART	552016.5	4200287.5	107.98	134.46	1.8
RE DISCCART	552002.7	4200307.5	112.14	134.46	1.8
RE DISCCART	551992.6	4200322.3	117.74	123.81	1.8
RE DISCCART	551989	4200327.5	119.3	121.85	1.8
RE DISCCART	551969.1	4200341	120.05	120.05	1.8
RE DISCCART	551949.3	4200354.5	119.14	134.46	1.8
RE DISCCART	551929.4	4200368	118.7	134.46	1.8
RE DISCCART	551911.5	4200380.1	121.46	134.46	1.8
RE DISCCART	551909.5	4200381.5	121.71	134.46	1.8
RE DISCCART	551889.7	4200395	123.22	134.46	1.8
RE DISCCART	551849.9	4200422	118.33	134.46	1.8
RE DISCCART	551830	4200435.5	113.31	134.46	1.8
RE DISCCART	551828.8	4200436.3	112.86	134.46	1.8
RE DISCCART	551810.2	4200449	114.71	134.46	1.8
RE DISCCART	551790.3	4200462.5	116.63	134.46	1.8
RE DISCCART	551774	4200481.2	119.97	134.46	1.8
RE DISCCART	551757.8	4200499.8	123.7	131.57	1.8
RE DISCCART	551755.2	4200502.8	124.11	131.57	1.8
RE DISCCART	551741.5	4200518.5	126.25	131.57	1.8
RE DISCCART	551725.3	4200537.2	127.19	131.57	1.8
RE DISCCART	551709	4200555.8	125.42	131.57	1.8
RE DISCCART	551692.8	4200574.5	122.04	131.57	1.8
RE DISCCART	551689.5	4200578.2	121.11	131.57	1.8
RE DISCCART	551676.5	4200593.2	117.8	131.57	1.8
RE DISCCART	551660.2	4200611.8	111.6	131.57	1.8
RE DISCCART	551644	4200630.5	103.55	134.46	1.8
RE DISCCART	551627.7	4200649.2	105.67	131.57	1.8
RE DISCCART	551623.8	4200653.6	105.74	131.57	1.8
RE DISCCART	551611.5	4200667.8	106.73	131.57	1.8
RE DISCCART	551595.2	4200686.5	103.99	131.57	1.8
RE DISCCART	551579	4200705.2	104.76	131.57	1.8
RE DISCCART	551562.7	4200723.8	98.69	131.57	1.8
RE DISCCART	551558.1	4200729	97.09	131.57	1.8
RE DISCCART	551546.4	4200742.5	95.08	131.57	1.8
RE DISCCART	551530.2	4200761.2	91.56	131.57	1.8
RE DISCCART	551513.9	4200779.8	87.25	131.57	1.8
RE DISCCART	551497.7	4200798.5	91.94	131.57	1.8
RE DISCCART	551492.5	4200804.5	93.37	131.57	1.8
RE DISCCART	551481.4	4200817.2	95.72	128.6	1.8
RE DISCCART	551465.2	4200835.8	93.99	128.6	1.8
RE DISCCART	551448.9	4200854.5	92.96	128.6	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	551432.7	4200873.2	91.59	122.41	1.8
RE DISCCART	551426.8	4200879.9	91.08	122.41	1.8
RE DISCCART	551416.4	4200891.8	89.88	122.41	1.8
RE DISCCART	551400.1	4200910.5	86.75	122.41	1.8
RE DISCCART	551383.9	4200929.2	85.75	122.41	1.8
RE DISCCART	551367.6	4200947.8	87.33	89.62	1.8
RE DISCCART	551361.1	4200955.3	87.03	88.87	1.8
RE DISCCART	551351.4	4200966.5	85.86	88.87	1.8
RE DISCCART	551335.1	4200985.2	82.43	89.62	1.8
RE DISCCART	551318.9	4201003.8	80.09	89.62	1.8
RE DISCCART	551302.6	4201022.5	80.79	82.27	1.8
RE DISCCART	551297.8	4201012.8	75.92	122.41	1.8
RE DISCCART	551291.6	4201000.2	68.71	128.6	1.8
RE DISCCART	551280.7	4200977.8	56.55	131.57	1.8
RE DISCCART	551258.7	4200933.2	52.86	134.46	1.8
RE DISCCART	551253.7	4200923	55.28	134.46	1.8
RE DISCCART	551247.8	4200910.8	56.58	134.46	1.8
RE DISCCART	551236.8	4200888.5	51.79	134.46	1.8
RE DISCCART	551215.4	4200882	43.17	134.46	1.8
RE DISCCART	551194.1	4200875.5	35.99	134.46	1.8
RE DISCCART	551177.9	4200870.6	31.49	134.46	1.8
RE DISCCART	551172.7	4200869	30.25	134.46	1.8
RE DISCCART	551151.4	4200862.5	23.42	134.46	1.8
RE DISCCART	551130	4200856	18.05	134.46	1.8
RE DISCCART	551108.7	4200849.5	14.82	134.46	1.8
RE DISCCART	551092.3	4200855.5	12	134.46	1.8
RE DISCCART	551082.7	4200859	10.96	134.46	1.8
RE DISCCART	551075.9	4200861.5	10.42	134.46	1.8
RE DISCCART	551053.5	4200852.8	9.91	134.46	1.8
RE DISCCART	551031.2	4200844.2	8.93	134.46	1.8
RE DISCCART	551008.8	4200835.5	5	134.46	1.8
RE DISCCART	550995.7	4200824.5	1.46	134.46	1.8
RE DISCCART	550992.9	4200822.2	1.14	134.46	1.8
RE DISCCART	550982.7	4200813.5	0.72	134.46	1.8
RE DISCCART	550980.4	4200833.2	0.49	134.46	1.8
RE DISCCART	550978.2	4200852.8	0.52	134.46	1.8
RE DISCCART	550975.9	4200872.5	0.52	134.46	1.8
RE DISCCART	550965.7	4200887.5	0.49	134.46	1.8
RE DISCCART	550962.3	4200896	0.44	134.46	1.8
RE DISCCART	550948.9	4200929.5	1.32	134.46	1.8
RE DISCCART	550938.7	4200939	1.11	134.46	1.8
RE DISCCART	550928.5	4200948.5	0.9	134.46	1.8
RE DISCCART	550907.6	4200952.5	0.53	134.46	1.8
RE DISCCART	550893.1	4200955.3	0.55	134.46	1.8
RE DISCCART	550886.8	4200956.5	0.56	134.46	1.8
RE DISCCART	550865.9	4200960.5	1.59	134.46	1.8
RE DISCCART	550825.3	4200967.5	8.87	134.46	1.8
RE DISCCART	550800.3	4200986	1.02	134.46	1.8
RE DISCCART	550791.5	4200992.5	0.47	134.46	1.8
RE DISCCART	550776.3	4201010	0.53	134.46	1.8
RE DISCCART	550761	4201027.5	0.55	134.46	1.8
RE DISCCART	550732.8	4201059.5	0.57	134.46	1.8
RE DISCCART	550732.8	4201059.5	0.57	134.46	1.8
RE DISCCART	550718.7	4201075.5	0.9	134.46	1.8
RE DISCCART	550698.7	4201079.9	0.61	134.46	1.8
RE DISCCART	550678.8	4201084.3	0.59	131.57	1.8
RE DISCCART	550658.8	4201088.7	0.6	131.57	1.8
RE DISCCART	550641.9	4201092.5	0.86	131.57	1.8
RE DISCCART	550638.9	4201093.1	0.95	131.57	1.8
RE DISCCART	550618.9	4201097.5	1.25	131.57	1.8
RE DISCCART	550576.5	4201117.5	0.61	131.57	1.8
RE DISCCART	550568.6	4201136.8	0.61	128.6	1.8
RE DISCCART	550565.3	4201144.9	0.62	128.6	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	550560.8	4201156.2	0.64	128.6	1.8
RE DISCCART	550552.9	4201175.5	0.64	122.41	1.8
RE DISCCART	550542.3	4201196.5	0.62	122.41	1.8
RE DISCCART	550522.7	4201235.3	0.62	101.49	1.8
RE DISCCART	550521.1	4201238.5	0.62	101.49	1.8
RE DISCCART	550510.5	4201259.5	0.62	101.49	1.8
RE DISCCART	550504.7	4201280.9	0.61	101.49	1.8
RE DISCCART	550499	4201302.3	0.6	101.49	1.8
RE DISCCART	550493.2	4201323.7	0.6	101.49	1.8
RE DISCCART	550491.6	4201329.8	0.56	101.49	1.8
RE DISCCART	550487.5	4201345.1	0.63	101.49	1.8
RE DISCCART	550481.7	4201366.5	0.6	101.49	1.8
RE DISCCART	550473.3	4201387.3	0.61	101.49	1.8
RE DISCCART	550464.8	4201408	0.49	101.49	1.8
RE DISCCART	550458.3	4201424	0.53	101.49	1.8
RE DISCCART	550456.4	4201428.7	0.4	101.49	1.8
RE DISCCART	550447.9	4201449.5	0.42	101.49	1.8
RE DISCCART	550443.2	4201472.1	0.34	101.49	1.8
RE DISCCART	550438.4	4201494.7	0.37	101.49	1.8
RE DISCCART	550433.7	4201517.3	0.4	101.49	1.8
RE DISCCART	550433	4201520.4	0.35	101.49	1.8
RE DISCCART	550428.9	4201539.9	0.43	101.49	1.8
RE DISCCART	550424.2	4201562.5	0.59	101.49	1.8
RE DISCCART	550428.2	4201580	1.48	101.49	1.8
RE DISCCART	550432.1	4201597.5	3.98	101.49	1.8
RE DISCCART	550436.5	4201601.9	4.71	101.49	1.8
RE DISCCART	550431.9	4201616	4.94	101.49	1.8
RE DISCCART	550423.7	4201641.4	4.96	101.49	1.8
RE DISCCART	550400.4	4201692.2	4.17	101.49	1.8
RE DISCCART	550414.4	4201702.8	11.49	74.02	1.8
RE DISCCART	550429.4	4201714.1	26.46	73.33	1.8
RE DISCCART	550463.9	4201666.8	15.67	74.02	1.8
RE DISCCART	550463.9	4201649.9	11.61	101.49	1.8
RE DISCCART	550469.2	4201652	12.55	101.49	1.8
RE DISCCART	550472.4	4201653.3	13.14	101.49	1.8
RE DISCCART	550496.6	4201652	15.59	101.49	1.8
RE DISCCART	550513.9	4201664.1	20.84	74.02	1.8
RE DISCCART	550541.5	4201671	26.46	74.02	1.8
RE DISCCART	550563.9	4201672.7	30.4	74.02	1.8
RE DISCCART	550564.2	4201672.8	30.47	74.02	1.8
RE DISCCART	550579.4	4201676.2	33.78	74.02	1.8
RE DISCCART	550562.2	4201715.8	39.75	70.3	1.8
RE DISCCART	550560.4	4201750.3	42.83	70.3	1.8
RE DISCCART	550560.4	4201756.9	42.27	70.3	1.8
RE DISCCART	550560.4	4201856.9	47.13	70.3	1.8
RE DISCCART	550560.4	4201857.3	47.15	70.3	1.8
RE DISCCART	550577.7	4201865.9	45.94	70.3	1.8
RE DISCCART	550595.3	4201877.1	43.43	70.3	1.8
RE DISCCART	550610.1	4201890.5	40.2	70.3	1.8
RE DISCCART	550627.9	4201901.3	38.41	70.3	1.8
RE DISCCART	550642.9	4201910.5	36.04	70.3	1.8
RE DISCCART	550643.8	4201911.1	35.79	70.3	1.8
RE DISCCART	550657.7	4201920.8	32.87	70.3	1.8
RE DISCCART	550673.3	4201935.8	30.88	73.21	1.8
RE DISCCART	550689.4	4201950.6	31.66	70.3	1.8
RE DISCCART	550705.9	4201955.3	31.48	70.3	1.8
RE DISCCART	550719.3	4201964	29	74.02	1.8
RE DISCCART	550724.8	4201967.5	29.43	73.86	1.8
RE DISCCART	550732.7	4201972.5	20.25	101.49	1.8
RE DISCCART	550746.7	4201986.5	6.03	101.49	1.8
RE DISCCART	550764.2	4201992	4.41	101.49	1.8
RE DISCCART	550781.8	4201997.5	0.49	101.49	1.8
RE DISCCART	550791.2	4201983.7	0.49	101.49	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	550800.6	4201969.8	0.62	101.49	1.8
RE DISCCART	550800.9	4201969.4	0.63	101.49	1.8
RE DISCCART	550810.1	4201956	0.85	101.49	1.8
RE DISCCART	550822.6	4201944	0.94	101.49	1.8
RE DISCCART	550835.2	4201932.1	1.22	101.49	1.8
RE DISCCART	550847.8	4201920.1	1.34	101.49	1.8
RE DISCCART	550861.6	4201905.7	2.06	101.49	1.8
RE DISCCART	550869.7	4201897.2	1.78	101.49	1.8
RE DISCCART	550875.5	4201891.2	3	101.49	1.8
RE DISCCART	550889.3	4201876.7	5.15	101.49	1.8
RE DISCCART	550906.3	4201881.5	2.21	101.49	1.8
RE DISCCART	550923.3	4201886.2	1.85	101.49	1.8
RE DISCCART	550944.7	4201897.2	1.12	101.49	1.8
RE DISCCART	550955.9	4201902.2	0.95	101.49	1.8
RE DISCCART	550986.4	4201915.7	1.07	101.49	1.8
RE DISCCART	550984.2	4201849.1	1.99	101.49	1.8
RE DISCCART	550983	4201813.5	2.23	101.49	1.8
RE DISCCART	550983	4201749.1	8.69	101.49	1.8
RE DISCCART	550983	4201742.2	11.05	101.49	1.8
RE DISCCART	550977.7	4201719.8	18.09	101.49	1.8
RE DISCCART	550967.1	4201675.2	32.75	101.49	1.8
RE DISCCART	550961.8	4201652.8	41.45	101.49	1.8
RE DISCCART	550961.5	4201651.6	41.95	101.49	1.8
RE DISCCART	550956.4	4201630.5	49.07	101.49	1.8
RE DISCCART	550951.1	4201608.2	54.16	101.49	1.8
RE DISCCART	550945.8	4201585.8	57.08	101.49	1.8
RE DISCCART	550940.5	4201563.5	57.82	101.49	1.8
RE DISCCART	550949.5	4201560.8	53.14	101.49	1.8
RE DISCCART	550985.1	4201549.9	32.04	101.49	1.8
RE DISCCART	551007.4	4201543.1	29.76	101.49	1.8
RE DISCCART	551029.7	4201536.3	37.57	101.49	1.8
RE DISCCART	551045.1	4201531.6	40.37	101.49	1.8
RE DISCCART	551052	4201529.5	40.88	101.49	1.8
RE DISCCART	551074.4	4201522.7	37.49	101.49	1.8
RE DISCCART	551096.7	4201515.9	31.02	101.49	1.8
RE DISCCART	551119	4201509.1	35.95	101.49	1.8
RE DISCCART	551140.8	4201502.5	43.67	101.49	1.8
RE DISCCART	551141.3	4201502.3	43.81	101.49	1.8
RE DISCCART	551163.6	4201495.5	53	101.49	1.8
RE DISCCART	551169.5	4201519.1	47.81	101.49	1.8
RE DISCCART	551175.5	4201542.7	41.44	101.49	1.8
RE DISCCART	551181.4	4201566.4	38.58	101.49	1.8
RE DISCCART	551182.1	4201569.4	38.69	101.49	1.8
RE DISCCART	551187.4	4201590	43.89	101.49	1.8
RE DISCCART	551193.3	4201613.6	48.13	101.49	1.8
RE DISCCART	551199.3	4201637.3	49.26	101.49	1.8
RE DISCCART	551205.2	4201660.9	46.74	101.49	1.8
RE DISCCART	551206.6	4201666.4	45.74	101.49	1.8
RE DISCCART	551211.2	4201684.5	42.05	101.49	1.8
RE DISCCART	551223	4201731.7	28.39	101.49	1.8
RE DISCCART	551229	4201755.4	17.19	101.49	1.8
RE DISCCART	551231	4201763.3	14.75	101.49	1.8
RE DISCCART	551234.9	4201779	9.87	101.49	1.8
RE DISCCART	551240.9	4201802.6	5.29	122.41	1.8
RE DISCCART	551246.8	4201826.3	4.17	122.41	1.8
RE DISCCART	551252.8	4201849.9	2.63	101.49	1.8
RE DISCCART	551262.8	4201853.7	2.69	101.49	1.8
RE DISCCART	551281.3	4201860.7	3.88	101.49	1.8
RE DISCCART	551312.3	4201874.5	4.75	101.49	1.8
RE DISCCART	551341.7	4201890	3.05	101.49	1.8
RE DISCCART	551354.2	4201893.6	3.07	101.49	1.8
RE DISCCART	551377.9	4201900.4	4.52	101.49	1.8
RE DISCCART	551408.9	4201905.5	2.82	101.49	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	551440	4201905.5	4.82	101.49	1.8
RE DISCCART	551452.5	4201902.6	4.73	101.49	1.8
RE DISCCART	551498.6	4201891.7	2.87	122.41	1.8
RE DISCCART	551541.1	4201860.6	4.31	122.41	1.8
RE DISCCART	551550.3	4201853.8	5.63	122.41	1.8
RE DISCCART	551572.8	4201862.4	4.98	122.41	1.8
RE DISCCART	551602.9	4201805.4	1.66	128.6	1.8
RE DISCCART	551611.4	4201789.3	1.65	131.57	1.8
RE DISCCART	551623.6	4201768.6	1.55	134.46	1.8
RE DISCCART	551635.9	4201747.8	1.59	134.46	1.8
RE DISCCART	551651.9	4201729.4	1.58	134.46	1.8
RE DISCCART	551658	4201722.5	1.6	134.46	1.8
RE DISCCART	551668	4201711	1.74	134.46	1.8
RE DISCCART	551684	4201692.6	1.7	134.46	1.8
RE DISCCART	551700	4201674.2	1.71	134.46	1.8
RE DISCCART	551711.4	4201658.7	0.73	134.46	1.8
RE DISCCART	551721.2	4201645.1	0.62	134.46	1.8
RE DISCCART	551734	4201627.5	0.73	134.46	1.8
RE DISCCART	551745.3	4201612	0.52	134.46	1.8
RE DISCCART	551752.2	4201595.6	0.72	134.46	1.8
RE DISCCART	551759.2	4201579.2	0.83	134.46	1.8
RE DISCCART	551766.1	4201562.9	0.79	134.46	1.8
RE DISCCART	551765.8	4201557.2	0.77	134.46	1.8
RE DISCCART	551765.1	4201540.3	0.7	134.46	1.8
RE DISCCART	551764.2	4201517.6	0.73	134.46	1.8
RE DISCCART	551756.6	4201500	0.48	134.46	1.8
RE DISCCART	551749.1	4201482.4	0.5	134.46	1.8
RE DISCCART	551741.5	4201464.8	0.42	134.46	1.8
RE DISCCART	551740.4	4201462.1	0.42	134.46	1.8
RE DISCCART	551734	4201445.4	0.47	134.46	1.8
RE DISCCART	551726.5	4201426.1	0.45	134.46	1.8
RE DISCCART	551718.9	4201406.8	0.76	134.46	1.8
RE DISCCART	551734.9	4201400.3	0.59	134.46	1.8
RE DISCCART	551755.1	4201388.5	0.47	134.46	1.8
RE DISCCART	551755.6	4201388.2	0.47	134.46	1.8
RE DISCCART	551781.4	4201379.6	0.45	134.46	1.8
RE DISCCART	551817.3	4201381.8	0.43	134.46	1.8
RE DISCCART	551818.6	4201398.7	0.45	134.46	1.8
RE DISCCART	551819.8	4201415.7	0.35	134.46	1.8
RE DISCCART	551819.9	4201418	0.36	134.46	1.8
RE DISCCART	551822.4	4201453.5	0.33	134.46	1.8
RE DISCCART	551823.6	4201472.3	0.4	134.46	1.8
RE DISCCART	551825.5	4201493.1	0.46	134.46	1.8
RE DISCCART	551827.4	4201513.8	0.43	134.46	1.8
RE DISCCART	551827.1	4201517.7	0.42	134.46	1.8
RE DISCCART	551826.1	4201531.5	0.5	134.46	1.8
RE DISCCART	551824.9	4201549.1	0.36	134.46	1.8
RE DISCCART	551823.6	4201566.7	0.31	134.46	1.8
RE DISCCART	551819.8	4201578.9	0.47	134.46	1.8
RE DISCCART	551816.1	4201591.2	0.54	134.46	1.8
RE DISCCART	551806.2	4201610	0.48	134.46	1.8
RE DISCCART	551804.3	4201613.5	0.46	134.46	1.8
RE DISCCART	551796.4	4201628.7	0.38	134.46	1.8
RE DISCCART	551786.5	4201647.5	1.26	134.46	1.8
RE DISCCART	551772.5	4201665.8	1.65	134.46	1.8
RE DISCCART	551758.4	4201684.2	1.39	134.46	1.8
RE DISCCART	551749.1	4201696.5	1.62	134.46	1.8
RE DISCCART	551709.4	4201749	1.56	134.46	1.8
RE DISCCART	551694.3	4201779.6	1.59	134.46	1.8
RE DISCCART	551684.3	4201800	1.82	128.6	1.8
RE DISCCART	551665.7	4201840.3	1.6	128.6	1.8
RE DISCCART	551667.7	4201853.5	0	128.6	1.8
RE DISCCART	551683.6	4201852.9	0	128.6	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	551684.9	4201849.5	0	128.6	1.8
RE DISCCART	551694.8	4201823.8	1.56	128.6	1.8
RE DISCCART	551717.3	4201777.5	1.45	134.46	1.8
RE DISCCART	551729.9	4201770.2	1.43	134.46	1.8
RE DISCCART	551733.3	4201764.7	1.41	134.46	1.8
RE DISCCART	551743.1	4201748.4	1.65	134.46	1.8
RE DISCCART	551756.4	4201731.2	1.59	134.46	1.8
RE DISCCART	551765	4201719.3	1.67	134.46	1.8
RE DISCCART	551778.1	4201712.9	1.3	134.46	1.8
RE DISCCART	551784.1	4201697.4	1.53	134.46	1.8
RE DISCCART	551793.8	4201688.2	1.4	134.46	1.8
RE DISCCART	551797.5	4201684.7	1.33	134.46	1.8
RE DISCCART	551801.8	4201660	1.66	134.46	1.8
RE DISCCART	551818.1	4201642.3	1.42	134.46	1.8
RE DISCCART	551830.4	4201620.5	0.63	134.46	1.8
RE DISCCART	551842.4	4201603.6	0.53	134.46	1.8
RE DISCCART	551846.8	4201597.4	0.57	134.46	1.8
RE DISCCART	551852.2	4201574.2	1.02	134.46	1.8
RE DISCCART	551853.6	4201546.9	0.38	134.46	1.8
RE DISCCART	551850.8	4201519.7	0.65	134.46	1.8
RE DISCCART	551852.3	4201505.9	0.43	134.46	1.8
RE DISCCART	551853.6	4201493.8	0.48	134.46	1.8
RE DISCCART	551846.8	4201469.2	1.3	134.46	1.8
RE DISCCART	551842.7	4201440.6	0.75	134.46	1.8
RE DISCCART	551841.2	4201409.6	0.46	134.46	1.8
RE DISCCART	551841	4201407.2	0.44	134.46	1.8
RE DISCCART	551839.8	4201389.6	0.47	134.46	1.8
RE DISCCART	551838.7	4201365.3	0.45	134.46	1.8
RE DISCCART	551840.9	4201349.9	0.47	134.46	1.8
RE DISCCART	551842.6	4201331.9	0.65	134.46	1.8
RE DISCCART	551853.8	4201310.2	0.7	134.46	1.8
RE DISCCART	551854.5	4201309	0.7	134.46	1.8
RE DISCCART	551862.3	4201290.7	0.66	134.46	1.8
RE DISCCART	551881.3	4201268.3	0.77	134.46	1.8
RE DISCCART	551894.4	4201255.2	1.45	134.46	1.8
RE DISCCART	551911.4	4201240.8	1.3	134.46	1.8
RE DISCCART	551918.3	4201235.8	1.08	134.46	1.8
RE DISCCART	551928.4	4201228.4	1.02	134.46	1.8
RE DISCCART	551944.5	4201211.1	1.72	134.46	1.8
RE DISCCART	551962.2	4201201.1	0.83	134.46	1.8
RE DISCCART	551974.4	4201194.1	0.57	134.46	1.8
RE DISCCART	551986	4201177.8	1.67	134.46	1.8
RE DISCCART	551993.6	4201172.2	1.47	134.46	1.8
RE DISCCART	552005.8	4201163.1	0.79	134.46	1.8
RE DISCCART	552069.6	4201107.2	1.89	134.46	1.8
RE DISCCART	552126	4201057.6	2.39	134.46	1.8
RE DISCCART	552144.8	4201041.3	2.37	134.46	1.8
RE DISCCART	552170.1	4201019.1	3.23	134.46	1.8
RE DISCCART	552173.4	4200997.1	3.24	150.1	1.8
RE DISCCART	552211	4200974.2	7.89	148.45	1.8
RE DISCCART	552254.1	4200948	3.32	150.1	1.8
RE DISCCART	552277	4200904.1	3.4	150.1	1.8
RE DISCCART	552281.6	4200895.3	3.31	150.1	1.8
RE DISCCART	552355.9	4200882.9	2.63	150.1	1.8
RE DISCCART	552368	4200874.5	3.47	150.1	1.8
RE DISCCART	552450.1	4200817.3	2.31	150.1	1.8
RE DISCCART	552460.3	4200810.2	2.54	150.1	1.8
RE DISCCART	552531.2	4200758.8	2.8	150.1	1.8
** BOUNDARY	BND2				
RE DISCCART	554621.5	4199048.5	2.64	11.94	1.8
RE DISCCART	554682.2	4199049.8	2.58	11.65	1.8
RE DISCCART	554649.2	4199028.5	2.51	11.94	1.8
RE DISCCART	554636.8	4199020.6	2.51	11.94	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	554619.7	4199003.1	2.46	11.94	1.8
RE DISCCART	554599.9	4198969.0	2.37	11.94	1.8
RE DISCCART	554595.0	4198949.6	2.43	11.94	1.8
RE DISCCART	554594.9	4198948.2	2.44	11.94	1.8
RE DISCCART	554590.8	4198886.0	2.52	11.25	1.8
RE DISCCART	554589.6	4198848.4	2.72	4.02	1.8
RE DISCCART	554587.7	4198789.0	2.86	4.16	1.8
RE DISCCART	554566.7	4198754.3	2.64	4.23	1.8
RE DISCCART	554514.9	4198668.7	2.54	4.09	1.8
RE DISCCART	554463.1	4198583.2	3.1	4.03	1.8
RE DISCCART	554459.2	4198576.7	3.4	3.98	1.8
RE DISCCART	554430.3	4198529.0	3.75	3.91	1.8
RE DISCCART	554400.0	4198520.8	2.95	3.99	1.8
RE DISCCART	554397.3	4198516.3	3.03	3.99	1.8
RE DISCCART	554344.7	4198431.2	2.15	3.85	1.8
RE DISCCART	554326.5	4198401.8	2.15	4.08	1.8
RE DISCCART	554293.9	4198345.1	2.35	4.17	1.8
RE DISCCART	554265.6	4198295.8	2.38	3.85	1.8
RE DISCCART	554244.6	4198258.1	2.34	113.66	1.8
RE DISCCART	554195.9	4198170.8	2.35	113.66	1.8
RE DISCCART	554168.1	4198121.1	2.26	113.66	1.8
RE DISCCART	554184.7	4198100.8	3.01	113.66	1.8
RE DISCCART	554180.7	4198089.4	3.28	113.66	1.8
RE DISCCART	554176.7	4198092.3	5.16	113.66	1.8
RE DISCCART	554146.8	4198113.8	8.29	113.66	1.8
RE DISCCART	554134.5	4198134.4	7.07	113.66	1.8
RE DISCCART	554127.4	4198163.7	6.31	113.66	1.8
RE DISCCART	554125.4	4198172.5	6.13	113.66	1.8
RE DISCCART	554122.0	4198187.6	5.96	113.66	1.8
RE DISCCART	554113.6	4198209.5	5.22	113.66	1.8
RE DISCCART	554092.2	4198233.1	4.17	113.62	1.8
RE DISCCART	554079.3	4198257.3	3.37	65.41	1.8
RE DISCCART	554080.6	4198258.5	3.37	65.41	1.8
RE DISCCART	554149.7	4198320.3	3.38	3.38	1.8
RE DISCCART	554154.6	4198325.7	3.35	3.85	1.8
RE DISCCART	554192.3	4198367.2	3.42	3.85	1.8
RE DISCCART	554217.5	4198403.2	3.22	3.85	1.8
RE DISCCART	554275.0	4198485.0	2.73	3.85	1.8
RE DISCCART	554275.6	4198486.0	2.74	3.85	1.8
RE DISCCART	554333.5	4198566.1	3.01	3.85	1.8
RE DISCCART	554387.3	4198640.7	3.22	7.38	1.8
RE DISCCART	554391.3	4198647.6	3.19	7.38	1.8
RE DISCCART	554416.3	4198690.3	3.48	4.16	1.8
RE DISCCART	554444.4	4198732.3	3.66	3.66	1.8
RE DISCCART	554500.0	4198815.5	4.7	5.03	1.8
RE DISCCART	554503.7	4198821.1	4.81	5.16	1.8
RE DISCCART	554546.6	4198903.9	9.11	9.11	1.8
RE DISCCART	554592.6	4198992.7	11.08	11.49	1.8
** BOUNDARY	BND3				
RE DISCCART	552026.4	4198484.6	1.46	150.1	1.8
RE DISCCART	552017.0	4198473.2	1.18	150.1	1.8
RE DISCCART	552012.3	4198460.3	1.05	150.1	1.8
RE DISCCART	551998.7	4198451.9	1.41	150.1	1.8
RE DISCCART	551980.0	4198447.5	1.36	150.1	1.8
RE DISCCART	551959.5	4198444.6	1.18	150.1	1.8
RE DISCCART	551944.9	4198440.1	1.07	150.1	1.8
RE DISCCART	551944.6	4198439.9	1.07	150.1	1.8
RE DISCCART	551935.2	4198434.7	1.09	150.1	1.8
RE DISCCART	551928.2	4198423.3	1.14	150.1	1.8
RE DISCCART	551916.5	4198420.7	1.1	150.1	1.8
RE DISCCART	551905.1	4198414.8	1.1	150.1	1.8
RE DISCCART	551895.2	4198416.3	1.1	150.1	1.8
RE DISCCART	551890.4	4198422.9	1.07	150.1	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	551890.4	4198430.6	1.09	150.1	1.8
RE DISCCART	551895.5	4198438.3	1.12	150.1	1.8
RE DISCCART	551906.3	4198450.1	1.15	150.1	1.8
RE DISCCART	551907.7	4198451.5	1.14	150.1	1.8
RE DISCCART	551907.7	4198458.9	1.08	150.1	1.8
RE DISCCART	551904.0	4198476.1	1.11	150.1	1.8
RE DISCCART	551890.7	4198494.3	2.17	150.1	1.8
RE DISCCART	551878.5	4198505.9	1.04	150.1	1.8
RE DISCCART	551910.2	4198506.4	5.26	150.1	1.8
RE DISCCART	551912.2	4198506.3	5.29	150.1	1.8
RE DISCCART	552011.9	4198498.1	4.83	150.1	1.8
RE DISCCART	552026.1	4198496.9	4.51	150.1	1.8
RE DISCCART	552096.3	4198482.2	2.11	150.1	1.8
RE DISCCART	552110.2	4198480.1	2.18	150.1	1.8
RE DISCCART	552196.3	4198467.2	0.47	150.1	1.8
RE DISCCART	552209.1	4198466.0	0.77	150.1	1.8
RE DISCCART	552249.4	4198462.0	7.64	150.1	1.8
RE DISCCART	552307.1	4198447.3	11.18	150.1	1.8
RE DISCCART	552320.3	4198444.0	10.88	150.1	1.8
RE DISCCART	552389.1	4198423.9	11.06	150.1	1.8
RE DISCCART	552403.6	4198421.5	11.54	150.1	1.8
RE DISCCART	552471.6	4198410.1	11.22	150.1	1.8
RE DISCCART	552502.6	4198411.9	10.95	150.1	1.8
RE DISCCART	552518.4	4198412.8	11.21	150.1	1.8
RE DISCCART	552548.0	4198413.8	11.52	150.1	1.8
RE DISCCART	552579.2	4198415.4	11.84	150.1	1.8
RE DISCCART	552602.5	4198416.3	12.45	150.1	1.8
RE DISCCART	552634.3	4198417.5	12.93	150.1	1.8
RE DISCCART	552685.1	4198417.0	13.88	150.1	1.8
RE DISCCART	552702.5	4198418.0	14.7	150.1	1.8
RE DISCCART	552717.8	4198419.0	13.45	150.1	1.8
RE DISCCART	552768.6	4198419.0	10.36	150.1	1.8
RE DISCCART	552801.3	4198427.6	11.78	150.1	1.8
RE DISCCART	552880.8	4198448.6	25.61	150.1	1.8
RE DISCCART	552896.8	4198456.5	25.98	150.1	1.8
RE DISCCART	552912.4	4198464.2	27.32	150.1	1.8
RE DISCCART	552978.7	4198488.0	24.42	150.1	1.8
RE DISCCART	552990.7	4198489.5	25.7	150.1	1.8
RE DISCCART	553058.6	4198498.3	24.46	150.1	1.8
RE DISCCART	553089.8	4198493.5	26.3	150.1	1.8
RE DISCCART	553151.4	4198484.1	21.89	150.1	1.8
RE DISCCART	553187.8	4198474.5	20.82	150.05	1.8
RE DISCCART	553231.9	4198462.9	19.53	145.07	1.8
RE DISCCART	553281.6	4198440.8	18.09	145.07	1.8
RE DISCCART	553294.4	4198435.2	17.79	145.07	1.8
RE DISCCART	553342.7	4198406.2	16.27	145.07	1.8
RE DISCCART	553369.1	4198392.5	15.69	144.9	1.8
RE DISCCART	553377.5	4198388.1	15.54	59.92	1.8
RE DISCCART	553414.2	4198367.5	14.59	59.92	1.8
RE DISCCART	553455.5	4198342.3	8.72	65.41	1.8
RE DISCCART	553463.8	4198337.3	6.49	65.41	1.8
RE DISCCART	553446.4	4198305.0	9.33	65.41	1.8
RE DISCCART	553433.5	4198275.4	11.2	65.41	1.8
RE DISCCART	553425.5	4198255.6	12.14	65.41	1.8
RE DISCCART	553423.9	4198251.6	12.51	65.41	1.8
RE DISCCART	553405.8	4198247.1	21.74	53.91	1.8
RE DISCCART	553388.4	4198236.8	23.45	53.91	1.8
RE DISCCART	553370.5	4198238.8	26.88	53.91	1.8
RE DISCCART	553338.3	4198260.4	40.53	53.91	1.8
RE DISCCART	553334.8	4198262.8	42.01	53.5	1.8
RE DISCCART	553325.9	4198269.1	43.66	53.29	1.8
RE DISCCART	553314.5	4198264.8	46.19	46.35	1.8
RE DISCCART	553295.1	4198291.5	43.6	53.91	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

RE DISCCART	553263.5	4198267.6	46.95	53.91	1.8
RE DISCCART	553231.8	4198243.6	38.8	53.91	1.8
RE DISCCART	553217.6	4198261.9	42.19	53.91	1.8
RE DISCCART	553213.6	4198254.3	40.36	53.91	1.8
RE DISCCART	553194.5	4198233.9	34.32	59.92	1.8
RE DISCCART	553194.2	4198233.4	34.1	59.92	1.8
RE DISCCART	553180.9	4198215.8	30.35	59.92	1.8
RE DISCCART	553169.1	4198227.2	31.15	59.92	1.8
RE DISCCART	553154.2	4198210.6	28.43	59.92	1.8
RE DISCCART	553140.1	4198223.1	28.87	59.92	1.8
RE DISCCART	553126.4	4198208.1	24.66	59.92	1.8
RE DISCCART	553116.9	4198197.6	22.32	59.92	1.8
RE DISCCART	553068.8	4198242.6	17.57	145.07	1.8
RE DISCCART	553053.2	4198255.0	17.04	145.07	1.8
RE DISCCART	553049.1	4198258.2	16.85	145.07	1.8
RE DISCCART	553026.9	4198266.4	16.51	145.07	1.8
RE DISCCART	553002.9	4198267.3	16.36	145.07	1.8
RE DISCCART	552984.7	4198266.0	16.12	145.07	1.8
RE DISCCART	552956.8	4198258.4	18.72	145.07	1.8
RE DISCCART	552953.5	4198257.5	19.25	145.07	1.8
RE DISCCART	552936.8	4198198.2	3.03	150.1	1.8
RE DISCCART	552902.8	4198206.5	2.76	150.1	1.8
RE DISCCART	552869.5	4198214.7	2.9	150.1	1.8
RE DISCCART	552834.7	4198213.3	3.99	150.1	1.8
RE DISCCART	552836.2	4198194.7	3.39	150.1	1.8
RE DISCCART	552833.1	4198182.9	3.64	150.1	1.8
RE DISCCART	552829.8	4198170.6	3.51	150.1	1.8
RE DISCCART	552823.5	4198163.6	3.08	150.1	1.8
RE DISCCART	552788.3	4198151.9	3.36	150.1	1.8
RE DISCCART	552778.3	4198138.8	2.93	150.1	1.8
RE DISCCART	552774.0	4198127.0	2.08	150.1	1.8
RE DISCCART	552762.6	4198129.2	1.23	150.1	1.8
RE DISCCART	552757.5	4198130.1	1.09	150.1	1.8
RE DISCCART	552750.3	4198145.2	2.4	150.1	1.8
RE DISCCART	552742.1	4198147.5	1.98	150.1	1.8
RE DISCCART	552726.1	4198138.3	1.15	150.1	1.8
RE DISCCART	552690.7	4198147.4	1.12	150.1	1.8
RE DISCCART	552694.8	4198161.5	1.04	150.1	1.8
RE DISCCART	552697.9	4198172.6	0.46	150.1	1.8
RE DISCCART	552690.2	4198179.5	0.99	150.1	1.8
RE DISCCART	552692.7	4198201.0	0.61	150.1	1.8
RE DISCCART	552703.2	4198222.9	1.01	150.1	1.8
RE DISCCART	552714.5	4198232.5	0.67	150.1	1.8
RE DISCCART	552719.9	4198248.9	1.06	150.1	1.8
RE DISCCART	552723.6	4198260.0	0.62	150.1	1.8
RE DISCCART	552704.1	4198284.1	0.58	150.1	1.8
RE DISCCART	552653.2	4198310.7	0.63	150.1	1.8
RE DISCCART	552652.5	4198311.1	0.6	150.1	1.8
RE DISCCART	552641.3	4198314.0	0.45	150.1	1.8
RE DISCCART	552630.6	4198309.7	0.53	150.1	1.8
RE DISCCART	552628.2	4198314.0	0.45	150.1	1.8
RE DISCCART	552628.2	4198328.2	0.43	150.1	1.8
RE DISCCART	552621.6	4198343.2	0.7	150.1	1.8
RE DISCCART	552616.7	4198360.2	0.82	150.1	1.8
RE DISCCART	552610.2	4198371.2	0.41	150.1	1.8
RE DISCCART	552603.7	4198378.9	0.61	150.1	1.8
RE DISCCART	552602.0	4198381.0	0.66	150.1	1.8
RE DISCCART	552589.4	4198389.7	0.86	150.1	1.8
RE DISCCART	552507.6	4198395.3	2.63	150.1	1.8
RE DISCCART	552501.9	4198395.7	2.52	150.1	1.8
RE DISCCART	552449.6	4198390.0	0.86	150.1	1.8
RE DISCCART	552409.0	4198399.2	1.76	150.1	1.8
RE DISCCART	552362.8	4198409.6	1.25	150.1	1.8

Attachment 1 Example Moeling Input Shipping at Berth.ami

```

RE DISCCART 552328.5 4198414.9 0.6 150.1 1.8
RE DISCCART 552314.8 4198413.3 0.53 150.1 1.8
RE DISCCART 552310.9 4198414.7 0.61 150.1 1.8
RE DISCCART 552300.0 4198418.6 0.39 150.1 1.8
RE DISCCART 552273.5 4198428.6 0.8 150.1 1.8
RE DISCCART 552249.7 4198441.9 2.18 150.1 1.8
RE DISCCART 552232.7 4198457.7 1.04 150.1 1.8
RE DISCCART 552223.2 4198458.7 1.07 150.1 1.8
RE DISCCART 552152.1 4198466.2 0.77 150.1 1.8
RE DISCCART 552123.8 4198470.3 0.66 150.1 1.8
RE DISCCART 552078.5 4198476.8 1.05 150.1 1.8
** BOUNDARY BND4
RE DISCCART 552992.6 4198243.4 12.1 145.07 1.8
RE DISCCART 552984.6 4198255.3 15.28 145.07 1.8
RE DISCCART 553002.9 4198259.3 15.99 145.07 1.8
RE DISCCART 553026.7 4198256.1 15.82 145.07 1.8
RE DISCCART 553052.9 4198244.2 16.81 145.07 1.8
RE DISCCART 553063.4 4198234.6 16.88 145.07 1.8
RE DISCCART 553137.0 4198167.2 21.51 59.92 1.8
RE DISCCART 553136.9 4198167.1 21.47 59.92 1.8
RE DISCCART 553110.8 4198139.4 13.82 59.92 1.8
RE DISCCART 553064.3 4198180.4 11.79 145.07 1.8
RE FINISHED

```

```

ME STARTING
ME SURFFILE "C:\TRINITY\CVRN\PIER.SFC"
** SURFFILE "C:\TRINITY\CVRN\PIER.SFC"
ME PROFFILE "C:\TRINITY\CVRN\PIER.PFL"
** PROFFILE "C:\TRINITY\CVRN\PIER.PFL"
ME SURFDATA 20230 2009
ME UAIRDATA 23230 2009
ME PROFBASE 2
ME STARTEND 2009 10 1 1 2010 9 30 24
ME FINISHED

```

```

OU STARTING
OU RECTABLE 1 FIRST SECOND THIRD FOURTH FIFTH SIXTH SEVENTH EIGHTH
OU RECTABLE 8 FIRST SECOND THIRD FOURTH FIFTH SIXTH SEVENTH EIGHTH
OU RECTABLE 24 FIRST SECOND THIRD FOURTH FIFTH SIXTH SEVENTH EIGHTH
OU RECTABLE MONTH FIRST SECOND THIRD FOURTH FIFTH SIXTH SEVENTH EIGHTH
OU FILEFORM EXP
OU PLOTFILE 1 B1_GEN FIRST B1_GEN\1\FIRST.plt 10000
OU PLOTFILE 1 B2_GEN FIRST B2_GEN\1\FIRST.plt 10001
OU PLOTFILE 1 B3_GEN FIRST B3_GEN\1\FIRST.plt 10002
OU PLOTFILE 1 B4_GEN FIRST B4_GEN\1\FIRST.plt 10003
OU PLOTFILE 1 B1_BLR FIRST B1_BLR\1\FIRST.plt 10004
OU PLOTFILE 1 B2_BLR FIRST B2_BLR\1\FIRST.plt 10005
OU PLOTFILE 1 B3_BLR FIRST B3_BLR\1\FIRST.plt 10006
OU PLOTFILE 1 B4_BLR FIRST B4_BLR\1\FIRST.plt 10007
OU PLOTFILE 1 B9_BRG FIRST B9_BRG\1\FIRST.plt 10008
OU PLOTFILE 1 B11_BRG FIRST B11_BRG\1\FIRST.plt 10009
OU PLOTFILE 1 B2_BRG FIRST B2_BRG\1\FIRST.plt 10010
OU PLOTFILE 1 B3_BRG FIRST B3_BRG\1\FIRST.plt 10011
OU PLOTFILE 1 B1_TURB FIRST B1_TURB\1\FIRST.plt 10012
OU PLOTFILE 1 B2_TURB FIRST B2_TURB\1\FIRST.plt 10013
OU PLOTFILE 1 B3_TURB FIRST B3_TURB\1\FIRST.plt 10014
OU PLOTFILE 1 B4_TURB FIRST B4_TURB\1\FIRST.plt 10015
OU PLOTFILE 1 SB_TUG FIRST SB_TUG\1\FIRST.plt 10016
OU PLOTFILE 1 B1_GEN SECOND B1_GEN\1\SECOND.plt 10017
OU PLOTFILE 1 B2_GEN SECOND B2_GEN\1\SECOND.plt 10018
OU PLOTFILE 1 B3_GEN SECOND B3_GEN\1\SECOND.plt 10019
OU PLOTFILE 1 B4_GEN SECOND B4_GEN\1\SECOND.plt 10020
OU PLOTFILE 1 B1_BLR SECOND B1_BLR\1\SECOND.plt 10021

```

Attachment 1 Example Moeling Input Shipping at Berth.ami

OU PLOTFILE	1	B2_BLR	SECOND	B2_BLR\1\SECOND.plt	10022
OU PLOTFILE	1	B3_BLR	SECOND	B3_BLR\1\SECOND.plt	10023
OU PLOTFILE	1	B4_BLR	SECOND	B4_BLR\1\SECOND.plt	10024
OU PLOTFILE	1	B9_BRG	SECOND	B9_BRG\1\SECOND.plt	10025
OU PLOTFILE	1	B11_BRG	SECOND	B11_BRG\1\SECOND.plt	10026
OU PLOTFILE	1	B2_BRG	SECOND	B2_BRG\1\SECOND.plt	10027
OU PLOTFILE	1	B3_BRG	SECOND	B3_BRG\1\SECOND.plt	10028
OU PLOTFILE	1	B1_TURB	SECOND	B1_TURB\1\SECOND.plt	10029
OU PLOTFILE	1	B2_TURB	SECOND	B2_TURB\1\SECOND.plt	10030
OU PLOTFILE	1	B3_TURB	SECOND	B3_TURB\1\SECOND.plt	10031
OU PLOTFILE	1	B4_TURB	SECOND	B4_TURB\1\SECOND.plt	10032
OU PLOTFILE	1	SB_TUG	SECOND	SB_TUG\1\SECOND.plt	10033
OU PLOTFILE	1	B1_GEN	THIRD	B1_GEN\1\THIRD.plt	10034
OU PLOTFILE	1	B2_GEN	THIRD	B2_GEN\1\THIRD.plt	10035
OU PLOTFILE	1	B3_GEN	THIRD	B3_GEN\1\THIRD.plt	10036
OU PLOTFILE	1	B4_GEN	THIRD	B4_GEN\1\THIRD.plt	10037
OU PLOTFILE	1	B1_BLR	THIRD	B1_BLR\1\THIRD.plt	10038
OU PLOTFILE	1	B2_BLR	THIRD	B2_BLR\1\THIRD.plt	10039
OU PLOTFILE	1	B3_BLR	THIRD	B3_BLR\1\THIRD.plt	10040
OU PLOTFILE	1	B4_BLR	THIRD	B4_BLR\1\THIRD.plt	10041
OU PLOTFILE	1	B9_BRG	THIRD	B9_BRG\1\THIRD.plt	10042
OU PLOTFILE	1	B11_BRG	THIRD	B11_BRG\1\THIRD.plt	10043
OU PLOTFILE	1	B2_BRG	THIRD	B2_BRG\1\THIRD.plt	10044
OU PLOTFILE	1	B3_BRG	THIRD	B3_BRG\1\THIRD.plt	10045
OU PLOTFILE	1	B1_TURB	THIRD	B1_TURB\1\THIRD.plt	10046
OU PLOTFILE	1	B2_TURB	THIRD	B2_TURB\1\THIRD.plt	10047
OU PLOTFILE	1	B3_TURB	THIRD	B3_TURB\1\THIRD.plt	10048
OU PLOTFILE	1	B4_TURB	THIRD	B4_TURB\1\THIRD.plt	10049
OU PLOTFILE	1	SB_TUG	THIRD	SB_TUG\1\THIRD.plt	10050
OU PLOTFILE	1	B1_GEN	FOURTH	B1_GEN\1\FOURTH.plt	10051
OU PLOTFILE	1	B2_GEN	FOURTH	B2_GEN\1\FOURTH.plt	10052
OU PLOTFILE	1	B3_GEN	FOURTH	B3_GEN\1\FOURTH.plt	10053
OU PLOTFILE	1	B4_GEN	FOURTH	B4_GEN\1\FOURTH.plt	10054
OU PLOTFILE	1	B1_BLR	FOURTH	B1_BLR\1\FOURTH.plt	10055
OU PLOTFILE	1	B2_BLR	FOURTH	B2_BLR\1\FOURTH.plt	10056
OU PLOTFILE	1	B3_BLR	FOURTH	B3_BLR\1\FOURTH.plt	10057
OU PLOTFILE	1	B4_BLR	FOURTH	B4_BLR\1\FOURTH.plt	10058
OU PLOTFILE	1	B9_BRG	FOURTH	B9_BRG\1\FOURTH.plt	10059
OU PLOTFILE	1	B11_BRG	FOURTH	B11_BRG\1\FOURTH.plt	10060
OU PLOTFILE	1	B2_BRG	FOURTH	B2_BRG\1\FOURTH.plt	10061
OU PLOTFILE	1	B3_BRG	FOURTH	B3_BRG\1\FOURTH.plt	10062
OU PLOTFILE	1	B1_TURB	FOURTH	B1_TURB\1\FOURTH.plt	10063
OU PLOTFILE	1	B2_TURB	FOURTH	B2_TURB\1\FOURTH.plt	10064
OU PLOTFILE	1	B3_TURB	FOURTH	B3_TURB\1\FOURTH.plt	10065
OU PLOTFILE	1	B4_TURB	FOURTH	B4_TURB\1\FOURTH.plt	10066
OU PLOTFILE	1	SB_TUG	FOURTH	SB_TUG\1\FOURTH.plt	10067
OU PLOTFILE	1	B1_GEN	FIFTH	B1_GEN\1\FIFTH.plt	10068
OU PLOTFILE	1	B2_GEN	FIFTH	B2_GEN\1\FIFTH.plt	10069
OU PLOTFILE	1	B3_GEN	FIFTH	B3_GEN\1\FIFTH.plt	10070
OU PLOTFILE	1	B4_GEN	FIFTH	B4_GEN\1\FIFTH.plt	10071
OU PLOTFILE	1	B1_BLR	FIFTH	B1_BLR\1\FIFTH.plt	10072
OU PLOTFILE	1	B2_BLR	FIFTH	B2_BLR\1\FIFTH.plt	10073
OU PLOTFILE	1	B3_BLR	FIFTH	B3_BLR\1\FIFTH.plt	10074
OU PLOTFILE	1	B4_BLR	FIFTH	B4_BLR\1\FIFTH.plt	10075
OU PLOTFILE	1	B9_BRG	FIFTH	B9_BRG\1\FIFTH.plt	10076
OU PLOTFILE	1	B11_BRG	FIFTH	B11_BRG\1\FIFTH.plt	10077
OU PLOTFILE	1	B2_BRG	FIFTH	B2_BRG\1\FIFTH.plt	10078
OU PLOTFILE	1	B3_BRG	FIFTH	B3_BRG\1\FIFTH.plt	10079
OU PLOTFILE	1	B1_TURB	FIFTH	B1_TURB\1\FIFTH.plt	10080
OU PLOTFILE	1	B2_TURB	FIFTH	B2_TURB\1\FIFTH.plt	10081
OU PLOTFILE	1	B3_TURB	FIFTH	B3_TURB\1\FIFTH.plt	10082
OU PLOTFILE	1	B4_TURB	FIFTH	B4_TURB\1\FIFTH.plt	10083
OU PLOTFILE	1	SB_TUG	FIFTH	SB_TUG\1\FIFTH.plt	10084

Attachment 1 Example Moeling Input Shipping at Berth.ami

OU PLOTFILE	1	B1_GEN	SIXTH	B1_GEN\1\	SIXTH.plt	10085
OU PLOTFILE	1	B2_GEN	SIXTH	B2_GEN\1\	SIXTH.plt	10086
OU PLOTFILE	1	B3_GEN	SIXTH	B3_GEN\1\	SIXTH.plt	10087
OU PLOTFILE	1	B4_GEN	SIXTH	B4_GEN\1\	SIXTH.plt	10088
OU PLOTFILE	1	B1_BLR	SIXTH	B1_BLR\1\	SIXTH.plt	10089
OU PLOTFILE	1	B2_BLR	SIXTH	B2_BLR\1\	SIXTH.plt	10090
OU PLOTFILE	1	B3_BLR	SIXTH	B3_BLR\1\	SIXTH.plt	10091
OU PLOTFILE	1	B4_BLR	SIXTH	B4_BLR\1\	SIXTH.plt	10092
OU PLOTFILE	1	B9_BRG	SIXTH	B9_BRG\1\	SIXTH.plt	10093
OU PLOTFILE	1	B11_BRG	SIXTH	B11_BRG\1\	SIXTH.plt	10094
OU PLOTFILE	1	B2_BRG	SIXTH	B2_BRG\1\	SIXTH.plt	10095
OU PLOTFILE	1	B3_BRG	SIXTH	B3_BRG\1\	SIXTH.plt	10096
OU PLOTFILE	1	B1_TURB	SIXTH	B1_TURB\1\	SIXTH.plt	10097
OU PLOTFILE	1	B2_TURB	SIXTH	B2_TURB\1\	SIXTH.plt	10098
OU PLOTFILE	1	B3_TURB	SIXTH	B3_TURB\1\	SIXTH.plt	10099
OU PLOTFILE	1	B4_TURB	SIXTH	B4_TURB\1\	SIXTH.plt	10100
OU PLOTFILE	1	SB_TUG	SIXTH	SB_TUG\1\	SIXTH.plt	10101
OU PLOTFILE	1	B1_GEN	SEVENTH	B1_GEN\1\	SEVENTH.plt	10102
OU PLOTFILE	1	B2_GEN	SEVENTH	B2_GEN\1\	SEVENTH.plt	10103
OU PLOTFILE	1	B3_GEN	SEVENTH	B3_GEN\1\	SEVENTH.plt	10104
OU PLOTFILE	1	B4_GEN	SEVENTH	B4_GEN\1\	SEVENTH.plt	10105
OU PLOTFILE	1	B1_BLR	SEVENTH	B1_BLR\1\	SEVENTH.plt	10106
OU PLOTFILE	1	B2_BLR	SEVENTH	B2_BLR\1\	SEVENTH.plt	10107
OU PLOTFILE	1	B3_BLR	SEVENTH	B3_BLR\1\	SEVENTH.plt	10108
OU PLOTFILE	1	B4_BLR	SEVENTH	B4_BLR\1\	SEVENTH.plt	10109
OU PLOTFILE	1	B9_BRG	SEVENTH	B9_BRG\1\	SEVENTH.plt	10110
OU PLOTFILE	1	B11_BRG	SEVENTH	B11_BRG\1\	SEVENTH.plt	10111
OU PLOTFILE	1	B2_BRG	SEVENTH	B2_BRG\1\	SEVENTH.plt	10112
OU PLOTFILE	1	B3_BRG	SEVENTH	B3_BRG\1\	SEVENTH.plt	10113
OU PLOTFILE	1	B1_TURB	SEVENTH	B1_TURB\1\	SEVENTH.plt	10114
OU PLOTFILE	1	B2_TURB	SEVENTH	B2_TURB\1\	SEVENTH.plt	10115
OU PLOTFILE	1	B3_TURB	SEVENTH	B3_TURB\1\	SEVENTH.plt	10116
OU PLOTFILE	1	B4_TURB	SEVENTH	B4_TURB\1\	SEVENTH.plt	10117
OU PLOTFILE	1	SB_TUG	SEVENTH	SB_TUG\1\	SEVENTH.plt	10118
OU PLOTFILE	1	B1_GEN	EIGHTH	B1_GEN\1\	EIGHTH.plt	10119
OU PLOTFILE	1	B2_GEN	EIGHTH	B2_GEN\1\	EIGHTH.plt	10120
OU PLOTFILE	1	B3_GEN	EIGHTH	B3_GEN\1\	EIGHTH.plt	10121
OU PLOTFILE	1	B4_GEN	EIGHTH	B4_GEN\1\	EIGHTH.plt	10122
OU PLOTFILE	1	B1_BLR	EIGHTH	B1_BLR\1\	EIGHTH.plt	10123
OU PLOTFILE	1	B2_BLR	EIGHTH	B2_BLR\1\	EIGHTH.plt	10124
OU PLOTFILE	1	B3_BLR	EIGHTH	B3_BLR\1\	EIGHTH.plt	10125
OU PLOTFILE	1	B4_BLR	EIGHTH	B4_BLR\1\	EIGHTH.plt	10126
OU PLOTFILE	1	B9_BRG	EIGHTH	B9_BRG\1\	EIGHTH.plt	10127
OU PLOTFILE	1	B11_BRG	EIGHTH	B11_BRG\1\	EIGHTH.plt	10128
OU PLOTFILE	1	B2_BRG	EIGHTH	B2_BRG\1\	EIGHTH.plt	10129
OU PLOTFILE	1	B3_BRG	EIGHTH	B3_BRG\1\	EIGHTH.plt	10130
OU PLOTFILE	1	B1_TURB	EIGHTH	B1_TURB\1\	EIGHTH.plt	10131
OU PLOTFILE	1	B2_TURB	EIGHTH	B2_TURB\1\	EIGHTH.plt	10132
OU PLOTFILE	1	B3_TURB	EIGHTH	B3_TURB\1\	EIGHTH.plt	10133
OU PLOTFILE	1	B4_TURB	EIGHTH	B4_TURB\1\	EIGHTH.plt	10134
OU PLOTFILE	1	SB_TUG	EIGHTH	SB_TUG\1\	EIGHTH.plt	10135
OU PLOTFILE	8	B1_GEN	FIRST	B1_GEN\8\	FIRST.plt	10136
OU PLOTFILE	8	B2_GEN	FIRST	B2_GEN\8\	FIRST.plt	10137
OU PLOTFILE	8	B3_GEN	FIRST	B3_GEN\8\	FIRST.plt	10138
OU PLOTFILE	8	B4_GEN	FIRST	B4_GEN\8\	FIRST.plt	10139
OU PLOTFILE	8	B1_BLR	FIRST	B1_BLR\8\	FIRST.plt	10140
OU PLOTFILE	8	B2_BLR	FIRST	B2_BLR\8\	FIRST.plt	10141
OU PLOTFILE	8	B3_BLR	FIRST	B3_BLR\8\	FIRST.plt	10142
OU PLOTFILE	8	B4_BLR	FIRST	B4_BLR\8\	FIRST.plt	10143
OU PLOTFILE	8	B9_BRG	FIRST	B9_BRG\8\	FIRST.plt	10144
OU PLOTFILE	8	B11_BRG	FIRST	B11_BRG\8\	FIRST.plt	10145
OU PLOTFILE	8	B2_BRG	FIRST	B2_BRG\8\	FIRST.plt	10146
OU PLOTFILE	8	B3_BRG	FIRST	B3_BRG\8\	FIRST.plt	10147

Attachment 1 Example Moeling Input Shipping at Berth.ami

OU PLOTFILE	8	B1_TURB	FIRST	B1_TURB`8`FIRST.plt	10148
OU PLOTFILE	8	B2_TURB	FIRST	B2_TURB`8`FIRST.plt	10149
OU PLOTFILE	8	B3_TURB	FIRST	B3_TURB`8`FIRST.plt	10150
OU PLOTFILE	8	B4_TURB	FIRST	B4_TURB`8`FIRST.plt	10151
OU PLOTFILE	8	SB_TUG	FIRST	SB_TUG`8`FIRST.plt	10152
OU PLOTFILE	8	B1_GEN	SECOND	B1_GEN`8`SECOND.plt	10153
OU PLOTFILE	8	B2_GEN	SECOND	B2_GEN`8`SECOND.plt	10154
OU PLOTFILE	8	B3_GEN	SECOND	B3_GEN`8`SECOND.plt	10155
OU PLOTFILE	8	B4_GEN	SECOND	B4_GEN`8`SECOND.plt	10156
OU PLOTFILE	8	B1_BLR	SECOND	B1_BLR`8`SECOND.plt	10157
OU PLOTFILE	8	B2_BLR	SECOND	B2_BLR`8`SECOND.plt	10158
OU PLOTFILE	8	B3_BLR	SECOND	B3_BLR`8`SECOND.plt	10159
OU PLOTFILE	8	B4_BLR	SECOND	B4_BLR`8`SECOND.plt	10160
OU PLOTFILE	8	B9_BRG	SECOND	B9_BRG`8`SECOND.plt	10161
OU PLOTFILE	8	B11_BRG	SECOND	B11_BRG`8`SECOND.plt	10162
OU PLOTFILE	8	B2_BRG	SECOND	B2_BRG`8`SECOND.plt	10163
OU PLOTFILE	8	B3_BRG	SECOND	B3_BRG`8`SECOND.plt	10164
OU PLOTFILE	8	B1_TURB	SECOND	B1_TURB`8`SECOND.plt	10165
OU PLOTFILE	8	B2_TURB	SECOND	B2_TURB`8`SECOND.plt	10166
OU PLOTFILE	8	B3_TURB	SECOND	B3_TURB`8`SECOND.plt	10167
OU PLOTFILE	8	B4_TURB	SECOND	B4_TURB`8`SECOND.plt	10168
OU PLOTFILE	8	SB_TUG	SECOND	SB_TUG`8`SECOND.plt	10169
OU PLOTFILE	8	B1_GEN	THIRD	B1_GEN`8`THIRD.plt	10170
OU PLOTFILE	8	B2_GEN	THIRD	B2_GEN`8`THIRD.plt	10171
OU PLOTFILE	8	B3_GEN	THIRD	B3_GEN`8`THIRD.plt	10172
OU PLOTFILE	8	B4_GEN	THIRD	B4_GEN`8`THIRD.plt	10173
OU PLOTFILE	8	B1_BLR	THIRD	B1_BLR`8`THIRD.plt	10174
OU PLOTFILE	8	B2_BLR	THIRD	B2_BLR`8`THIRD.plt	10175
OU PLOTFILE	8	B3_BLR	THIRD	B3_BLR`8`THIRD.plt	10176
OU PLOTFILE	8	B4_BLR	THIRD	B4_BLR`8`THIRD.plt	10177
OU PLOTFILE	8	B9_BRG	THIRD	B9_BRG`8`THIRD.plt	10178
OU PLOTFILE	8	B11_BRG	THIRD	B11_BRG`8`THIRD.plt	10179
OU PLOTFILE	8	B2_BRG	THIRD	B2_BRG`8`THIRD.plt	10180
OU PLOTFILE	8	B3_BRG	THIRD	B3_BRG`8`THIRD.plt	10181
OU PLOTFILE	8	B1_TURB	THIRD	B1_TURB`8`THIRD.plt	10182
OU PLOTFILE	8	B2_TURB	THIRD	B2_TURB`8`THIRD.plt	10183
OU PLOTFILE	8	B3_TURB	THIRD	B3_TURB`8`THIRD.plt	10184
OU PLOTFILE	8	B4_TURB	THIRD	B4_TURB`8`THIRD.plt	10185
OU PLOTFILE	8	SB_TUG	THIRD	SB_TUG`8`THIRD.plt	10186
OU PLOTFILE	8	B1_GEN	FOURTH	B1_GEN`8`FOURTH.plt	10187
OU PLOTFILE	8	B2_GEN	FOURTH	B2_GEN`8`FOURTH.plt	10188
OU PLOTFILE	8	B3_GEN	FOURTH	B3_GEN`8`FOURTH.plt	10189
OU PLOTFILE	8	B4_GEN	FOURTH	B4_GEN`8`FOURTH.plt	10190
OU PLOTFILE	8	B1_BLR	FOURTH	B1_BLR`8`FOURTH.plt	10191
OU PLOTFILE	8	B2_BLR	FOURTH	B2_BLR`8`FOURTH.plt	10192
OU PLOTFILE	8	B3_BLR	FOURTH	B3_BLR`8`FOURTH.plt	10193
OU PLOTFILE	8	B4_BLR	FOURTH	B4_BLR`8`FOURTH.plt	10194
OU PLOTFILE	8	B9_BRG	FOURTH	B9_BRG`8`FOURTH.plt	10195
OU PLOTFILE	8	B11_BRG	FOURTH	B11_BRG`8`FOURTH.plt	10196
OU PLOTFILE	8	B2_BRG	FOURTH	B2_BRG`8`FOURTH.plt	10197
OU PLOTFILE	8	B3_BRG	FOURTH	B3_BRG`8`FOURTH.plt	10198
OU PLOTFILE	8	B1_TURB	FOURTH	B1_TURB`8`FOURTH.plt	10199
OU PLOTFILE	8	B2_TURB	FOURTH	B2_TURB`8`FOURTH.plt	10200
OU PLOTFILE	8	B3_TURB	FOURTH	B3_TURB`8`FOURTH.plt	10201
OU PLOTFILE	8	B4_TURB	FOURTH	B4_TURB`8`FOURTH.plt	10202
OU PLOTFILE	8	SB_TUG	FOURTH	SB_TUG`8`FOURTH.plt	10203
OU PLOTFILE	8	B1_GEN	FIFTH	B1_GEN`8`FIFTH.plt	10204
OU PLOTFILE	8	B2_GEN	FIFTH	B2_GEN`8`FIFTH.plt	10205
OU PLOTFILE	8	B3_GEN	FIFTH	B3_GEN`8`FIFTH.plt	10206
OU PLOTFILE	8	B4_GEN	FIFTH	B4_GEN`8`FIFTH.plt	10207
OU PLOTFILE	8	B1_BLR	FIFTH	B1_BLR`8`FIFTH.plt	10208
OU PLOTFILE	8	B2_BLR	FIFTH	B2_BLR`8`FIFTH.plt	10209
OU PLOTFILE	8	B3_BLR	FIFTH	B3_BLR`8`FIFTH.plt	10210

Attachment 1 Example Moeling Input Shipping at Berth.ami

OU PLOTFILE	8	B4_BLR	FIFTH	B4_BLR`8`FIFTH.plt	10211
OU PLOTFILE	8	B9_BRG	FIFTH	B9_BRG`8`FIFTH.plt	10212
OU PLOTFILE	8	B11_BRG	FIFTH	B11_BRG`8`FIFTH.plt	10213
OU PLOTFILE	8	B2_BRG	FIFTH	B2_BRG`8`FIFTH.plt	10214
OU PLOTFILE	8	B3_BRG	FIFTH	B3_BRG`8`FIFTH.plt	10215
OU PLOTFILE	8	B1_TURB	FIFTH	B1_TURB`8`FIFTH.plt	10216
OU PLOTFILE	8	B2_TURB	FIFTH	B2_TURB`8`FIFTH.plt	10217
OU PLOTFILE	8	B3_TURB	FIFTH	B3_TURB`8`FIFTH.plt	10218
OU PLOTFILE	8	B4_TURB	FIFTH	B4_TURB`8`FIFTH.plt	10219
OU PLOTFILE	8	SB_TUG	FIFTH	SB_TUG`8`FIFTH.plt	10220
OU PLOTFILE	8	B1_GEN	SIXTH	B1_GEN`8`SIXTH.plt	10221
OU PLOTFILE	8	B2_GEN	SIXTH	B2_GEN`8`SIXTH.plt	10222
OU PLOTFILE	8	B3_GEN	SIXTH	B3_GEN`8`SIXTH.plt	10223
OU PLOTFILE	8	B4_GEN	SIXTH	B4_GEN`8`SIXTH.plt	10224
OU PLOTFILE	8	B1_BLR	SIXTH	B1_BLR`8`SIXTH.plt	10225
OU PLOTFILE	8	B2_BLR	SIXTH	B2_BLR`8`SIXTH.plt	10226
OU PLOTFILE	8	B3_BLR	SIXTH	B3_BLR`8`SIXTH.plt	10227
OU PLOTFILE	8	B4_BLR	SIXTH	B4_BLR`8`SIXTH.plt	10228
OU PLOTFILE	8	B9_BRG	SIXTH	B9_BRG`8`SIXTH.plt	10229
OU PLOTFILE	8	B11_BRG	SIXTH	B11_BRG`8`SIXTH.plt	10230
OU PLOTFILE	8	B2_BRG	SIXTH	B2_BRG`8`SIXTH.plt	10231
OU PLOTFILE	8	B3_BRG	SIXTH	B3_BRG`8`SIXTH.plt	10232
OU PLOTFILE	8	B1_TURB	SIXTH	B1_TURB`8`SIXTH.plt	10233
OU PLOTFILE	8	B2_TURB	SIXTH	B2_TURB`8`SIXTH.plt	10234
OU PLOTFILE	8	B3_TURB	SIXTH	B3_TURB`8`SIXTH.plt	10235
OU PLOTFILE	8	B4_TURB	SIXTH	B4_TURB`8`SIXTH.plt	10236
OU PLOTFILE	8	SB_TUG	SIXTH	SB_TUG`8`SIXTH.plt	10237
OU PLOTFILE	8	B1_GEN	SEVENTH	B1_GEN`8`SEVENTH.plt	10238
OU PLOTFILE	8	B2_GEN	SEVENTH	B2_GEN`8`SEVENTH.plt	10239
OU PLOTFILE	8	B3_GEN	SEVENTH	B3_GEN`8`SEVENTH.plt	10240
OU PLOTFILE	8	B4_GEN	SEVENTH	B4_GEN`8`SEVENTH.plt	10241
OU PLOTFILE	8	B1_BLR	SEVENTH	B1_BLR`8`SEVENTH.plt	10242
OU PLOTFILE	8	B2_BLR	SEVENTH	B2_BLR`8`SEVENTH.plt	10243
OU PLOTFILE	8	B3_BLR	SEVENTH	B3_BLR`8`SEVENTH.plt	10244
OU PLOTFILE	8	B4_BLR	SEVENTH	B4_BLR`8`SEVENTH.plt	10245
OU PLOTFILE	8	B9_BRG	SEVENTH	B9_BRG`8`SEVENTH.plt	10246
OU PLOTFILE	8	B11_BRG	SEVENTH	B11_BRG`8`SEVENTH.plt	10247
OU PLOTFILE	8	B2_BRG	SEVENTH	B2_BRG`8`SEVENTH.plt	10248
OU PLOTFILE	8	B3_BRG	SEVENTH	B3_BRG`8`SEVENTH.plt	10249
OU PLOTFILE	8	B1_TURB	SEVENTH	B1_TURB`8`SEVENTH.plt	10250
OU PLOTFILE	8	B2_TURB	SEVENTH	B2_TURB`8`SEVENTH.plt	10251
OU PLOTFILE	8	B3_TURB	SEVENTH	B3_TURB`8`SEVENTH.plt	10252
OU PLOTFILE	8	B4_TURB	SEVENTH	B4_TURB`8`SEVENTH.plt	10253
OU PLOTFILE	8	SB_TUG	SEVENTH	SB_TUG`8`SEVENTH.plt	10254
OU PLOTFILE	8	B1_GEN	EIGHTH	B1_GEN`8`EIGHTH.plt	10255
OU PLOTFILE	8	B2_GEN	EIGHTH	B2_GEN`8`EIGHTH.plt	10256
OU PLOTFILE	8	B3_GEN	EIGHTH	B3_GEN`8`EIGHTH.plt	10257
OU PLOTFILE	8	B4_GEN	EIGHTH	B4_GEN`8`EIGHTH.plt	10258
OU PLOTFILE	8	B1_BLR	EIGHTH	B1_BLR`8`EIGHTH.plt	10259
OU PLOTFILE	8	B2_BLR	EIGHTH	B2_BLR`8`EIGHTH.plt	10260
OU PLOTFILE	8	B3_BLR	EIGHTH	B3_BLR`8`EIGHTH.plt	10261
OU PLOTFILE	8	B4_BLR	EIGHTH	B4_BLR`8`EIGHTH.plt	10262
OU PLOTFILE	8	B9_BRG	EIGHTH	B9_BRG`8`EIGHTH.plt	10263
OU PLOTFILE	8	B11_BRG	EIGHTH	B11_BRG`8`EIGHTH.plt	10264
OU PLOTFILE	8	B2_BRG	EIGHTH	B2_BRG`8`EIGHTH.plt	10265
OU PLOTFILE	8	B3_BRG	EIGHTH	B3_BRG`8`EIGHTH.plt	10266
OU PLOTFILE	8	B1_TURB	EIGHTH	B1_TURB`8`EIGHTH.plt	10267
OU PLOTFILE	8	B2_TURB	EIGHTH	B2_TURB`8`EIGHTH.plt	10268
OU PLOTFILE	8	B3_TURB	EIGHTH	B3_TURB`8`EIGHTH.plt	10269
OU PLOTFILE	8	B4_TURB	EIGHTH	B4_TURB`8`EIGHTH.plt	10270
OU PLOTFILE	8	SB_TUG	EIGHTH	SB_TUG`8`EIGHTH.plt	10271
OU PLOTFILE	24	B1_GEN	FIRST	B1_GEN`24`FIRST.plt	10272
OU PLOTFILE	24	B2_GEN	FIRST	B2_GEN`24`FIRST.plt	10273

Attachment 1 Example Moeling Input Shipping at Berth.ami

OU PLOTFILE	24	B3_GEN	FIRST	B3_GEN`24`FIRST.plt	10274
OU PLOTFILE	24	B4_GEN	FIRST	B4_GEN`24`FIRST.plt	10275
OU PLOTFILE	24	B1_BLR	FIRST	B1_BLR`24`FIRST.plt	10276
OU PLOTFILE	24	B2_BLR	FIRST	B2_BLR`24`FIRST.plt	10277
OU PLOTFILE	24	B3_BLR	FIRST	B3_BLR`24`FIRST.plt	10278
OU PLOTFILE	24	B4_BLR	FIRST	B4_BLR`24`FIRST.plt	10279
OU PLOTFILE	24	B9_BRG	FIRST	B9_BRG`24`FIRST.plt	10280
OU PLOTFILE	24	B11_BRG	FIRST	B11_BRG`24`FIRST.plt	10281
OU PLOTFILE	24	B2_BRG	FIRST	B2_BRG`24`FIRST.plt	10282
OU PLOTFILE	24	B3_BRG	FIRST	B3_BRG`24`FIRST.plt	10283
OU PLOTFILE	24	B1_TURB	FIRST	B1_TURB`24`FIRST.plt	10284
OU PLOTFILE	24	B2_TURB	FIRST	B2_TURB`24`FIRST.plt	10285
OU PLOTFILE	24	B3_TURB	FIRST	B3_TURB`24`FIRST.plt	10286
OU PLOTFILE	24	B4_TURB	FIRST	B4_TURB`24`FIRST.plt	10287
OU PLOTFILE	24	SB_TUG	FIRST	SB_TUG`24`FIRST.plt	10288
OU PLOTFILE	24	B1_GEN	SECOND	B1_GEN`24`SECOND.plt	10289
OU PLOTFILE	24	B2_GEN	SECOND	B2_GEN`24`SECOND.plt	10290
OU PLOTFILE	24	B3_GEN	SECOND	B3_GEN`24`SECOND.plt	10291
OU PLOTFILE	24	B4_GEN	SECOND	B4_GEN`24`SECOND.plt	10292
OU PLOTFILE	24	B1_BLR	SECOND	B1_BLR`24`SECOND.plt	10293
OU PLOTFILE	24	B2_BLR	SECOND	B2_BLR`24`SECOND.plt	10294
OU PLOTFILE	24	B3_BLR	SECOND	B3_BLR`24`SECOND.plt	10295
OU PLOTFILE	24	B4_BLR	SECOND	B4_BLR`24`SECOND.plt	10296
OU PLOTFILE	24	B9_BRG	SECOND	B9_BRG`24`SECOND.plt	10297
OU PLOTFILE	24	B11_BRG	SECOND	B11_BRG`24`SECOND.plt	10298
OU PLOTFILE	24	B2_BRG	SECOND	B2_BRG`24`SECOND.plt	10299
OU PLOTFILE	24	B3_BRG	SECOND	B3_BRG`24`SECOND.plt	10300
OU PLOTFILE	24	B1_TURB	SECOND	B1_TURB`24`SECOND.plt	10301
OU PLOTFILE	24	B2_TURB	SECOND	B2_TURB`24`SECOND.plt	10302
OU PLOTFILE	24	B3_TURB	SECOND	B3_TURB`24`SECOND.plt	10303
OU PLOTFILE	24	B4_TURB	SECOND	B4_TURB`24`SECOND.plt	10304
OU PLOTFILE	24	SB_TUG	SECOND	SB_TUG`24`SECOND.plt	10305
OU PLOTFILE	24	B1_GEN	THIRD	B1_GEN`24`THIRD.plt	10306
OU PLOTFILE	24	B2_GEN	THIRD	B2_GEN`24`THIRD.plt	10307
OU PLOTFILE	24	B3_GEN	THIRD	B3_GEN`24`THIRD.plt	10308
OU PLOTFILE	24	B4_GEN	THIRD	B4_GEN`24`THIRD.plt	10309
OU PLOTFILE	24	B1_BLR	THIRD	B1_BLR`24`THIRD.plt	10310
OU PLOTFILE	24	B2_BLR	THIRD	B2_BLR`24`THIRD.plt	10311
OU PLOTFILE	24	B3_BLR	THIRD	B3_BLR`24`THIRD.plt	10312
OU PLOTFILE	24	B4_BLR	THIRD	B4_BLR`24`THIRD.plt	10313
OU PLOTFILE	24	B9_BRG	THIRD	B9_BRG`24`THIRD.plt	10314
OU PLOTFILE	24	B11_BRG	THIRD	B11_BRG`24`THIRD.plt	10315
OU PLOTFILE	24	B2_BRG	THIRD	B2_BRG`24`THIRD.plt	10316
OU PLOTFILE	24	B3_BRG	THIRD	B3_BRG`24`THIRD.plt	10317
OU PLOTFILE	24	B1_TURB	THIRD	B1_TURB`24`THIRD.plt	10318
OU PLOTFILE	24	B2_TURB	THIRD	B2_TURB`24`THIRD.plt	10319
OU PLOTFILE	24	B3_TURB	THIRD	B3_TURB`24`THIRD.plt	10320
OU PLOTFILE	24	B4_TURB	THIRD	B4_TURB`24`THIRD.plt	10321
OU PLOTFILE	24	SB_TUG	THIRD	SB_TUG`24`THIRD.plt	10322
OU PLOTFILE	24	B1_GEN	FOURTH	B1_GEN`24`FOURTH.plt	10323
OU PLOTFILE	24	B2_GEN	FOURTH	B2_GEN`24`FOURTH.plt	10324
OU PLOTFILE	24	B3_GEN	FOURTH	B3_GEN`24`FOURTH.plt	10325
OU PLOTFILE	24	B4_GEN	FOURTH	B4_GEN`24`FOURTH.plt	10326
OU PLOTFILE	24	B1_BLR	FOURTH	B1_BLR`24`FOURTH.plt	10327
OU PLOTFILE	24	B2_BLR	FOURTH	B2_BLR`24`FOURTH.plt	10328
OU PLOTFILE	24	B3_BLR	FOURTH	B3_BLR`24`FOURTH.plt	10329
OU PLOTFILE	24	B4_BLR	FOURTH	B4_BLR`24`FOURTH.plt	10330
OU PLOTFILE	24	B9_BRG	FOURTH	B9_BRG`24`FOURTH.plt	10331
OU PLOTFILE	24	B11_BRG	FOURTH	B11_BRG`24`FOURTH.plt	10332
OU PLOTFILE	24	B2_BRG	FOURTH	B2_BRG`24`FOURTH.plt	10333
OU PLOTFILE	24	B3_BRG	FOURTH	B3_BRG`24`FOURTH.plt	10334
OU PLOTFILE	24	B1_TURB	FOURTH	B1_TURB`24`FOURTH.plt	10335
OU PLOTFILE	24	B2_TURB	FOURTH	B2_TURB`24`FOURTH.plt	10336

Attachment 1 Example Moeling Input Shipping at Berth.ami

OU PLOTFILE	24	B3_TURB	FOURTH	B3_TURB`24`FOURTH.plt	10337
OU PLOTFILE	24	B4_TURB	FOURTH	B4_TURB`24`FOURTH.plt	10338
OU PLOTFILE	24	SB_TUG	FOURTH	SB_TUG`24`FOURTH.plt	10339
OU PLOTFILE	24	B1_GEN	FIFTH	B1_GEN`24`FIFTH.plt	10340
OU PLOTFILE	24	B2_GEN	FIFTH	B2_GEN`24`FIFTH.plt	10341
OU PLOTFILE	24	B3_GEN	FIFTH	B3_GEN`24`FIFTH.plt	10342
OU PLOTFILE	24	B4_GEN	FIFTH	B4_GEN`24`FIFTH.plt	10343
OU PLOTFILE	24	B1_BLR	FIFTH	B1_BLR`24`FIFTH.plt	10344
OU PLOTFILE	24	B2_BLR	FIFTH	B2_BLR`24`FIFTH.plt	10345
OU PLOTFILE	24	B3_BLR	FIFTH	B3_BLR`24`FIFTH.plt	10346
OU PLOTFILE	24	B4_BLR	FIFTH	B4_BLR`24`FIFTH.plt	10347
OU PLOTFILE	24	B9_BRG	FIFTH	B9_BRG`24`FIFTH.plt	10348
OU PLOTFILE	24	B11_BRG	FIFTH	B11_BRG`24`FIFTH.plt	10349
OU PLOTFILE	24	B2_BRG	FIFTH	B2_BRG`24`FIFTH.plt	10350
OU PLOTFILE	24	B3_BRG	FIFTH	B3_BRG`24`FIFTH.plt	10351
OU PLOTFILE	24	B1_TURB	FIFTH	B1_TURB`24`FIFTH.plt	10352
OU PLOTFILE	24	B2_TURB	FIFTH	B2_TURB`24`FIFTH.plt	10353
OU PLOTFILE	24	B3_TURB	FIFTH	B3_TURB`24`FIFTH.plt	10354
OU PLOTFILE	24	B4_TURB	FIFTH	B4_TURB`24`FIFTH.plt	10355
OU PLOTFILE	24	SB_TUG	FIFTH	SB_TUG`24`FIFTH.plt	10356
OU PLOTFILE	24	B1_GEN	SIXTH	B1_GEN`24`SIXTH.plt	10357
OU PLOTFILE	24	B2_GEN	SIXTH	B2_GEN`24`SIXTH.plt	10358
OU PLOTFILE	24	B3_GEN	SIXTH	B3_GEN`24`SIXTH.plt	10359
OU PLOTFILE	24	B4_GEN	SIXTH	B4_GEN`24`SIXTH.plt	10360
OU PLOTFILE	24	B1_BLR	SIXTH	B1_BLR`24`SIXTH.plt	10361
OU PLOTFILE	24	B2_BLR	SIXTH	B2_BLR`24`SIXTH.plt	10362
OU PLOTFILE	24	B3_BLR	SIXTH	B3_BLR`24`SIXTH.plt	10363
OU PLOTFILE	24	B4_BLR	SIXTH	B4_BLR`24`SIXTH.plt	10364
OU PLOTFILE	24	B9_BRG	SIXTH	B9_BRG`24`SIXTH.plt	10365
OU PLOTFILE	24	B11_BRG	SIXTH	B11_BRG`24`SIXTH.plt	10366
OU PLOTFILE	24	B2_BRG	SIXTH	B2_BRG`24`SIXTH.plt	10367
OU PLOTFILE	24	B3_BRG	SIXTH	B3_BRG`24`SIXTH.plt	10368
OU PLOTFILE	24	B1_TURB	SIXTH	B1_TURB`24`SIXTH.plt	10369
OU PLOTFILE	24	B2_TURB	SIXTH	B2_TURB`24`SIXTH.plt	10370
OU PLOTFILE	24	B3_TURB	SIXTH	B3_TURB`24`SIXTH.plt	10371
OU PLOTFILE	24	B4_TURB	SIXTH	B4_TURB`24`SIXTH.plt	10372
OU PLOTFILE	24	SB_TUG	SIXTH	SB_TUG`24`SIXTH.plt	10373
OU PLOTFILE	24	B1_GEN	SEVENTH	B1_GEN`24`SEVENTH.plt	10374
OU PLOTFILE	24	B2_GEN	SEVENTH	B2_GEN`24`SEVENTH.plt	10375
OU PLOTFILE	24	B3_GEN	SEVENTH	B3_GEN`24`SEVENTH.plt	10376
OU PLOTFILE	24	B4_GEN	SEVENTH	B4_GEN`24`SEVENTH.plt	10377
OU PLOTFILE	24	B1_BLR	SEVENTH	B1_BLR`24`SEVENTH.plt	10378
OU PLOTFILE	24	B2_BLR	SEVENTH	B2_BLR`24`SEVENTH.plt	10379
OU PLOTFILE	24	B3_BLR	SEVENTH	B3_BLR`24`SEVENTH.plt	10380
OU PLOTFILE	24	B4_BLR	SEVENTH	B4_BLR`24`SEVENTH.plt	10381
OU PLOTFILE	24	B9_BRG	SEVENTH	B9_BRG`24`SEVENTH.plt	10382
OU PLOTFILE	24	B11_BRG	SEVENTH	B11_BRG`24`SEVENTH.plt	10383
OU PLOTFILE	24	B2_BRG	SEVENTH	B2_BRG`24`SEVENTH.plt	10384
OU PLOTFILE	24	B3_BRG	SEVENTH	B3_BRG`24`SEVENTH.plt	10385
OU PLOTFILE	24	B1_TURB	SEVENTH	B1_TURB`24`SEVENTH.plt	10386
OU PLOTFILE	24	B2_TURB	SEVENTH	B2_TURB`24`SEVENTH.plt	10387
OU PLOTFILE	24	B3_TURB	SEVENTH	B3_TURB`24`SEVENTH.plt	10388
OU PLOTFILE	24	B4_TURB	SEVENTH	B4_TURB`24`SEVENTH.plt	10389
OU PLOTFILE	24	SB_TUG	SEVENTH	SB_TUG`24`SEVENTH.plt	10390
OU PLOTFILE	24	B1_GEN	EIGHTH	B1_GEN`24`EIGHTH.plt	10391
OU PLOTFILE	24	B2_GEN	EIGHTH	B2_GEN`24`EIGHTH.plt	10392
OU PLOTFILE	24	B3_GEN	EIGHTH	B3_GEN`24`EIGHTH.plt	10393
OU PLOTFILE	24	B4_GEN	EIGHTH	B4_GEN`24`EIGHTH.plt	10394
OU PLOTFILE	24	B1_BLR	EIGHTH	B1_BLR`24`EIGHTH.plt	10395
OU PLOTFILE	24	B2_BLR	EIGHTH	B2_BLR`24`EIGHTH.plt	10396
OU PLOTFILE	24	B3_BLR	EIGHTH	B3_BLR`24`EIGHTH.plt	10397
OU PLOTFILE	24	B4_BLR	EIGHTH	B4_BLR`24`EIGHTH.plt	10398
OU PLOTFILE	24	B9_BRG	EIGHTH	B9_BRG`24`EIGHTH.plt	10399

Attachment 1 Example Moeling Input Shipping at Berth.ami

OU PLOTFILE	24	B11_BRG	EIGHTH	B11_BRG`24`EIGHTH.plt	10400
OU PLOTFILE	24	B2_BRG	EIGHTH	B2_BRG`24`EIGHTH.plt	10401
OU PLOTFILE	24	B3_BRG	EIGHTH	B3_BRG`24`EIGHTH.plt	10402
OU PLOTFILE	24	B1_TURB	EIGHTH	B1_TURB`24`EIGHTH.plt	10403
OU PLOTFILE	24	B2_TURB	EIGHTH	B2_TURB`24`EIGHTH.plt	10404
OU PLOTFILE	24	B3_TURB	EIGHTH	B3_TURB`24`EIGHTH.plt	10405
OU PLOTFILE	24	B4_TURB	EIGHTH	B4_TURB`24`EIGHTH.plt	10406
OU PLOTFILE	24	SB_TUG	EIGHTH	SB_TUG`24`EIGHTH.plt	10407
OU PLOTFILE	MONTH	B1_GEN	FIRST	B1_GEN`MONTH`FIRST.plt	10408
OU PLOTFILE	MONTH	B2_GEN	FIRST	B2_GEN`MONTH`FIRST.plt	10409
OU PLOTFILE	MONTH	B3_GEN	FIRST	B3_GEN`MONTH`FIRST.plt	10410
OU PLOTFILE	MONTH	B4_GEN	FIRST	B4_GEN`MONTH`FIRST.plt	10411
OU PLOTFILE	MONTH	B1_BLR	FIRST	B1_BLR`MONTH`FIRST.plt	10412
OU PLOTFILE	MONTH	B2_BLR	FIRST	B2_BLR`MONTH`FIRST.plt	10413
OU PLOTFILE	MONTH	B3_BLR	FIRST	B3_BLR`MONTH`FIRST.plt	10414
OU PLOTFILE	MONTH	B4_BLR	FIRST	B4_BLR`MONTH`FIRST.plt	10415
OU PLOTFILE	MONTH	B9_BRG	FIRST	B9_BRG`MONTH`FIRST.plt	10416
OU PLOTFILE	MONTH	B11_BRG	FIRST	B11_BRG`MONTH`FIRST.plt	10417
OU PLOTFILE	MONTH	B2_BRG	FIRST	B2_BRG`MONTH`FIRST.plt	10418
OU PLOTFILE	MONTH	B3_BRG	FIRST	B3_BRG`MONTH`FIRST.plt	10419
OU PLOTFILE	MONTH	B1_TURB	FIRST	B1_TURB`MONTH`FIRST.plt	10420
OU PLOTFILE	MONTH	B2_TURB	FIRST	B2_TURB`MONTH`FIRST.plt	10421
OU PLOTFILE	MONTH	B3_TURB	FIRST	B3_TURB`MONTH`FIRST.plt	10422
OU PLOTFILE	MONTH	B4_TURB	FIRST	B4_TURB`MONTH`FIRST.plt	10423
OU PLOTFILE	MONTH	SB_TUG	FIRST	SB_TUG`MONTH`FIRST.plt	10424
OU PLOTFILE	MONTH	B1_GEN	SECOND	B1_GEN`MONTH`SECOND.plt	10425
OU PLOTFILE	MONTH	B2_GEN	SECOND	B2_GEN`MONTH`SECOND.plt	10426
OU PLOTFILE	MONTH	B3_GEN	SECOND	B3_GEN`MONTH`SECOND.plt	10427
OU PLOTFILE	MONTH	B4_GEN	SECOND	B4_GEN`MONTH`SECOND.plt	10428
OU PLOTFILE	MONTH	B1_BLR	SECOND	B1_BLR`MONTH`SECOND.plt	10429
OU PLOTFILE	MONTH	B2_BLR	SECOND	B2_BLR`MONTH`SECOND.plt	10430
OU PLOTFILE	MONTH	B3_BLR	SECOND	B3_BLR`MONTH`SECOND.plt	10431
OU PLOTFILE	MONTH	B4_BLR	SECOND	B4_BLR`MONTH`SECOND.plt	10432
OU PLOTFILE	MONTH	B9_BRG	SECOND	B9_BRG`MONTH`SECOND.plt	10433
OU PLOTFILE	MONTH	B11_BRG	SECOND	B11_BRG`MONTH`SECOND.plt	10434
OU PLOTFILE	MONTH	B2_BRG	SECOND	B2_BRG`MONTH`SECOND.plt	10435
OU PLOTFILE	MONTH	B3_BRG	SECOND	B3_BRG`MONTH`SECOND.plt	10436
OU PLOTFILE	MONTH	B1_TURB	SECOND	B1_TURB`MONTH`SECOND.plt	10437
OU PLOTFILE	MONTH	B2_TURB	SECOND	B2_TURB`MONTH`SECOND.plt	10438
OU PLOTFILE	MONTH	B3_TURB	SECOND	B3_TURB`MONTH`SECOND.plt	10439
OU PLOTFILE	MONTH	B4_TURB	SECOND	B4_TURB`MONTH`SECOND.plt	10440
OU PLOTFILE	MONTH	SB_TUG	SECOND	SB_TUG`MONTH`SECOND.plt	10441
OU PLOTFILE	MONTH	B1_GEN	THIRD	B1_GEN`MONTH`THIRD.plt	10442
OU PLOTFILE	MONTH	B2_GEN	THIRD	B2_GEN`MONTH`THIRD.plt	10443
OU PLOTFILE	MONTH	B3_GEN	THIRD	B3_GEN`MONTH`THIRD.plt	10444
OU PLOTFILE	MONTH	B4_GEN	THIRD	B4_GEN`MONTH`THIRD.plt	10445
OU PLOTFILE	MONTH	B1_BLR	THIRD	B1_BLR`MONTH`THIRD.plt	10446
OU PLOTFILE	MONTH	B2_BLR	THIRD	B2_BLR`MONTH`THIRD.plt	10447
OU PLOTFILE	MONTH	B3_BLR	THIRD	B3_BLR`MONTH`THIRD.plt	10448
OU PLOTFILE	MONTH	B4_BLR	THIRD	B4_BLR`MONTH`THIRD.plt	10449
OU PLOTFILE	MONTH	B9_BRG	THIRD	B9_BRG`MONTH`THIRD.plt	10450
OU PLOTFILE	MONTH	B11_BRG	THIRD	B11_BRG`MONTH`THIRD.plt	10451
OU PLOTFILE	MONTH	B2_BRG	THIRD	B2_BRG`MONTH`THIRD.plt	10452
OU PLOTFILE	MONTH	B3_BRG	THIRD	B3_BRG`MONTH`THIRD.plt	10453
OU PLOTFILE	MONTH	B1_TURB	THIRD	B1_TURB`MONTH`THIRD.plt	10454
OU PLOTFILE	MONTH	B2_TURB	THIRD	B2_TURB`MONTH`THIRD.plt	10455
OU PLOTFILE	MONTH	B3_TURB	THIRD	B3_TURB`MONTH`THIRD.plt	10456
OU PLOTFILE	MONTH	B4_TURB	THIRD	B4_TURB`MONTH`THIRD.plt	10457
OU PLOTFILE	MONTH	SB_TUG	THIRD	SB_TUG`MONTH`THIRD.plt	10458
OU PLOTFILE	MONTH	B1_GEN	FOURTH	B1_GEN`MONTH`FOURTH.plt	10459
OU PLOTFILE	MONTH	B2_GEN	FOURTH	B2_GEN`MONTH`FOURTH.plt	10460
OU PLOTFILE	MONTH	B3_GEN	FOURTH	B3_GEN`MONTH`FOURTH.plt	10461
OU PLOTFILE	MONTH	B4_GEN	FOURTH	B4_GEN`MONTH`FOURTH.plt	10462

Attachment 1 Example Moeling Input Shipping at Berth.ami

OU PLOTFILE	MONTH	B1_BLR	FOURTH	B1_BLR`MONTH`FOURTH.plt	10463
OU PLOTFILE	MONTH	B2_BLR	FOURTH	B2_BLR`MONTH`FOURTH.plt	10464
OU PLOTFILE	MONTH	B3_BLR	FOURTH	B3_BLR`MONTH`FOURTH.plt	10465
OU PLOTFILE	MONTH	B4_BLR	FOURTH	B4_BLR`MONTH`FOURTH.plt	10466
OU PLOTFILE	MONTH	B9_BRG	FOURTH	B9_BRG`MONTH`FOURTH.plt	10467
OU PLOTFILE	MONTH	B11_BRG	FOURTH	B11_BRG`MONTH`FOURTH.plt	10468
OU PLOTFILE	MONTH	B2_BRG	FOURTH	B2_BRG`MONTH`FOURTH.plt	10469
OU PLOTFILE	MONTH	B3_BRG	FOURTH	B3_BRG`MONTH`FOURTH.plt	10470
OU PLOTFILE	MONTH	B1_TURB	FOURTH	B1_TURB`MONTH`FOURTH.plt	10471
OU PLOTFILE	MONTH	B2_TURB	FOURTH	B2_TURB`MONTH`FOURTH.plt	10472
OU PLOTFILE	MONTH	B3_TURB	FOURTH	B3_TURB`MONTH`FOURTH.plt	10473
OU PLOTFILE	MONTH	B4_TURB	FOURTH	B4_TURB`MONTH`FOURTH.plt	10474
OU PLOTFILE	MONTH	SB_TUG	FOURTH	SB_TUG`MONTH`FOURTH.plt	10475
OU PLOTFILE	MONTH	B1_GEN	FIFTH	B1_GEN`MONTH`FIFTH.plt	10476
OU PLOTFILE	MONTH	B2_GEN	FIFTH	B2_GEN`MONTH`FIFTH.plt	10477
OU PLOTFILE	MONTH	B3_GEN	FIFTH	B3_GEN`MONTH`FIFTH.plt	10478
OU PLOTFILE	MONTH	B4_GEN	FIFTH	B4_GEN`MONTH`FIFTH.plt	10479
OU PLOTFILE	MONTH	B1_BLR	FIFTH	B1_BLR`MONTH`FIFTH.plt	10480
OU PLOTFILE	MONTH	B2_BLR	FIFTH	B2_BLR`MONTH`FIFTH.plt	10481
OU PLOTFILE	MONTH	B3_BLR	FIFTH	B3_BLR`MONTH`FIFTH.plt	10482
OU PLOTFILE	MONTH	B4_BLR	FIFTH	B4_BLR`MONTH`FIFTH.plt	10483
OU PLOTFILE	MONTH	B9_BRG	FIFTH	B9_BRG`MONTH`FIFTH.plt	10484
OU PLOTFILE	MONTH	B11_BRG	FIFTH	B11_BRG`MONTH`FIFTH.plt	10485
OU PLOTFILE	MONTH	B2_BRG	FIFTH	B2_BRG`MONTH`FIFTH.plt	10486
OU PLOTFILE	MONTH	B3_BRG	FIFTH	B3_BRG`MONTH`FIFTH.plt	10487
OU PLOTFILE	MONTH	B1_TURB	FIFTH	B1_TURB`MONTH`FIFTH.plt	10488
OU PLOTFILE	MONTH	B2_TURB	FIFTH	B2_TURB`MONTH`FIFTH.plt	10489
OU PLOTFILE	MONTH	B3_TURB	FIFTH	B3_TURB`MONTH`FIFTH.plt	10490
OU PLOTFILE	MONTH	B4_TURB	FIFTH	B4_TURB`MONTH`FIFTH.plt	10491
OU PLOTFILE	MONTH	SB_TUG	FIFTH	SB_TUG`MONTH`FIFTH.plt	10492
OU PLOTFILE	MONTH	B1_GEN	SIXTH	B1_GEN`MONTH`SIXTH.plt	10493
OU PLOTFILE	MONTH	B2_GEN	SIXTH	B2_GEN`MONTH`SIXTH.plt	10494
OU PLOTFILE	MONTH	B3_GEN	SIXTH	B3_GEN`MONTH`SIXTH.plt	10495
OU PLOTFILE	MONTH	B4_GEN	SIXTH	B4_GEN`MONTH`SIXTH.plt	10496
OU PLOTFILE	MONTH	B1_BLR	SIXTH	B1_BLR`MONTH`SIXTH.plt	10497
OU PLOTFILE	MONTH	B2_BLR	SIXTH	B2_BLR`MONTH`SIXTH.plt	10498
OU PLOTFILE	MONTH	B3_BLR	SIXTH	B3_BLR`MONTH`SIXTH.plt	10499
OU PLOTFILE	MONTH	B4_BLR	SIXTH	B4_BLR`MONTH`SIXTH.plt	10500
OU PLOTFILE	MONTH	B9_BRG	SIXTH	B9_BRG`MONTH`SIXTH.plt	10501
OU PLOTFILE	MONTH	B11_BRG	SIXTH	B11_BRG`MONTH`SIXTH.plt	10502
OU PLOTFILE	MONTH	B2_BRG	SIXTH	B2_BRG`MONTH`SIXTH.plt	10503
OU PLOTFILE	MONTH	B3_BRG	SIXTH	B3_BRG`MONTH`SIXTH.plt	10504
OU PLOTFILE	MONTH	B1_TURB	SIXTH	B1_TURB`MONTH`SIXTH.plt	10505
OU PLOTFILE	MONTH	B2_TURB	SIXTH	B2_TURB`MONTH`SIXTH.plt	10506
OU PLOTFILE	MONTH	B3_TURB	SIXTH	B3_TURB`MONTH`SIXTH.plt	10507
OU PLOTFILE	MONTH	B4_TURB	SIXTH	B4_TURB`MONTH`SIXTH.plt	10508
OU PLOTFILE	MONTH	SB_TUG	SIXTH	SB_TUG`MONTH`SIXTH.plt	10509
OU PLOTFILE	MONTH	B1_GEN	SEVENTH	B1_GEN`MONTH`SEVENTH.plt	10510
OU PLOTFILE	MONTH	B2_GEN	SEVENTH	B2_GEN`MONTH`SEVENTH.plt	10511
OU PLOTFILE	MONTH	B3_GEN	SEVENTH	B3_GEN`MONTH`SEVENTH.plt	10512
OU PLOTFILE	MONTH	B4_GEN	SEVENTH	B4_GEN`MONTH`SEVENTH.plt	10513
OU PLOTFILE	MONTH	B1_BLR	SEVENTH	B1_BLR`MONTH`SEVENTH.plt	10514
OU PLOTFILE	MONTH	B2_BLR	SEVENTH	B2_BLR`MONTH`SEVENTH.plt	10515
OU PLOTFILE	MONTH	B3_BLR	SEVENTH	B3_BLR`MONTH`SEVENTH.plt	10516
OU PLOTFILE	MONTH	B4_BLR	SEVENTH	B4_BLR`MONTH`SEVENTH.plt	10517
OU PLOTFILE	MONTH	B9_BRG	SEVENTH	B9_BRG`MONTH`SEVENTH.plt	10518
OU PLOTFILE	MONTH	B11_BRG	SEVENTH	B11_BRG`MONTH`SEVENTH.plt	10519
OU PLOTFILE	MONTH	B2_BRG	SEVENTH	B2_BRG`MONTH`SEVENTH.plt	10520
OU PLOTFILE	MONTH	B3_BRG	SEVENTH	B3_BRG`MONTH`SEVENTH.plt	10521
OU PLOTFILE	MONTH	B1_TURB	SEVENTH	B1_TURB`MONTH`SEVENTH.plt	10522
OU PLOTFILE	MONTH	B2_TURB	SEVENTH	B2_TURB`MONTH`SEVENTH.plt	10523
OU PLOTFILE	MONTH	B3_TURB	SEVENTH	B3_TURB`MONTH`SEVENTH.plt	10524
OU PLOTFILE	MONTH	B4_TURB	SEVENTH	B4_TURB`MONTH`SEVENTH.plt	10525

Attachment 1 Example Moeling Input Shipping at Berth.ami

```

OU PLOTFILE MONTH SB_TUG SEVENTH SB_TUG`MONTH`SEVENTH.plt 10526
OU PLOTFILE MONTH B1_GEN EIGHTH B1_GEN`MONTH`EIGHTH.plt 10527
OU PLOTFILE MONTH B2_GEN EIGHTH B2_GEN`MONTH`EIGHTH.plt 10528
OU PLOTFILE MONTH B3_GEN EIGHTH B3_GEN`MONTH`EIGHTH.plt 10529
OU PLOTFILE MONTH B4_GEN EIGHTH B4_GEN`MONTH`EIGHTH.plt 10530
OU PLOTFILE MONTH B1_BLR EIGHTH B1_BLR`MONTH`EIGHTH.plt 10531
OU PLOTFILE MONTH B2_BLR EIGHTH B2_BLR`MONTH`EIGHTH.plt 10532
OU PLOTFILE MONTH B3_BLR EIGHTH B3_BLR`MONTH`EIGHTH.plt 10533
OU PLOTFILE MONTH B4_BLR EIGHTH B4_BLR`MONTH`EIGHTH.plt 10534
OU PLOTFILE MONTH B9_BRG EIGHTH B9_BRG`MONTH`EIGHTH.plt 10535
OU PLOTFILE MONTH B11_BRG EIGHTH B11_BRG`MONTH`EIGHTH.plt 10536
OU PLOTFILE MONTH B2_BRG EIGHTH B2_BRG`MONTH`EIGHTH.plt 10537
OU PLOTFILE MONTH B3_BRG EIGHTH B3_BRG`MONTH`EIGHTH.plt 10538
OU PLOTFILE MONTH B1_TURB EIGHTH B1_TURB`MONTH`EIGHTH.plt 10539
OU PLOTFILE MONTH B2_TURB EIGHTH B2_TURB`MONTH`EIGHTH.plt 10540
OU PLOTFILE MONTH B3_TURB EIGHTH B3_TURB`MONTH`EIGHTH.plt 10541
OU PLOTFILE MONTH B4_TURB EIGHTH B4_TURB`MONTH`EIGHTH.plt 10542
OU PLOTFILE MONTH SB_TUG EIGHTH SB_TUG`MONTH`EIGHTH.plt 10543
OU PLOTFILE PERIOD B1_GEN B1_GEN`PERIOD.plt 10544
OU PLOTFILE PERIOD B2_GEN B2_GEN`PERIOD.plt 10545
OU PLOTFILE PERIOD B3_GEN B3_GEN`PERIOD.plt 10546
OU PLOTFILE PERIOD B4_GEN B4_GEN`PERIOD.plt 10547
OU PLOTFILE PERIOD B1_BLR B1_BLR`PERIOD.plt 10548
OU PLOTFILE PERIOD B2_BLR B2_BLR`PERIOD.plt 10549
OU PLOTFILE PERIOD B3_BLR B3_BLR`PERIOD.plt 10550
OU PLOTFILE PERIOD B4_BLR B4_BLR`PERIOD.plt 10551
OU PLOTFILE PERIOD B9_BRG B9_BRG`PERIOD.plt 10552
OU PLOTFILE PERIOD B11_BRG B11_BRG`PERIOD.plt 10553
OU PLOTFILE PERIOD B2_BRG B2_BRG`PERIOD.plt 10554
OU PLOTFILE PERIOD B3_BRG B3_BRG`PERIOD.plt 10555
OU PLOTFILE PERIOD B1_TURB B1_TURB`PERIOD.plt 10556
OU PLOTFILE PERIOD B2_TURB B2_TURB`PERIOD.plt 10557
OU PLOTFILE PERIOD B3_TURB B3_TURB`PERIOD.plt 10558
OU PLOTFILE PERIOD B4_TURB B4_TURB`PERIOD.plt 10559
OU PLOTFILE PERIOD SB_TUG SB_TUG`PERIOD.plt 10560
OU FINISHED

```

** It is recommended that the user not edit any data below this line

```

** BUILDING BLD 1 1 0 3.81 4
** BUILDING IDN N_WHARF
** BUILDING CRN 551493.2 4197781.2
** BUILDING CRN 551519.0 4197802.0
** BUILDING CRN 551833.0 4197383.6
** BUILDING CRN 551805.3 4197364.8
** BUILDING BLD 2 1 0 3.81 4
** BUILDING IDN SWHARF
** BUILDING CRN 551826.5 4197335.3
** BUILDING CRN 551859.5 4197359.5
** BUILDING CRN 551971.3 4197204.9
** BUILDING CRN 551939.9 4197184.1
** BUILDING BLD 3 1 0 3.81 5
** BUILDING IDN CENTERWH
** BUILDING CRN 551805.0 4197363.1
** BUILDING CRN 552642.8 4197971.3
** BUILDING CRN 552664.3 4197940.5
** BUILDING CRN 552536.7 4197861.6
** BUILDING CRN 551826.5 4197335.1
** BUILDING BLD 4 1 0 3.81 7
** BUILDING IDN EASTWHAR
** BUILDING CRN 552643.0 4197975.5

```

Attachment 1 Example Moeling Input Shipping at Berth.ami

```

** BUILDING CRN 552709.3 4198190.5
** BUILDING CRN 552781.6 4198138.2
** BUILDING CRN 552753.5 4198043.8
** BUILDING CRN 552721.4 4197991.6
** BUILDING CRN 552667.1 4197941.4
** BUILDING CRN 552643.0 4197971.5
** BUILDING BLD 5 1 0 8.382 4
** BUILDING IDN OFFICE/W
** BUILDING CRN 551832.8 4197383.2
** BUILDING CRN 551821.5 4197399.0
** BUILDING CRN 551857.6 4197425.3
** BUILDING CRN 551868.5 4197408.2
** BUILDING BLD 6 1 0 7.3152 4
** BUILDING IDN MACHINES
** BUILDING CRN 551941.0 4197419.6
** BUILDING CRN 551949.7 4197406.9
** BUILDING CRN 551991.3 4197438.4
** BUILDING CRN 551983.0 4197450.7
** BUILDING BLD 7 1 0 3.81 4
** BUILDING IDN BERTHAB
** BUILDING CRN 551929.4 4197411.6
** BUILDING CRN 552011.9 4197304.0
** BUILDING CRN 552025.6 4197313.1
** BUILDING CRN 551941.3 4197420.1
** BUILDING BLD 8 1 0 7.3152 4
** BUILDING IDN BLDG
** BUILDING CRN 551914.0 4197399.1
** BUILDING CRN 551928.2 4197381.4
** BUILDING CRN 551943.6 4197393.4
** BUILDING CRN 551929.4 4197411.0
** BUILDING BLD 0 0 0.8 4.6 4
** BUILDING IDN B-ADD_18
** BUILDING CRN 551907.9 4197445.7
** BUILDING CRN 551911.6 4197440.3
** BUILDING CRN 551900.4 4197431.1
** BUILDING CRN 551896.6 4197436.5
** BUILDING BLD 0 0 6.57 3.7 4
** BUILDING IDN WHRFBLD2
** BUILDING CRN 552803.8 4198166.9
** BUILDING CRN 552799.9 4198153.4
** BUILDING CRN 552783.5 4198157.8
** BUILDING CRN 552787.9 4198171.3
** BUILDING BLD 0 0 6.36 3.7 9
** BUILDING IDN WHARFBLD
** BUILDING CRN 552770.5 4198172.7
** BUILDING CRN 552766.2 4198159.2
** BUILDING CRN 552745.4 4198166.9
** BUILDING CRN 552743.5 4198160.2
** BUILDING CRN 552734.8 4198163.1
** BUILDING CRN 552738.2 4198173.7
** BUILDING CRN 552728.6 4198176.1
** BUILDING CRN 552732.4 4198184.3
** BUILDING CRN 552733.4 4198184.3

** TERRFILE U:\CHEVRO~2\ENVIRO~1\AIRQUA~1\MODEL\NED\11401156\11401156.TIF 2 0
WGS84 10 0 539282.4 4182727.4 539134.8 4213567.8 568674.0 4213763.2
568933.1 4182922.3
** AMPTYPE NED
** AMPDATUM 3
** AMPZONE 10
** AMPHEMISPHERE N
** HILLBOUN 540574.5 4183994.1 568047.5 4212496.4

```

Attachment 1 Example Moeling Input Shipping at Berth.ami

```
** PROJECTION  UTM
** DATUM  NAR-C
** UNITS  METER
** ZONE  10
** HEMISPHERE  N
** ORIGINLON  0
** ORIGINLAT  0
** PARALLEL1  0
** PARALLEL2  0
** AZIMUTH  0
** SCALEFACT  0
** FALSEEAST  0
** FALSENORTH  0

** POSTFMT  UNFORM
** TEMPLATE Regulatory,0
** AERMODEXE  AERMOD_EPA_12345.exe
** AERMAPEXE  AERMAP_EPA_11103.EXE
```


APPENDIX 4.3 - HRA

Attachment 2

1 ATTACHMENT 2 TO APPENDIX 4.3-HRA: METEOROLOGICAL DATA PROCESSING METHODOLOGIES

1.1 METEOROLOGICAL DATA SELECTION

1.1.1 Meteorological Data

AERMOD requires a meteorological input file to characterize the transport and dispersion of pollutants in the atmosphere. In order to create this input file, surface and upper air meteorological data inputs, along with surface parameter data describing the land use and surface characteristics near the site, are first processed using AERMET, the meteorological preprocessor to AERMOD. The output file generated by AERMET is the meteorological input file required by AERMOD. Details of AERMET and AERMOD meteorological data needs are described in US Environmental Protection Agency (USEPA) guidance documents (USEPA, 2012a, 2012b). This appendix describes the use of onsite surface meteorological data, as well as the selection of representative surface and upper air meteorological data sets for the Site, and the methodology used for processing the meteorological data in AERMET.

1.1.1.1 Selection of Surface Meteorological Data

When characterizing near-field air pollutant dispersion using models such as AERMOD, representative hourly surface meteorological data inputs are required to characterize the atmospheric transport and dispersion in the area to be studied. AERMET, the meteorological preprocessor to AERMOD, requires certain surface meteorological parameters in order to prepare an AERMOD meteorological data input file. The minimum surface meteorological parameters required include wind speed, wind direction, temperature, and cloud cover (USEPA 2012b). Station pressure is also recommended, but is not required for AERMET (USEPA, 2012a).

Two surface meteorological stations were found in the vicinity of the Site: one is the station maintained by the Facility located just south of the western end of the W. Gertrude Avenue (Gertrude station). The other station is a National Climate Data Center (NCDC) station (AWS ID 994036) located on the Refinery Pier just south of Highway 580 (Wharf station). Figure 1 presents the locations of both stations, together with windroses based on data from each station. A comparison of the windroses indicates that the wind conditions between the two stations are generally similar; however, there are a few notable differences. One

difference is that low wind speeds occur more frequently at the Wharf station than at the Gertrude station. In addition, wind blowing from the northwest direction happens more frequently at the Wharf station than at the Gertrude station. The more frequent northwest wind at the Wharf station can be explained by the “channeling” effect of the terrain just north of the Wharf station. Figure 2 presents the two stations overlaid with terrain data downloaded from United States Geological Survey (USGS, 2011), which shows a mountain ridge running from Point San Pablo to south of the Site boundary, separating the two stations. Due to the differences mentioned above, ENVIRON decided that the Gertrude station represents meteorological condition on the north side of the mountain ridge, while the Wharf station represents meteorological condition on the south side of the mountain ridge. Therefore, ENVIRON processed both sets of meteorological data for modeling.

Completeness analysis of these two stations revealed that the Gertrude station meets 90% completeness criteria required by USEPA (USEPA, 2005) for years 2008-2010. However the Wharf station only meets the completeness criteria for the last quarter of 2009 through the first three quarters of 2010. Since both stations are located on the Facility property and are representative of part of the Modernization Project Site, only one year of meteorological data is required for regulatory dispersion modeling (USEPA, 2005). Therefore one year of meteorological data from October 1, 2009 to September 30, 2010 at the Gertrude station were processed. The data include wind speed, wind direction, and surface temperature. In addition, data from the same time period¹ at the Wharf station were processed. The data include wind speed, wind direction, and surface temperature. No data substitution to these two on-site stations were performed.

ENVIRON obtained surface data from the National Climactic Data Center’s (NCDC, 2011) Oakland International Airport (OAK) station.

1.1.1.2 Selection of Upper Air Meteorological Data

AERMET also requires upper air sounding data in order to prepare an AERMOD meteorological data input file (USEPA, 2011a, 2011b). The upper air sounding data are typically only available from NCDC stations and are measurements of various meteorological parameters such as wind speed and direction, temperature, and pressure, usually taken at multiple levels in the atmosphere. Oakland International Airport (OAK) is the only upper air station in Northern

¹ 2008 data at the Wharf station does not meet the 90% complete requirement.

California that NCDC recommends for reliable, complete, and representative upper air data for air dispersion modeling in Northern California.² Thus, upper air data from the OAK was used in AERMET processing for the Site. Station pressure and cloud cover from the OAK station was used to supplement the Gertrude and Pier surface data.

1.2 AERMET DATA PROCESSING METHODS

In addition to the surface and upper air meteorological data discussed previously, surface parameters representing the land use and surface characteristics are required for processing meteorological data in AERMET. The methods used to develop surface parameters for the Site are discussed below.

1.2.1 Determining Surface Parameters using AERSURFACE

Prior to running AERMET, it is necessary to specify the surface parameters to be used. The surface parameters including surface roughness, Albedo, and Bowen ratio are required to compute heat fluxes and stability of the atmosphere (USEPA 2012b). Typically, land use characteristics around both the primary project area and the surface meteorological data collection site shall be evaluated and compared to determine the representativeness of the meteorological station, as recommended by the USEPA (USEPA, 2009, 2012b) and the California Air Resources Board (ARB) Guidelines (ARB, 2006). Because the primary meteorological stations (the Gertrude station and the Wharf station) are located on-site, surface parameters calculated for the meteorological stations are also representative of the Site.

Land cover data for the areas surrounding the on-site meteorological stations (the Gertrude station and the Wharf station) were used with the land cover data processor of AERMOD (i.e., AERSURFACE) to calculate surface parameters.

1.2.2 Land Cover

ENVIRON used the USGS National Land Cover Database (NLCD) maps from 1992 (USGS, 1992). Although the most recent NLCD maps available contain 2006 data, historical aerial maps show that the area around the site did not experience significant changes between 1992 and 2006. Some of the Site's surroundings were somewhat less developed in 1992 than in 2006; however, because less-developed areas are represented by lower surface roughness, the air dispersion

² Personal communication, William Brown of NCDC by telephone to C. Mukai of ENVIRON on May 5, 2006.

model predicts higher (i.e. more conservative) pollutant concentrations because there is reduced turbulence created by the movement of air through the area. Therefore, as a conservative measure, and in an effort to use representative land cover types, ENVIRON used the 1992 NLCD maps published by the USGS for the surface parameter analysis.

1.2.3 AERSURFACE Inputs

ENVIRON followed the USEPA (2013a) recommendations regarding the use of an upwind fetch distance of one kilometer for estimation of the surface roughness length, which corresponds to a circle with a radius of one kilometer surrounding the meteorological station. The recommendation is based on the estimated typical distance required to obtain a new turbulent boundary layer height after a roughness transition (USEPA, 2013).

AERMET accepts as input a table of surface parameters defined according to radial sectors centered at the meteorological station covering segments of wind direction. A maximum of twelve sectors of at least 30 degrees can be chosen based on patterns in the local land use. The number of sectors and the directions included in each are left to the determination of the user. For the both of the on-site meteorological stations, ENVIRON used the AERSURFACE default value of twelve sectors. ENVIRON then specified surface parameters for each sector using default seasonal values that are adjusted for the local climate. For Albedo and Bowen ratio, the same locally-adjusted default seasonal values were applied to the non-sector-specific 10-kilometer by 10-kilometer square area surrounding the each of the meteorological monitoring stations.

Where available and appropriate, the USEPA guidance (USEPA, 2009, 2011b) was followed. However, the USEPA guidance was developed based on nationwide averages. There are instances in which known local characteristics differ from national norms and would impact the methods used to evaluate the surface parameters. This topic is discussed in additional detail below.

1.2.4 Season Assignments and Precipitation Condition

The AERMET User's Guide (USEPA, 2011a) contains tables of values for the surface parameters based on four seasonal vegetative cycles (e.g., 'spring' refers to the period of re-growth after the last frost). AERMET accepts surface parameters for annual, seasonal, or monthly periods. The determination of the appropriate seasonal values for a given period, in addition to the choice of annual, seasonal, or monthly temporal divisions, is left to the user. The decision is particularly important in California (and thus for the Site), which has seasonal weather that is atypical from what is assumed in the User's Guide (USEPA, 2012a) as nationwide averages. For example, default winter season in the User's

Guide assumes a presence of snow cover, while the Site typically does not experience any snow cover at all. To better represent the Site condition, ENVIRON assigned each month a corresponding seasonal category based on the local conditions and the USEPA Guidance, as explained below (USEPA, 2012a). The methodologies for determining the seasons to use and months of each season have been approved by the Bay Area Air Quality Management District (BAAQMD), and have been used in multiple analyses approved by the District (ENVIRON, 2006, 2009).

In addition to defining the months of the seasons at the Site, ENVIRON also evaluated precipitation data in order to select a condition (wet, dry, average) for the Bowen ratio calculation. ENVIRON first examined seasonal precipitation totals from meteorological stations in the vicinity of the Site for the modeling period of interest (January 1, 2008 – December 31, 2010). Precipitation totals were taken from the Western Regional Climate Center (WRCC) Richmond meteorological station (station ID 47414), the closest station to the Site with available precipitation data. Data do not meet the completeness criteria from the WRCC Richmond meteorological station for autumn of 2009 and autumn of 2010; therefore, precipitation totals were also evaluated for the next two closest stations to the Site, - the WRCC Berkeley station (station ID 40693) and the WRCC Oakland Museum station (station ID 46336).

As suggested by the AERSURFACE's User's Guide (USEPA 2013), the precipitation totals for the year of interest were then compared to the 30-year historical precipitation averages measured at the WRCC Richmond meteorological station. If the tabulated values were higher than the 70th-percentile for historical precipitation, a "wet" Bowen ratio condition was selected. If the tabulated values were lower than the 30th-percentile for historical precipitation, a "dry" Bowen ratio condition was selected. Otherwise, an "average" Bowen ratio condition was selected if precipitation was between the 30th and 70th percentile for historical precipitation. Similarly, the condition for autumn of 2009 and autumn of 2010 from the other two stations were compared to their 30-year historical precipitation averages for the corresponding seasons.

1.2.5 AERMET Input

ENVIRON used version 12345 of the USEPA AERMET executable to process the data. As mentioned previously, surface air data and upper air data, together with the calculated surface parameters were combined and processed using AERMET. Two sets of surface meteorological data representing the Gertrude station and the Wharf station were used, with on-site data supplemented by the NCDC surface data from the Oakland International Airport station. Two sets of AERMET runs were conducted, one for the Gertrude station, and one for the Wharf

station. Two output files were generated for each AERMET run: a surface file and a profile file.

REFERENCES

Air Resources Board (ARB). 2006. *ARB Health Risk Assessment Guidance for Rail Yard and Intermodal Facilities*.

Chevron Data Transmittal #9 Revision #1: GLM Locations. December 3, 2013

Chevron Data Transmittal #38 Revision #1: APNs. November 21, 2013

ENVIRON International Corporation (ENVIRON). 2006. *Protocol for Conducting an Air Toxics Health Risk Assessment for Emergency Standby Generators at Genentech's South San Francisco Campus*. 03-15205D. October.

ENVIRON International Corporation (ENVIRON). 2009. *Protocol for Conducting an Air Toxics Health Risk Analysis for the University of California, San Francisco, Mission Bay Site*. 03-22092A. April.

National Climatic Data Center (NCDC), 2007. *Meteorological Conditions*. National Oceanic and Atmospheric Administration.
<ftp://ftp.ncdc.noaa.gov/pub/data/noaa/2007/>.

National Climatic Data Center (NCDC). 2011. *Integrated Global Radiosonde Archive - Station Inventory*.
<http://www.ncdc.noaa.gov/oa/climate/igra/index.php>.

United States Environmental Protection Agency (USEPA). 2000. *Meteorological Monitoring Guidance for Regulatory Modeling Applications*. Office of Air Quality Planning and Standards Research Triangle Park, North Carolina EPA-454/R-99-005. 6-32. February.

United States Environmental Protection Agency (USEPA). 2005. *Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions*; Final Rule. 40 CFR Part 51, Appendix W. 70 Federal Register 68218-61. November 9.

United States Environmental Protection Agency (USEPA). 2009. *AERMOD Implementation Guide*. Research Triangle Park, North Carolina. March.

United States Environmental Protection Agency (USEPA). 2012a. *User's Guide for the AERMOD Meteorological Preprocessor (AERMET)*. Office of Air Quality Planning and Standards. Air Quality Assessment Division. Research Triangle Park, North Carolina. EPA-454/B-03-002. December.

United States Environmental Protection Agency (USEPA). 2012b. *User's Guide for the AMS/EPA Regulatory Model (AERMOD)*. Office of Air Quality Planning and Standards. Air Quality Assessment Division. Research Triangle Park, North Carolina. EPA-454/B-03-001. December.

United States Environmental Protection Agency (USEPA). 2013. *AERSURFACE User's Guide*. Office of Air Quality Planning and Standards. Air Quality Assessment Division. Air Quality Modeling Group. Research Triangle Park, North Carolina. EPA-454-B-08-001. January.

United States Geological Survey (USGS). 1992. *National Land Cover Dataset (NLCD)*. <http://landcover.usgs.gov/natl/landcover.php>.

United States Geological Survey (USGS). 2011. *National Elevation Dataset (NED)*. <http://ned.usgs.gov/>.

ACRONYMS AND ABBREVIATIONS

AERMET	AERMOD Meteorological Preprocessor
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AERSURFACE	AERMOD Landuse Preprocessor
ARB	Air Resources Board
BAAQMD	Bay Area Air Quality Management District
NCDC	National Climate Data Center
NED	National Elevation Dataset
NLCD	National Land Cover Dataset
NWS	National Weather Service
OAK	Oakland International Airport
USEPA	US Environmental Protection Agency
USGS	United States Geological Survey
WRCC	Western Regional Climate Center

APPENDIX 4.3 - HRA

Attachment 3

**Attachment 3 to Appendix 4.3-HRA:
Super Automated Risk Assessment Database
(SARAD) and Comparison to Hotspots Analysis
Reporting Program (HARP)**

Summary of SARAD Database Files

Construction SARADs

CST-1	SARAD - 2 Offroad Construction Equipment.accdb
CST-2	SARAD - 1 Onroad Mobile Sources Long Term.accdb
CST-3	SARAD - 1 Onroad Mobile Sources Acute.accdb
CST-4	SARAD - Total Risks.accdb
CSTSLR-1	SARAD - 2 Offroad Construction Equipment - Solar Project.accdb
CSTSLR-2	SARAD - 1 Onroad Mobile Sources Long Term - Solar Project.accdb
CSTSLR-3	SARAD - 1 Onroad Mobile Sources Acute - Solar Project.accdb
CSTSLR-4	SARAD - Total Risks - Solar Project.accdb
CSTTD_1-1	SARAD - 2 Offroad Construction Equipment - One Tank Dome.accdb
CSTTD_1-2	SARAD - 1 Onroad Mobile Sources Long Term - One Tank Dome.accdb
CSTTD_1-3	SARAD - 1 Onroad Mobile Sources Acute - One Tank Dome.accdb
CSTTD_1-4	SARAD - Total Risks - One Tank Dome.accdb
CSTTD_14-1	SARAD - 2 Offroad Construction Equipment - 14 Tank Domes.accdb
CSTTD_14-2	SARAD - 1 Onroad Mobile Sources Long Term - 14 Tank Domes.accdb
CSTTD_14-4	SARAD - Total Risks - 14 Tank Domes.accdb

Refinery SARADs

OP-1	SARAD - Refinery Project 93%.accdb
OP-2	SARAD - Refinery Project 100%.accdb
OP-3	SARAD - Refinery Lightest 93%.accdb
OP-4	SARAD - Refinery Lightest 100%.accdb

Shipping SARADs

SHP-1	SARAD - Operational Shipping Project 93%.accdb
SHP-2	SARAD - Operational Shipping Project 100%.accdb
SHP-3	SARAD - Operational Shipping_ 93% Max Light Case.accdb
SHP-4	SARAD - Operational Shipping_100% Max Light Case.accdb

Trucking SARADs

TRANS-4	SARAD - Operational Trucking All Cases.accdb
---------	--

Total Operational SARADs

CUM-1	Cumulative Project 93%.accdb
CUM-2	Cumulative Project 100%.accdb
CUM-3	Cumulative Project Max Light 93%.accdb
CUM-4	Cumulative Project Max Light 93%.accdb

Multi-pathway Databases

MP-1	SARAD - Operational Shipping Project 93%.accdb
MP-2	SARAD - Refinery Project 93%.accdb
MP-3	SARAD - Total Multipath.accdb

1 Attachment 3 to Appendix 4.3-HRA: Super Automated Risk Assessment Database (SARAD) and Comparison to Hotspots Analysis Reporting Program (HARP)

Risk assessments conducted to the standards required by the BAAQMD and OEHHA may involve sizeable data sets in order to thoroughly analyze the impacts from a large project, like the Modernization Project. In the case of the Modernization Project, over 50 TACs are emitted from over 150 different sources associated with the Project, including Refinery Operations and shipping. In addition, during the construction of the Modernization Project, 15 TACs are emitted from the off-road construction equipment and on-road vehicles. In order to carefully analyze impacts on the community, the evaluation was conducted at over 8000 locations in the community. In order to evaluate large data sets some type of database is typically programmed to allow for efficient calculations.

The Hotspots Analysis and Reporting Program (HARP) is a tool that assists with the programmatic requirements of the Air Toxics "Hot Spots" Program. The Air Toxics "Hot Spots" Program has the same risk assessment requirements as does the BAAQMD for CEQA. HARP is a single integrated software package that can be used by the air pollution control and air quality management districts (districts), facility operators, and other parties to promote statewide consistency, efficiency, and cost-effective development of health risk assessments. While HARP is a useful tool, it does not permit the analysis of data sets as large as that required for the Modernization Project. In addition, HARP does not allow the evaluation of time-changing activities, such as construction, which operate only 10 hours in a 24 hour day. Finally, HARP does not incorporate the childhood cancer sensitivity factors required for use by the BAAQMD.

In order to analyze the large dataset required for the Modernization Project, ENVIRON, the City's Consultants, programmed a Microsoft Access 2010 database to mimic the functions of HARP for the inhalation pathway. In addition, another set of databases were developed to evaluate the impact of the TAC emissions through the non-inhalation pathways, referred to as multi-pathway analysis. It was then concluded that the cancer risks and non-cancer hazards associated with the multi-pathway exposures are small compared to the CEQA thresholds for risks and non-cancer chronic hazards. The resulting programmed Microsoft Access database used to mimic the inhalation pathway of HARP is called the

Super Automated Risk Assessment Database, or SARAD. The City's Consultants, have used forms of this database for years to analyze risks for permitting projects and CEQA projects within the jurisdiction of the BAAQMD. The Microsoft Access database used for the multi-pathway analysis then scaled the inhalation risks and chronic hazards by the multi-pathway scaling factors derived from HARP version 1.4f to estimate risks and chronic hazards in SARAD for each multi-pathway chemical.

This attachment describes in detail how SARAD works, and describes the evaluation conducted to show equivalence between SARAD and HARP to confirm that the results from SARAD are the same as would result if HARP could be used for this evaluation.

Because the SARADs used for the construction and operational impact analyses have the same general structure, and function the same way, this attachment describes the methods used for both analyses.

1.1 Introduction

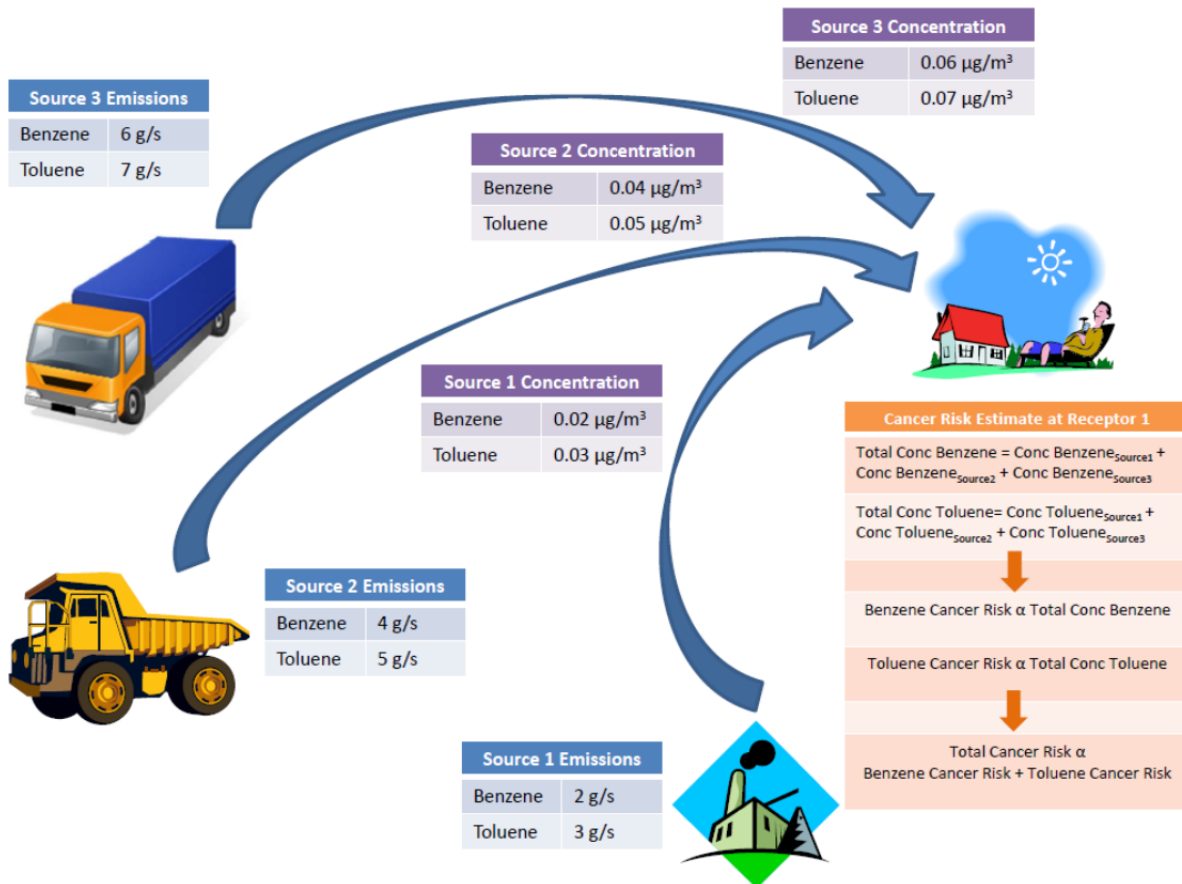
SARAD was used to perform calculations for the ambient air quality (AAQ) health risk assessment (HRA) of potential toxic air containments (TAC) emissions from construction of the Chevron Modernization Project, and incremental TAC emissions from the Facility operations resulting from the Modernization Project. SARAD was also used to estimate incremental $PM_{2.5}$ concentrations from construction and operation of the Modernization Project.

The databases allow for the easy calculation of health risks and $PM_{2.5}$ concentrations by performing a series of calculations using several data sources. As further discussed in Appendices 4.3-HRA and 4.3-CHRA, estimating health risk requires data such as: airborne concentrations of TACs; toxicity information on TACs; and exposure information for populations of interest. Airborne concentrations of TACs and $PM_{2.5}$ are estimated from information on how chemicals move in the air (air dispersion) from each emissions source, and the quantity of TAC and $PM_{2.5}$ emissions from each emissions source.

Figure A4.3-HRA-Attachment 3.1 contains an illustration of how health risk is estimated using SARAD. SARAD estimates human health risks due to chemical exposures at specific locations (i.e., receptors) for specific population groups (e.g., adult residents, adult workers) as a result of air emissions from many emission sources. At a given receptor (e.g., adult resident 1), the air concentration of a compound (e.g., benzene) is the sum of emissions from many sources, for example a stack and several tanks. Similarly, the health risk is the sum of health impacts from a number of chemicals, say, benzene and diesel particulate matter

(DPM). It also depends on the concentration of each compound as well as amount that each type of exposed population breathes at a location in a day. For example, a resident breathes air throughout the day, whereas a worker only breathes air at a work location during working hours. If there is more than one compound that is contributing to the health risk at a given receptor, then the health risk at that receptor is estimated as the sum of the health risks from all compounds estimated to be in the air near that receptor and have a similar adverse health effect. For example, to estimate cancer risk at a specific receptor, the health risks from all carcinogens in the air near that receptor are summed together. To estimate non-cancer risk, the health risks from all compounds that affect a similar target organ are summed together.

FIGURE A4.3-HRA-ATTACHMENT 3.1 CONCEPTUAL ILLUSTRATION OF SARAD CALCULATIONS



The remainder of this attachment provides a description of SARAD, including an overview of the database structure as well as the methods that are used in the calculation of health risks. As further described in Appendices 4.3-HRA and 4.3-CHRA, for this HRA ENVIRON estimated cancer risks, chronic non-cancer hazard indices, acute non-cancer hazard indices, and $PM_{2.5}$ concentrations for all receptor types.¹

As discussed above, SARAD was used to calculate cancer risks and chronic non-cancer hazards through the inhalation pathway only and then for all pathways using a multipathway factor. It was then concluded that the cancer risks and non-cancer hazards associated with the multi-pathway exposures are small compared to the CEQA threshold for risks and non-cancer chronic hazards. The details of the SARAD configuration used for the multi-pathway analysis is described at the end of this attachment.

1.2 Structure of SARAD for Construction Impacts

As discussed above, health risk is estimated based on contributions of numerous TACs from a variety of emission sources. For the construction portion of the HRA as described in Appendix 4.3-CHRA, the two main categories of emission sources include off-road equipment and on-road mobile emission sources. Air concentrations of TACs and $PM_{2.5}$, as well as cancer risks and non-cancer hazards from these emissions categories were estimated in separate databases. Due to the large number of on-road emission sources included in this HRA, air concentrations, cancer risks, and non-cancer hazards from on-road emission sources were calculated in two separate databases, one used to calculate the maximum one-hour concentrations for acute effects and one used to calculate the average annual concentrations for chronic effects. These air concentrations, cancer risks, and non-cancer hazards were then combined in a different database to calculate the overall health risks from construction activities.

1.3 Structure of SARAD for Operational Impacts

For the operation portion of the HRA as described in Appendix 4.3-HRA, the three main categories of emission sources include Refinery Operations, shipping, and trucking. Air concentrations of TACs and $PM_{2.5}$, as well as cancer risks and non-cancer hazards from each of these emission categories were estimated in separate databases. These air concentrations, cancer risks, and non-cancer

¹ Cancer risks were estimated for 70-year residents and worker receptors, while chronic and acute non-cancer hazard and $PM_{2.5}$ concentrations were evaluated for all types of receptors.

hazards were then combined in a different database to calculate the overall health risks from operational activities. A separate set of databases was used for each Project scenario evaluated for Refinery Operations and Shipping. All cases were evaluated in one SARAD database for trucking.

1.4 Database Tables Used in Health Risk Calculations

Each SARAD database consists of six input tables. Four tables contain air emissions and modeling information and two tables contain human health risk assessment data. Figure A4.3-HRA-Attachment 3.2 summarizes the relationship between the input tables in the database. Table A4.3-HRA-Attachment 3.1 provides definitions of select column names and data entries. All tables used in the database are described below.

FIGURE A4.3-HRA-ATTACHMENT 3.2 INPUT TABLES USED IN HEALTH RISK DATABASES

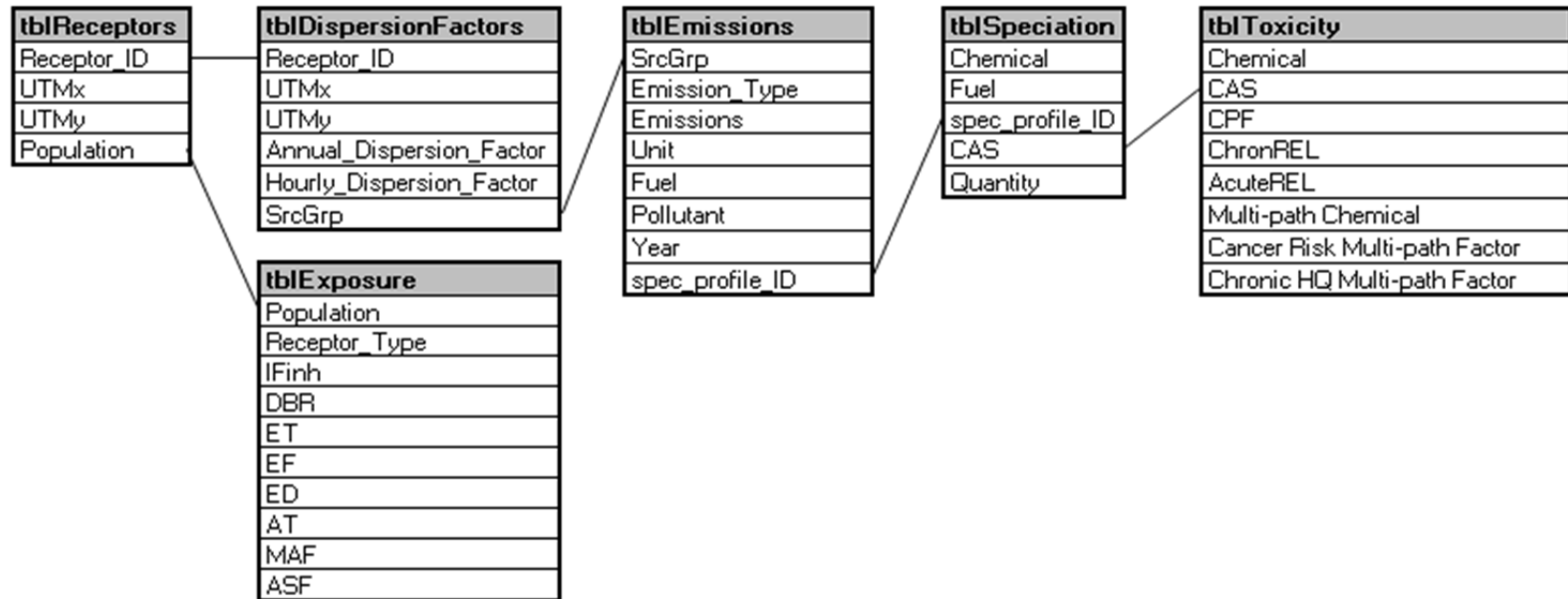


TABLE A4.3-HRA-ATTACHMENT 3.1 DEFINITIONS OF SELECT COLUMN NAMES IN DATABASE TABLES

Table Name	Column Name/Data Entry	Definition
tblReceptors	Receptor_ID	ENVIRON-assigned receptor ID
	UTMx	X-coordinate (m)
	UTMy	Y-coordinate (m)
	Population	Identifies population-type of receptor (e.g., resident, worker, school child)
tblDispersionFactors	Annual_Dispersion_Factor	Annual dispersion factor
	Hourly_Dispersion_Factor	Maximum hourly dispersion factor
	SrcGrp	ENVIRON-assigned source ID
tblEmissions	Emission_Type	Description of emissions (e.g., annual, 1-hour)
	Emissions	Emission rate
	Unit	Units for emission rate (g/s)
	Fuel	Type of fuel (e.g., diesel)
	Pollutant	Compound associated with emission rate (e.g., TOG)
	Year	Year when emissions are released
	Spec_profile_ID	Speciation profile associated with a specific emission source or fuel
tblSpeciation	Chemical	Chemical
	CAS	Chemical Abstract Service registry number
	Quantity	Fraction of emissions attributable to specified chemical
tblExposure	IFinh	Intake factor for specified receptor type (m3/kg-day)

Table Name	Column Name/Data Entry	Definition
	DBR	Daily Breathing Rate for specified receptor type (L/kg-day)
	HBR	Hourly Breathing Rate for specified receptor type (L/kg-hour)
	BW	Body weight (kg)
	ET	Exposure time (hours/24-hours)
	EF	Exposure Frequency for specified receptor type (days/year)
	ED	Exposure Duration for specified receptor type (years)
	AT	Averaging Time (days)
	MAF	Modeling adjustment factor (unitless)
	ASF/CRAF	Cancer risk adjustment factor (unitless)
tblToxicity	CPF	Cancer potency factor (mg/kg-day) ⁻¹
	AcuteREL	Acute Reference Exposure Level (µg/m ³)
	ChronREL	Chronic Reference Exposure Level (µg/m ³)
tblToxicity	Multi-pathway Chemical	Marks whether a TAC is a multi-pathway chemical
	Cancer Multi-pathway Factor	Scaling factor to be multiplied to inhalation cancer risk to yield non-inhalation cancer risk
	Chronic HQ Multi-pathway Factor	Scaling factor to be multiplied to inhalation chronic HQ to yield non-inhalation chronic HQ

The purpose of the figure and the table above is to illustrate the content of the SARAD input files. The inputs in the SARADs used for this analysis generally follow the structure of the six input files presented above. In addition, the emission rates in the SARADs for Refinery Operations are incremental emissions (i.e., Project case minus Baseline emissions) while the emissions rates in the trucking and shipping SARADs include Project emissions and baseline emissions separately. Incremental emissions were used to simplify the SARADs for Refinery Operations. Refinery Operations contains hundreds of emission sources, and emissions from most of these sources are not changing as a result of the Modernization Project. Because these emissions from these sources are not changing as a result of the Modernization Project, there is also no change in risk and non-cancer hazards resulting from these sources. Thus, to reduce the complexity of the Refinery Operations SARAD databases, Refinery Operations emissions sources that are not impacted by the Modernization Project were not included in the incremental emissions table. Additional details on each of these tables are presented below.

1.4.1 Air Emission and Modeling Tables

The information presented in the following tables includes emissions and air dispersion modeling information used to calculate health impacts in SARAD.

“tblReceptors” Table

This table relates X- and Y- coordinates to potentially exposed populations, as shown in Table A4.3-HRA-Attachment 3.2. The table contains Universal Transverse Mercator (UTMx and UTM_y) coordinates in meters (m) and receptor identification numbers for tracking purposes (“Receptor_ID” column). The potentially exposed populations (“Population”) considered in this HRA, include residents (children and adults), school children, daycare children, community center children and adults, patients (children and adults), recreational facility children and adults, and adult workers.

TABLE A4.3-HRA-ATTACHMENT 3.2 EXAMPLE ENTRIES IN RECEPTOR TABLE

Receptor_ID	UTMx	UTMy	Population
R0001	549000	4194000	Worker
R0053	559400	4194000	Resident
R6780	554439	4197648	School Child

“tblDispersion Factors” Table

This table lists the annual average (see “Annual_Dispersion_Factor” column) and maximum 1-hour average (see “Hourly_Dispersion_Factor” column) dispersion coefficients calculated for each modeled source (see “SrcGrp” column) for each receptor location listed in the “Receptor_ID” column (see Table A4.3-HRA-Attachment 3.3 below for example of table). As

described in Appendix 4.3-HRA and A4.3-CHRA, a dispersion coefficient is the source-specific concentration estimated by the air dispersion model for a unit emission rate (i.e., 1 gram per second). The dispersion coefficients in this table are in units of micrograms per cubic meter over grams per second ($(\mu\text{g}/\text{m}^3)/(\text{g}/\text{s})$) and are used in conjunction with TAC and $\text{PM}_{2.5}$ emission rates to estimate ambient concentrations.

TABLE A4.3-HRA-ATTACHMENT 3.3 EXAMPLE ENTRIES IN DISPERSION TABLE

Receptor_ID	Annual_Dispersion_Factor	Hourly_Dispersion_Factor	SrcGrp
R0001	0.02227	16.14874	EXISH2
R0001	0.02698	12.77279	SRU

“tblEmissions” Table

This table lists chemical-specific or compound-specific emission rates (see “Emissions” column) for each source evaluated in this HRA. For the Refinery Operations SARAD databases, the emission rates were chemical-specific. For the construction, shipping, and operational trucking SARAD databases, some of the emission rates in this table were for a mixture of either total organic gases or reactive organic gases, in which case the speciation profile table described below provides the chemical breakdown of these mixtures. An example entry is shown in Table A4.3-HRA-Attachment 3.4. The “Source” column identifies the emission source from which the emissions are released. Emission rates are in units of grams per second (g/s). If a source burns fuel, the fuel type is specified under the “Fuel” field, when applicable. The year when the emissions are applicable is specified under the “Year” field. The “Year” field is relevant for the construction HRA, where the construction sources changed by year. The “Spec_Profile_ID” column identifies the speciation profile that is applicable for each source.

TABLE A4.3-HRA-ATTACHMENT 3.4 EXAMPLE ENTRIES IN EMISSION PROFILE TABLE

Emission_Type	Emissions	Unit	Fuel	Pollutant	Source	Year	Spec_Profile_ID
Annual	1.82E-02	g/s	Diesel	$\text{PM}_{2.5}$	EXISH2	2016	3
Annual	1.80E-02	g/s	Diesel	DPM	SRU	2014	428

“tblSpeciation” Table

This table contains the chemical breakdown for each speciation profile. For each speciation profile (“Spec_profile_ID”), the quantity of each chemical is expressed along with the chemical abstract service (“CAS”) registry number, a unique identifier for each chemical. In the example table below, acrolein represents approximately 0.13% of the gasoline exhaust total organic gas (TOG) profile.

TABLE A4.3-HRA-ATTACHMENT 3.5 EXAMPLE ENTRY IN SPECIATION TABLE

Chemical	Fuel	Spec_profile_ID	CAS	Quantity
Acrolein	Gasoline Exhaust TOG	5	107028	0.0013
Diesel PM	Diesel	428	9901	1

1.4.2 Human Health Calculation Database Tables

The dose estimated for each exposure pathway is a function of the concentration of a chemical and the intake of that chemical. Similar to the emissions and air modeling tables presented above, SARAD also has a couple of tables that are used as inputs in the calculation of health risks. The two main input tables used to calculate human health risk involve exposure parameters and chemical toxicity data. Additional details on each of these tables are provided below.

“tblExposure” Table

The “exposure” table contains the exposure assumptions used to estimate human health risks for the population types (“Population”) considered in this HRA. The inhalation intake factor (“IF_{Inh}”) is based on the daily breathing rate (“DBR”), exposure time (“ET”), exposure frequency (“EF”), exposure duration (“ED”), and the overall averaging time (“AT”). Table A4.3-HRA Attachment 3.6 presents example exposure parameters used in the database.

TABLE A4.3-HRA-ATTACHMENT 3.6 EXAMPLE ENTRY IN EXPOSURE TABLE

Population	Receptor_type	Year	IF _{Inh}	DBR	HBR ¹	BW ¹	ET	EF	ED	AT	MAF	CRAF
Community Center Child	Community Center Child	2008	0.078	581			10	245	1	25550	3.36	5.2
Recreational User	Recreational Adult	2014			1.74	63	1	52	1	25550	3.36	1.7
Resident	Resident	All	0.4923	302			24	350	70	25550	1	1.7

Note: The exposure assumption for recreational user is not available in the BAAQMD guidance (2010) or the OEHHHA guidance (2003). As a result, the exposure assumption (i.e., hourly breathing rate, and body weight) from the USEPA Exposure Handbook (2011) was used. The USEPA Exposure Handbook is available at <http://www.epa.gov/ncea/>.

As further discussed in Appendix 4.3-HRA, the equation used to calculate the inhalation intake factor (IF_{inh}), is as follows:

$$IF_{inh} = \frac{DBR \times ET \times EF \times ED \times CF}{AT}$$

Where:

IF_{inh}	=	Intake Factor for Inhalation ($m^3/kg\text{-day}$)
DBR	=	Daily Breathing Rate ($L/kg\text{-day}$)
ET	=	Exposure Time (hours/24 hours)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
AT	=	Averaging Time (days)
CF	=	Conversion Factor ($0.001\ m^3/L$)

The model adjustment factor (MAF) and cancer risk adjustment factor (CRAF) are further discussed in Appendix 4.3-HRA and in the sections below.

“tblToxicity” Table

The “tblToxicity” table contains the chemical-specific toxicity values used to estimate human health risks in this HRA. As shown in Table A4.3-HRA-Attachment 3.7, the toxicity inputs include the cancer potency factor (CPF) (“CPF” column), acute REL (“AcuteREL” column) and chronic REL (“ChronREL” column).

The CPF is expressed in units of (milligram [mg]/kilogram-day [kg-day])⁻¹. The acute REL and chronic REL are expressed in units of g/m^3 .

In addition, the toxicity table also has a column (“Multi-path Chemical” column) that marks the whether a chemical is a multi-pathway chemical. The chemicals that are emitted from the refinery and shipping activities at the Facility and that are multi-pathway chemicals are: arsenic, beryllium, cadmium, chromium (VI), lead, mercury, nickel, and polycyclic aromatic hydrocarbons (PAHs) including benzo(a)pyrene, b(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. In the last two columns of the table, the multi-pathway scaling factors derived from HARP version 1.7f for non-inhalation cancer risk and Chronic HQ calculation are provided. The methodology used to derive these scaling factors are described in Appendix 4.3-HRA.

TABLE A4.3-HRA-ATTACHMENT 3.7 EXAMPLE ENTRY IN TOXICITY TABLE

Chemical	CAS	CPF	AcuteREL	ChronREL	Multi-path Chemical?	Cancer Multi-path Factor	Chronic HQ Multi-path Factor
Arsenic	7440382	12	0.2	0.015	Yes	3.76	39.0
1,3-Butadiene	106990	6.00E-01	6.60E+02	2.00E+00			
Diesel PM	9901	1.10E+00		5.00E+00			

1.5 Risk Characterization Calculations for Inhalation Pathway

As discussed in Appendix 4.3-HRA, this HRA includes estimates of cancer risk as well as an evaluation of acute and chronic non-cancer health effects. This section includes a discussion of how SARAD estimates airborne concentrations of TACs based on the emissions and modeling inputs described earlier. This section also includes a discussion of how SARAD estimates cancer and non-cancer risks using the calculated airborne concentrations of TACs and the risk inputs described earlier.

1.5.1 Calculation of Airborne Concentrations

To calculate the overall, chemical-specific airborne concentrations resulting from all emission sources for each receptor location, emission rates from the “tblEmissions” table and dispersion coefficients from the “tblDispersionFactors” table were used at each receptor location using the following formula:

$$C_i = \sum_{source=1}^{#sources} [ER * (\chi / Q)]_{source}$$

Where:

C_i	=	Air Concentration of Chemical i ($\mu\text{g}/\text{m}^3$)
ER	=	Source-Specific Emission Rate (from “tblEmissions” table) (g/s)
(χ/Q)	=	Source-Specific Dispersion Coefficient (from “tblDispersion Factors” table) ($\mu\text{g}/\text{m}^3$ per g/s)

In the above formula, the chemical specific emission rate for each source is multiplied by the dispersion factor for each source, and then this product is summed across all sources emitting that chemical. Annual average ambient air concentrations were calculated with this formula by using annual average emission rates and dispersion coefficients, whereas maximum 1-hour ambient air concentrations were calculated with this formula by using 1-hour average emission rates and maximum 1-hour dispersion coefficients.

As discussed in Appendix A4.3-HRA, Cal/EPA recommends applying an adjustment factor to air concentrations based on a continuous averaging period (i.e., 24 hours per day, 365 days per year) when the following three things are true (1) the actual exposure occurs for less than 24 hours per day and/or less than one year, (2) emission activities occur for less than 24 hours per day and/or less than one year, and (3) exposures are entirely or partially concurrent with emitting activities (OEHHA, 2013). The model averages the emissions over 24 hour per day over a year. The modeling adjustment factor is applied to the modeled annual average concentrations from the Modernization Project construction to reflect the fact that the actual exposure concentration the receptor is exposed to is higher than the average annual concentration. Because operational activities occur at any time of day, a constant emission rate for 24 hours per day, 7 days per week was assumed for all operational sources. Therefore, no MAF was required for any receptor type for operation.

The exposure point concentrations for receptors requiring a model adjustment factor (i.e., daycare child and school child) were calculated using the following equation for construction:

$$C_i = C_{i,annual} \times MAF$$

Where:

C_i	=	Exposure Point Concentration of Chemical _i ($\mu\text{g}/\text{m}^3$)
$C_{i,annual}$	=	Annual Average Concentration of Chemical _i ($\mu\text{g}/\text{m}^3$)
MAF	=	Modeling adjustment factor (unitless)

1.5.2 Calculation of Cancer Risk

The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$$\text{Risk}_{inh} = \sum C_i \times CF \times IF_{inh} \times CPF_i \times CRAF$$

Where:

Risk_{inh}	=	Cancer Risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)
C_i	=	Annual Average Air Concentration for Chemical _i ($\mu\text{g}/\text{m}^3$)
CF	=	Conversion Factor ($\text{mg}/\mu\text{g}$)
IF_{inh}	=	Intake Factor for Inhalation ($\text{m}^3/\text{kg}\cdot\text{day}$)
CPF_i	=	Cancer Potency Factor for Chemical _i ($\text{mg chemical}/\text{kg body weight}\cdot\text{day}$) ⁻¹

CRAF = Cancer Risk Adjustment Factor (unitless)

1.5.3 Calculation of Chronic Noncancer Hazard Quotient/Indices

The equations used to calculate the chemical-specific HQs and the overall HI are:

$$\text{Chronic HQ}_i = C_i / \text{cREL}_i$$

$$\text{Chronic HI} = \sum \text{HQ}_i$$

Where:

Chronic HQ _i	=	Chronic Hazard Quotient for Chemical _i (unitless)
Chronic HI	=	Hazard Index (unitless)
C _i	=	Annual Average Air Concentration for Chemical _i (µg/m ³)
cREL _i	=	Chronic Non-cancer Reference Exposure Level for Chemical _i (µg/m ³)

1.5.4 Calculation of Acute Noncancer Hazard Quotient/Indices

The equations used to calculate the chemical-specific HQs and the overall HI are:

$$\text{Acute HQ}_i = C_i / \text{aREL}_i$$

$$\text{Acute HI} = \sum \text{HQ}_i$$

Where:

Acute HQ _i	=	Acute Hazard Quotient for Chemical _i (unitless)
Acute HI	=	Hazard Index (unitless)
C _i	=	1-hour Maximum Air Concentration for Chemical _i (µg/m ³)
aREL _i	=	Acute Non-cancer Reference Exposure Level for Chemical _i (µg/m ³)

1.5.5 Database Queries

A series of queries used to summarize the cancer and non-cancer risks for inhalation pathway in this HRA are as follows:

- **qryConcentration** – Calculates annual-average and maximum hourly average concentrations for each TAC at each receptor. Results are placed in the “tblConcentrations” table.
- **qryConcentration-Annual PM_{2.5}** – Calculates annual-average concentrations of PM_{2.5} at each receptor. Results are placed in the “tblConcentrations_Annual PM_{2.5}” table.

- **qryRiskSum** – Calculates the total cancer risk at each receptor. Results are placed in the “tblRiskSum” table.
- **qryChronicMaxHI** – Calculates the maximum chronic HI at each receptor. Results are placed in the “tblChronicHIMax” table.
- **qryAcuteMaxHI** – Calculates the maximum acute HI at each receptor. Results are placed in the “tblAcuteHIMax” table.

1.6 Risk Characterization Calculations for Non-inhalation Pathway

As mentioned above, among the TACs evaluated for the inhalation cancer risk and chronic HQ, some are multi-pathway chemicals. The chemicals that are emitted from the refinery and shipping activities at the Facility and that are multi-pathway chemicals are: arsenic, beryllium, cadmium, chromium (VI), lead, mercury, nickel, and polycyclic aromatic hydrocarbons (PAHs) including benzo(a)pyrene, b(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

The HARP version 1.4f was used to generate multi-pathway scaling factors. These factors were then used to scale the inhalation risks and HQs calculated in SARADs for the multi-pathway chemicals to estimate cancer risks and non-cancer chronic hazards from the multi-pathway exposures. Consistent with the recommendations in the OEHHA Hot Spots Guidance for conducting a multi-pathway analysis, a 70 year resident was conservatively assumed to be exposed to Facility emissions via inhalation, dermal contact with soil, incidental ingestion of soil, ingestion of homegrown produce, and ingestion of mother’s milk. Using the multi-pathway generated for a 70-year resident for worker receptors yielded conservative non-inhalation cancer risks at these receptors.

To generate the cancer risk multi-pathway scaling factors, the derived (adjusted) method and default exposure settings for a 70-year resident as recommended in the OEHHA Hot Spots Guidance and District HRSA Guidelines (BAAQMD 2010) were used in HARP. This receptor population represents the most conservative exposures among all receptor populations evaluated for the Project. ENVIRON conducted two sets of analysis in HARP to calculate cancer risks for each of the multi-pathway chemicals for 1) inhalation pathway only, and 2) all non-inhalation pathways identified above. The methodologies and equations used in HARP to estimate chemical concentrations in each medium, doses and cancer risks for each exposure pathway are consistent with the recommendations in the Hot Spots Guidance. The cancer risk multi-pathway scaling factors for each of the multi-pathway chemicals were then derived based on cancer risk results from the two sets of analysis using the following equation:

$$\text{Cancer Risk Multipathway Factors} = \frac{\text{All Pathway Risk} - \text{Inhalation Cancer Risk}}{\text{Inhalation Cancer Risk}}$$

As shown in the equation above, because the inhalation pathway risk is subtracted from the all pathway risk, the cancer risk multi-pathway scaling factor derived from this method does not reflect the scaling between the inhalation pathway risk and the all pathway risk. Instead the scaling factor reflects the scaling between the inhalation pathway risk and the non-inhalation multi-pathway risk.

Similarly, to generate the non-cancer chronic HQ multi-pathway scaling factors, the derived (OEHHA) method and default exposure settings for a resident as recommended in the OEHHA Hot Spots Guidance were used in HARP. ENVIRON conducted two sets of analysis in HARP to calculate the non-cancer chronic HQs for each of the multi-pathway chemicals for 1) inhalation pathway only, and 2) all non-inhalation pathways identified above. The equations used in HARP to estimate chemical concentrations in each medium, doses and non-cancer hazards for each exposure pathway are consistent with the methodology recommended in the Hot Spots Guidance. The chronic HQ multi-pathway scaling factors for each of the multi-pathway chemicals were then derived using the maximum all-pathway chronic HQ among all target organs over the maximum inhalation chronic HQ among all target organs using the following equation:

$$\text{Chronic HQ Multipathway Factors} = \frac{\text{Max All Pathway Chronic HQ} - \text{Inhalation Max Chronic HQ}}{\text{Inhalation Chronic HQ}}$$

As shown in the equation above, because the maximum inhalation pathway chronic HQ is subtracted from the all pathway maximum chronic HQ, the chronic HQ multi-pathway scaling factor derived from this method does not reflect the scaling between the maximum inhalation pathway chronic HQ and the maximum all pathway chronic HQ. Instead the scaling factor reflects the scaling between the maximum inhalation pathway chronic HQ and the maximum non-inhalation multi-pathway chronic HQ.

As mentioned in section 1.4.2 above, these scaling factors are contained in the toxicity table of the individual refinery and shipping SARADs for each of the multi-pathway chemical. The scaling factors are also presented Table A4.3-HRA-6 and below.

TABLE A4.3-HRA-ATTACHMENT 3.8 HARP-CALCULATED MULTIPATH SCALING FACTORS

Chemical	CAS	Cancer Risk Multi-Pathway Scaling Factor	Chronic HQ Multi-Pathway Scaling Factor
Arsenic	7440-38-2	3.76	39
Benzo(a)anthracene	56-55-3	28.85	--
Benzo(a)pyrene	50-32-8	28.85	--
Benzo(b)fluoranthene	205-99-2	28.85	--
Benzo(k)fluoranthene	207-08-9	28.85	--
Cadmium	7440-43-9	--	0.494
Chromium (hex)	18540-29-9	0.01	--
Chrysene	218-01-9	28.85	--
Dibenz(a,h)anthracene	53-70-3	9.33	--
Indeno(1,2,3-cd)pyrene	193-39-5	28.85	--
Lead compounds	7439-92-1	3.28	--
Mercury Compounds	7439-97-6	--	5.667

The derived “cancer risk multi-pathway scaling factors” and the “chronic HQ multi-pathway scaling factors” were then imported to a separate multi-pathway SARAD database to estimate cancer risks and chronic HQs for the non-inhalation multi-pathway exposures by applying these scaling factors to the calculated inhalation risks and chronic HQs in the SARADs for each multi-pathway chemical accordingly using the following equation:

$$\text{Multipathway Cancer Risk} = \text{Inhalation Cancer Risk} \times \text{Cancer Risk Multipathway Scaling Factor}$$

$$\text{Multipathway Chronic HQ} = \text{Inhalation Chronic HQ} \times \text{Chronic HQ Multipathway Scaling Factor}$$

1.6.1 Database Queries

The series of queries used to summarize the cancer and non-cancer risks for non-inhalation pathway in this HRA are as follows:

- **qryMake tblCancerRisk_by Chem_multi-path** – Calculates the non-inhalation cancer risk at each receptor for each multi-pathway chemical. Results are placed in the “tblCancerRisk_by chem_multi-path” table.
- **qryMake tblMulti-path Cancer Risk_Total** – Sums the non-inhalation cancer risk for each multi-pathway chemical at each receptor in “tblCancerRisk_by chem_multi-path” table. Results are placed in the “tblMulti-path Cancer Risk_Total” table.

- **qryMake tblChronic HI_by Chem_multi-path** – Calculates the non-inhalation chronic HQ at each receptor for each multi-pathway chemical. Results are placed in the “tblChronic HQ_by chem_multi-path” table.
- **qryMake tblMulti-path Chronic HI_Total** – Sums the non-inhalation chronic HQ for each multi-pathway chemical at each receptor in “tblChronic HI_by chem_multi-path” table. Results are placed in the “tblMulti-path Chronic HQ_Total” table.

These four queries are repeated in the individual shipping and refinery databases for the non-inhalation multi-pathway calculation. Then another database combines the non-inhalation multi-pathway cancer risk and chronic HI from shipping and refinery and calculates total non-inhalation multi-pathway cancer risk and chronic HI from the operations.

1.7 Equivalency between SARAD and Hotspots Analysis Reporting Program (HARP)

ENVIRON evaluated the health impact due to emissions from the construction and operation activities from the facility on the surrounding communities through the inhalation pathway using SARAD. As mentioned above, SARAD was developed in accordance with methodologies recommended by OEHHA Hot Spots Guidance (OEHHA 2003) and BAAQMD CEQA guidelines (BAAQMD 2012). To verify to BAAQMD that the SARAD follows the methodologies that are in compliant with the regulatory requirements, an analysis was conducted to compare the results calculated using SARAD with the results calculated in HARP using the same exposure assumptions, toxicity information, source and emissions information, and air dispersion factors (χ/Q). HARP is a software program developed by Cal/EPA Air Resource Board (ARB) to assist with the programmatic requirements of the Air Toxics “Hot Spots” Program. It combines the emission inventory database, facility prioritization, air dispersion modeling, and risk assessment analysis into one computer software package. In this analysis, ENVIRON used HARP on-ramp to import the previously modeled site-specific source information, TAC emissions, and dispersion factors and converted them into standard input files that are required by HARP. Then the risk analysis module in HARP was used to conduct the cancer risk and chronic HI calculations based on the same default exposure assumptions and toxicity values recommended by OEHHA and BAAQMD as what was used in SARAD for shipping. In order to focus the comparison, ENVIRON identified the chemical (diesel particulate matter [DPM]) and top five source groups (i.e. mntug, SB_TUG, y_tug, x_tug, and mnbrg) that contribute the most to the cancer risk at the maximally exposed individual resident receptor (MEIR) in the shipping evaluation. Each of the five source groups was analyzed separately in HARP and compared with the cancer risk results calculated using SARAD. This analysis was conducted in the following three steps as described below:

In the first step, HARP On-Ramp was used to import and convert the AERMOD input and output files and emissions data to create a source file (*.SRC), a chemical-specific emissions file (*.EMS) for each source group, and a “ χ/Q ” file that includes the dispersion factors and receptor

location information (*.XOQ) that are required by HARP to conduct the health impact analysis. ENVIRON input the name and location for each of the source groups being analyzed in separate HARP On-Ramp runs. DPM emissions data for each source group was entered into HARP On-Ramp for their individual runs. Consistent with the approach used in the shipping evaluation with SARADs, ENVIRON used 70-year ASF-weighted DPM emissions for the cancer risk analysis for a 70-year resident (BAAQMD 2010), and un-weighted DPM emissions for the non-cancer chronic hazard analysis. AERMOD output files (i.e., plot files which present dispersion factors by source group by receptor location) were then uploaded to HARP On-Ramp. The AERMOD output files provide HARP On-Ramp with the dispersion modeling results and indicate the location of receptors in relation to the sources that were entered previously.

In the second step, the input files generated by HARP On-Ramp (*.SRC, *.EMS, and *.XOQ) were uploaded to HARP, exposure parameters were selected that match the parameters assumed in the shipping evaluation with SARAD for a 70-year resident. In this analysis, exposure settings under the OEHHA Derived (Adjusted) method which assumes the default residential exposure assumptions for a resident in the Hot Spot Guidance with the 80th percentile daily breathing rate were used to calculate the cancer risk for a 70-year resident through the inhalation pathway only at the MEIR location. The derived (OEHHA) method was used to calculate the non-cancer chronic HI through the inhalation pathway only at the same location.

In the third step, the HARP-calculated inhalation risks and chronic hazards for each source group were then compared to those calculated in the shipping evaluation with SARAD. As shown in the tables below, the cancer risks and non-cancer chronic HI calculated in the shipping SARADs for the five source groups that contribute the most to total cancer risk and chronic HI for DPM at the MEIR location were equivalent to the cancer risk and chronic hazards calculated in HARP for those source groups for DPM at the same location. Because in both HARP and SARADs the cancer risk and noncancer hazard calculations are conducted the same way for each chemical, each receptor, and each source group, this comparison demonstrates that the SARADs follow the HRA methodologies recommended by OEHHA and BAAQMD for conducting risk assessment and produce risk analysis results equivalent to HARP analysis results for the inhalation pathway.

TABLE A4.3-HRA-ATTACHMENT 3.9 COMPARISON OF ENVIRON-CALCULATED AND HARP-CALCULATED RESULTS CANCER RISK DUE TO EXPOSURE TO DPM EMISSIONS AT MEIR (R7013)

Source Group	ENVIRON-Calculated Risk (in a million)	HARP-Calculated Risk (in a million)
Mntug	20	20
sb_tug	18	18

y_tug	9.2	9.2
x_tug	8.9	8.9
Mnbrg	4.2	4.2

TABLE A4.3-HRA-ATTACHMENT 3.10 COMPARISON OF ENVIRON-CALCULATED AND HARP-CALCULATED RESULTS CHRONIC HI DUE TO EXPOSURE TO DPM EMISSIONS AT MEIR (R7013)²

Source Group	ENVIRON-Calculated Chronic HI	HARP-Calculated Chronic HI
mntug	0.0094	0.0094
SB_TUG	0.0079	0.0079
y_tug	0.0044	0.0044
x_tug	0.0043	0.0043
mnbrg	0.0028	0.0028

An example of the HARP runs used to show equivalence are presented in Attachments 5 and 6. Attachment 5 provides an example of a HARP input and output file for the equivalency test. Attachment 6 provides the HARP input and output files for multi-pathway scaling factors.

The above comparison demonstrates that the SARADs follow the HRA methodologies recommended by OEHHA and BAAQMD for conducting risk assessment and produce risk analysis results equivalent to HARP analysis results for the inhalation pathway. In addition, as discussed in section 1.6, the multi-pathway scaling factors for cancer risk and chronic HQ were derived from HARP version 1.7f using default residential exposure settings for a 70-year resident as recommended in the OEHHA Hot Spots Guidance and District HRSA Guidelines (BAAQMD 2010). Because both inputs (cancer risk and chronic HQ for inhalation pathway, and the corresponding multi-pathway scaling factors) follow the HRA methodologies recommended by OEHHA and BAAQMD for conducting risk assessment and/or use HARP directly, the multi-pathway analysis will produce results equivalent to HARP analysis results for the non-inhalation pathway.

² This location is the cancer risk MEIR rather than the chronic HI MEIR. However because in both HARP and SARAD the cancer risk and noncancer hazard calculations are conducted the same way for each chemical, each receptor, and each source group, this comparison still demonstrates that SARAD follows the HRA methodologies recommended by OEHHA and BAAQMD for conducting risk assessment and produce risk analysis results equivalent to HARP analysis results for the inhalation pathway.

1.8 References

Bay Area Air Quality Management District (BAAQMD). 2010. Air Toxics NSR Program Health Risk Screening Analysis (HRSA) Guidelines. January.

Office of Environmental Health Hazard Assessment (OEHHA). 2003. *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.
http://oehha.ca.gov/air/hot_spots/pdf/HRAguidefinal.pdf.

APPENDIX 4.3 - HRA

Attachment 4

Table A4.3-HRA-Attachment 4-1
Refinery Operations Dispersion Factors for the Cancer Risk MEISR¹
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m³/g/s)	Meteorological Data Station²
f_1160	0.0108	Onsite
f_1650	0.08503	Onsite
f_1660	0.0302	Onsite
fccu	0.00592	Onsite
h2_cool1	0.09528	Onsite
h2_cool2	0.09391	Onsite
h2_cool3	0.09243	Onsite
h2flare	0.0421	Onsite
h2train1	0.00904	Onsite
h2train2	0.01014	Onsite
h2venta	0.36798	Onsite
h2ventb	0.38356	Onsite
marineld	0.03176	Onsite
mrkrack	1.12897	Onsite
n_sulft	0.3746	Onsite
newhp	1.42465	Onsite
p_0047	0.04714	Onsite
p_0048	0.05705	Onsite
p_0049	0.01961	Onsite
p_0055	0.02679	Onsite
p_0057	0.01014	Onsite
p_0058	0.01003	Onsite
p_0109	0.06138	Onsite
p_0111	0.05962	Onsite
p_0116	0.05372	Onsite
p_0117	0.02404	Onsite
p_0119	0.02694	Onsite
p_0120	0.02359	Onsite
p_0121	0.01381	Onsite
p_0122	0.0139	Onsite
p_0127	0.05197	Onsite
p_0128	0.04142	Onsite
p_0129	0.03913	Onsite
p_0130	0.02946	Onsite
p_0147	0.04035	Onsite
p_0148	0.04138	Onsite
p_0215	0.0298	Onsite
p_0216	0.03158	Onsite
p_0217	0.02864	Onsite
p_0260	0.0097	Onsite

Table A4.3-HRA-Attachment 4-1
Refinery Operations Dispersion Factors for the Cancer Risk MEISR¹
Chevron Modernization Project
Richmond, California

p_311	0.01313	Onsite
p_4155	0.02607	Onsite
sru	0.45457	Onsite
sru1_e	0.03703	Onsite
sru1_n	0.03229	Onsite
sru2_e	0.03613	Onsite
sru2_n	0.03243	Onsite
sru3_e	0.03072	Onsite
sru3_n	0.02417	Onsite
t1899	9.65186	Pier
t3100	1.69944	Pier
t3213	0.65071	Onsite
tkc	0.91646	Onsite
4rheni ³	0.51574	Onsite
5rheni ³	0.62657	Onsite
p_0040 ³	0.01906	Onsite
p_0041 ³	0.01886	Onsite
p_0042 ³	0.02015	Onsite
p_0043 ³	0.01983	Onsite

Notes:

1. The location of the MEISR is (552,950 4198,200).
2. Either the onsite (or Gertrude St.) station or the Pier (or the NOAA) station was chosen for the air dispersion modeling based on the
3. These sources are Rheniformers sources, and the Rheniformer URM throughput is the same in the Baseline and 93% Project cases, so there are no delta emissions. There are delta emissions for the other three cases. Therefore dispersion factors for these sources are included here.

Abbreviations:

µg: microgram
g: gram
m: meter
s: second

Table A4.3-HRA-Attachment 4-2
Shipping Dispersion Factors for the Cancer Risk MEISR^{1,2}
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m ³ /g/s)
b11_brg	1.17936
b1_blr	0.110037
b1_gen	0.102461
b1_turb	0.0836558
b2_blr	0.0889773
b2_brg	1.24601
b2_gen	0.0848784
b2_turb	0.0711322
b3_blr	0.0805082
b3_brg	1.15169
b3_gen	0.0777306
b3_turb	0.0651897
b4_blr	0.0641256
b4_gen	0.061434
b4_turb	0.0500316
b9_brg	1.25689
ancbrg	0.671009
ancshp	0.0510571
anctug	0.66707
berbrg	2.03718
bertug	2.01443
mnbrg	1.5528
mnshp	0.0939765
mntug	1.53996
w_brg	1.34858
w_shp	0.103759
w_tug	1.33853
x_brg	0.632189
x_shp	0.0723361
x_tug	0.629716
y_brg	0.969278
y_shp	0.0898906
y_tug	0.964445
zn_brg	0.658016
zn_shp	0.0614958
zn_tug	0.654751
zs_brg	0.589703
zs_shp	0.0572728
zs_tug	0.586928
sb_tug	2.62668

Table A4.3-HRA-Attachment 4-2
Shipping Dispersion Factors for the Cancer Risk MEISR^{1,2}
Chevron Modernization Project
Richmond, California

x_e_brg_2	0.36
x_e_shp_2	0.0527
x_e_tug_2	0.359
x_e_brg	0.434167
x_e_shp	0.0583086
x_e_tug	0.432824

Notes:

1. The location of the MEISR is (552,950 4198,200).
2. The Pier (or the NOAA) station was chosen for the air dispersion modeling based on the location of the source.

Abbreviations:

µg: microgram
g: gram
m: meter
s: second

Table A4.3-HRA-Attachment 4-3
Trucking Dispersion Factors for the Cancer Risk MEISR^{1,2}
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m ³ /g/s)
CAS_G31T	0.27408
ETC_6	0.01523
ETC_7	0.02665
ETC_8	0.07678
ETC_9	0.19562
ITC_IDLN	0.42839
ITC_IDL	0.40197
ITOHMZ	1.40253
ITO_LPG	1.39849
ITOL_1	1.81941
ITOMR	1.77144
ITOO_1	1.24604
ITOO_2	1.41253
ITOO_3	0.57862
ITOS_1	1.24604
ITOS_2	1.41253
ITOS_3	0.5512
ITOT_1	2.0432
RAMPST	0.17888

Notes:

1. The location of the MEISR is (552,950 4198,200).
2. The onsite (or Gertrude St.) station was chosen for the air dispersion modeling based on the location of the source.

Abbreviations:

µg: microgram
g: gram
m: meter
s: second

Table A4.3-HRA-Attachment 4-4
Refinery Operations Dispersion Factors for the Chronic Non-Cancer Hazard MEISR¹
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m ³ /g/s)	Meteorological Data Station ²
f_1160	0.00197	Onsite
f_1650	0.02193	Onsite
f_1660	0.0044	Onsite
fccu	0.00061	Onsite
h2_cool1	0.01355	Onsite
h2_cool2	0.01338	Onsite
h2_cool3	0.0132	Onsite
h2flare	0.00597	Onsite
h2train1	0.00131	Onsite
h2train2	0.00165	Onsite
h2venta	0.25968	Onsite
h2ventb	0.32623	Onsite
marineld	0.00424	Onsite
mrkrack	0.17016	Onsite
n_sulfvt	0.96582	Onsite
newhp	0.93079	Onsite
p_0047	0.00619	Onsite
p_0048	0.00703	Onsite
p_0049	0.00353	Onsite
p_0055	0.00407	Onsite
p_0057	0.00163	Onsite
p_0058	0.00164	Onsite
p_0109	0.0062	Onsite
p_0111	0.00616	Onsite
p_0116	0.00604	Onsite
p_0117	0.01518	Onsite
p_0119	0.00415	Onsite
p_0120	0.0152	Onsite
p_0121	0.00196	Onsite
p_0122	0.00193	Onsite
p_0127	0.02759	Onsite
p_0128	0.02692	Onsite
p_0129	0.02167	Onsite
p_0130	0.0266	Onsite
p_0147	0.00537	Onsite
p_0148	0.00555	Onsite
p_0215	0.00694	Onsite
p_0216	0.00499	Onsite
p_0217	0.00549	Onsite
p_0260	0.00221	Onsite

Table A4.3-HRA-Attachment 4-4
Refinery Operations Dispersion Factors for the Chronic Non-Cancer Hazard MEISR¹
Chevron Modernization Project
Richmond, California

p_311	0.00175	Onsite
p_4155	0.00309	Onsite
sru	3.0838	Onsite
sru1_e	0.00952	Onsite
sru1_n	0.00794	Onsite
sru2_e	0.00853	Onsite
sru2_n	0.00742	Onsite
sru3_e	0.00611	Onsite
sru3_n	0.00461	Onsite
t1899	0.32286	Pier
t3100	0.30315	Pier
t3213	0.29751	Onsite
tkc	1.69801	Onsite
4rheni ³	0.07505	Onsite
5rheni ³	0.03456	Onsite
p_0040 ³	0.00364	Onsite
p_0041 ³	0.00362	Onsite
p_0042 ³	0.00354	Onsite
p_0043 ³	0.00351	Onsite

Notes:

1. The location of the MEISR is (551,200 4200,600).
2. Either the onsite (or Gertrude St.) station or the Pier (or the NOAA) station was chosen for the air dispersion modeling based on the location of the source.
3. These sources are Rheniformers sources, and the Rheniformer URM throughput is the same in the Baseline and 93% Project cases, so there are no delta emissions. There are delta emissions for the other three cases. Therefore dispersion factors for these sources are included here.

Abbreviations:

µg: microgram
g: gram
m: meter
s: second

Table A4.3-HRA-Attachment 4-5
Shipping Dispersion Factors for the Chronic Non-Cancer Hazard MEISR^{1,2}
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m ³ /g/s)
b11_brg	1.66284
b1_blr	0.160586
b1_gen	0.147074
b1_turb	0.123828
b2_blr	0.165127
b2_brg	1.49445
b2_gen	0.150983
b2_turb	0.127013
b3_blr	0.164997
b3_brg	1.54356
b3_gen	0.15092
b3_turb	0.127048
b4_blr	0.153654
b4_gen	0.141588
b4_turb	0.119504
b9_brg	1.57636
ancbrg	0.665016
ancshp	0.130918
anctug	0.665357
berbrg	1.4156
bertug	1.41542
mnbrg	1.01737
mnshp	0.192074
mntug	1.01738
w_brg	0.501085
w_shp	0.107898
w_tug	0.501156
x_brg	0.317121
x_shp	0.0832582
x_tug	0.316945
y_brg	0.508781
y_shp	0.109036
y_tug	0.508651
zn_brg	0.694913
zn_shp	0.1256
zn_tug	0.694988
zs_brg	0.620015
zs_shp	0.114848
zs_tug	0.62005
sb_tug	1.30299

Table A4.3-HRA-Attachment 4-5
Shipping Dispersion Factors for the Chronic Non-Cancer Hazard MEISR^{1,2}
Chevron Modernization Project
Richmond, California

x_e_brg_2	0.307
x_e_shp_2	0.088
x_e_tug_2	0.307
x_e_brg	0.330606
x_e_shp	0.091678
x_e_tug	0.330399

Notes:

1. The location of the MEISR is (551,200 4200,600).
2. The Pier (or the NOAA) station was chosen for the air dispersion modeling based on the lcoation of the source.

Abbreviations:

µg: microgram
g: gram
m: meter
s: second

Table A4.3-HRA-Attachment 4-6
Trucking Dispersion Factors for the Chronic Non-Cancer Hazard MEISR^{1,2}
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m ³ /g/s)
CAS_G31T	0.03196
ETC_6	0.01206
ETC_7	0.03418
ETC_8	0.05434
ETC_9	0.05221
ITC_IDLN	0.03326
ITC_IDL	0.08246
ITOH AZ	0.32243
ITO_LPG	0.54241
ITOL_1	0.31298
ITOMR	0.23924
ITOO_1	0.91305
ITOO_2	0.31844
ITOO_3	2.50963
ITOS_1	0.91305
ITOS_2	0.31844
ITOS_3	2.18525
ITOT_1	0.32855
RAMPST	0.00924

Notes:

1. The location of the MEISR is (551,200 4200,600).
2. The onsite (or Gertrude St.) station was chosen for the air dispersion modeling based on the location of the source.

Abbreviations:

µg: microgram
g: gram
m: meter
s: second

Table A4.3-HRA-Attachment 4-7
Refinery Operations Dispersion Factors for the Acute Non-Cancer Hazard MEISR¹
Chevron Modernization Project
Richmond, California

Source Group	1-hour Dispersion Factor (ug/m ³ /g/s)	Meteorological Data Station ²
f_1160	2.41792	Onsite
f_1650	5.18336	Onsite
f_1660	4.34079	Onsite
fccu	0.39217	Onsite
h2_cool1	7.60082	Onsite
h2_cool2	7.5927	Onsite
h2_cool3	7.55746	Onsite
h2flare	7.47398	Onsite
h2train1	1.6203	Onsite
h2train2	1.58058	Onsite
h2venta	138.55087	Onsite
h2ventb	62.4885	Onsite
marineld	2.90061	Onsite
mrkrack	35.45244	Onsite
n_sulfvt	67.85649	Onsite
newhp	242.07118	Onsite
p_0047	3.97564	Onsite
p_0048	4.16263	Onsite
p_0049	2.57843	Onsite
p_0055	3.80797	Onsite
p_0057	1.8225	Onsite
p_0058	1.82248	Onsite
p_0109	6.78643	Onsite
p_0111	6.81835	Onsite
p_0116	6.37438	Onsite
p_0117	16.46175	Onsite
p_0119	1.99826	Onsite
p_0120	11.9151	Onsite
p_0121	0.4705	Onsite
p_0122	0.49335	Onsite
p_0127	7.01736	Onsite
p_0128	5.73818	Onsite
p_0129	5.71183	Onsite
p_0130	5.58545	Onsite
p_0147	5.11957	Onsite
p_0148	5.21768	Onsite
p_0215	0.95978	Onsite
p_0216	2.09483	Onsite
p_0217	0.97053	Onsite
p_0260	0.9999	Onsite

Table A4.3-HRA-Attachment 4-7
Refinery Operations Dispersion Factors for the Acute Non-Cancer Hazard MEISR¹
Chevron Modernization Project
Richmond, California

p_311	0.53492	Onsite
p_4155	3.98796	Onsite
sru	579.20408	Onsite
sru1_e	2.16016	Onsite
sru1_n	1.85543	Onsite
sru2_e	2.14168	Onsite
sru2_n	1.99676	Onsite
sru3_e	2.34793	Onsite
sru3_n	1.81401	Onsite
t1899	99.19269	Pier
t3100	61.87325	Pier
t3213	29.85145	Onsite
tkc	376.42425	Onsite
4rheni ³	28.8813	Onsite
5rheni ³	17.24102	Onsite
p_0040 ³	3.05291	Onsite
p_0041 ³	3.06694	Onsite
p_0042 ³	2.77738	Onsite
p_0043 ³	2.80915	Onsite

Notes:

1. The location of the MEISR is (551,075.9 4200,861.5).
2. Either the onsite (or Gertrude St.) station or the Pier (or the NOAA) station was chosen for the air dispersion modeling based on the location of the source.
3. These sources are Rheniformers sources, and the Rheniformer URM throughput is the same in the Baseline and 93% Project cases, so there are no delta emissions. There are delta emissions for the other three cases. Therefore dispersion factors for these sources are included here.

Abbreviations:

µg: microgram
g: gram
m: meter
s: second

Table A4.3-HRA-Attachment 4-8
Shipping Dispersion Factors for the Acute Non-Cancer Hazard MEISR^{1,2}
Chevron Modernization Project
Richmond, California

Source Group	1-hour Dispersion Factor (ug/m ³ /g/s)
b11_brg	234.466
b1_blr	11.5169
b1_gen	11.628
b1_turb	8.96975
b2_blr	11.1043
b2_brg	212.427
b2_gen	11.2658
b2_turb	8.7598
b3_blr	10.5698
b3_brg	221.983
b3_gen	10.7544
b3_turb	8.39003
b4_blr	9.8957
b4_gen	9.98996
b4_turb	7.5846
b9_brg	226.389
ancbrg	116.123
ancshp	11.007
anctug	116.259
berbrg	119.772
bertug	120.4
mnbrg	55.9638
mnshp	9.44156
mntug	56.2463
w_brg	22.3547
w_shp	4.678
w_tug	22.3711
x_brg	30.4902
x_shp	5.39162
x_tug	30.4838
y_brg	63.8316
y_shp	7.82539
y_tug	63.9358
zn_brg	12.9095
zn_shp	2.81985
zn_tug	12.9513
zs_brg	12.7663
zs_shp	2.6082
zs_tug	12.8012
sb_tug	116.512

Table A4.3-HRA-Attachment 4-8
Shipping Dispersion Factors for the Acute Non-Cancer Hazard MEISR^{1,2}
Chevron Modernization Project
Richmond, California

x_e_brg_2	36.7
x_e_shp_2	7.34
x_e_tug_2	36.7
x_e_brg	38.715
x_e_shp	8.16923
x_e_tug	38.6831

Notes:

1. The location of the MEISR is (551,075.9 4200,861.5).
2. The Pier (or the NOAA) station was chosen for the air dispersion modeling based on the location of the source.

Abbreviations:

µg: microgram
g: gram
m: meter
s: second

Table A4.3-HRA-Attachment 4-9
Refinery Operations Dispersion Factors for the PM_{2.5} Concentration MEISR¹
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m ³ /g/s)	Meteorological Data Station ²
f_1160	0.13042	Onsite
f_1650	0.04965	Onsite
f_1660	0.02833	Onsite
fccu	0.11455	Onsite
h2_cool1	0.03587	Onsite
h2_cool2	0.03538	Onsite
h2_cool3	0.03492	Onsite
h2flare	0.02693	Onsite
h2train1	0.16423	Onsite
h2train2	0.13478	Onsite
h2venta	0.23796	Onsite
h2ventb	0.40089	Onsite
marineld	0.04956	Onsite
mrkrack	0.01256	Onsite
n_sulft	0.1451	Onsite
newhp	0.07526	Onsite
p_0047	0.02971	Onsite
p_0048	0.03001	Onsite
p_0049	0.04261	Onsite
p_0055	0.03072	Onsite
p_0057	0.21259	Onsite
p_0058	0.21033	Onsite
p_0109	0.02317	Onsite
p_0111	0.02298	Onsite
p_0116	0.02173	Onsite
p_0117	0.05122	Onsite
p_0119	0.03683	Onsite
p_0120	0.05302	Onsite
p_0121	0.10857	Onsite
p_0122	0.10875	Onsite
p_0127	0.03868	Onsite
p_0128	0.03681	Onsite
p_0129	0.03791	Onsite
p_0130	0.03672	Onsite
p_0147	0.04419	Onsite
p_0148	0.04472	Onsite
p_0215	0.03693	Onsite
p_0216	0.04555	Onsite
p_0217	0.03986	Onsite
p_0260	0.1213	Onsite

Table A4.3-HRA-Attachment 4-9
Refinery Operations Dispersion Factors for the PM_{2.5} Concentration MEISR¹
Chevron Modernization Project
Richmond, California

p_311	0.09209	Onsite
p_4155	0.02321	Onsite
sru	0.13064	Onsite
sru1_e	0.04975	Onsite
sru1_n	0.04721	Onsite
sru2_e	0.0498	Onsite
sru2_n	0.04784	Onsite
sru3_e	0.04928	Onsite
sru3_n	0.05244	Onsite
t1899	0.50332	Pier
t3100	1.45247	Pier
t3213	0.10591	Onsite
tkc	0.08422	Onsite
ctalky_a ⁴	0.15697	Onsite
ctalky_b ⁴	0.17314	Onsite
ctalky_c ⁴	0.12518	Onsite
ctalky_d ⁴	0.11974	Onsite
ctalky_e ⁴	0.11154	Onsite
ctalky_f ⁴	0.11128	Onsite
p_0040 ³	0.03083	Onsite
p_0041 ³	0.0308	Onsite
p_0042 ³	0.06583	Onsite
p_0043 ³	0.06494	Onsite

Notes:

1. The location of the MEISR is (552,450 4199,270).
2. Either the onsite (or Gertrude St.) station or the Pier (or the NOAA) station was chosen for the air dispersion modeling based on the location of the source.
3. These sources are Rheniformers sources, and the Rheniformer URM throughput is the same in the Baseline and 93% Project cases, so there are no delta emissions. There are delta emissions for the other three cases. Therefore dispersion factors for these sources are included here.
4. These cooling towers are only PM_{2.5} sources.

Abbreviations:

µg: microgram
g: gram
m: meter
s: second

Table A4.3-HRA-Attachment 4-10
Shipping Dispersion Factors for the PM_{2.5} Concentration MEISR^{1,2}
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m ³ /g/s)
b11_brg	0.157693
b1_blr	0.0815293
b1_gen	0.0797703
b1_turb	0.0732209
b2_blr	0.0835902
b2_brg	0.16146
b2_gen	0.0816118
b2_turb	0.0747339
b3_blr	0.0810426
b3_brg	0.153921
b3_gen	0.0794445
b3_turb	0.0726799
b4_blr	0.0685343
b4_gen	0.0672826
b4_turb	0.06099
b9_brg	0.186242
ancbrg	0.0363734
ancshp	0.0289443
anctug	0.0363643
berbrg	0.134858
bertug	0.134803
mnbrg	0.0878179
mnshp	0.0647945
mntug	0.0877912
w_brg	0.0603521
w_shp	0.0463154
w_tug	0.0603364
x_brg	0.0309451
x_shp	0.0277575
x_tug	0.0309417
y_brg	0.0516995
y_shp	0.0413367
y_tug	0.0516862
zn_brg	0.0349877
zn_shp	0.0278712
zn_tug	0.03498
zs_brg	0.0312195
zs_shp	0.0253057
zs_tug	0.0312134
sb_tug	0.157325
x_e_brg_2	0.0228

Table A4.3-HRA-Attachment 4-10
Shipping Dispersion Factors for the PM_{2.5} Concentration MEISR^{1,2}
Chevron Modernization Project
Richmond, California

x_e_shp_2	0.0218
x_e_tug_2	0.0228
x_e_brg	0.0249089
x_e_shp	0.0236492
x_e_tug	0.0249082

Notes:

1. The location of the MEISR is (552,450 4199,270).
2. The Pier (or the NOAA) station was chosen for the air dispersion modeling based on the location of the source.

Abbreviations:

µg: microgram
g: gram
m: meter
s: second

Table A4.3-HRA-Attachment 4-11
Trucking Dispersion Factors for the PM_{2.5} Concentration MEISR^{1,2}
Chevron Modernization Project
Richmond, California

Source Group	Annual Dispersion Factor (ug/m ³ /g/s)
CAS_G31T	0.01319
ETC_6	0.01143
ETC_7	0.00879
ETC_8	0.01833
ETC_9	0.01059
ITC_IDLN	0.01023
ITC_IDL	0.00174
ITOH AZ	0.00605
ITO_LPG	0.03177
ITOL_1	0.00699
ITOMR	0.00737
ITOO_1	0.05906
ITOO_2	0.00594
ITOO_3	0.1498
ITOS_1	0.05906
ITOS_2	0.00594
ITOS_3	0.13121
ITOT_1	0.00851
RAMPST	0.00628

Notes:

1. The location of the MEISR is (552,450 4199,270).
2. The onsite (or Gertrude St.) station was chosen for the air dispersion modeling based on the location of the source.

Abbreviations:

µg: microgram
g: gram
m: meter
s: second

Table A4.3-HRA-Attachment 4-12
Shipping Emission Rates for Baseline and Project 93% Case for Cancer Risk Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
Ammonia	7664417	1.08366E-05	1.19859E-05	g/s	ancshp	Risks
Ammonia	7664417	0.001005236	0.00110333	g/s	B1_BLR	Risks
Ammonia	7664417	0.000713873	0.000776054	g/s	B2_BLR	Risks
Ammonia	7664417	0.000649879	0.000710247	g/s	B3_BLR	Risks
Ammonia	7664417	0.002638016	0.003662751	g/s	B4_BLR	Risks
Ammonia	7664417	8.71018E-05	0.000128502	g/s	mnshp	Risks
Ammonia	7664417	1.05909E-06	1.14566E-06	g/s	w_shp	Risks
Ammonia	7664417	9.01581E-06	1.47641E-05	g/s	x_e_shp	Risks
Ammonia	7664417	9.01581E-06	1.47641E-05	g/s	x_e_shp_2	Risks
Ammonia	7664417	2.5834E-05	4.23053E-05	g/s	x_shp	Risks
Ammonia	7664417	4.30983E-05	5.93916E-05	g/s	y_shp	Risks
Ammonia	7664417	6.41807E-06	6.88831E-06	g/s	zn_shp	Risks
Ammonia	7664417	3.62993E-06	3.97902E-06	g/s	zs_shp	Risks
Arsenic	7440382	3.49569E-09	3.86643E-09	g/s	ancshp	Risks
Arsenic	7440382	3.2427E-07	3.55913E-07	g/s	B1_BLR	Risks
Arsenic	7440382	2.30282E-07	2.5034E-07	g/s	B2_BLR	Risks
Arsenic	7440382	2.09638E-07	2.29112E-07	g/s	B3_BLR	Risks
Arsenic	7440382	8.50973E-07	1.18153E-06	g/s	B4_BLR	Risks
Arsenic	7440382	2.80974E-08	4.14521E-08	g/s	mnshp	Risks
Arsenic	7440382	3.41643E-10	3.69569E-10	g/s	w_shp	Risks
Arsenic	7440382	2.90833E-09	4.76262E-09	g/s	x_e_shp	Risks
Arsenic	7440382	2.90833E-09	4.76262E-09	g/s	x_e_shp_2	Risks
Arsenic	7440382	8.33356E-09	1.36469E-08	g/s	x_shp	Risks
Arsenic	7440382	1.39027E-08	1.91586E-08	g/s	y_shp	Risks
Arsenic	7440382	2.07035E-09	2.22203E-09	g/s	zn_shp	Risks
Arsenic	7440382	1.17095E-09	1.28355E-09	g/s	zs_shp	Risks
benzene	71432	2.77599E-06	3.0704E-06	g/s	ancshp	Risks
benzene	71432	0.000257508	0.000282637	g/s	B1_BLR	Risks
benzene	71432	0.000182871	0.000198799	g/s	B2_BLR	Risks
benzene	71432	0.000166478	0.000181942	g/s	B3_BLR	Risks
benzene	71432	0.000675773	0.000938276	g/s	B4_BLR	Risks
benzene	71432	2.23126E-05	3.29179E-05	g/s	mnshp	Risks
benzene	71432	2.71305E-07	2.93481E-07	g/s	w_shp	Risks
benzene	71432	2.30955E-06	3.78208E-06	g/s	x_e_shp	Risks
benzene	71432	2.30955E-06	3.78208E-06	g/s	x_e_shp_2	Risks
benzene	71432	6.61783E-06	1.08372E-05	g/s	x_shp	Risks
benzene	71432	1.10404E-05	1.52142E-05	g/s	y_shp	Risks
benzene	71432	1.6441E-06	1.76456E-06	g/s	zn_shp	Risks
benzene	71432	9.29869E-07	1.01929E-06	g/s	zs_shp	Risks
Cadmium	7440439	5.02977E-09	5.56321E-09	g/s	ancshp	Risks
Cadmium	7440439	4.66575E-07	5.12105E-07	g/s	B1_BLR	Risks
Cadmium	7440439	3.3134E-07	3.60201E-07	g/s	B2_BLR	Risks
Cadmium	7440439	3.01638E-07	3.29657E-07	g/s	B3_BLR	Risks
Cadmium	7440439	1.22442E-06	1.70005E-06	g/s	B4_BLR	Risks
Cadmium	7440439	4.04279E-08	5.96434E-08	g/s	mnshp	Risks
Cadmium	7440439	4.91573E-10	5.31754E-10	g/s	w_shp	Risks

Table A4.3-HRA-Attachment 4-12
Shipping Emission Rates for Baseline and Project 93% Case for Cancer Risk Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
Cadmium	7440439	4.18464E-09	6.85268E-09	g/s	x_e_shp	Risks
Cadmium	7440439	4.18464E-09	6.85268E-09	g/s	x_e_shp_2	Risks
Cadmium	7440439	1.19907E-08	1.96358E-08	g/s	x_shp	Risks
Cadmium	7440439	2.00038E-08	2.75663E-08	g/s	y_shp	Risks
Cadmium	7440439	2.97892E-09	3.19717E-09	g/s	zn_shp	Risks
Cadmium	7440439	1.68481E-09	1.84684E-09	g/s	zs_shp	Risks
Chlorine	7782505	9.78794E-08	1.0826E-07	g/s	ancshp	Risks
Chlorine	7782505	9.07955E-06	9.96556E-06	g/s	B1_BLR	Risks
Chlorine	7782505	6.44788E-06	7.00952E-06	g/s	B2_BLR	Risks
Chlorine	7782505	5.86987E-06	6.41513E-06	g/s	B3_BLR	Risks
Chlorine	7782505	2.38272E-05	3.30829E-05	g/s	B4_BLR	Risks
Chlorine	7782505	7.86726E-07	1.16066E-06	g/s	mnshp	Risks
Chlorine	7782505	9.56601E-09	1.03479E-08	g/s	w_shp	Risks
Chlorine	7782505	8.14331E-08	1.33353E-07	g/s	x_e_shp	Risks
Chlorine	7782505	8.14331E-08	1.33353E-07	g/s	x_e_shp_2	Risks
Chlorine	7782505	2.3334E-07	3.82112E-07	g/s	x_shp	Risks
Chlorine	7782505	3.89275E-07	5.36441E-07	g/s	y_shp	Risks
Chlorine	7782505	5.79697E-08	6.2217E-08	g/s	zn_shp	Risks
Chlorine	7782505	3.27865E-08	3.59395E-08	g/s	zs_shp	Risks
chlorobenzene	108907	6.42591E-08	7.10741E-08	g/s	ancshp	Risks
chlorobenzene	108907	5.96084E-06	6.54252E-06	g/s	B1_BLR	Risks
chlorobenzene	108907	4.23312E-06	4.60184E-06	g/s	B2_BLR	Risks
chlorobenzene	108907	3.85365E-06	4.21162E-06	g/s	B3_BLR	Risks
chlorobenzene	108907	1.56429E-05	2.17193E-05	g/s	B4_BLR	Risks
chlorobenzene	108907	5.16496E-07	7.61988E-07	g/s	mnshp	Risks
chlorobenzene	108907	6.28021E-09	6.79355E-09	g/s	w_shp	Risks
chlorobenzene	108907	5.34619E-08	8.75481E-08	g/s	x_e_shp	Risks
chlorobenzene	108907	5.34619E-08	8.75481E-08	g/s	x_e_shp_2	Risks
chlorobenzene	108907	1.5319E-07	2.50862E-07	g/s	x_shp	Risks
chlorobenzene	108907	2.55564E-07	3.5218E-07	g/s	y_shp	Risks
chlorobenzene	108907	3.80578E-08	4.08462E-08	g/s	zn_shp	Risks
chlorobenzene	108907	2.15247E-08	2.35948E-08	g/s	zs_shp	Risks
Copper	7440508	8.80211E-09	9.73561E-09	g/s	ancshp	Risks
Copper	7440508	8.16507E-07	8.96184E-07	g/s	B1_BLR	Risks
Copper	7440508	5.79846E-07	6.30352E-07	g/s	B2_BLR	Risks
Copper	7440508	5.27866E-07	5.76901E-07	g/s	B3_BLR	Risks
Copper	7440508	2.14274E-06	2.97508E-06	g/s	B4_BLR	Risks
Copper	7440508	7.07487E-08	1.04376E-07	g/s	mnshp	Risks
Copper	7440508	8.60253E-10	9.3057E-10	g/s	w_shp	Risks
Copper	7440508	7.32312E-09	1.19922E-08	g/s	x_e_shp	Risks
Copper	7440508	7.32312E-09	1.19922E-08	g/s	x_e_shp_2	Risks
Copper	7440508	2.09838E-08	3.43626E-08	g/s	x_shp	Risks
Copper	7440508	3.50067E-08	4.82411E-08	g/s	y_shp	Risks
Copper	7440508	5.2131E-09	5.59505E-09	g/s	zn_shp	Risks
Copper	7440508	2.94842E-09	3.23197E-09	g/s	zs_shp	Risks
Diesel PM	9901	0.001824766	0.001938655	g/s	ancbrg	Risks

Table A4.3-HRA-Attachment 4-12
Shipping Emission Rates for Baseline and Project 93% Case for Cancer Risk Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
Diesel PM	9901	0.000484109	0.000535296	g/s	ancshp	Risks
Diesel PM	9901	0.044002916	0.048397705	g/s	B1_GEN	Risks
Diesel PM	9901	8.93358E-06	9.83056E-06	g/s	B11_BRG	Risks
Diesel PM	9901	0.004183021	0.004521732	g/s	B2_BRG	Risks
Diesel PM	9901	0.039669418	0.043099847	g/s	B2_GEN	Risks
Diesel PM	9901	0.003013431	0.003236712	g/s	B3_BRG	Risks
Diesel PM	9901	0.033839161	0.036911698	g/s	B3_GEN	Risks
Diesel PM	9901	0.037463869	0.013215554	g/s	B4_GEN	Risks
Diesel PM	9901	0.000125757	0.000138384	g/s	B9_BRG	Risks
Diesel PM	9901	0.000588695	0.000621071	g/s	berbrg	Risks
Diesel PM	9901	0.002723499	0.002926652	g/s	bertug	Risks
Diesel PM	9901	0.007545994	0.007961002	g/s	mnbrg	Risks
Diesel PM	9901	0.016524254	0.016811104	g/s	mnshp	Risks
Diesel PM	9901	0.034910305	0.037514352	g/s	mntug	Risks
Diesel PM	9901	0.021878428	0.021878428	g/s	SB_TUG	Risks
Diesel PM	9901	0.002092369	0.002195312	g/s	w_brg	Risks
Diesel PM	9901	0.000136305	0.000147652	g/s	w_shp	Risks
Diesel PM	9901	0.000394459	0.000410021	g/s	w_tug	Risks
Diesel PM	9901	0.003305059	0.003487893	g/s	x_brg	Risks
Diesel PM	9901	0.001153431	0.001217238	g/s	x_e_brg	Risks
Diesel PM	9901	0.001153431	0.001217238	g/s	x_e_brg_2	Risks
Diesel PM	9901	0.00439079	0.004585196	g/s	x_e_shp	Risks
Diesel PM	9901	0.00439079	0.004585196	g/s	x_e_shp_2	Risks
Diesel PM	9901	0.013352672	0.014370969	g/s	x_e_tug	Risks
Diesel PM	9901	0.013352672	0.014370969	g/s	x_e_tug_2	Risks
Diesel PM	9901	0.012581434	0.013138488	g/s	x_shp	Risks
Diesel PM	9901	0.038260948	0.04117879	g/s	x_tug	Risks
Diesel PM	9901	0.003701557	0.0039062	g/s	y_brg	Risks
Diesel PM	9901	0.007535932	0.00774532	g/s	y_shp	Risks
Diesel PM	9901	0.025931076	0.027888947	g/s	y_tug	Risks
Diesel PM	9901	0.001728749	0.001814575	g/s	zn_brg	Risks
Diesel PM	9901	0.001247602	0.001334393	g/s	zn_shp	Risks
Diesel PM	9901	0.00099011	0.00106964	g/s	zn_tug	Risks
Diesel PM	9901	0.001415468	0.00148395	g/s	zs_brg	Risks
Diesel PM	9901	0.000548967	0.000600782	g/s	zs_shp	Risks
Diesel PM	9901	0.001061973	0.001150763	g/s	zs_tug	Risks
ethylbenzene	100414	8.99627E-08	9.95037E-08	g/s	ancshp	Risks
ethylbenzene	100414	8.34518E-06	9.15952E-06	g/s	B1_BLR	Risks
ethylbenzene	100414	5.92636E-06	6.44257E-06	g/s	B2_BLR	Risks
ethylbenzene	100414	5.3951E-06	5.89626E-06	g/s	B3_BLR	Risks
ethylbenzene	100414	2.19E-05	3.04071E-05	g/s	B4_BLR	Risks
ethylbenzene	100414	7.23094E-07	1.06678E-06	g/s	mnshp	Risks
ethylbenzene	100414	8.79229E-09	9.51097E-09	g/s	w_shp	Risks
ethylbenzene	100414	7.48466E-08	1.22567E-07	g/s	x_e_shp	Risks
ethylbenzene	100414	7.48466E-08	1.22567E-07	g/s	x_e_shp_2	Risks
ethylbenzene	100414	2.14467E-07	3.51206E-07	g/s	x_shp	Risks

Table A4.3-HRA-Attachment 4-12
Shipping Emission Rates for Baseline and Project 93% Case for Cancer Risk Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
ethylbenzene	100414	3.57789E-07	4.93052E-07	g/s	y_shp	Risks
ethylbenzene	100414	5.3281E-08	5.71847E-08	g/s	zn_shp	Risks
ethylbenzene	100414	3.01346E-08	3.30327E-08	g/s	zs_shp	Risks
formaldehyde	50000	1.28518E-07	1.42148E-07	g/s	ancshp	Risks
formaldehyde	50000	1.19217E-05	1.3085E-05	g/s	B1_BLR	Risks
formaldehyde	50000	8.46623E-06	9.20367E-06	g/s	B2_BLR	Risks
formaldehyde	50000	7.70729E-06	8.42323E-06	g/s	B3_BLR	Risks
formaldehyde	50000	3.12858E-05	4.34387E-05	g/s	B4_BLR	Risks
formaldehyde	50000	1.03299E-06	1.52398E-06	g/s	mnshp	Risks
formaldehyde	50000	1.25604E-08	1.35871E-08	g/s	w_shp	Risks
formaldehyde	50000	1.06924E-07	1.75096E-07	g/s	x_e_shp	Risks
formaldehyde	50000	1.06924E-07	1.75096E-07	g/s	x_e_shp_2	Risks
formaldehyde	50000	3.06381E-07	5.01723E-07	g/s	x_shp	Risks
formaldehyde	50000	5.11127E-07	7.0436E-07	g/s	y_shp	Risks
formaldehyde	50000	7.61157E-08	8.16924E-08	g/s	zn_shp	Risks
formaldehyde	50000	4.30495E-08	4.71895E-08	g/s	zs_shp	Risks
isomers of xylene	1330207	4.36962E-07	4.83304E-07	g/s	ancshp	Risks
isomers of xylene	1330207	4.05337E-05	4.44891E-05	g/s	B1_BLR	Risks
isomers of xylene	1330207	2.87852E-05	3.12925E-05	g/s	B2_BLR	Risks
isomers of xylene	1330207	2.62048E-05	2.8639E-05	g/s	B3_BLR	Risks
isomers of xylene	1330207	0.000106372	0.000147692	g/s	B4_BLR	Risks
isomers of xylene	1330207	3.51217E-06	5.18152E-06	g/s	mnshp	Risks
isomers of xylene	1330207	4.27054E-08	4.61962E-08	g/s	w_shp	Risks
isomers of xylene	1330207	3.63541E-07	5.95327E-07	g/s	x_e_shp	Risks
isomers of xylene	1330207	3.63541E-07	5.95327E-07	g/s	x_e_shp_2	Risks
isomers of xylene	1330207	1.0417E-06	1.70586E-06	g/s	x_shp	Risks
isomers of xylene	1330207	1.73783E-06	2.39482E-06	g/s	y_shp	Risks
isomers of xylene	1330207	2.58793E-07	2.77754E-07	g/s	zn_shp	Risks
isomers of xylene	1330207	1.46368E-07	1.60444E-07	g/s	zs_shp	Risks
Lead	7439921	5.59311E-08	6.18629E-08	g/s	ancshp	Risks
Lead	7439921	5.18832E-06	5.69461E-06	g/s	B1_BLR	Risks
Lead	7439921	3.68451E-06	4.00544E-06	g/s	B2_BLR	Risks
Lead	7439921	3.35421E-06	3.66579E-06	g/s	B3_BLR	Risks
Lead	7439921	1.36156E-05	1.89045E-05	g/s	B4_BLR	Risks
Lead	7439921	4.49558E-07	6.63234E-07	g/s	mnshp	Risks
Lead	7439921	5.46629E-09	5.91311E-09	g/s	w_shp	Risks
Lead	7439921	4.65332E-08	7.62018E-08	g/s	x_e_shp	Risks
Lead	7439921	4.65332E-08	7.62018E-08	g/s	x_e_shp_2	Risks
Lead	7439921	1.33337E-07	2.1835E-07	g/s	x_shp	Risks
Lead	7439921	2.22443E-07	3.06537E-07	g/s	y_shp	Risks
Lead	7439921	3.31255E-08	3.55525E-08	g/s	zn_shp	Risks
Lead	7439921	1.87351E-08	2.05369E-08	g/s	zs_shp	Risks
Manganese	7439965	0	0	g/s	ancshp	Risks
Manganese	7439965	0	0	g/s	B1_BLR	Risks
Manganese	7439965	0	0	g/s	B2_BLR	Risks
Manganese	7439965	0	0	g/s	B3_BLR	Risks

Table A4.3-HRA-Attachment 4-12
Shipping Emission Rates for Baseline and Project 93% Case for Cancer Risk Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
Manganese	7439965	0	0	g/s	B4_BLR	Risks
Manganese	7439965	0	0	g/s	mnshp	Risks
Manganese	7439965	0	0	g/s	w_shp	Risks
Manganese	7439965	0	0	g/s	x_e_shp	Risks
Manganese	7439965	0	0	g/s	x_e_shp_2	Risks
Manganese	7439965	0	0	g/s	x_shp	Risks
Manganese	7439965	0	0	g/s	y_shp	Risks
Manganese	7439965	0	0	g/s	zn_shp	Risks
Manganese	7439965	0	0	g/s	zs_shp	Risks
m-xylene	108383	5.78332E-07	6.39666E-07	g/s	ancshp	Risks
m-xylene	108383	5.36476E-05	5.88827E-05	g/s	B1_BLR	Risks
m-xylene	108383	3.80981E-05	4.14165E-05	g/s	B2_BLR	Risks
m-xylene	108383	3.46828E-05	3.79046E-05	g/s	B3_BLR	Risks
m-xylene	108383	0.000140786	0.000195474	g/s	B4_BLR	Risks
m-xylene	108383	4.64846E-06	6.85789E-06	g/s	mnshp	Risks
m-xylene	108383	5.65219E-08	6.1142E-08	g/s	w_shp	Risks
m-xylene	108383	4.81157E-07	7.87933E-07	g/s	x_e_shp	Risks
m-xylene	108383	4.81157E-07	7.87933E-07	g/s	x_e_shp_2	Risks
m-xylene	108383	1.37871E-06	2.25775E-06	g/s	x_shp	Risks
m-xylene	108383	2.30007E-06	3.16962E-06	g/s	y_shp	Risks
m-xylene	108383	3.4252E-07	3.67616E-07	g/s	zn_shp	Risks
m-xylene	108383	1.93723E-07	2.12353E-07	g/s	zs_shp	Risks
naphthalene	91203	8.99627E-08	9.95037E-08	g/s	ancshp	Risks
naphthalene	91203	8.34518E-06	9.15952E-06	g/s	B1_BLR	Risks
naphthalene	91203	5.92636E-06	6.44257E-06	g/s	B2_BLR	Risks
naphthalene	91203	5.3951E-06	5.89626E-06	g/s	B3_BLR	Risks
naphthalene	91203	2.19E-05	3.04071E-05	g/s	B4_BLR	Risks
naphthalene	91203	7.23094E-07	1.06678E-06	g/s	mnshp	Risks
naphthalene	91203	8.79229E-09	9.51097E-09	g/s	w_shp	Risks
naphthalene	91203	7.48466E-08	1.22567E-07	g/s	x_e_shp	Risks
naphthalene	91203	7.48466E-08	1.22567E-07	g/s	x_e_shp_2	Risks
naphthalene	91203	2.14467E-07	3.51206E-07	g/s	x_shp	Risks
naphthalene	91203	3.57789E-07	4.93052E-07	g/s	y_shp	Risks
naphthalene	91203	5.3281E-08	5.71847E-08	g/s	zn_shp	Risks
naphthalene	91203	3.01346E-08	3.30327E-08	g/s	zs_shp	Risks
n-hexane	110543	2.04344E-06	2.26015E-06	g/s	ancshp	Risks
n-hexane	110543	0.000189555	0.000208052	g/s	B1_BLR	Risks
n-hexane	110543	0.000134613	0.000146338	g/s	B2_BLR	Risks
n-hexane	110543	0.000122546	0.000133929	g/s	B3_BLR	Risks
n-hexane	110543	0.000497444	0.000690675	g/s	B4_BLR	Risks
n-hexane	110543	1.64246E-05	2.42312E-05	g/s	mnshp	Risks
n-hexane	110543	1.99711E-07	2.16035E-07	g/s	w_shp	Risks
n-hexane	110543	1.70009E-06	2.78403E-06	g/s	x_e_shp	Risks
n-hexane	110543	1.70009E-06	2.78403E-06	g/s	x_e_shp_2	Risks
n-hexane	110543	4.87146E-06	7.9774E-06	g/s	x_shp	Risks
n-hexane	110543	8.12693E-06	1.11993E-05	g/s	y_shp	Risks

Table A4.3-HRA-Attachment 4-12
Shipping Emission Rates for Baseline and Project 93% Case for Cancer Risk Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
n-hexane	110543	1.21024E-06	1.29891E-06	g/s	zn_shp	Risks
n-hexane	110543	6.84487E-07	7.50313E-07	g/s	zs_shp	Risks
Nickel	7440020	1.25493E-06	1.38802E-06	g/s	ancshp	Risks
Nickel	7440020	0.00011641	0.00012777	g/s	B1_BLR	Risks
Nickel	7440020	8.26694E-05	8.98702E-05	g/s	B2_BLR	Risks
Nickel	7440020	7.52587E-05	8.22495E-05	g/s	B3_BLR	Risks
Nickel	7440020	0.000305493	0.000424162	g/s	B4_BLR	Risks
Nickel	7440020	1.00867E-05	1.4881E-05	g/s	mnshp	Risks
Nickel	7440020	1.22647E-07	1.32673E-07	g/s	w_shp	Risks
Nickel	7440020	1.04407E-06	1.70974E-06	g/s	x_e_shp	Risks
Nickel	7440020	1.04407E-06	1.70974E-06	g/s	x_e_shp_2	Risks
Nickel	7440020	2.99169E-06	4.89913E-06	g/s	x_shp	Risks
Nickel	7440020	4.99096E-06	6.8778E-06	g/s	y_shp	Risks
Nickel	7440020	7.43239E-07	7.97694E-07	g/s	zn_shp	Risks
Nickel	7440020	4.20361E-07	4.60787E-07	g/s	zs_shp	Risks
o-xylene	95476	3.98406E-07	4.40659E-07	g/s	ancshp	Risks
o-xylene	95476	3.69572E-05	4.05636E-05	g/s	B1_BLR	Risks
o-xylene	95476	2.62453E-05	2.85314E-05	g/s	B2_BLR	Risks
o-xylene	95476	2.38926E-05	2.6112E-05	g/s	B3_BLR	Risks
o-xylene	95476	9.69859E-05	0.00013466	g/s	B4_BLR	Risks
o-xylene	95476	3.20227E-06	4.72432E-06	g/s	mnshp	Risks
o-xylene	95476	3.89373E-08	4.212E-08	g/s	w_shp	Risks
o-xylene	95476	3.31464E-07	5.42798E-07	g/s	x_e_shp	Risks
o-xylene	95476	3.31464E-07	5.42798E-07	g/s	x_e_shp_2	Risks
o-xylene	95476	9.49781E-07	1.55534E-06	g/s	x_shp	Risks
o-xylene	95476	1.58449E-06	2.18352E-06	g/s	y_shp	Risks
o-xylene	95476	2.35959E-07	2.53247E-07	g/s	zn_shp	Risks
o-xylene	95476	1.33453E-07	1.46287E-07	g/s	zs_shp	Risks
propene	115071	5.86043E-06	6.48195E-06	g/s	ancshp	Risks
propene	115071	0.000543629	0.000596678	g/s	B1_BLR	Risks
propene	115071	0.00038606	0.000419687	g/s	B2_BLR	Risks
propene	115071	0.000351453	0.000384099	g/s	B3_BLR	Risks
propene	115071	0.001426631	0.001980805	g/s	B4_BLR	Risks
propene	115071	4.71044E-05	6.94933E-05	g/s	mnshp	Risks
propene	115071	5.72755E-07	6.19572E-07	g/s	w_shp	Risks
propene	115071	4.87572E-06	7.98438E-06	g/s	x_e_shp	Risks
propene	115071	4.87572E-06	7.98438E-06	g/s	x_e_shp_2	Risks
propene	115071	1.3971E-05	2.28786E-05	g/s	x_shp	Risks
propene	115071	2.33074E-05	3.21188E-05	g/s	y_shp	Risks
propene	115071	3.47087E-06	3.72517E-06	g/s	zn_shp	Risks
propene	115071	1.96306E-06	2.15184E-06	g/s	zs_shp	Risks
Selenium	7782492	3.49569E-09	3.86643E-09	g/s	ancshp	Risks
Selenium	7782492	3.2427E-07	3.55913E-07	g/s	B1_BLR	Risks
Selenium	7782492	2.30282E-07	2.5034E-07	g/s	B2_BLR	Risks
Selenium	7782492	2.09638E-07	2.29112E-07	g/s	B3_BLR	Risks
Selenium	7782492	8.50973E-07	1.18153E-06	g/s	B4_BLR	Risks

Table A4.3-HRA-Attachment 4-12
Shipping Emission Rates for Baseline and Project 93% Case for Cancer Risk Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
Selenium	7782492	2.80974E-08	4.14521E-08	g/s	mnshp	Risks
Selenium	7782492	3.41643E-10	3.69569E-10	g/s	w_shp	Risks
Selenium	7782492	2.90833E-09	4.76262E-09	g/s	x_e_shp	Risks
Selenium	7782492	2.90833E-09	4.76262E-09	g/s	x_e_shp_2	Risks
Selenium	7782492	8.33356E-09	1.36469E-08	g/s	x_shp	Risks
Selenium	7782492	1.39027E-08	1.91586E-08	g/s	y_shp	Risks
Selenium	7782492	2.07035E-09	2.22203E-09	g/s	zn_shp	Risks
Selenium	7782492	1.17095E-09	1.28355E-09	g/s	zs_shp	Risks
Silicon	1175	1.55558E-06	1.72056E-06	g/s	ancshp	Risks
Silicon	1175	0.0001443	0.000158381	g/s	B1_BLR	Risks
Silicon	1175	0.000102475	0.000111401	g/s	B2_BLR	Risks
Silicon	1175	9.32891E-05	0.000101955	g/s	B3_BLR	Risks
Silicon	1175	0.000378683	0.000525782	g/s	B4_BLR	Risks
Silicon	1175	1.25033E-05	1.84462E-05	g/s	mnshp	Risks
Silicon	1175	1.52031E-07	1.64458E-07	g/s	w_shp	Risks
Silicon	1175	1.29421E-06	2.11936E-06	g/s	x_e_shp	Risks
Silicon	1175	1.29421E-06	2.11936E-06	g/s	x_e_shp_2	Risks
Silicon	1175	3.70843E-06	6.07286E-06	g/s	x_shp	Risks
Silicon	1175	6.18669E-06	8.52557E-06	g/s	y_shp	Risks
Silicon	1175	9.21304E-07	9.88805E-07	g/s	zn_shp	Risks
Silicon	1175	5.21071E-07	5.71182E-07	g/s	zs_shp	Risks
Sulfate	9960	7.7214E-05	8.54029E-05	g/s	ancshp	Risks
Sulfate	9960	0.00716257	0.007861516	g/s	B1_BLR	Risks
Sulfate	9960	0.00508653	0.005529584	g/s	B2_BLR	Risks
Sulfate	9960	0.004630557	0.005060696	g/s	B3_BLR	Risks
Sulfate	9960	0.01879655	0.026098056	g/s	B4_BLR	Risks
Sulfate	9960	0.000620623	0.000915607	g/s	mnshp	Risks
Sulfate	9960	7.54632E-06	8.16316E-06	g/s	w_shp	Risks
Sulfate	9960	6.424E-05	0.000105198	g/s	x_e_shp	Risks
Sulfate	9960	6.424E-05	0.000105198	g/s	x_e_shp_2	Risks
Sulfate	9960	0.000184074	0.000301436	g/s	x_shp	Risks
Sulfate	9960	0.000307086	0.000423181	g/s	y_shp	Risks
Sulfate	9960	4.57304E-05	4.9081E-05	g/s	zn_shp	Risks
Sulfate	9960	2.58642E-05	2.83516E-05	g/s	zs_shp	Risks
toluene	108883	2.76314E-06	3.05618E-06	g/s	ancshp	Risks
toluene	108883	0.000256316	0.000281328	g/s	B1_BLR	Risks
toluene	108883	0.000182024	0.000197879	g/s	B2_BLR	Risks
toluene	108883	0.000165707	0.0001811	g/s	B3_BLR	Risks
toluene	108883	0.000672644	0.000933932	g/s	B4_BLR	Risks
toluene	108883	2.22093E-05	3.27655E-05	g/s	mnshp	Risks
toluene	108883	2.70049E-07	2.92123E-07	g/s	w_shp	Risks
toluene	108883	2.29886E-06	3.76457E-06	g/s	x_e_shp	Risks
toluene	108883	2.29886E-06	3.76457E-06	g/s	x_e_shp_2	Risks
toluene	108883	6.58719E-06	1.0787E-05	g/s	x_shp	Risks
toluene	108883	1.09892E-05	1.51437E-05	g/s	y_shp	Risks
toluene	108883	1.63649E-06	1.75639E-06	g/s	zn_shp	Risks

Table A4.3-HRA-Attachment 4-12
Shipping Emission Rates for Baseline and Project 93% Case for Cancer Risk Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
toluene	108883	9.25564E-07	1.01457E-06	g/s	zs_shp	Risks
Vanadium	7440622	3.20019E-06	3.53959E-06	g/s	ancshp	Risks
Vanadium	7440622	0.000296858	0.000325827	g/s	B1_BLR	Risks
Vanadium	7440622	0.000210815	0.000229178	g/s	B2_BLR	Risks
Vanadium	7440622	0.000191917	0.000209745	g/s	B3_BLR	Risks
Vanadium	7440622	0.000779038	0.001081655	g/s	B4_BLR	Risks
Vanadium	7440622	2.57222E-05	3.79481E-05	g/s	mnshp	Risks
Vanadium	7440622	3.12763E-07	3.38329E-07	g/s	w_shp	Risks
Vanadium	7440622	2.66248E-06	4.36002E-06	g/s	x_e_shp	Risks
Vanadium	7440622	2.66248E-06	4.36002E-06	g/s	x_e_shp_2	Risks
Vanadium	7440622	7.6291E-06	1.24933E-05	g/s	x_shp	Risks
Vanadium	7440622	1.27274E-05	1.75391E-05	g/s	y_shp	Risks
Vanadium	7440622	1.89533E-06	2.0342E-06	g/s	zn_shp	Risks
Vanadium	7440622	1.07196E-06	1.17505E-06	g/s	zs_shp	Risks
PM2.5	EDF213	0.00083866	0.00090878	g/s	zs_tug	PM2.5
PM2.5	EDF213	0.00032428	0.000354934	g/s	zs_shp	PM2.5
PM2.5	EDF213	0.00140693	0.00147525	g/s	zs_brg	PM2.5
PM2.5	EDF213	0.000781908	0.000844715	g/s	zn_tug	PM2.5
PM2.5	EDF213	0.000723884	0.000774412	g/s	zn_shp	PM2.5
PM2.5	EDF213	0.001745181	0.001831808	g/s	zn_brg	PM2.5
PM2.5	EDF213	0.019150207	0.020624665	g/s	y_tug	PM2.5
PM2.5	EDF213	0.004403447	0.00463367	g/s	y_shp	PM2.5
PM2.5	EDF213	0.003790683	0.004000542	g/s	y_brg	PM2.5
PM2.5	EDF213	0.028339611	0.030542602	g/s	x_tug	PM2.5
PM2.5	EDF213	0.007022109	0.007442546	g/s	x_shp	PM2.5
PM2.5	EDF213	0.009989132	0.010765641	g/s	x_e_tug_2	PM2.5
PM2.5	EDF213	0.009989132	0.010765641	g/s	x_e_tug	PM2.5
PM2.5	EDF213	0.002472634	0.002620642	g/s	x_e_shp_2	PM2.5
PM2.5	EDF213	0.002472634	0.002620642	g/s	x_e_shp	PM2.5
PM2.5	EDF213	0.001197825	0.001264159	g/s	x_e_brg_2	PM2.5
PM2.5	EDF213	0.001197825	0.001264159	g/s	x_e_brg	PM2.5
PM2.5	EDF213	0.003403337	0.003591811	g/s	x_brg	PM2.5
PM2.5	EDF213	0.000311512	0.000323802	g/s	w_tug	PM2.5
PM2.5	EDF213	8.16441E-05	8.84294E-05	g/s	w_shp	PM2.5
PM2.5	EDF213	0.002089769	0.002193049	g/s	w_brg	PM2.5
PM2.5	EDF213	0.014570776	0.014570776	g/s	SB_TUG	PM2.5
PM2.5	EDF213	0.025521979	0.027470043	g/s	mntug	PM2.5
PM2.5	EDF213	0.00960268	0.010054405	g/s	mnshp	PM2.5
PM2.5	EDF213	0.007727779	0.008153524	g/s	mnbrg	PM2.5
PM2.5	EDF213	0.001991076	0.002143053	g/s	bertug	PM2.5
PM2.5	EDF213	0.000602876	0.000636091	g/s	berbrg	PM2.5
PM2.5	EDF213	9.89711E-05	0.000108403	g/s	B9_BRG	PM2.5
PM2.5	EDF213	0.020360111	0.007182124	g/s	B4_GEN	PM2.5
PM2.5	EDF213	0.018850663	0.026173189	g/s	B4_BLR	PM2.5
PM2.5	EDF213	0.018390228	0.020060028	g/s	B3_GEN	PM2.5
PM2.5	EDF213	0.002518919	0.002705313	g/s	B3_BRG	PM2.5

Table A4.3-HRA-Attachment 4-12
Shipping Emission Rates for Baseline and Project 93% Case for Cancer Risk Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
PM2.5	EDF213	0.004643887	0.005075265	g/s	B3_BLR	PM2.5
PM2.5	EDF213	0.021558738	0.023423039	g/s	B2_GEN	PM2.5
PM2.5	EDF213	0.003179186	0.003446479	g/s	B2_BRG	PM2.5
PM2.5	EDF213	0.005101174	0.005545503	g/s	B2_BLR	PM2.5
PM2.5	EDF213	7.03074E-06	7.70073E-06	g/s	B11_BRG	PM2.5
PM2.5	EDF213	0.023913821	0.026302213	g/s	B1_GEN	PM2.5
PM2.5	EDF213	0.00718319	0.007884148	g/s	B1_BLR	PM2.5
PM2.5	EDF213	0.00034053	0.000376561	g/s	ancshp	PM2.5
PM2.5	EDF213	0.001176491	0.001249527	g/s	ancbrg	PM2.5

Table A4.3-HRA-Attachment 4-13

Shipping Emission Rates for Baseline and Project 93% Case for Chronic and Acute Non-cancer hazard Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
Ammonia	7664417	6.4014E-06	7.0803E-06	g/s	ancshp	Chronic and Acute
Ammonia	7664417	0.00059381	0.000651756	g/s	B1_BLR	Chronic and Acute
Ammonia	7664417	0.000421697	0.000458428	g/s	B2_BLR	Chronic and Acute
Ammonia	7664417	0.000383895	0.000419555	g/s	B3_BLR	Chronic and Acute
Ammonia	7664417	0.001558321	0.00216365	g/s	B4_BLR	Chronic and Acute
Ammonia	7664417	5.14525E-05	7.59081E-05	g/s	mnshp	Chronic and Acute
Ammonia	7664417	6.25625E-07	6.76764E-07	g/s	w_shp	Chronic and Acute
Ammonia	7664417	5.33645E-06	8.73886E-06	g/s	x_e_shp	Chronic and Acute
Ammonia	7664417	5.33645E-06	8.73886E-06	g/s	x_e_shp_2	Chronic and Acute
Ammonia	7664417	1.52606E-05	2.49905E-05	g/s	x_shp	Chronic and Acute
Ammonia	7664417	2.54589E-05	3.50837E-05	g/s	y_shp	Chronic and Acute
Ammonia	7664417	3.79127E-06	4.06904E-06	g/s	zn_shp	Chronic and Acute
Ammonia	7664417	2.14426E-06	2.35048E-06	g/s	zs_shp	Chronic and Acute
Arsenic	7440382	2.06497E-09	2.28397E-09	g/s	ancshp	Chronic and Acute
Arsenic	7440382	1.91552E-07	2.10244E-07	g/s	B1_BLR	Chronic and Acute
Arsenic	7440382	1.36031E-07	1.4788E-07	g/s	B2_BLR	Chronic and Acute
Arsenic	7440382	1.23837E-07	1.3534E-07	g/s	B3_BLR	Chronic and Acute
Arsenic	7440382	5.02684E-07	6.97952E-07	g/s	B4_BLR	Chronic and Acute
Arsenic	7440382	1.65976E-08	2.44865E-08	g/s	mnshp	Chronic and Acute
Arsenic	7440382	2.01815E-10	2.18311E-10	g/s	w_shp	Chronic and Acute
Arsenic	7440382	1.72143E-09	2.81899E-09	g/s	x_e_shp	Chronic and Acute
Arsenic	7440382	1.72143E-09	2.81899E-09	g/s	x_e_shp_2	Chronic and Acute
Arsenic	7440382	4.92278E-09	8.06144E-09	g/s	x_shp	Chronic and Acute
Arsenic	7440382	8.21254E-09	1.13173E-08	g/s	y_shp	Chronic and Acute
Arsenic	7440382	1.22299E-09	1.31259E-09	g/s	zn_shp	Chronic and Acute
Arsenic	7440382	6.91698E-10	7.58218E-10	g/s	zs_shp	Chronic and Acute
benzene	71432	1.63983E-06	1.81374E-06	g/s	ancshp	Chronic and Acute
benzene	71432	0.000152115	0.000166958	g/s	B1_BLR	Chronic and Acute
benzene	71432	0.000108025	0.000117434	g/s	B2_BLR	Chronic and Acute
benzene	71432	9.83411E-05	0.000107476	g/s	B3_BLR	Chronic and Acute
benzene	71432	0.000399191	0.000554256	g/s	B4_BLR	Chronic and Acute
benzene	71432	1.31804E-05	1.94452E-05	g/s	mnshp	Chronic and Acute
benzene	71432	1.60265E-07	1.73365E-07	g/s	w_shp	Chronic and Acute
benzene	71432	1.36634E-06	2.23749E-06	g/s	x_e_shp	Chronic and Acute
benzene	71432	1.36634E-06	2.23749E-06	g/s	x_e_shp_2	Chronic and Acute
benzene	71432	3.90927E-06	6.40173E-06	g/s	x_shp	Chronic and Acute
benzene	71432	6.52173E-06	8.98728E-06	g/s	y_shp	Chronic and Acute
benzene	71432	9.71197E-07	1.04235E-06	g/s	zn_shp	Chronic and Acute
benzene	71432	5.4929E-07	6.02114E-07	g/s	zs_shp	Chronic and Acute
Cadmium	7440439	2.97117E-09	3.28628E-09	g/s	ancshp	Chronic and Acute
Cadmium	7440439	2.75614E-07	3.02509E-07	g/s	B1_BLR	Chronic and Acute
Cadmium	7440439	1.95728E-07	2.12777E-07	g/s	B2_BLR	Chronic and Acute
Cadmium	7440439	1.78183E-07	1.94734E-07	g/s	B3_BLR	Chronic and Acute
Cadmium	7440439	7.23287E-07	1.00425E-06	g/s	B4_BLR	Chronic and Acute
Cadmium	7440439	2.38814E-08	3.52324E-08	g/s	mnshp	Chronic and Acute

Table A4.3-HRA-Attachment 4-13

Shipping Emission Rates for Baseline and Project 93% Case for Chronic and Acute Non-cancer hazard Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
Cadmium	7440439	2.90381E-10	3.14116E-10	g/s	w_shp	Chronic and Acute
Cadmium	7440439	2.47688E-09	4.05609E-09	g/s	x_e_shp	Chronic and Acute
Cadmium	7440439	2.47688E-09	4.05609E-09	g/s	x_e_shp_2	Chronic and Acute
Cadmium	7440439	7.08313E-09	1.15992E-08	g/s	x_shp	Chronic and Acute
Cadmium	7440439	1.18166E-08	1.62839E-08	g/s	y_shp	Chronic and Acute
Cadmium	7440439	1.7597E-09	1.88862E-09	g/s	zn_shp	Chronic and Acute
Cadmium	7440439	9.95249E-10	1.09096E-09	g/s	zs_shp	Chronic and Acute
Chlorine	7782505	5.78191E-08	6.39511E-08	g/s	ancshp	Chronic and Acute
Chlorine	7782505	5.36345E-06	5.88683E-06	g/s	B1_BLR	Chronic and Acute
Chlorine	7782505	3.80888E-06	4.14064E-06	g/s	B2_BLR	Chronic and Acute
Chlorine	7782505	3.46744E-06	3.78953E-06	g/s	B3_BLR	Chronic and Acute
Chlorine	7782505	1.40752E-05	1.95426E-05	g/s	B4_BLR	Chronic and Acute
Chlorine	7782505	4.64733E-07	6.85622E-07	g/s	mnshp	Chronic and Acute
Chlorine	7782505	5.65081E-09	6.11271E-09	g/s	w_shp	Chronic and Acute
Chlorine	7782505	4.82002E-08	7.89316E-08	g/s	x_e_shp	Chronic and Acute
Chlorine	7782505	4.82002E-08	7.89316E-08	g/s	x_e_shp_2	Chronic and Acute
Chlorine	7782505	1.37838E-07	2.2572E-07	g/s	x_shp	Chronic and Acute
Chlorine	7782505	2.29951E-07	3.16885E-07	g/s	y_shp	Chronic and Acute
Chlorine	7782505	3.42437E-08	3.67526E-08	g/s	zn_shp	Chronic and Acute
Chlorine	7782505	1.93675E-08	2.12301E-08	g/s	zs_shp	Chronic and Acute
chlorobenzene	108907	3.79589E-08	4.19847E-08	g/s	ancshp	Chronic and Acute
chlorobenzene	108907	3.52117E-06	3.86478E-06	g/s	B1_BLR	Chronic and Acute
chlorobenzene	108907	2.50058E-06	2.71838E-06	g/s	B2_BLR	Chronic and Acute
chlorobenzene	108907	2.27642E-06	2.48787E-06	g/s	B3_BLR	Chronic and Acute
chlorobenzene	108907	9.24052E-06	1.283E-05	g/s	B4_BLR	Chronic and Acute
chlorobenzene	108907	3.05103E-07	4.50119E-07	g/s	mnshp	Chronic and Acute
chlorobenzene	108907	3.70983E-09	4.01307E-09	g/s	w_shp	Chronic and Acute
chlorobenzene	108907	3.16282E-08	5.17937E-08	g/s	x_e_shp	Chronic and Acute
chlorobenzene	108907	3.16282E-08	5.17937E-08	g/s	x_e_shp_2	Chronic and Acute
chlorobenzene	108907	9.04923E-08	1.48188E-07	g/s	x_shp	Chronic and Acute
chlorobenzene	108907	1.50966E-07	2.08039E-07	g/s	y_shp	Chronic and Acute
chlorobenzene	108907	2.24814E-08	2.41286E-08	g/s	zn_shp	Chronic and Acute
chlorobenzene	108907	1.2715E-08	1.39378E-08	g/s	zs_shp	Chronic and Acute
Copper	7440508	5.19956E-09	5.75099E-09	g/s	ancshp	Chronic and Acute
Copper	7440508	4.82325E-07	5.29391E-07	g/s	B1_BLR	Chronic and Acute
Copper	7440508	3.42525E-07	3.7236E-07	g/s	B2_BLR	Chronic and Acute
Copper	7440508	3.1182E-07	3.40785E-07	g/s	B3_BLR	Chronic and Acute
Copper	7440508	1.26575E-06	1.75743E-06	g/s	B4_BLR	Chronic and Acute
Copper	7440508	4.17925E-08	6.16566E-08	g/s	mnshp	Chronic and Acute
Copper	7440508	5.08166E-10	5.49704E-10	g/s	w_shp	Chronic and Acute
Copper	7440508	4.33455E-09	7.09817E-09	g/s	x_e_shp	Chronic and Acute
Copper	7440508	4.33455E-09	7.09817E-09	g/s	x_e_shp_2	Chronic and Acute
Copper	7440508	1.23955E-08	2.02986E-08	g/s	x_shp	Chronic and Acute
Copper	7440508	2.06791E-08	2.84968E-08	g/s	y_shp	Chronic and Acute
Copper	7440508	3.07947E-09	3.30509E-09	g/s	zn_shp	Chronic and Acute

Table A4.3-HRA-Attachment 4-13

Shipping Emission Rates for Baseline and Project 93% Case for Chronic and Acute Non-cancer hazard Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
Copper	7440508	1.74169E-09	1.90918E-09	g/s	zs_shp	Chronic and Acute
Diesel PM	9901	0.001212877	0.001288172	g/s	ancbrg	Chronic and Acute
Diesel PM	9901	0.000285972	0.000316209	g/s	ancshp	Chronic and Acute
Diesel PM	9901	0	0	g/s	B1_BLR	Chronic and Acute
Diesel PM	9901	0.025993284	0.028589362	g/s	B1_GEN	Chronic and Acute
Diesel PM	9901	7.24818E-06	7.9389E-06	g/s	B11_BRG	Chronic and Acute
Diesel PM	9901	0	0	g/s	B2_BLR	Chronic and Acute
Diesel PM	9901	0.003277512	0.003553071	g/s	B2_BRG	Chronic and Acute
Diesel PM	9901	0.023433411	0.025459825	g/s	B2_GEN	Chronic and Acute
Diesel PM	9901	0	0	g/s	B3_BLR	Chronic and Acute
Diesel PM	9901	0.002596823	0.002788983	g/s	B3_BRG	Chronic and Acute
Diesel PM	9901	0.019989378	0.021804378	g/s	B3_GEN	Chronic and Acute
Diesel PM	9901	0	0	g/s	B4_BLR	Chronic and Acute
Diesel PM	9901	0.022130556	0.007806656	g/s	B4_GEN	Chronic and Acute
Diesel PM	9901	0.000102032	0.000111755	g/s	B9_BRG	Chronic and Acute
Diesel PM	9901	0.000621522	0.000655763	g/s	berbrg	Chronic and Acute
Diesel PM	9901	0.002052656	0.002209333	g/s	bertug	Chronic and Acute
Diesel PM	9901	0.007966783	0.008405695	g/s	mnbrg	Chronic and Acute
Diesel PM	9901	0.009761163	0.00993061	g/s	mnshp	Chronic and Acute
Diesel PM	9901	0.026311319	0.028319632	g/s	mntug	Chronic and Acute
Diesel PM	9901	0.015021419	0.015021419	g/s	SB_TUG	Chronic and Acute
Diesel PM	9901	0.002154401	0.002260875	g/s	w_brg	Chronic and Acute
Diesel PM	9901	8.05175E-05	8.72203E-05	g/s	w_shp	Chronic and Acute
Diesel PM	9901	0.000321146	0.000333816	g/s	w_tug	Chronic and Acute
Diesel PM	9901	0.003508594	0.003702898	g/s	x_brg	Chronic and Acute
Diesel PM	9901	0.001229361	0.001297442	g/s	x_e_brg	Chronic and Acute
Diesel PM	9901	0.001229361	0.001297442	g/s	x_e_brg_2	Chronic and Acute
Diesel PM	9901	0.002605387	0.002720743	g/s	x_e_shp	Chronic and Acute
Diesel PM	9901	0.002605387	0.002720743	g/s	x_e_shp_2	Chronic and Acute
Diesel PM	9901	0.010247093	0.011043655	g/s	x_e_tug	Chronic and Acute
Diesel PM	9901	0.010247093	0.011043655	g/s	x_e_tug_2	Chronic and Acute
Diesel PM	9901	0.007432071	0.007761132	g/s	x_shp	Chronic and Acute
Diesel PM	9901	0.029216094	0.031487219	g/s	x_tug	Chronic and Acute
Diesel PM	9901	0.003907921	0.00412427	g/s	y_brg	Chronic and Acute
Diesel PM	9901	0.004451605	0.004575294	g/s	y_shp	Chronic and Acute
Diesel PM	9901	0.019742481	0.021262542	g/s	y_tug	Chronic and Acute
Diesel PM	9901	0.001799156	0.001888462	g/s	zn_brg	Chronic and Acute
Diesel PM	9901	0.00073698	0.000788249	g/s	zn_shp	Chronic and Acute
Diesel PM	9901	0.000806091	0.00087084	g/s	zn_tug	Chronic and Acute
Diesel PM	9901	0.001450443	0.001520876	g/s	zs_brg	Chronic and Acute
Diesel PM	9901	0.000324284	0.000354892	g/s	zs_shp	Chronic and Acute
Diesel PM	9901	0.000864598	0.000936886	g/s	zs_tug	Chronic and Acute
ethylbenzene	100414	5.31425E-08	5.87785E-08	g/s	ancshp	Chronic and Acute
ethylbenzene	100414	4.92964E-06	5.41069E-06	g/s	B1_BLR	Chronic and Acute
ethylbenzene	100414	3.50081E-06	3.80574E-06	g/s	B2_BLR	Chronic and Acute

Table A4.3-HRA-Attachment 4-13

Shipping Emission Rates for Baseline and Project 93% Case for Chronic and Acute Non-cancer hazard Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
ethylbenzene	100414	3.18698E-06	3.48302E-06	g/s	B3_BLR	Chronic and Acute
ethylbenzene	100414	1.29367E-05	1.7962E-05	g/s	B4_BLR	Chronic and Acute
ethylbenzene	100414	4.27144E-07	6.30167E-07	g/s	mnshp	Chronic and Acute
ethylbenzene	100414	5.19376E-09	5.6183E-09	g/s	w_shp	Chronic and Acute
ethylbenzene	100414	4.42795E-08	7.25112E-08	g/s	x_e_shp	Chronic and Acute
ethylbenzene	100414	4.42795E-08	7.25112E-08	g/s	x_e_shp_2	Chronic and Acute
ethylbenzene	100414	1.26689E-07	2.07464E-07	g/s	x_shp	Chronic and Acute
ethylbenzene	100414	2.11352E-07	2.91254E-07	g/s	y_shp	Chronic and Acute
ethylbenzene	100414	3.1474E-08	3.378E-08	g/s	zn_shp	Chronic and Acute
ethylbenzene	100414	1.78011E-08	1.9513E-08	g/s	zs_shp	Chronic and Acute
formaldehyde	50000	7.59179E-08	8.39693E-08	g/s	ancshp	Chronic and Acute
formaldehyde	50000	7.04234E-06	7.72956E-06	g/s	B1_BLR	Chronic and Acute
formaldehyde	50000	5.00115E-06	5.43677E-06	g/s	B2_BLR	Chronic and Acute
formaldehyde	50000	4.55283E-06	4.97575E-06	g/s	B3_BLR	Chronic and Acute
formaldehyde	50000	1.8481E-05	2.566E-05	g/s	B4_BLR	Chronic and Acute
formaldehyde	50000	6.10206E-07	9.00239E-07	g/s	mnshp	Chronic and Acute
formaldehyde	50000	7.41965E-09	8.02614E-09	g/s	w_shp	Chronic and Acute
formaldehyde	50000	6.32564E-08	1.03587E-07	g/s	x_e_shp	Chronic and Acute
formaldehyde	50000	6.32564E-08	1.03587E-07	g/s	x_e_shp_2	Chronic and Acute
formaldehyde	50000	1.80985E-07	2.96377E-07	g/s	x_shp	Chronic and Acute
formaldehyde	50000	3.01932E-07	4.16078E-07	g/s	y_shp	Chronic and Acute
formaldehyde	50000	4.49628E-08	4.82571E-08	g/s	zn_shp	Chronic and Acute
formaldehyde	50000	2.54301E-08	2.78757E-08	g/s	zs_shp	Chronic and Acute
isomers of xylene	1330207	2.58121E-07	2.85496E-07	g/s	ancshp	Chronic and Acute
isomers of xylene	1330207	2.3944E-05	2.62805E-05	g/s	B1_BLR	Chronic and Acute
isomers of xylene	1330207	1.70039E-05	1.8485E-05	g/s	B2_BLR	Chronic and Acute
isomers of xylene	1330207	1.54796E-05	1.69175E-05	g/s	B3_BLR	Chronic and Acute
isomers of xylene	1330207	6.28355E-05	8.7244E-05	g/s	B4_BLR	Chronic and Acute
isomers of xylene	1330207	2.0747E-06	3.06081E-06	g/s	mnshp	Chronic and Acute
isomers of xylene	1330207	2.52268E-08	2.72889E-08	g/s	w_shp	Chronic and Acute
isomers of xylene	1330207	2.15072E-07	3.52197E-07	g/s	x_e_shp	Chronic and Acute
isomers of xylene	1330207	2.15072E-07	3.52197E-07	g/s	x_e_shp_2	Chronic and Acute
isomers of xylene	1330207	6.15347E-07	1.00768E-06	g/s	x_shp	Chronic and Acute
isomers of xylene	1330207	1.02657E-06	1.41466E-06	g/s	y_shp	Chronic and Acute
isomers of xylene	1330207	1.52874E-07	1.64074E-07	g/s	zn_shp	Chronic and Acute
isomers of xylene	1330207	8.64623E-08	9.47772E-08	g/s	zs_shp	Chronic and Acute
Lead	7439921	3.30395E-08	3.65435E-08	g/s	ancshp	Chronic and Acute
Lead	7439921	3.06483E-06	3.3639E-06	g/s	B1_BLR	Chronic and Acute
Lead	7439921	2.1765E-06	2.36608E-06	g/s	B2_BLR	Chronic and Acute
Lead	7439921	1.98139E-06	2.16545E-06	g/s	B3_BLR	Chronic and Acute
Lead	7439921	8.04295E-06	1.11672E-05	g/s	B4_BLR	Chronic and Acute
Lead	7439921	2.65562E-07	3.91784E-07	g/s	mnshp	Chronic and Acute
Lead	7439921	3.22903E-09	3.49298E-09	g/s	w_shp	Chronic and Acute
Lead	7439921	2.7543E-08	4.51038E-08	g/s	x_e_shp	Chronic and Acute
Lead	7439921	2.7543E-08	4.51038E-08	g/s	x_e_shp_2	Chronic and Acute

Table A4.3-HRA-Attachment 4-13

Shipping Emission Rates for Baseline and Project 93% Case for Chronic and Acute Non-cancer hazard Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
Lead	7439921	7.87645E-08	1.28983E-07	g/s	x_shp	Chronic and Acute
Lead	7439921	1.31401E-07	1.81077E-07	g/s	y_shp	Chronic and Acute
Lead	7439921	1.95678E-08	2.10015E-08	g/s	zn_shp	Chronic and Acute
Lead	7439921	1.10672E-08	1.21315E-08	g/s	zs_shp	Chronic and Acute
Manganese	7439965	0	0	g/s	ancshp	Chronic and Acute
Manganese	7439965	0	0	g/s	B1_BLR	Chronic and Acute
Manganese	7439965	0	0	g/s	B2_BLR	Chronic and Acute
Manganese	7439965	0	0	g/s	B3_BLR	Chronic and Acute
Manganese	7439965	0	0	g/s	B4_BLR	Chronic and Acute
Manganese	7439965	0	0	g/s	mnshp	Chronic and Acute
Manganese	7439965	0	0	g/s	w_shp	Chronic and Acute
Manganese	7439965	0	0	g/s	x_e_shp	Chronic and Acute
Manganese	7439965	0	0	g/s	x_e_shp_2	Chronic and Acute
Manganese	7439965	0	0	g/s	x_shp	Chronic and Acute
Manganese	7439965	0	0	g/s	y_shp	Chronic and Acute
Manganese	7439965	0	0	g/s	zn_shp	Chronic and Acute
Manganese	7439965	0	0	g/s	zs_shp	Chronic and Acute
m-xylene	108383	3.4163E-07	3.77862E-07	g/s	ancshp	Chronic and Acute
m-xylene	108383	3.16905E-05	3.4783E-05	g/s	B1_BLR	Chronic and Acute
m-xylene	108383	2.25052E-05	2.44655E-05	g/s	B2_BLR	Chronic and Acute
m-xylene	108383	2.04877E-05	2.23909E-05	g/s	B3_BLR	Chronic and Acute
m-xylene	108383	8.31647E-05	0.00011547	g/s	B4_BLR	Chronic and Acute
m-xylene	108383	2.74593E-06	4.05107E-06	g/s	mnshp	Chronic and Acute
m-xylene	108383	3.33884E-08	3.61176E-08	g/s	w_shp	Chronic and Acute
m-xylene	108383	2.84654E-07	4.66144E-07	g/s	x_e_shp	Chronic and Acute
m-xylene	108383	2.84654E-07	4.66144E-07	g/s	x_e_shp_2	Chronic and Acute
m-xylene	108383	8.1443E-07	1.33369E-06	g/s	x_shp	Chronic and Acute
m-xylene	108383	1.35869E-06	1.87235E-06	g/s	y_shp	Chronic and Acute
m-xylene	108383	2.02333E-07	2.17157E-07	g/s	zn_shp	Chronic and Acute
m-xylene	108383	1.14435E-07	1.2544E-07	g/s	zs_shp	Chronic and Acute
naphthalene	91203	5.31425E-08	5.87785E-08	g/s	ancshp	Chronic and Acute
naphthalene	91203	4.92964E-06	5.41069E-06	g/s	B1_BLR	Chronic and Acute
naphthalene	91203	3.50081E-06	3.80574E-06	g/s	B2_BLR	Chronic and Acute
naphthalene	91203	3.18698E-06	3.48302E-06	g/s	B3_BLR	Chronic and Acute
naphthalene	91203	1.29367E-05	1.7962E-05	g/s	B4_BLR	Chronic and Acute
naphthalene	91203	4.27144E-07	6.30167E-07	g/s	mnshp	Chronic and Acute
naphthalene	91203	5.19376E-09	5.6183E-09	g/s	w_shp	Chronic and Acute
naphthalene	91203	4.42795E-08	7.25112E-08	g/s	x_e_shp	Chronic and Acute
naphthalene	91203	4.42795E-08	7.25112E-08	g/s	x_e_shp_2	Chronic and Acute
naphthalene	91203	1.26689E-07	2.07464E-07	g/s	x_shp	Chronic and Acute
naphthalene	91203	2.11352E-07	2.91254E-07	g/s	y_shp	Chronic and Acute
naphthalene	91203	3.1474E-08	3.378E-08	g/s	zn_shp	Chronic and Acute
naphthalene	91203	1.78011E-08	1.9513E-08	g/s	zs_shp	Chronic and Acute
n-hexane	110543	1.20709E-06	1.33511E-06	g/s	ancshp	Chronic and Acute
n-hexane	110543	0.000111973	0.0001229	g/s	B1_BLR	Chronic and Acute

Table A4.3-HRA-Attachment 4-13

Shipping Emission Rates for Baseline and Project 93% Case for Chronic and Acute Non-cancer hazard Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
n-hexane	110543	7.95183E-05	8.64446E-05	g/s	B2_BLR	Chronic and Acute
n-hexane	110543	7.239E-05	7.91144E-05	g/s	B3_BLR	Chronic and Acute
n-hexane	110543	0.000293849	0.000407994	g/s	B4_BLR	Chronic and Acute
n-hexane	110543	9.70227E-06	1.43138E-05	g/s	mnshp	Chronic and Acute
n-hexane	110543	1.17972E-07	1.27616E-07	g/s	w_shp	Chronic and Acute
n-hexane	110543	1.00578E-06	1.64704E-06	g/s	x_e_shp	Chronic and Acute
n-hexane	110543	1.00578E-06	1.64704E-06	g/s	x_e_shp_2	Chronic and Acute
n-hexane	110543	2.87765E-06	4.71239E-06	g/s	x_shp	Chronic and Acute
n-hexane	110543	4.80072E-06	6.61563E-06	g/s	y_shp	Chronic and Acute
n-hexane	110543	7.14909E-07	7.67288E-07	g/s	zn_shp	Chronic and Acute
n-hexane	110543	4.04338E-07	4.43223E-07	g/s	zs_shp	Chronic and Acute
Nickel	7440020	7.41308E-07	8.19927E-07	g/s	ancshp	Chronic and Acute
Nickel	7440020	6.87657E-05	7.54761E-05	g/s	B1_BLR	Chronic and Acute
Nickel	7440020	4.88343E-05	5.30879E-05	g/s	B2_BLR	Chronic and Acute
Nickel	7440020	4.44566E-05	4.85862E-05	g/s	B3_BLR	Chronic and Acute
Nickel	7440020	0.00018046	0.00025056	g/s	B4_BLR	Chronic and Acute
Nickel	7440020	5.95842E-06	8.79047E-06	g/s	mnshp	Chronic and Acute
Nickel	7440020	7.245E-08	7.83721E-08	g/s	w_shp	Chronic and Acute
Nickel	7440020	6.17983E-07	1.012E-06	g/s	x_e_shp	Chronic and Acute
Nickel	7440020	6.17983E-07	1.012E-06	g/s	x_e_shp_2	Chronic and Acute
Nickel	7440020	1.76724E-06	2.894E-06	g/s	x_shp	Chronic and Acute
Nickel	7440020	2.94824E-06	4.06283E-06	g/s	y_shp	Chronic and Acute
Nickel	7440020	4.39044E-07	4.71212E-07	g/s	zn_shp	Chronic and Acute
Nickel	7440020	2.48315E-07	2.72195E-07	g/s	zs_shp	Chronic and Acute
o-xylene	95476	2.35345E-07	2.60305E-07	g/s	ancshp	Chronic and Acute
o-xylene	95476	2.18313E-05	2.39616E-05	g/s	B1_BLR	Chronic and Acute
o-xylene	95476	1.55036E-05	1.6854E-05	g/s	B2_BLR	Chronic and Acute
o-xylene	95476	1.41138E-05	1.54248E-05	g/s	B3_BLR	Chronic and Acute
o-xylene	95476	5.72912E-05	7.9546E-05	g/s	B4_BLR	Chronic and Acute
o-xylene	95476	1.89164E-06	2.79074E-06	g/s	mnshp	Chronic and Acute
o-xylene	95476	2.30009E-08	2.4881E-08	g/s	w_shp	Chronic and Acute
o-xylene	95476	1.96095E-07	3.21121E-07	g/s	x_e_shp	Chronic and Acute
o-xylene	95476	1.96095E-07	3.21121E-07	g/s	x_e_shp_2	Chronic and Acute
o-xylene	95476	5.61052E-07	9.18767E-07	g/s	x_shp	Chronic and Acute
o-xylene	95476	9.35989E-07	1.28984E-06	g/s	y_shp	Chronic and Acute
o-xylene	95476	1.39385E-07	1.49597E-07	g/s	zn_shp	Chronic and Acute
o-xylene	95476	7.88332E-08	8.64145E-08	g/s	zs_shp	Chronic and Acute
propene	115071	3.46186E-06	3.829E-06	g/s	ancshp	Chronic and Acute
propene	115071	0.000321131	0.000352468	g/s	B1_BLR	Chronic and Acute
propene	115071	0.000228052	0.000247917	g/s	B2_BLR	Chronic and Acute
propene	115071	0.000207609	0.000226894	g/s	B3_BLR	Chronic and Acute
propene	115071	0.000842736	0.001170096	g/s	B4_BLR	Chronic and Acute
propene	115071	2.78254E-05	4.10509E-05	g/s	mnshp	Chronic and Acute
propene	115071	3.38336E-07	3.65992E-07	g/s	w_shp	Chronic and Acute
propene	115071	2.88449E-06	4.72359E-06	g/s	x_e_shp	Chronic and Acute

Table A4.3-HRA-Attachment 4-13

Shipping Emission Rates for Baseline and Project 93% Case for Chronic and Acute Non-cancer hazard Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
propene	115071	2.88449E-06	4.72359E-06	g/s	x_e_shp_2	Chronic and Acute
propene	115071	8.25289E-06	1.35148E-05	g/s	x_shp	Chronic and Acute
propene	115071	1.37681E-05	1.89731E-05	g/s	y_shp	Chronic and Acute
propene	115071	2.05031E-06	2.20053E-06	g/s	zn_shp	Chronic and Acute
propene	115071	1.15961E-06	1.27113E-06	g/s	zs_shp	Chronic and Acute
Selenium	7782492	2.06497E-09	2.28397E-09	g/s	ancshp	Chronic and Acute
Selenium	7782492	1.91552E-07	2.10244E-07	g/s	B1_BLR	Chronic and Acute
Selenium	7782492	1.36031E-07	1.4788E-07	g/s	B2_BLR	Chronic and Acute
Selenium	7782492	1.23837E-07	1.3534E-07	g/s	B3_BLR	Chronic and Acute
Selenium	7782492	5.02684E-07	6.97952E-07	g/s	B4_BLR	Chronic and Acute
Selenium	7782492	1.65976E-08	2.44865E-08	g/s	mnshp	Chronic and Acute
Selenium	7782492	2.01815E-10	2.18311E-10	g/s	w_shp	Chronic and Acute
Selenium	7782492	1.72143E-09	2.81899E-09	g/s	x_e_shp	Chronic and Acute
Selenium	7782492	1.72143E-09	2.81899E-09	g/s	x_e_shp_2	Chronic and Acute
Selenium	7782492	4.92278E-09	8.06144E-09	g/s	x_shp	Chronic and Acute
Selenium	7782492	8.21254E-09	1.13173E-08	g/s	y_shp	Chronic and Acute
Selenium	7782492	1.22299E-09	1.31259E-09	g/s	zn_shp	Chronic and Acute
Selenium	7782492	6.91698E-10	7.58218E-10	g/s	zs_shp	Chronic and Acute
Silicon	1175	9.1891E-07	1.01636E-06	g/s	ancshp	Chronic and Acute
Silicon	1175	8.52405E-05	9.35586E-05	g/s	B1_BLR	Chronic and Acute
Silicon	1175	6.05339E-05	6.58066E-05	g/s	B2_BLR	Chronic and Acute
Silicon	1175	5.51075E-05	6.02265E-05	g/s	B3_BLR	Chronic and Acute
Silicon	1175	0.000223695	0.000310589	g/s	B4_BLR	Chronic and Acute
Silicon	1175	7.38593E-06	1.08965E-05	g/s	mnshp	Chronic and Acute
Silicon	1175	8.98075E-08	9.71484E-08	g/s	w_shp	Chronic and Acute
Silicon	1175	7.66038E-07	1.25445E-06	g/s	x_e_shp	Chronic and Acute
Silicon	1175	7.66038E-07	1.25445E-06	g/s	x_e_shp_2	Chronic and Acute
Silicon	1175	2.19064E-06	3.58734E-06	g/s	x_shp	Chronic and Acute
Silicon	1175	3.65458E-06	5.0362E-06	g/s	y_shp	Chronic and Acute
Silicon	1175	5.4423E-07	5.84104E-07	g/s	zn_shp	Chronic and Acute
Silicon	1175	3.07806E-07	3.37407E-07	g/s	zs_shp	Chronic and Acute
Sulfate	9960	4.56116E-05	5.0449E-05	g/s	ancshp	Chronic and Acute
Sulfate	9960	0.004231054	0.004643933	g/s	B1_BLR	Chronic and Acute
Sulfate	9960	0.003004702	0.003266421	g/s	B2_BLR	Chronic and Acute
Sulfate	9960	0.00273535	0.00298944	g/s	B3_BLR	Chronic and Acute
Sulfate	9960	0.011103447	0.015416573	g/s	B4_BLR	Chronic and Acute
Sulfate	9960	0.000366613	0.000540865	g/s	mnshp	Chronic and Acute
Sulfate	9960	4.45774E-06	4.82212E-06	g/s	w_shp	Chronic and Acute
Sulfate	9960	3.80236E-05	6.22666E-05	g/s	x_e_shp	Chronic and Acute
Sulfate	9960	3.80236E-05	6.22666E-05	g/s	x_e_shp_2	Chronic and Acute
Sulfate	9960	0.000108736	0.000178064	g/s	x_shp	Chronic and Acute
Sulfate	9960	0.000181401	0.00024998	g/s	y_shp	Chronic and Acute
Sulfate	9960	2.70138E-05	2.8993E-05	g/s	zn_shp	Chronic and Acute
Sulfate	9960	1.52784E-05	1.67478E-05	g/s	zs_shp	Chronic and Acute
toluene	108883	1.63223E-06	1.80534E-06	g/s	ancshp	Chronic and Acute

Table A4.3-HRA-Attachment 4-13

Shipping Emission Rates for Baseline and Project 93% Case for Chronic and Acute Non-cancer hazard Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
toluene	108883	0.00015141	0.000166185	g/s	B1_BLR	Chronic and Acute
toluene	108883	0.000107525	0.000116891	g/s	B2_BLR	Chronic and Acute
toluene	108883	9.78859E-05	0.000106979	g/s	B3_BLR	Chronic and Acute
toluene	108883	0.000397342	0.00055169	g/s	B4_BLR	Chronic and Acute
toluene	108883	1.31194E-05	1.93551E-05	g/s	mnshp	Chronic and Acute
toluene	108883	1.59523E-07	1.72562E-07	g/s	w_shp	Chronic and Acute
toluene	108883	1.36001E-06	2.22713E-06	g/s	x_e_shp	Chronic and Acute
toluene	108883	1.36001E-06	2.22713E-06	g/s	x_e_shp_2	Chronic and Acute
toluene	108883	3.89117E-06	6.3721E-06	g/s	x_shp	Chronic and Acute
toluene	108883	6.49153E-06	8.94567E-06	g/s	y_shp	Chronic and Acute
toluene	108883	9.66701E-07	1.03753E-06	g/s	zn_shp	Chronic and Acute
toluene	108883	5.46747E-07	5.99327E-07	g/s	zs_shp	Chronic and Acute
Vanadium	7440622	1.89041E-06	2.0909E-06	g/s	ancshp	Chronic and Acute
Vanadium	7440622	0.000175359	0.000192472	g/s	B1_BLR	Chronic and Acute
Vanadium	7440622	0.000124532	0.000135379	g/s	B2_BLR	Chronic and Acute
Vanadium	7440622	0.000113369	0.0001239	g/s	B3_BLR	Chronic and Acute
Vanadium	7440622	0.000460191	0.000638952	g/s	B4_BLR	Chronic and Acute
Vanadium	7440622	1.51946E-05	2.24166E-05	g/s	mnshp	Chronic and Acute
Vanadium	7440622	1.84755E-07	1.99857E-07	g/s	w_shp	Chronic and Acute
Vanadium	7440622	1.57592E-06	2.58069E-06	g/s	x_e_shp	Chronic and Acute
Vanadium	7440622	1.57592E-06	2.58069E-06	g/s	x_e_shp_2	Chronic and Acute
Vanadium	7440622	4.50664E-06	7.37999E-06	g/s	x_shp	Chronic and Acute
Vanadium	7440622	7.51832E-06	1.03606E-05	g/s	y_shp	Chronic and Acute
Vanadium	7440622	1.11961E-06	1.20164E-06	g/s	zn_shp	Chronic and Acute
Vanadium	7440622	6.33227E-07	6.94124E-07	g/s	zs_shp	Chronic and Acute
PM2.5	EDF213	0.00083866	0.00090878	g/s	zs_tug	PM2.5
PM2.5	EDF213	0.00032428	0.000354934	g/s	zs_shp	PM2.5
PM2.5	EDF213	0.00140693	0.00147525	g/s	zs_brg	PM2.5
PM2.5	EDF213	0.000781908	0.000844715	g/s	zn_tug	PM2.5
PM2.5	EDF213	0.000723884	0.000774412	g/s	zn_shp	PM2.5
PM2.5	EDF213	0.001745181	0.001831808	g/s	zn_brg	PM2.5
PM2.5	EDF213	0.019150207	0.020624665	g/s	y_tug	PM2.5
PM2.5	EDF213	0.004403447	0.00463367	g/s	y_shp	PM2.5
PM2.5	EDF213	0.003790683	0.004000542	g/s	y_brg	PM2.5
PM2.5	EDF213	0.028339611	0.030542602	g/s	x_tug	PM2.5
PM2.5	EDF213	0.007022109	0.007442546	g/s	x_shp	PM2.5
PM2.5	EDF213	0.009989132	0.010765641	g/s	x_e_tug_2	PM2.5
PM2.5	EDF213	0.009989132	0.010765641	g/s	x_e_tug	PM2.5
PM2.5	EDF213	0.002472634	0.002620642	g/s	x_e_shp_2	PM2.5
PM2.5	EDF213	0.002472634	0.002620642	g/s	x_e_shp	PM2.5
PM2.5	EDF213	0.001197825	0.001264159	g/s	x_e_brg_2	PM2.5
PM2.5	EDF213	0.001197825	0.001264159	g/s	x_e_brg	PM2.5

Table A4.3-HRA-Attachment 4-13

Shipping Emission Rates for Baseline and Project 93% Case for Chronic and Acute Non-cancer hazard Calculation
Chevron Modernization Project
Richmond, California

Chemical	CAS	Baseline Emission Rate	Future Emission Rate	Unit	SRCGRP	Impact
PM2.5	EDF213	0.003403337	0.003591811	g/s	x_brg	PM2.5
PM2.5	EDF213	0.000311512	0.000323802	g/s	w_tug	PM2.5
PM2.5	EDF213	8.16441E-05	8.84294E-05	g/s	w_shp	PM2.5
PM2.5	EDF213	0.002089769	0.002193049	g/s	w_brg	PM2.5
PM2.5	EDF213	0.014570776	0.014570776	g/s	SB_TUG	PM2.5
PM2.5	EDF213	0.025521979	0.027470043	g/s	mntug	PM2.5
PM2.5	EDF213	0.00960268	0.010054405	g/s	mnshp	PM2.5
PM2.5	EDF213	0.007727779	0.008153524	g/s	mnbrg	PM2.5
PM2.5	EDF213	0.001991076	0.002143053	g/s	bertug	PM2.5
PM2.5	EDF213	0.000602876	0.000636091	g/s	berbrg	PM2.5
PM2.5	EDF213	9.89711E-05	0.000108403	g/s	B9_BRG	PM2.5
PM2.5	EDF213	0.020360111	0.007182124	g/s	B4_GEN	PM2.5
PM2.5	EDF213	0.018850663	0.026173189	g/s	B4_BLR	PM2.5
PM2.5	EDF213	0.018390228	0.020060028	g/s	B3_GEN	PM2.5
PM2.5	EDF213	0.002518919	0.002705313	g/s	B3_BRG	PM2.5
PM2.5	EDF213	0.004643887	0.005075265	g/s	B3_BLR	PM2.5
PM2.5	EDF213	0.021558738	0.023423039	g/s	B2_GEN	PM2.5
PM2.5	EDF213	0.003179186	0.003446479	g/s	B2_BRG	PM2.5
PM2.5	EDF213	0.005101174	0.005545503	g/s	B2_BLR	PM2.5
PM2.5	EDF213	7.03074E-06	7.70073E-06	g/s	B11_BRG	PM2.5
PM2.5	EDF213	0.023913821	0.026302213	g/s	B1_GEN	PM2.5
PM2.5	EDF213	0.00718319	0.007884148	g/s	B1_BLR	PM2.5
PM2.5	EDF213	0.00034053	0.000376561	g/s	ancshp	PM2.5
PM2.5	EDF213	0.001176491	0.001249527	g/s	ancbrg	PM2.5

Table A4.3-HRA-Attachment 4-14
Trucking Emission Rates for Baseline and Project 93% Case
Chevron Modernization Project
Richmond, California

Year	Case Name	Source Group	Chemical	Emission Rate	Units
2016	93% Project Crude	CAS_G31T	PM10	6.17E-05	g/s
2016	93% Project Crude	ETC_6	PM10	0.000595463	g/s
2016	93% Project Crude	ETC_7	PM10	6.67838E-05	g/s
2016	93% Project Crude	ETC_8	PM10	0.000741423	g/s
2016	93% Project Crude	ETC_9	PM10	0.000287101	g/s
2016	93% Project Crude	ITC_IDL	PM10	5.40478E-05	g/s
2016	93% Project Crude	ITC_IDLN	PM10	6.17985E-05	g/s
2016	93% Project Crude	ITO_LPG	PM10	5.0776E-05	g/s
2016	93% Project Crude	ITOH AZ	PM10	5.65121E-06	g/s
2016	93% Project Crude	ITOL_1	PM10	2.25506E-05	g/s
2016	93% Project Crude	ITOMR	PM10	5.51258E-05	g/s
2016	93% Project Crude	ITOO_1	PM10	0.000129175	g/s
2016	93% Project Crude	ITOO_2	PM10	3.11517E-05	g/s
2016	93% Project Crude	ITOO_3	PM10	7.70759E-06	g/s
2016	93% Project Crude	ITOS_1	PM10	1.18176E-05	g/s
2016	93% Project Crude	ITOS_2	PM10	2.84993E-06	g/s
2016	93% Project Crude	ITOS_3	PM10	6.94528E-07	g/s
2016	93% Project Crude	ITOT_1	PM10	1.48262E-05	g/s
2016	93% Project Crude	RAMPST	PM10	0.000252906	g/s
2016	Baseline	CAS_G31T	PM10	5.72443E-05	g/s
2016	Baseline	ETC_6	PM10	0.000438079	g/s
2016	Baseline	ETC_7	PM10	4.91324E-05	g/s
2016	Baseline	ETC_8	PM10	0.000545461	g/s
2016	Baseline	ETC_9	PM10	0.000211218	g/s
2016	Baseline	ITC_IDL	PM10	3.79606E-05	g/s
2016	Baseline	ITC_IDLN	PM10	5.8211E-05	g/s
2016	Baseline	ITO_LPG	PM10	4.78219E-05	g/s
2016	Baseline	ITOH AZ	PM10	5.32212E-06	g/s
2016	Baseline	ITOL_1	PM10	2.12383E-05	g/s
2016	Baseline	ITOMR	PM10	5.19257E-05	g/s
2016	Baseline	ITOO_1	PM10	5.7702E-05	g/s
2016	Baseline	ITOO_2	PM10	1.39154E-05	g/s
2016	Baseline	ITOO_3	PM10	3.44296E-06	g/s
2016	Baseline	ITOS_1	PM10	6.11132E-06	g/s
2016	Baseline	ITOS_2	PM10	1.4738E-06	g/s
2016	Baseline	ITOS_3	PM10	3.59166E-07	g/s
2016	Baseline	ITOT_1	PM10	1.46278E-05	g/s
2016	Baseline	RAMPST	PM10	0.000234642	g/s
2016	Baseline	CAS_G31T	PM25	8.10238E-05	g/s
2016	Baseline	ETC_6	PM25	0.000781955	g/s
2016	Baseline	ETC_7	PM25	8.76997E-05	g/s

Table A4.3-HRA-Attachment 4-14
Trucking Emission Rates for Baseline and Project 93% Case
Chevron Modernization Project
Richmond, California

Year	Case Name	Source Group	Chemical	Emission Rate	Units
2016	Baseline	ETC_8	PM25	0.000973628	g/s
2016	Baseline	ETC_9	PM25	0.000377017	g/s
2016	Baseline	ITC_IDL	PM25	4.9724E-05	g/s
2016	Baseline	ITC_IDLN	PM25	5.68546E-05	g/s
2016	Baseline	ITO_LPG	PM25	6.66785E-05	g/s
2016	Baseline	ITOH AZ	PM25	7.4211E-06	g/s
2016	Baseline	ITOL_1	PM25	2.96132E-05	g/s
2016	Baseline	ITOMR	PM25	7.23906E-05	g/s
2016	Baseline	ITOO_1	PM25	0.000169631	g/s
2016	Baseline	ITOO_2	PM25	4.09081E-05	g/s
2016	Baseline	ITOO_3	PM25	1.01215E-05	g/s
2016	Baseline	ITOS_1	PM25	1.55188E-05	g/s
2016	Baseline	ITOS_2	PM25	3.7425E-06	g/s
2016	Baseline	ITOS_3	PM25	9.12046E-07	g/s
2016	Baseline	ITOT_1	PM25	1.94696E-05	g/s
2016	Baseline	RAMPST	PM25	0.000332113	g/s
2016	Baseline	CAS_G31T	PM25	7.51725E-05	g/s
2016	Baseline	ETC_6	PM25	0.00057528	g/s
2016	Baseline	ETC_7	PM25	6.45201E-05	g/s
2016	Baseline	ETC_8	PM25	0.000716293	g/s
2016	Baseline	ETC_9	PM25	0.00027737	g/s
2016	Baseline	ITC_IDL	PM25	3.49237E-05	g/s
2016	Baseline	ITC_IDLN	PM25	5.35541E-05	g/s
2016	Baseline	ITO_LPG	PM25	6.27992E-05	g/s
2016	Baseline	ITOH AZ	PM25	6.98895E-06	g/s
2016	Baseline	ITOL_1	PM25	2.78899E-05	g/s
2016	Baseline	ITOMR	PM25	6.81882E-05	g/s
2016	Baseline	ITOO_1	PM25	7.57736E-05	g/s
2016	Baseline	ITOO_2	PM25	1.82735E-05	g/s
2016	Baseline	ITOO_3	PM25	4.52126E-06	g/s
2016	Baseline	ITOS_1	PM25	8.02531E-06	g/s
2016	Baseline	ITOS_2	PM25	1.93538E-06	g/s
2016	Baseline	ITOS_3	PM25	4.71652E-07	g/s
2016	Baseline	ITOT_1	PM25	1.92091E-05	g/s
2016	Baseline	RAMPST	PM25	0.000308129	g/s

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
SRU1_E	Acetaldehyde	75-07-0	-0.000156339	-0.000375213
P_0109	Acetaldehyde	75-07-0	6.90867E-07	1.65808E-06
P_0127	Acetaldehyde	75-07-0	-3.66799E-05	-8.80317E-05
H2FLARE	Acetaldehyde	75-07-0	1.06639E-05	2.55933E-05
P_0129	Acetaldehyde	75-07-0	-3.66799E-05	-8.80317E-05
P_0148	Acetaldehyde	75-07-0	1.08742E-07	2.60981E-07
SRU3_E	Acetaldehyde	75-07-0	-0.000229395	-0.000550548
H2TRAIN1	Acetaldehyde	75-07-0	0.006127119	0.014705086
P_0260	Acetaldehyde	75-07-0	-0.000126573	-0.000303776
P_0119	Acetaldehyde	75-07-0	1.06008E-06	2.54419E-06
P_0122	Acetaldehyde	75-07-0	2.18943E-06	5.25463E-06
P_0117	Acetaldehyde	75-07-0	7.98913E-06	1.91739E-05
SRU1_N	Acetaldehyde	75-07-0	0.000213528	0.000512468
P_0130	Acetaldehyde	75-07-0	-3.66799E-05	-8.80317E-05
P_0116	Acetaldehyde	75-07-0	-1.004E-05	-2.40961E-05
P_0111	Acetaldehyde	75-07-0	6.58657E-07	1.58078E-06
F_1660	Acetaldehyde	75-07-0	1.65588E-07	3.97411E-07
P_311	Acetaldehyde	75-07-0	1.61919E-06	3.88605E-06
P_0055	Acetaldehyde	75-07-0	3.62607E-07	8.70257E-07
P_0121	Acetaldehyde	75-07-0	2.61618E-06	6.27884E-06
P_0147	Acetaldehyde	75-07-0	2.44316E-07	5.86359E-07
P_0128	Acetaldehyde	75-07-0	-3.66799E-05	-8.80317E-05
P_0216	Acetaldehyde	75-07-0	2.36476E-05	5.67543E-05
H2TRAIN2	Acetaldehyde	75-07-0	0.006127119	0.014705086
P_0048	Acetaldehyde	75-07-0	-5.54205E-08	-1.33009E-07
SRU3_N	Acetaldehyde	75-07-0	0.000373153	0.000895567
P_0047	Acetaldehyde	75-07-0	-5.01062E-08	-1.20255E-07
P_0049	Acetaldehyde	75-07-0	-8.40892E-07	-2.01814E-06
P_0057	Acetaldehyde	75-07-0	3.42319E-06	8.21567E-06
P_0217	Acetaldehyde	75-07-0	3.61003E-05	8.66407E-05
F_1160	Acetaldehyde	75-07-0	3.98939E-06	9.57453E-06
SRU2_E	Acetaldehyde	75-07-0	-0.000166337	-0.000399208
P_0058	Acetaldehyde	75-07-0	3.13708E-06	7.52898E-06
SRU2_N	Acetaldehyde	75-07-0	0.00021361	0.000512663
P_4155	Acetaldehyde	75-07-0	9.07309E-06	2.17754E-05
P_0215	Acetaldehyde	75-07-0	6.71872E-05	0.000161249
H2_COOL2	Ammonia (NH3) pollutant	7664-41-7	1.26003E-05	3.02407E-05
NEWHP	Ammonia (NH3) pollutant	7664-41-7	0.001222007	0.002932816
H2TRAIN2	Ammonia (NH3) pollutant	7664-41-7	0.520144695	1.248347269
H2_COOL3	Ammonia (NH3) pollutant	7664-41-7	1.26003E-05	3.02407E-05

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
FCCU	Ammonia (NH3) pollutant	7664-41-7	0.001288274	0.003091858
H2_COOL1	Ammonia (NH3) pollutant	7664-41-7	1.26003E-05	3.02407E-05
H2TRAIN1	Ammonia (NH3) pollutant	7664-41-7	0.520144695	1.248347269
SRU	Ammonia (NH3) pollutant	7664-41-7	0.00014968	0.000359233
F_1660	Arsenic (all)	7440-38-2	5.39124E-09	1.2939E-08
P_0119	Arsenic (all)	7440-38-2	3.45142E-08	8.28341E-08
P_4155	Arsenic (all)	7440-38-2	2.95403E-07	7.08967E-07
SRU2_N	Arsenic (all)	7440-38-2	3.45982E-06	8.30356E-06
SRU3_E	Arsenic (all)	7440-38-2	-3.71549E-06	-8.91717E-06
P_0047	Arsenic (all)	7440-38-2	-1.63137E-09	-3.91528E-09
F_1160	Arsenic (all)	7440-38-2	1.29887E-07	3.11729E-07
H2_COOL2	Arsenic (all)	7440-38-2	3.14768E-08	7.55442E-08
P_0048	Arsenic (all)	7440-38-2	-1.80439E-09	-4.33053E-09
H2_COOL3	Arsenic (all)	7440-38-2	3.14768E-08	7.55442E-08
P_0121	Arsenic (all)	7440-38-2	8.5178E-08	2.04427E-07
SRU1_N	Arsenic (all)	7440-38-2	3.4585E-06	8.3004E-06
H2_COOL1	Arsenic (all)	7440-38-2	3.14768E-08	7.55442E-08
P_0111	Arsenic (all)	7440-38-2	2.14446E-08	5.14671E-08
H2TRAIN1	Arsenic (all)	7440-38-2	9.92404E-05	0.000238177
P_0148	Arsenic (all)	7440-38-2	3.54044E-09	8.49706E-09
P_0116	Arsenic (all)	7440-38-2	-3.26885E-07	-7.84524E-07
SRU1_E	Arsenic (all)	7440-38-2	-2.5322E-06	-6.07729E-06
P_0109	Arsenic (all)	7440-38-2	2.24933E-08	5.3984E-08
P_0122	Arsenic (all)	7440-38-2	7.12837E-08	1.71081E-07
P_0147	Arsenic (all)	7440-38-2	7.95448E-09	1.90907E-08
P_0058	Arsenic (all)	7440-38-2	1.02137E-07	2.4513E-07
P_311	Arsenic (all)	7440-38-2	5.27177E-08	1.26523E-07
SRU3_N	Arsenic (all)	7440-38-2	6.04393E-06	1.45054E-05
P_0049	Arsenic (all)	7440-38-2	-2.73779E-08	-6.57069E-08
FCCU	Arsenic (all)	7440-38-2	2.65834E-07	6.38002E-07
P_0055	Arsenic (all)	7440-38-2	1.18058E-08	2.83339E-08
H2TRAIN2	Arsenic (all)	7440-38-2	9.92404E-05	0.000238177
H2FLARE	Arsenic (all)	7440-38-2	1.72722E-07	4.14532E-07
P_0057	Arsenic (all)	7440-38-2	1.11453E-07	2.67487E-07
P_0117	Arsenic (all)	7440-38-2	2.60111E-07	6.24267E-07
SRU2_E	Arsenic (all)	7440-38-2	-2.69414E-06	-6.46594E-06
MARINELD	Benzene	71-43-2	0.001128482	0.002708358
P_0047	Benzene	71-43-2	-7.69072E-08	-1.84577E-07
MRKRACK	Benzene	71-43-2	5.40969E-05	0.000129833
P_0129	Benzene	71-43-2	-5.50198E-05	-0.000132048

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
P_0121	Benzene	71-43-2	4.01554E-06	9.63728E-06
P_0130	Benzene	71-43-2	-5.50198E-05	-0.000132048
P_0127	Benzene	71-43-2	-5.50198E-05	-0.000132048
P_0119	Benzene	71-43-2	1.6271E-06	3.90504E-06
SRU1_E	Benzene	71-43-2	-0.000143663	-0.00034479
P_0117	Benzene	71-43-2	1.22624E-05	2.94297E-05
P_0122	Benzene	71-43-2	3.36052E-06	8.06525E-06
SRU1_N	Benzene	71-43-2	0.000196215	0.000470917
P_0116	Benzene	71-43-2	-1.54103E-05	-3.69847E-05
P_0055	Benzene	71-43-2	5.5656E-07	1.33574E-06
P_0109	Benzene	71-43-2	1.0604E-06	2.54496E-06
SRU2_N	Benzene	71-43-2	0.00019629	0.000471096
P_0058	Benzene	71-43-2	4.81505E-06	1.15561E-05
SRU2_E	Benzene	71-43-2	-0.00015285	-0.00036684
P_0057	Benzene	71-43-2	5.2542E-06	1.26101E-05
P_0128	Benzene	71-43-2	-5.50198E-05	-0.000132048
P_0049	Benzene	71-43-2	-1.29067E-06	-3.09761E-06
P_4155	Benzene	71-43-2	1.39261E-05	3.34227E-05
P_0048	Benzene	71-43-2	-8.5064E-08	-2.04154E-07
P_0111	Benzene	71-43-2	1.01096E-06	2.42631E-06
T3213	Benzene	71-43-2	0.000496818	0.001192362
P_0148	Benzene	71-43-2	1.66907E-07	4.00576E-07
T1899	Benzene	71-43-2	0.000496818	0.001192362
T3100	Benzene	71-43-2	0.000496818	0.001192362
H2FLARE	Benzene	71-43-2	9.79922E-06	2.35181E-05
SRU3_E	Benzene	71-43-2	-0.000210795	-0.000505909
H2TRAIN1	Benzene	71-43-2	0.005630326	0.013512781
FCCU	Benzene	71-43-2	5.72566E-05	0.000137416
P_0260	Benzene	71-43-2	-0.00018986	-0.000455664
P_0216	Benzene	71-43-2	2.71906E-06	6.52575E-06
P_0217	Benzene	71-43-2	4.15091E-06	9.96217E-06
F_1660	Benzene	71-43-2	2.54158E-07	6.0998E-07
F_1650	Benzene	71-43-2	3.09313E-06	7.4235E-06
TKC	Benzene	71-43-2	0.000730456	0.001753094
F_1160	Benzene	71-43-2	6.12324E-06	1.46958E-05
P_0215	Benzene	71-43-2	7.72536E-06	1.85409E-05
SRU3_N	Benzene	71-43-2	0.000342897	0.000822954
H2TRAIN2	Benzene	71-43-2	0.005630326	0.013512781
P_0147	Benzene	71-43-2	3.74997E-07	8.99992E-07
P_311	Benzene	71-43-2	1.69165E-06	4.05996E-06

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
SRU2_E	Benzo(a)anthracene	56-55-3	-6.48649E-08	-1.55676E-07
H2TRAIN1	Benzo(a)anthracene	56-55-3	2.38934E-06	5.73442E-06
SRU1_E	Benzo(a)anthracene	56-55-3	-6.0966E-08	-1.46319E-07
SRU3_N	Benzo(a)anthracene	56-55-3	1.45515E-07	3.49237E-07
SRU3_E	Benzo(a)anthracene	56-55-3	-8.94552E-08	-2.14692E-07
SRU2_N	Benzo(a)anthracene	56-55-3	8.32995E-08	1.99919E-07
H2FLARE	Benzo(a)anthracene	56-55-3	4.15849E-09	9.98038E-09
H2TRAIN2	Benzo(a)anthracene	56-55-3	2.38934E-06	5.73442E-06
SRU1_N	Benzo(a)anthracene	56-55-3	8.32678E-08	1.99843E-07
F_1160	PAH's (benzo[a]pyrene equiv)	50-32-8	1.53081E-05	3.67395E-05
F_1660	PAH's (benzo[a]pyrene equiv)	50-32-8	6.35396E-07	1.52495E-06
P_0147	PAH's (benzo[a]pyrene equiv)	50-32-8	9.37492E-07	2.24998E-06
P_0148	PAH's (benzo[a]pyrene equiv)	50-32-8	4.17267E-07	1.00144E-06
P_0215	PAH's (benzo[a]pyrene equiv)	50-32-8	1.93134E-05	4.63522E-05
P_0119	PAH's (benzo[a]pyrene equiv)	50-32-8	4.06775E-06	9.76259E-06
P_0055	PAH's (benzo[a]pyrene equiv)	50-32-8	1.3914E-06	3.33936E-06
P_0057	PAH's (benzo[a]pyrene equiv)	50-32-8	1.31355E-05	3.15252E-05
P_0058	PAH's (benzo[a]pyrene equiv)	50-32-8	1.20376E-05	2.88903E-05
P_0049	PAH's (benzo[a]pyrene equiv)	50-32-8	-3.22668E-06	-7.74403E-06
P_0109	PAH's (benzo[a]pyrene equiv)	50-32-8	2.651E-06	6.3624E-06
P_0048	PAH's (benzo[a]pyrene equiv)	50-32-8	-2.1266E-07	-5.10384E-07
P_0111	PAH's (benzo[a]pyrene equiv)	50-32-8	2.5274E-06	6.06577E-06
P_0047	PAH's (benzo[a]pyrene equiv)	50-32-8	-1.92268E-07	-4.61443E-07
H2TRAIN2	PAH's (benzo[a]pyrene equiv)	50-32-8	6.13895E-06	1.47335E-05
P_0117	PAH's (benzo[a]pyrene equiv)	50-32-8	3.0656E-05	7.35744E-05
H2FLARE	PAH's (benzo[a]pyrene equiv)	50-32-8	1.06844E-08	2.56427E-08
P_0120	PAH's (benzo[a]pyrene equiv)	50-32-8	3.31241E-05	7.94979E-05
P_0121	PAH's (benzo[a]pyrene equiv)	50-32-8	1.00388E-05	2.40932E-05
P_0122	PAH's (benzo[a]pyrene equiv)	50-32-8	8.4013E-06	2.01631E-05
P_0127	PAH's (benzo[a]pyrene equiv)	50-32-8	-0.000137549	-0.000330119
H2TRAIN1	PAH's (benzo[a]pyrene equiv)	50-32-8	6.13895E-06	1.47335E-05
P_0128	PAH's (benzo[a]pyrene equiv)	50-32-8	-0.000137549	-0.000330119
P_0129	PAH's (benzo[a]pyrene equiv)	50-32-8	-0.000137549	-0.000330119
P_0130	PAH's (benzo[a]pyrene equiv)	50-32-8	-0.000137549	-0.000330119
P_0116	PAH's (benzo[a]pyrene equiv)	50-32-8	-3.85257E-05	-9.24617E-05
SRU1_N	PAH's (benzo[a]pyrene equiv)	50-32-8	2.13941E-07	5.13457E-07
SRU2_E	PAH's (benzo[a]pyrene equiv)	50-32-8	-1.66658E-07	-3.99979E-07
P_0260	PAH's (benzo[a]pyrene equiv)	50-32-8	-0.00047465	-0.001139159
SRU3_N	PAH's (benzo[a]pyrene equiv)	50-32-8	3.73873E-07	8.97296E-07
P_311	PAH's (benzo[a]pyrene equiv)	50-32-8	6.21316E-06	1.49116E-05

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
P_4155	PAH's (benzo[a]pyrene equiv)	50-32-8	3.48153E-05	8.35568E-05
P_0217	PAH's (benzo[a]pyrene equiv)	50-32-8	1.03773E-05	2.49054E-05
P_0216	PAH's (benzo[a]pyrene equiv)	50-32-8	1.43358E-05	3.44059E-05
SRU3_E	PAH's (benzo[a]pyrene equiv)	50-32-8	-2.29838E-07	-5.51611E-07
SRU2_N	PAH's (benzo[a]pyrene equiv)	50-32-8	2.14022E-07	5.13653E-07
SRU1_E	PAH's (benzo[a]pyrene equiv)	50-32-8	-1.5664E-07	-3.75937E-07
SRU2_N	Benzo(b)fluoranthene	205-99-2	1.03506E-07	2.48414E-07
SRU3_E	Benzo(b)fluoranthene	205-99-2	-1.11155E-07	-2.66771E-07
SRU1_N	Benzo(b)fluoranthene	205-99-2	1.03466E-07	2.48319E-07
SRU1_E	Benzo(b)fluoranthene	205-99-2	-7.57548E-08	-1.81812E-07
H2TRAIN2	Benzo(b)fluoranthene	205-99-2	2.96893E-06	7.12544E-06
SRU3_N	Benzo(b)fluoranthene	205-99-2	1.80814E-07	4.33952E-07
H2TRAIN1	Benzo(b)fluoranthene	205-99-2	2.96893E-06	7.12544E-06
H2FLARE	Benzo(b)fluoranthene	205-99-2	5.16724E-09	1.24014E-08
SRU2_E	Benzo(b)fluoranthene	205-99-2	-8.05995E-08	-1.93439E-07
SRU3_N	Benzo(k)fluoranthene	207-08-9	1.05895E-07	2.54147E-07
SRU1_N	Benzo(k)fluoranthene	207-08-9	6.05959E-08	1.4543E-07
SRU3_E	Benzo(k)fluoranthene	207-08-9	-6.50986E-08	-1.56237E-07
H2TRAIN1	Benzo(k)fluoranthene	207-08-9	1.73878E-06	4.17306E-06
H2TRAIN2	Benzo(k)fluoranthene	207-08-9	1.73878E-06	4.17306E-06
SRU2_E	Benzo(k)fluoranthene	207-08-9	-4.72037E-08	-1.13289E-07
SRU1_E	Benzo(k)fluoranthene	207-08-9	-4.43664E-08	-1.06479E-07
SRU2_N	Benzo(k)fluoranthene	207-08-9	6.0619E-08	1.45485E-07
H2FLARE	Benzo(k)fluoranthene	207-08-9	3.02623E-09	7.26295E-09
NEWHP	1,3-butadiene	106-99-0	8.03431E-05	0.000192823
P_0147	Cadmium	7440-43-9	2.27271E-09	5.4545E-09
SRU3_N	Cadmium	7440-43-9	4.29342E-06	1.03042E-05
P_311	Cadmium	7440-43-9	1.50622E-08	3.61493E-08
SRU2_N	Cadmium	7440-43-9	2.45775E-06	5.8986E-06
SRU3_E	Cadmium	7440-43-9	-2.63937E-06	-6.33449E-06
H2TRAIN2	Cadmium	7440-43-9	7.04974E-05	0.000169194
P_0148	Cadmium	7440-43-9	1.01156E-09	2.42773E-09
H2FLARE	Cadmium	7440-43-9	1.22696E-07	2.94471E-07
H2TRAIN1	Cadmium	7440-43-9	7.04974E-05	0.000169194
P_0057	Cadmium	7440-43-9	3.18437E-08	7.64248E-08
P_0109	Cadmium	7440-43-9	6.42667E-09	1.5424E-08
P_0111	Cadmium	7440-43-9	6.12704E-09	1.47049E-08
F_1160	Cadmium	7440-43-9	3.71106E-08	8.90654E-08
P_0048	Cadmium	7440-43-9	-5.1554E-10	-1.2373E-09
P_0058	Cadmium	7440-43-9	2.91821E-08	7.00371E-08

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
P_0116	Cadmium	7440-43-9	-9.33957E-08	-2.2415E-07
F_1660	Cadmium	7440-43-9	1.54035E-09	3.69685E-09
SRU1_N	Cadmium	7440-43-9	2.45681E-06	5.89635E-06
P_0122	Cadmium	7440-43-9	2.03668E-08	4.88803E-08
P_0117	Cadmium	7440-43-9	7.43175E-08	1.78362E-07
SRU2_E	Cadmium	7440-43-9	-1.91384E-06	-4.59321E-06
P_0055	Cadmium	7440-43-9	3.37309E-09	8.09541E-09
P_0119	Cadmium	7440-43-9	9.8612E-09	2.36669E-08
SRU1_E	Cadmium	7440-43-9	-1.7988E-06	-4.31712E-06
P_0121	Cadmium	7440-43-9	2.43366E-08	5.84078E-08
P_0049	Cadmium	7440-43-9	-7.82225E-09	-1.87734E-08
P_4155	Cadmium	7440-43-9	8.44008E-08	2.02562E-07
P_0047	Cadmium	7440-43-9	-4.66104E-10	-1.11865E-09
SRU2_N	Carbon Disulfide	75-15-0	0.01009554	0.024229296
SRU1_E	Carbon Disulfide	75-15-0	-0.014371016	-0.034490438
SRU3_N	Carbon Disulfide	75-15-0	0.018863207	0.045271697
SRU1_N	Carbon Disulfide	75-15-0	0.012875592	0.030901421
SRU2_E	Carbon Disulfide	75-15-0	-0.009418419	-0.022604206
SRU3_E	Carbon Disulfide	75-15-0	-0.018054541	-0.043330898
H2_COOL1	Chlorine	7782-50-5	2.06012E-06	4.9443E-06
H2_COOL2	Chlorine	7782-50-5	2.06012E-06	4.9443E-06
H2_COOL3	Chlorine	7782-50-5	2.06012E-06	4.9443E-06
H2_COOL3	Chloroform	67-66-3	0.000152906	0.000366974
H2_COOL2	Chloroform	67-66-3	0.000152906	0.000366974
H2_COOL1	Chloroform	67-66-3	0.000152906	0.000366974
P_0121	Chromium (hexavalent)	18540-29-9	4.86732E-08	1.16816E-07
P_0058	Chromium (hexavalent)	18540-29-9	5.83642E-08	1.40074E-07
P_0217	Chromium (hexavalent)	18540-29-9	2.5157E-08	6.03768E-08
P_0216	Chromium (hexavalent)	18540-29-9	1.64792E-08	3.955E-08
P_0057	Chromium (hexavalent)	18540-29-9	6.36873E-08	1.5285E-07
P_0109	Chromium (hexavalent)	18540-29-9	1.28533E-08	3.0848E-08
P_4155	Chromium (hexavalent)	18540-29-9	1.68802E-07	4.05124E-07
P_0111	Chromium (hexavalent)	18540-29-9	1.22541E-08	2.94098E-08
P_0215	Chromium (hexavalent)	18540-29-9	4.68204E-08	1.12369E-07
P_0116	Chromium (hexavalent)	18540-29-9	-1.86791E-07	-4.48299E-07
P_0117	Chromium (hexavalent)	18540-29-9	1.48635E-07	3.56724E-07
P_311	Chromium (hexavalent)	18540-29-9	3.01244E-08	7.22986E-08
P_0147	Chromium (hexavalent)	18540-29-9	4.54542E-09	1.0909E-08
P_0148	Chromium (hexavalent)	18540-29-9	2.02311E-09	4.85547E-09
P_0119	Chromium (hexavalent)	18540-29-9	1.97224E-08	4.73338E-08

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
P_0122	Chromium (hexavalent)	18540-29-9	4.07336E-08	9.77605E-08
P_0047	Chromium (hexavalent)	18540-29-9	-9.32209E-10	-2.2373E-09
F_1160	Chromium (hexavalent)	18540-29-9	7.42211E-08	1.78131E-07
P_0049	Chromium (hexavalent)	18540-29-9	-1.56445E-08	-3.75468E-08
P_0048	Chromium (hexavalent)	18540-29-9	-1.03108E-09	-2.47459E-09
P_0055	Chromium (hexavalent)	18540-29-9	6.74618E-09	1.61908E-08
F_1660	Chromium (hexavalent)	18540-29-9	3.08071E-09	7.3937E-09
SRU1_E	Chrysene	218-01-9	-5.67407E-09	-1.36178E-08
SRU3_E	Chrysene	218-01-9	-8.32553E-09	-1.99813E-08
H2TRAIN2	Chrysene	218-01-9	2.22374E-07	5.33698E-07
SRU2_E	Chrysene	218-01-9	-6.03693E-09	-1.44886E-08
H2FLARE	Chrysene	218-01-9	3.87028E-10	9.28867E-10
SRU1_N	Chrysene	218-01-9	7.74968E-09	1.85992E-08
SRU3_N	Chrysene	218-01-9	1.3543E-08	3.25032E-08
H2TRAIN1	Chrysene	218-01-9	2.22374E-07	5.33698E-07
SRU2_N	Chrysene	218-01-9	7.75263E-09	1.86063E-08
SRU3_N	Copper (all) pollutant	7440-50-8	4.11333E-05	9.87199E-05
P_0127	Copper (all) pollutant	7440-50-8	-7.66943E-06	-1.84066E-05
P_0129	Copper (all) pollutant	7440-50-8	-7.66943E-06	-1.84066E-05
H2TRAIN1	Copper (all) pollutant	7440-50-8	0.000675403	0.001620966
P_0128	Copper (all) pollutant	7440-50-8	-7.66943E-06	-1.84066E-05
H2_COOL1	Copper (all) pollutant	7440-50-8	9.67779E-08	2.32267E-07
P_0148	Copper (all) pollutant	7440-50-8	3.1864E-08	7.64736E-08
P_0260	Copper (all) pollutant	7440-50-8	-2.64653E-05	-6.35167E-05
H2FLARE	Copper (all) pollutant	7440-50-8	1.17549E-06	2.82119E-06
H2_COOL3	Copper (all) pollutant	7440-50-8	9.67779E-08	2.32267E-07
P_0215	Copper (all) pollutant	7440-50-8	2.34102E-07	5.61844E-07
SRU1_E	Copper (all) pollutant	7440-50-8	-1.72335E-05	-4.13603E-05
H2_COOL2	Copper (all) pollutant	7440-50-8	9.67779E-08	2.32267E-07
SRU1_N	Copper (all) pollutant	7440-50-8	2.35376E-05	5.64902E-05
H2TRAIN2	Copper (all) pollutant	7440-50-8	0.000675403	0.001620966
SRU2_E	Copper (all) pollutant	7440-50-8	-1.83356E-05	-4.40054E-05
P_0217	Copper (all) pollutant	7440-50-8	1.25785E-07	3.01884E-07
SRU2_N	Copper (all) pollutant	7440-50-8	2.35465E-05	5.65117E-05
SRU3_E	Copper (all) pollutant	7440-50-8	-2.52866E-05	-6.06878E-05
P_0130	Copper (all) pollutant	7440-50-8	-7.66943E-06	-1.84066E-05
P_0216	Copper (all) pollutant	7440-50-8	8.23959E-08	1.9775E-07
T1899	Diethanolamine	111-42-2	1.23297E-05	2.95913E-05
T3213	Diethanolamine	111-42-2	1.23297E-05	2.95913E-05
SRU	Diethanolamine	111-42-2	0.016540818	0.039697962

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
T3100	Diethanolamine	111-42-2	1.23297E-05	2.95913E-05
TKC	Diethanolamine	111-42-2	0.00654441	0.015706585
MRKRACK	Ethylbenzene	100-41-4	9.01616E-06	2.16388E-05
SRU2_N	Ethylbenzene	100-41-4	7.29902E-05	0.000175176
NEWHP	Ethylbenzene	100-41-4	5.40813E-05	0.000129795
T3100	Ethylbenzene	100-41-4	0.000100279	0.00024067
H2TRAIN2	Ethylbenzene	100-41-4	0.002093629	0.005024711
SRU1_E	Ethylbenzene	100-41-4	-5.34207E-05	-0.00012821
H2FLARE	Ethylbenzene	100-41-4	3.64383E-06	8.74519E-06
SRU1_N	Ethylbenzene	100-41-4	7.29624E-05	0.00017511
T3213	Ethylbenzene	100-41-4	0.000100279	0.00024067
SRU3_E	Ethylbenzene	100-41-4	-7.8384E-05	-0.000188122
TKC	Ethylbenzene	100-41-4	0.001043028	0.002503268
SRU2_E	Ethylbenzene	100-41-4	-5.68371E-05	-0.000136409
T1899	Ethylbenzene	100-41-4	0.000100279	0.00024067
H2TRAIN1	Ethylbenzene	100-41-4	0.002093629	0.005024711
MARINELD	Ethylbenzene	100-41-4	0.000185755	0.000445812
SRU3_N	Ethylbenzene	100-41-4	0.000127506	0.000306014
SRU3_N	Formaldehyde	50-00-0	0.00071533	0.001716792
P_0127	Formaldehyde	50-00-0	-3.66799E-05	-8.80317E-05
P_0148	Formaldehyde	50-00-0	4.45084E-08	1.0682E-07
P_0057	Formaldehyde	50-00-0	1.40112E-06	3.36269E-06
SRU2_E	Formaldehyde	50-00-0	-0.000318866	-0.000765278
P_0130	Formaldehyde	50-00-0	-3.66799E-05	-8.80317E-05
P_0055	Formaldehyde	50-00-0	1.48416E-07	3.56198E-07
P_0260	Formaldehyde	50-00-0	-0.000126573	-0.000303776
P_0129	Formaldehyde	50-00-0	-3.66799E-05	-8.80317E-05
P_311	Formaldehyde	50-00-0	6.62737E-07	1.59057E-06
P_0128	Formaldehyde	50-00-0	-3.66799E-05	-8.80317E-05
H2FLARE	Formaldehyde	50-00-0	2.04425E-05	4.9062E-05
H2TRAIN1	Formaldehyde	50-00-0	0.011745616	0.028189479
P_0216	Formaldehyde	50-00-0	6.41864E-05	0.000154047
P_4155	Formaldehyde	50-00-0	3.71364E-06	8.91273E-06
P_0119	Formaldehyde	50-00-0	4.33893E-07	1.04134E-06
P_0047	Formaldehyde	50-00-0	-2.05086E-08	-4.92206E-08
P_0116	Formaldehyde	50-00-0	-4.10941E-06	-9.86258E-06
P_0215	Formaldehyde	50-00-0	0.000182365	0.000437677
P_0111	Formaldehyde	50-00-0	2.6959E-07	6.47015E-07
SRU1_N	Formaldehyde	50-00-0	0.000409331	0.000982395
P_0117	Formaldehyde	50-00-0	3.26997E-06	7.84793E-06

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
SRU2_N	Formaldehyde	50-00-0	0.000409487	0.000982769
P_0122	Formaldehyde	50-00-0	8.96138E-07	2.15073E-06
P_0217	Formaldehyde	50-00-0	9.79865E-05	0.000235168
H2TRAIN2	Formaldehyde	50-00-0	0.011745616	0.028189479
P_0109	Formaldehyde	50-00-0	2.82774E-07	6.78656E-07
P_0147	Formaldehyde	50-00-0	9.99991E-08	2.39998E-07
SRU1_E	Formaldehyde	50-00-0	-0.000299699	-0.000719279
SRU3_E	Formaldehyde	50-00-0	-0.000439747	-0.001055394
P_0121	Formaldehyde	50-00-0	1.07081E-06	2.56994E-06
F_1160	Formaldehyde	50-00-0	1.63286E-06	3.91888E-06
F_1660	Formaldehyde	50-00-0	6.77755E-08	1.62661E-07
P_0049	Formaldehyde	50-00-0	-3.44179E-07	-8.2603E-07
P_0058	Formaldehyde	50-00-0	1.28401E-06	3.08163E-06
P_0048	Formaldehyde	50-00-0	-2.26837E-08	-5.4441E-08
T1899	Hexane	110-54-3	0.00116204	0.002788896
T3213	Hexane	110-54-3	0.00116204	0.002788896
NEWHP	Hexane	110-54-3	0.000175634	0.000421521
MRKRACK	Hexane	110-54-3	0.000145547	0.000349312
TKC	Hexane	110-54-3	0.002879251	0.006910203
T3100	Hexane	110-54-3	0.00116204	0.002788896
MARINELD	Hexane	110-54-3	0.001519138	0.003645932
H2_COOL1	Cyanide	74-90-8	4.28314E-08	1.02795E-07
H2_COOL3	Cyanide	74-90-8	4.28314E-08	1.02795E-07
H2_COOL2	Cyanide	74-90-8	4.28314E-08	1.02795E-07
TKC	Hydrogen Sulfide (H2S)	7783-06-4	0.002190387	0.00525693
SRU1_N	Hydrogen Sulfide (H2S)	7783-06-4	0.026725112	0.06414027
SRU2_N	Hydrogen Sulfide (H2S)	7783-06-4	0.026735334	0.064164802
NEWHP	Hydrogen Sulfide (H2S)	7783-06-4	0.000870695	0.002089667
T3213	Hydrogen Sulfide (H2S)	7783-06-4	0.000326004	0.00078241
N_SULFVT	Hydrogen Sulfide (H2S)	7783-06-4	0.000941654	0.00225997
SRU	Hydrogen Sulfide (H2S)	7783-06-4	0.01252255	0.030054119
SRU3_N	Hydrogen Sulfide (H2S)	7783-06-4	0.054786002	0.131486405
T3100	Hydrogen Sulfide (H2S)	7783-06-4	0.000326004	0.00078241
T1899	Hydrogen Sulfide (H2S)	7783-06-4	0.000326004	0.00078241
SRU3_E	Indeno(1,2,3-cd)pyrene	193-39-5	-2.68366E-07	-6.44077E-07
SRU1_N	Indeno(1,2,3-cd)pyrene	193-39-5	2.49803E-07	5.99528E-07
SRU2_N	Indeno(1,2,3-cd)pyrene	193-39-5	2.49899E-07	5.99757E-07
SRU1_E	Indeno(1,2,3-cd)pyrene	193-39-5	-1.82898E-07	-4.38956E-07
SRU2_E	Indeno(1,2,3-cd)pyrene	193-39-5	-1.94595E-07	-4.67027E-07
H2TRAIN1	Indeno(1,2,3-cd)pyrene	193-39-5	7.16802E-06	1.72032E-05

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
H2FLARE	Indeno(1,2,3-cd)pyrene	193-39-5	1.24755E-08	2.99412E-08
SRU3_N	Indeno(1,2,3-cd)pyrene	193-39-5	4.36546E-07	1.04771E-06
H2TRAIN2	Indeno(1,2,3-cd)pyrene	193-39-5	7.16802E-06	1.72032E-05
SRU1_N	Lead (all) pollutant	7439-92-1	1.01818E-05	2.44362E-05
H2TRAIN2	Lead (all) pollutant	7439-92-1	0.000292162	0.000701188
H2_COOL1	Lead (all) pollutant	7439-92-1	3.90465E-09	9.37117E-09
H2_COOL2	Lead (all) pollutant	7439-92-1	3.90465E-09	9.37117E-09
SRU2_N	Lead (all) pollutant	7439-92-1	1.01856E-05	2.44455E-05
H2_COOL3	Lead (all) pollutant	7439-92-1	3.90465E-09	9.37117E-09
SRU3_E	Lead (all) pollutant	7439-92-1	-1.09383E-05	-2.6252E-05
H2TRAIN1	Lead (all) pollutant	7439-92-1	0.000292162	0.000701188
H2FLARE	Lead (all) pollutant	7439-92-1	5.08489E-07	1.22037E-06
SRU2_E	Lead (all) pollutant	7439-92-1	-7.9315E-06	-1.90356E-05
SRU3_N	Lead (all) pollutant	7439-92-1	1.77932E-05	4.27037E-05
SRU1_E	Lead (all) pollutant	7439-92-1	-7.45476E-06	-1.78914E-05
FCCU	Manganese	7439-96-5	5.52117E-05	0.000132508
P_0117	Manganese	7439-96-5	5.05359E-06	1.21286E-05
F_1160	Manganese	7439-96-5	2.52352E-06	6.05644E-06
P_0119	Manganese	7439-96-5	6.70562E-07	1.60935E-06
H2TRAIN2	Manganese	7439-96-5	0.000547656	0.001314373
P_0116	Manganese	7439-96-5	-6.35091E-06	-1.52422E-05
SRU1_E	Manganese	7439-96-5	-1.39739E-05	-3.35374E-05
SRU2_N	Manganese	7439-96-5	1.90929E-05	4.5823E-05
SRU3_E	Manganese	7439-96-5	-2.05038E-05	-4.92092E-05
F_1660	Manganese	7439-96-5	1.04744E-07	2.51386E-07
P_0111	Manganese	7439-96-5	4.16639E-07	9.99933E-07
P_0057	Manganese	7439-96-5	2.16537E-06	5.19689E-06
P_0109	Manganese	7439-96-5	4.37014E-07	1.04883E-06
SRU3_N	Manganese	7439-96-5	3.33533E-05	8.00478E-05
P_0058	Manganese	7439-96-5	1.98438E-06	4.76252E-06
H2TRAIN1	Manganese	7439-96-5	0.000547656	0.001314373
P_0047	Manganese	7439-96-5	-3.16951E-08	-7.60682E-08
P_0055	Manganese	7439-96-5	2.2937E-07	5.50488E-07
H2FLARE	Manganese	7439-96-5	9.5316E-07	2.28758E-06
SRU2_E	Manganese	7439-96-5	-1.48676E-05	-3.56821E-05
P_0049	Manganese	7439-96-5	-5.31913E-07	-1.27659E-06
P_0048	Manganese	7439-96-5	-3.50567E-08	-8.41361E-08
SRU1_N	Manganese	7439-96-5	1.90856E-05	4.58055E-05
P_0217	Manganese	7439-96-5	1.13207E-06	2.71696E-06
P_0260	Manganese	7439-96-5	-0.000161093	-0.000386624

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
P_0127	Manganese	7439-96-5	-4.66835E-05	-0.00011204
P_0147	Manganese	7439-96-5	1.54544E-07	3.70906E-07
P_0148	Manganese	7439-96-5	6.87858E-08	1.65086E-07
P_0122	Manganese	7439-96-5	1.38494E-06	3.32386E-06
P_4155	Manganese	7439-96-5	5.73926E-06	1.37742E-05
P_0128	Manganese	7439-96-5	-4.66835E-05	-0.00011204
P_0216	Manganese	7439-96-5	7.41563E-07	1.77975E-06
P_0121	Manganese	7439-96-5	1.65489E-06	3.97173E-06
P_0215	Manganese	7439-96-5	2.10692E-06	5.0566E-06
P_0130	Manganese	7439-96-5	-4.66835E-05	-0.00011204
P_311	Manganese	7439-96-5	1.02423E-06	2.45815E-06
P_0129	Manganese	7439-96-5	-4.66835E-05	-0.00011204
SRU2_N	Mercury (all) pollutant	7439-97-6	9.93821E-07	2.38517E-06
P_0127	Mercury (all) pollutant	7439-97-6	-3.33453E-07	-8.00288E-07
P_0129	Mercury (all) pollutant	7439-97-6	-3.33453E-07	-8.00288E-07
P_0058	Mercury (all) pollutant	7439-97-6	1.45911E-07	3.50185E-07
H2TRAIN1	Mercury (all) pollutant	7439-97-6	2.85065E-05	6.84156E-05
F_1160	Mercury (all) pollutant	7439-97-6	1.85553E-07	4.45327E-07
SRU1_N	Mercury (all) pollutant	7439-97-6	9.93443E-07	2.38426E-06
P_0109	Mercury (all) pollutant	7439-97-6	3.21334E-08	7.71201E-08
P_0216	Mercury (all) pollutant	7439-97-6	1.64792E-07	3.955E-07
P_0122	Mercury (all) pollutant	7439-97-6	1.01834E-07	2.44401E-07
SRU3_N	Mercury (all) pollutant	7439-97-6	1.7361E-06	4.16663E-06
P_0260	Mercury (all) pollutant	7439-97-6	-1.15067E-06	-2.7616E-06
P_0055	Mercury (all) pollutant	7439-97-6	1.68654E-08	4.04771E-08
P_0057	Mercury (all) pollutant	7439-97-6	1.59218E-07	3.82124E-07
P_0048	Mercury (all) pollutant	7439-97-6	-2.5777E-09	-6.18648E-09
P_4155	Mercury (all) pollutant	7439-97-6	4.22004E-07	1.01281E-06
P_0217	Mercury (all) pollutant	7439-97-6	2.5157E-07	6.03768E-07
F_1660	Mercury (all) pollutant	7439-97-6	7.70177E-09	1.84842E-08
P_0147	Mercury (all) pollutant	7439-97-6	1.13635E-08	2.72725E-08
SRU2_E	Mercury (all) pollutant	7439-97-6	-7.73884E-07	-1.85732E-06
P_0049	Mercury (all) pollutant	7439-97-6	-3.91113E-08	-9.3867E-08
P_0047	Mercury (all) pollutant	7439-97-6	-2.33052E-09	-5.59325E-09
SRU3_E	Mercury (all) pollutant	7439-97-6	-1.06726E-06	-2.56143E-06
P_0128	Mercury (all) pollutant	7439-97-6	-3.33453E-07	-8.00288E-07
H2TRAIN2	Mercury (all) pollutant	7439-97-6	2.85065E-05	6.84156E-05
P_0130	Mercury (all) pollutant	7439-97-6	-3.33453E-07	-8.00288E-07
P_311	Mercury (all) pollutant	7439-97-6	7.53111E-08	1.80747E-07
H2_COOL2	Mercury (all) pollutant	7439-97-6	2.76919E-10	6.64605E-10

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
P_0119	Mercury (all) pollutant	7439-97-6	4.9306E-08	1.18334E-07
P_0116	Mercury (all) pollutant	7439-97-6	-4.66978E-07	-1.12075E-06
SRU1_E	Mercury (all) pollutant	7439-97-6	-7.27367E-07	-1.74568E-06
P_0215	Mercury (all) pollutant	7439-97-6	4.68204E-07	1.12369E-06
P_0148	Mercury (all) pollutant	7439-97-6	5.05778E-09	1.21387E-08
P_0111	Mercury (all) pollutant	7439-97-6	3.06352E-08	7.35245E-08
H2_COOL1	Mercury (all) pollutant	7439-97-6	2.76919E-10	6.64605E-10
H2FLARE	Mercury (all) pollutant	7439-97-6	4.96137E-08	1.19073E-07
P_0121	Mercury (all) pollutant	7439-97-6	1.21683E-07	2.92039E-07
H2_COOL3	Mercury (all) pollutant	7439-97-6	2.76919E-10	6.64605E-10
P_0117	Mercury (all) pollutant	7439-97-6	3.71588E-07	8.9181E-07
H2TRAIN2	Methyl alcohol	67-56-1	7.94017E-06	1.90564E-05
H2VENTB	Methyl alcohol	67-56-1	-0.020765918	-0.049838203
H2VENTA	Methyl alcohol	67-56-1	-0.020765918	-0.049838203
H2TRAIN1	Methyl alcohol	67-56-1	7.94017E-06	1.90564E-05
NEWHP	Cresol	1319-77-3	9.34916E-05	0.00022438
SRU1_E	Naphthalene	91-20-3	-1.43059E-06	-3.43341E-06
T1899	Naphthalene	91-20-3	3.00875E-07	7.22101E-07
TKC	Naphthalene	91-20-3	0.000836887	0.00200853
H2FLARE	Naphthalene	91-20-3	9.75805E-08	2.34193E-07
SRU3_N	Naphthalene	91-20-3	3.41457E-06	8.19496E-06
SRU1_N	Naphthalene	91-20-3	1.95391E-06	4.68938E-06
MARINELD	Naphthalene	91-20-3	4.03311E-07	9.67946E-07
T3213	Naphthalene	91-20-3	3.00875E-07	7.22101E-07
T3100	Naphthalene	91-20-3	3.00875E-07	7.22101E-07
H2TRAIN1	Naphthalene	91-20-3	5.60667E-05	0.00013456
SRU3_E	Naphthalene	91-20-3	-2.0991E-06	-5.03783E-06
NEWHP	Naphthalene	91-20-3	0.000316433	0.000759439
H2TRAIN2	Naphthalene	91-20-3	5.60667E-05	0.00013456
SRU2_N	Naphthalene	91-20-3	1.95465E-06	4.69117E-06
MRKRACK	Naphthalene	91-20-3	3.86407E-08	9.27376E-08
SRU2_E	Naphthalene	91-20-3	-1.52208E-06	-3.65299E-06
P_0127	Nickel pollutant	7440-02-0	-1.66727E-06	-4.00144E-06
FCCU	Nickel pollutant	7440-02-0	3.06732E-07	7.36157E-07
P_4155	Nickel pollutant	7440-02-0	6.75206E-07	1.6205E-06
SRU1_E	Nickel pollutant	7440-02-0	-1.49397E-05	-3.58553E-05
H2TRAIN1	Nickel pollutant	7440-02-0	0.000585507	0.001405216
F_1660	Nickel pollutant	7440-02-0	1.23228E-08	2.95748E-08
SRU2_E	Nickel pollutant	7440-02-0	-1.58951E-05	-3.81483E-05
P_0130	Nickel pollutant	7440-02-0	-1.66727E-06	-4.00144E-06

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
P_0055	Nickel pollutant	7440-02-0	2.69847E-08	6.47633E-08
P_0048	Nickel pollutant	7440-02-0	-4.12432E-09	-9.89836E-09
H2TRAIN2	Nickel pollutant	7440-02-0	0.000585507	0.001405216
H2_COOL3	Nickel pollutant	7440-02-0	5.94082E-08	1.4258E-07
P_0128	Nickel pollutant	7440-02-0	-1.66727E-06	-4.00144E-06
P_0049	Nickel pollutant	7440-02-0	-6.2578E-08	-1.50187E-07
P_0121	Nickel pollutant	7440-02-0	1.94693E-07	4.67262E-07
P_0147	Nickel pollutant	7440-02-0	1.81817E-08	4.3636E-08
H2_COOL1	Nickel pollutant	7440-02-0	5.94082E-08	1.4258E-07
SRU3_E	Nickel pollutant	7440-02-0	-2.19209E-05	-5.26103E-05
P_0117	Nickel pollutant	7440-02-0	5.9454E-07	1.4269E-06
P_0111	Nickel pollutant	7440-02-0	4.90163E-08	1.17639E-07
P_0109	Nickel pollutant	7440-02-0	5.14134E-08	1.23392E-07
H2FLARE	Nickel pollutant	7440-02-0	1.01904E-06	2.44569E-06
P_311	Nickel pollutant	7440-02-0	1.20498E-07	2.89194E-07
P_0122	Nickel pollutant	7440-02-0	1.62934E-07	3.91042E-07
SRU2_N	Nickel pollutant	7440-02-0	2.04125E-05	4.899E-05
P_0057	Nickel pollutant	7440-02-0	2.54749E-07	6.11398E-07
SRU3_N	Nickel pollutant	7440-02-0	3.56584E-05	8.55803E-05
P_0217	Nickel pollutant	7440-02-0	1.25785E-07	3.01884E-07
H2_COOL2	Nickel pollutant	7440-02-0	5.94082E-08	1.4258E-07
P_0260	Nickel pollutant	7440-02-0	-5.75333E-06	-1.3808E-05
P_0058	Nickel pollutant	7440-02-0	2.33457E-07	5.60296E-07
P_0129	Nickel pollutant	7440-02-0	-1.66727E-06	-4.00144E-06
P_0215	Nickel pollutant	7440-02-0	2.34102E-07	5.61844E-07
F_1160	Nickel pollutant	7440-02-0	2.96885E-07	7.12523E-07
P_0119	Nickel pollutant	7440-02-0	7.88896E-08	1.89335E-07
P_0116	Nickel pollutant	7440-02-0	-7.47166E-07	-1.7932E-06
P_0047	Nickel pollutant	7440-02-0	-3.72883E-09	-8.9492E-09
P_0216	Nickel pollutant	7440-02-0	8.23959E-08	1.9775E-07
SRU1_N	Nickel pollutant	7440-02-0	2.04047E-05	4.89714E-05
H2TRAIN2	Phenol	108-95-2	0.000547656	0.001314373
P_4155	Phenol	108-95-2	7.97588E-06	1.91421E-05
P_0055	Phenol	108-95-2	3.18757E-07	7.65016E-07
P_0121	Phenol	108-95-2	2.29981E-06	5.51954E-06
P_0122	Phenol	108-95-2	1.92466E-06	4.61919E-06
P_0047	Phenol	108-95-2	-4.40469E-08	-1.05712E-07
P_0057	Phenol	108-95-2	3.00923E-06	7.22214E-06
SRU1_N	Phenol	108-95-2	1.90856E-05	4.58055E-05
P_0049	Phenol	108-95-2	-7.39203E-07	-1.77409E-06

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
P_0058	Phenol	108-95-2	2.75771E-06	6.6185E-06
P_0216	Phenol	108-95-2	6.59167E-06	1.582E-05
P_0127	Phenol	108-95-2	-1.50054E-05	-3.6013E-05
NEWHP	Phenol	108-95-2	0.000486156	0.001166775
P_0109	Phenol	108-95-2	6.0732E-07	1.45757E-06
P_0119	Phenol	108-95-2	9.31884E-07	2.23652E-06
P_0111	Phenol	108-95-2	5.79005E-07	1.38961E-06
P_0116	Phenol	108-95-2	-8.82589E-06	-2.11821E-05
SRU1_E	Phenol	108-95-2	-1.39739E-05	-3.35374E-05
P_0117	Phenol	108-95-2	7.02301E-06	1.68552E-05
SRU3_E	Phenol	108-95-2	-2.05038E-05	-4.92092E-05
SRU2_N	Phenol	108-95-2	1.90929E-05	4.5823E-05
SRU2_E	Phenol	108-95-2	-1.48676E-05	-3.56821E-05
P_0129	Phenol	108-95-2	-1.50054E-05	-3.6013E-05
SRU3_N	Phenol	108-95-2	3.33533E-05	8.00478E-05
H2FLARE	Phenol	108-95-2	9.5316E-07	2.28758E-06
P_0147	Phenol	108-95-2	2.14771E-07	5.1545E-07
P_0048	Phenol	108-95-2	-4.87185E-08	-1.16924E-07
P_0130	Phenol	108-95-2	-1.50054E-05	-3.6013E-05
P_0260	Phenol	108-95-2	-5.178E-05	-0.000124272
P_0217	Phenol	108-95-2	1.00628E-05	2.41507E-05
P_0148	Phenol	108-95-2	9.5592E-08	2.29421E-07
P_311	Phenol	108-95-2	1.42338E-06	3.41611E-06
P_0128	Phenol	108-95-2	-1.50054E-05	-3.6013E-05
F_1660	Phenol	108-95-2	1.45563E-07	3.49352E-07
P_0215	Phenol	108-95-2	1.87281E-05	4.49476E-05
H2TRAIN1	Phenol	108-95-2	0.000547656	0.001314373
F_1160	Phenol	108-95-2	3.50695E-06	8.41668E-06
NEWHP	Propylene	115-07-1	0.00859484	0.020627617
SRU1_N	Selenium	7782-49-2	2.04047E-05	4.89714E-05
H2TRAIN2	Selenium	7782-49-2	0.000585507	0.001405216
SRU3_E	Selenium	7782-49-2	-2.19209E-05	-5.26103E-05
H2TRAIN1	Selenium	7782-49-2	0.000585507	0.001405216
SRU2_E	Selenium	7782-49-2	-1.58951E-05	-3.81483E-05
SRU2_N	Selenium	7782-49-2	2.04125E-05	4.899E-05
H2FLARE	Selenium	7782-49-2	1.01904E-06	2.44569E-06
SRU3_N	Selenium	7782-49-2	3.56584E-05	8.55803E-05
SRU1_E	Selenium	7782-49-2	-1.49397E-05	-3.58553E-05
SRU3_N	Sulfuric Acid mist pollutant	7664-93-9	0.04546864	0.109124737
P_0130	Sulfuric Acid mist pollutant	7664-93-9	-1.25179E-09	-3.00431E-09

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
SRU2_N	Sulfuric Acid mist pollutant	7664-93-9	0.025518733	0.061244959
SRU3_E	Sulfuric Acid mist pollutant	7664-93-9	-0.308886178	-0.741326827
P_0127	Sulfuric Acid mist pollutant	7664-93-9	-1.25179E-09	-3.00431E-09
P_0116	Sulfuric Acid mist pollutant	7664-93-9	-3.5061E-10	-8.41465E-10
P_0128	Sulfuric Acid mist pollutant	7664-93-9	-1.25179E-09	-3.00431E-09
H2TRAIN1	Sulfuric Acid mist pollutant	7664-93-9	0.005432809	0.013038742
SRU1_E	Sulfuric Acid mist pollutant	7664-93-9	-0.270098142	-0.64823554
P_0260	Sulfuric Acid mist pollutant	7664-93-9	-4.31964E-09	-1.03671E-08
SRU2_E	Sulfuric Acid mist pollutant	7664-93-9	-0.181480869	-0.435554085
H2FLARE	Sulfuric Acid mist pollutant	7664-93-9	0.000142267	0.00034144
P_0129	Sulfuric Acid mist pollutant	7664-93-9	-1.25179E-09	-3.00431E-09
H2TRAIN2	Sulfuric Acid mist pollutant	7664-93-9	0.005432809	0.013038742
SRU1_N	Sulfuric Acid mist pollutant	7664-93-9	0.040389213	0.096934111
T3213	Perchloroethylene	127-18-4	6.61107E-07	1.58666E-06
T1899	Perchloroethylene	127-18-4	6.61107E-07	1.58666E-06
T3100	Perchloroethylene	127-18-4	6.61107E-07	1.58666E-06
H2TRAIN2	Toluene	108-88-3	0.00992404	0.023817697
MRKRACK	Toluene	108-88-3	0.000140394	0.000336947
SRU2_N	Toluene	108-88-3	0.000345982	0.000830356
P_0127	Toluene	108-88-3	-0.001173756	-0.002817013
MARINELD	Toluene	108-88-3	0.00292868	0.007028833
H2FLARE	Toluene	108-88-3	1.72722E-05	4.14532E-05
P_0217	Toluene	108-88-3	7.48421E-05	0.000179621
P_0130	Toluene	108-88-3	-0.001173756	-0.002817013
T1899	Toluene	108-88-3	0.003582091	0.008597018
SRU3_N	Toluene	108-88-3	0.000604393	0.001450542
P_0215	Toluene	108-88-3	0.000139291	0.000334297
TKC	Toluene	108-88-3	0.004210204	0.010104491
P_0216	Toluene	108-88-3	4.90255E-05	0.000117661
SRU3_E	Toluene	108-88-3	-0.000371549	-0.000891717
SRU1_N	Toluene	108-88-3	0.00034585	0.00083004
T3213	Toluene	108-88-3	0.003582091	0.008597018
SRU1_E	Toluene	108-88-3	-0.00025322	-0.000607729
H2TRAIN1	Toluene	108-88-3	0.00992404	0.023817697
NEWHP	Toluene	108-88-3	9.34916E-05	0.00022438
P_0128	Toluene	108-88-3	-0.001173756	-0.002817013
SRU2_E	Toluene	108-88-3	-0.000269414	-0.000646594
T3100	Toluene	108-88-3	0.003582091	0.008597018
P_0129	Toluene	108-88-3	-0.001173756	-0.002817013
P_0260	Toluene	108-88-3	-0.004050343	-0.009720823

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
H2TRAIN1	Xylene	1330-20-7	0.004920621	0.01180949
SRU2_N	Xylene	1330-20-7	0.000171548	0.000411714
T3100	Xylene	1330-20-7	0.000490418	0.001177003
SRU1_E	Xylene	1330-20-7	-0.000125554	-0.000301329
T3213	Xylene	1330-20-7	0.000490418	0.001177003
SRU2_E	Xylene	1330-20-7	-0.000133583	-0.0003206
SRU3_E	Xylene	1330-20-7	-0.000184225	-0.000442139
T1899	Xylene	1330-20-7	0.000490418	0.001177003
TKC	Xylene	1330-20-7	0.004725557	0.011341336
H2TRAIN2	Xylene	1330-20-7	0.004920621	0.01180949
SRU1_N	Xylene	1330-20-7	0.000171482	0.000411557
H2FLARE	Xylene	1330-20-7	8.56403E-06	2.05537E-05
SRU3_N	Xylene	1330-20-7	0.000299675	0.00071922
MRKRACK	Xylene	1330-20-7	4.50808E-05	0.000108194
MARINELD	Xylene	1330-20-7	0.000940402	0.002256965
NEWHP	Xylene	1330-20-7	0.000227832	0.000546796
CTALKY_A	PM2.5	EDF213	6.00047E-06	
CTALKY_B	PM2.5	EDF213	6.00047E-06	
CTALKY_C	PM2.5	EDF213	6.00047E-06	
CTALKY_D	PM2.5	EDF213	6.00047E-06	
CTALKY_E	PM2.5	EDF213	6.00047E-06	
CTALKY_F	PM2.5	EDF213	6.00047E-06	
E_SULFVT	PM2.5	EDF213	-3.23624E-06	
F_1160	PM2.5	EDF213	0.018564304	
F_1650	PM2.5	EDF213	0.001405965	
F_1660	PM2.5	EDF213	0.000770551	
FCCU	PM2.5	EDF213	0.514348191	
H2_COOL1	PM2.5	EDF213	0.018869427	
H2_COOL2	PM2.5	EDF213	0.018869427	
H2_COOL3	PM2.5	EDF213	0.018869427	
H2FLARE	PM2.5	EDF213	0.001502097	
H2TRAIN1	PM2.5	EDF213	0.297909146	
H2TRAIN2	PM2.5	EDF213	0.297909146	
N_SULFVT	PM2.5	EDF213	0.000143201	
P_0047	PM2.5	EDF213	-0.000233165	
P_0048	PM2.5	EDF213	-0.000257895	
P_0049	PM2.5	EDF213	-0.003913028	
P_0055	PM2.5	EDF213	0.001687364	
P_0057	PM2.5	EDF213	0.015929573	
P_0058	PM2.5	EDF213	0.014598146	

Table A4.3-HRA-Attachment 4-15
Refinery Incremental Emission Rates between Project 93% Case and Baseline
Chevron Modernization Project
Richmond, California

Model ID	Pollutant	CAS	Incremental Annual Emissions (g/s)	Incremental Hourly Emissions (g/s)
P_0109	PM2.5	EDF213	0.003214898	
P_0111	PM2.5	EDF213	0.003065009	
P_0116	PM2.5	EDF213	-0.035264316	
P_0117	PM2.5	EDF213	0.030036334	
P_0119	PM2.5	EDF213	0.004932999	
P_0120	PM2.5	EDF213	0.032454587	
P_0121	PM2.5	EDF213	0.012174204	
P_0122	PM2.5	EDF213	0.010188341	
P_0127	PM2.5	EDF213	-0.125905192	
P_0128	PM2.5	EDF213	-0.125905192	
P_0129	PM2.5	EDF213	-0.125905192	
P_0130	PM2.5	EDF213	-0.125905192	
P_0147	PM2.5	EDF213	0.000918542	
P_0148	PM2.5	EDF213	0.000408832	
P_0215	PM2.5	EDF213	0.023416301	
P_0216	PM2.5	EDF213	0.008357647	
P_0217	PM2.5	EDF213	0.012581788	
P_0260	PM2.5	EDF213	-0.655447344	
P_311	PM2.5	EDF213	0.006087576	
P_4155	PM2.5	EDF213	0.042220923	
SRU1_E	PM2.5	EDF213	-0.147592353	
SRU1_N	PM2.5	EDF213	0.04121091	
SRU2_E	PM2.5	EDF213	-0.142735824	
SRU2_N	PM2.5	EDF213	0.037204294	
SRU3_E	PM2.5	EDF213	-0.226059999	
SRU3_N	PM2.5	EDF213	0.074408587	
T1899	PM2.5	EDF213	8.04261E-07	
T3100	PM2.5	EDF213	8.04261E-07	
T3213	PM2.5	EDF213	8.04261E-07	

APPENDIX 4.3 - HRA

Attachment 5

File: Cancer_MNTUG_EmissionsReport.txt

Average Emissions (lbs/yr)							
Src	CAS	fac	dev	pro	stk	Mult	
	Abbrev.						
	Backgrou						
	Multipli						
1	MNTUG	E1	*	*	1	1	9901 DieselExhPM 0 1 2.81E+03

Maximum Emission Rate (lbs/hr)							
Src	CAS	fac	dev	pro	stk	Mult	
	Abbrev.						
	Backgrou						
	Multipli						
1	MNTUG	E1	*	*	1	1	Chem 9901 DieselExhPM 0 1 1.00E+00

File: Cancer_MNTUG.SRC

SCREENINGMODE OFF NONE

COORDINATES UTMNAD83

UTMZONE 10

SOURCE	1 MNTUG	CHEVRON	0	7 SF	BA	0	550500	4196600	0	10
RECEPTOR	1 GRID	549000	4194000	0	10					
RECEPTOR	2 GRID	549200	4194000	0	10					
RECEPTOR	3 GRID	549400	4194000	0	10					
RECEPTOR	4 GRID	549600	4194000	0	10					
RECEPTOR	5 GRID	549800	4194000	0	10					
RECEPTOR	6 GRID	550000	4194000	0	10					
RECEPTOR	7 GRID	550200	4194000	0	10					
RECEPTOR	8 GRID	550400	4194000	0	10					
RECEPTOR	9 GRID	550600	4194000	0	10					
RECEPTOR	10 GRID	550800	4194000	0	10					
RECEPTOR	11 GRID	551000	4194000	0	10					
RECEPTOR	12 GRID	551200	4194000	0	10					
RECEPTOR	13 GRID	551400	4194000	0	10					
RECEPTOR	14 GRID	551600	4194000	0	10					
RECEPTOR	15 GRID	551800	4194000	0	10					
RECEPTOR	16 GRID	552000	4194000	0	10					
RECEPTOR	17 GRID	552200	4194000	0	10					
RECEPTOR	18 GRID	552400	4194000	0	10					
RECEPTOR	19 GRID	552600	4194000	0	10					
RECEPTOR	20 GRID	552800	4194000	0	10					
RECEPTOR	21 GRID	553000	4194000	0	10					
RECEPTOR	22 GRID	553200	4194000	0	10					
RECEPTOR	23 GRID	553400	4194000	0	10					
RECEPTOR	24 GRID	553600	4194000	0	10					
RECEPTOR	25 GRID	553800	4194000	0	10					
RECEPTOR	26 GRID	554000	4194000	0	10					
RECEPTOR	27 GRID	554200	4194000	0	10					
RECEPTOR	28 GRID	554400	4194000	0	10					
RECEPTOR	29 GRID	554600	4194000	0	10					
RECEPTOR	30 GRID	554800	4194000	0	10					
RECEPTOR	31 GRID	555000	4194000	0	10					
RECEPTOR	32 GRID	555200	4194000	0	10					
RECEPTOR	33 GRID	555400	4194000	0	10					
RECEPTOR	34 GRID	555600	4194000	0	10					
RECEPTOR	35 GRID	555800	4194000	0	10					
RECEPTOR	36 GRID	556000	4194000	0	10					
RECEPTOR	37 GRID	556200	4194000	0	10					
RECEPTOR	38 GRID	556400	4194000	0	10					
RECEPTOR	39 GRID	556600	4194000	0	10					
RECEPTOR	40 GRID	556800	4194000	0	10					
RECEPTOR	41 GRID	557000	4194000	0	10					
RECEPTOR	42 GRID	557200	4194000	0	10					
RECEPTOR	43 GRID	557400	4194000	0	10					
RECEPTOR	44 GRID	557600	4194000	0	10					
RECEPTOR	45 GRID	557800	4194000	0	10					
RECEPTOR	46 GRID	558000	4194000	0	10					
RECEPTOR	47 GRID	558200	4194000	0	10					
RECEPTOR	48 GRID	558400	4194000	0	10					
RECEPTOR	49 GRID	558600	4194000	0	10					
RECEPTOR	50 GRID	558800	4194000	0	10					
RECEPTOR	51 GRID	559000	4194000	0	10					
RECEPTOR	52 GRID	559200	4194000	0	10					
RECEPTOR	53 GRID	559400	4194000	1.7	10					
RECEPTOR	54 GRID	559600	4194000	0	10					
RECEPTOR	55 GRID	559800	4194000	0.2	10					
RECEPTOR	56 GRID	560000	4194000	0.3	10					

File: Cancer_MNTUG.SRC

RECEPTOR	57 GRID	560200	4194000	8.7	10
RECEPTOR	58 GRID	560400	4194000	0.5	10
RECEPTOR	59 GRID	560600	4194000	0.7	10
RECEPTOR	60 GRID	560800	4194000	5.4	10
RECEPTOR	61 GRID	561000	4194000	21.7	10
RECEPTOR	62 GRID	549000	4194200	0	10
RECEPTOR	63 GRID	549200	4194200	0	10
RECEPTOR	64 GRID	549400	4194200	0	10
RECEPTOR	65 GRID	549600	4194200	0	10
RECEPTOR	66 GRID	549800	4194200	0	10
RECEPTOR	67 GRID	550000	4194200	0	10
RECEPTOR	68 GRID	550200	4194200	0	10
RECEPTOR	69 GRID	550400	4194200	0	10
RECEPTOR	70 GRID	550600	4194200	0	10
RECEPTOR	71 GRID	550800	4194200	0	10
RECEPTOR	72 GRID	551000	4194200	0	10
RECEPTOR	73 GRID	551200	4194200	0	10
RECEPTOR	74 GRID	551400	4194200	0	10
RECEPTOR	75 GRID	551600	4194200	0	10
RECEPTOR	76 GRID	551800	4194200	0	10
RECEPTOR	77 GRID	552000	4194200	0	10
RECEPTOR	78 GRID	552200	4194200	0	10
RECEPTOR	79 GRID	552400	4194200	0	10
RECEPTOR	80 GRID	552600	4194200	0	10
RECEPTOR	81 GRID	552800	4194200	0	10
RECEPTOR	82 GRID	553000	4194200	0	10
RECEPTOR	83 GRID	553200	4194200	0	10
RECEPTOR	84 GRID	553400	4194200	0	10
RECEPTOR	85 GRID	553600	4194200	0	10
RECEPTOR	86 GRID	553800	4194200	0	10
RECEPTOR	87 GRID	554000	4194200	0	10
RECEPTOR	88 GRID	554200	4194200	0	10
RECEPTOR	89 GRID	554400	4194200	0	10
RECEPTOR	90 GRID	554600	4194200	0	10
RECEPTOR	91 GRID	554800	4194200	0	10
RECEPTOR	92 GRID	555000	4194200	0	10
RECEPTOR	93 GRID	555200	4194200	0	10
RECEPTOR	94 GRID	555400	4194200	0	10
RECEPTOR	95 GRID	555600	4194200	0	10
RECEPTOR	96 GRID	555800	4194200	0	10
RECEPTOR	97 GRID	556000	4194200	0	10
RECEPTOR	98 GRID	556200	4194200	0	10
RECEPTOR	99 GRID	556400	4194200	0	10
RECEPTOR	100 GRID	556600	4194200	0	10
RECEPTOR	101 GRID	556800	4194200	0	10
RECEPTOR	102 GRID	557000	4194200	0	10
RECEPTOR	103 GRID	557200	4194200	0	10
RECEPTOR	104 GRID	557400	4194200	0	10
RECEPTOR	105 GRID	557600	4194200	0	10
RECEPTOR	106 GRID	557800	4194200	0	10
RECEPTOR	107 GRID	558000	4194200	0	10
RECEPTOR	108 GRID	558200	4194200	0	10
RECEPTOR	109 GRID	558400	4194200	0	10
RECEPTOR	110 GRID	558600	4194200	0	10
RECEPTOR	111 GRID	558800	4194200	0	10
RECEPTOR	112 GRID	559000	4194200	0	10
RECEPTOR	113 GRID	559200	4194200	0	10
RECEPTOR	114 GRID	559400	4194200	0	10
RECEPTOR	115 GRID	559600	4194200	0	10
RECEPTOR	116 GRID	559800	4194200	0.2	10

File: Cancer_MNTUG.SRC

RECEPTOR	117 GRID	560000	4194200	0.2	10
RECEPTOR	118 GRID	560200	4194200	0.4	10
RECEPTOR	119 GRID	560400	4194200	0.6	10
RECEPTOR	120 GRID	560600	4194200	1.7	10
RECEPTOR	121 GRID	560800	4194200	7	10
RECEPTOR	122 GRID	561000	4194200	32	10
RECEPTOR	123 GRID	549000	4194400	0	10
RECEPTOR	124 GRID	549200	4194400	0	10
RECEPTOR	125 GRID	549400	4194400	0	10
RECEPTOR	126 GRID	549600	4194400	0	10
RECEPTOR	127 GRID	549800	4194400	0	10
RECEPTOR	128 GRID	550000	4194400	0	10
RECEPTOR	129 GRID	550200	4194400	0	10
RECEPTOR	130 GRID	550400	4194400	0	10
RECEPTOR	131 GRID	550600	4194400	0	10
RECEPTOR	132 GRID	550800	4194400	0	10
RECEPTOR	133 GRID	551000	4194400	0	10
RECEPTOR	134 GRID	551200	4194400	0	10
RECEPTOR	135 GRID	551400	4194400	0	10
RECEPTOR	136 GRID	551600	4194400	0	10
RECEPTOR	137 GRID	551800	4194400	0	10
RECEPTOR	138 GRID	552000	4194400	0	10
RECEPTOR	139 GRID	552200	4194400	0	10
RECEPTOR	140 GRID	552400	4194400	0	10
RECEPTOR	141 GRID	552600	4194400	0	10
RECEPTOR	142 GRID	552800	4194400	0	10
RECEPTOR	143 GRID	553000	4194400	0	10
RECEPTOR	144 GRID	553200	4194400	0	10
RECEPTOR	145 GRID	553400	4194400	0	10
RECEPTOR	146 GRID	553600	4194400	0	10
RECEPTOR	147 GRID	553800	4194400	0	10
RECEPTOR	148 GRID	554000	4194400	0	10
RECEPTOR	149 GRID	554200	4194400	0	10
RECEPTOR	150 GRID	554400	4194400	0	10
RECEPTOR	151 GRID	554600	4194400	0	10
RECEPTOR	152 GRID	554800	4194400	0	10
RECEPTOR	153 GRID	555000	4194400	0	10
RECEPTOR	154 GRID	555200	4194400	0	10
RECEPTOR	155 GRID	555400	4194400	0	10
RECEPTOR	156 GRID	555600	4194400	0	10
RECEPTOR	157 GRID	555800	4194400	0	10
RECEPTOR	158 GRID	556000	4194400	0	10
RECEPTOR	159 GRID	556200	4194400	0	10
RECEPTOR	160 GRID	556400	4194400	0	10
RECEPTOR	161 GRID	556600	4194400	16.1	10
RECEPTOR	162 GRID	556800	4194400	10.4	10
RECEPTOR	163 GRID	557000	4194400	0	10
RECEPTOR	164 GRID	557200	4194400	0	10
RECEPTOR	165 GRID	557400	4194400	0	10
RECEPTOR	166 GRID	557600	4194400	0	10
RECEPTOR	167 GRID	557800	4194400	0	10
RECEPTOR	168 GRID	558000	4194400	0	10
RECEPTOR	169 GRID	558200	4194400	0	10
RECEPTOR	170 GRID	558400	4194400	0	10
RECEPTOR	171 GRID	558600	4194400	0	10
RECEPTOR	172 GRID	558800	4194400	0	10
RECEPTOR	173 GRID	559000	4194400	0	10
RECEPTOR	174 GRID	559200	4194400	0	10
RECEPTOR	175 GRID	559400	4194400	-0.1	10
RECEPTOR	176 GRID	559600	4194400	-0.1	10

File: Cancer_MNTUG.SRC

RECEPTOR	177 GRID	559800	4194400	0.2	10
RECEPTOR	178 GRID	560000	4194400	0.2	10
RECEPTOR	179 GRID	560200	4194400	0.3	10
RECEPTOR	180 GRID	560400	4194400	0.8	10
RECEPTOR	181 GRID	560600	4194400	1.8	10
RECEPTOR	182 GRID	560800	4194400	6.2	10
RECEPTOR	183 GRID	561000	4194400	39.1	10
RECEPTOR	184 GRID	549000	4194600	0	10
RECEPTOR	185 GRID	549200	4194600	0	10
RECEPTOR	186 GRID	549400	4194600	0	10
RECEPTOR	187 GRID	549600	4194600	0	10
RECEPTOR	188 GRID	549800	4194600	0	10
RECEPTOR	189 GRID	550000	4194600	0	10
RECEPTOR	190 GRID	550200	4194600	0	10
RECEPTOR	191 GRID	550400	4194600	0	10
RECEPTOR	192 GRID	550600	4194600	0	10
RECEPTOR	193 GRID	550800	4194600	0	10
RECEPTOR	194 GRID	551000	4194600	0	10
RECEPTOR	195 GRID	551200	4194600	0	10
RECEPTOR	196 GRID	551400	4194600	0	10
RECEPTOR	197 GRID	551600	4194600	0	10
RECEPTOR	198 GRID	551800	4194600	0	10
RECEPTOR	199 GRID	552000	4194600	0	10
RECEPTOR	200 GRID	552200	4194600	0	10
RECEPTOR	201 GRID	552400	4194600	0	10
RECEPTOR	202 GRID	552600	4194600	0	10
RECEPTOR	203 GRID	552800	4194600	0	10
RECEPTOR	204 GRID	553000	4194600	0	10
RECEPTOR	205 GRID	553200	4194600	0	10
RECEPTOR	206 GRID	553400	4194600	0	10
RECEPTOR	207 GRID	553600	4194600	0	10
RECEPTOR	208 GRID	553800	4194600	0	10
RECEPTOR	209 GRID	554000	4194600	0	10
RECEPTOR	210 GRID	554200	4194600	0	10
RECEPTOR	211 GRID	554400	4194600	0	10
RECEPTOR	212 GRID	554600	4194600	0	10
RECEPTOR	213 GRID	554800	4194600	0	10
RECEPTOR	214 GRID	555000	4194600	0	10
RECEPTOR	215 GRID	555200	4194600	0	10
RECEPTOR	216 GRID	555400	4194600	0	10
RECEPTOR	217 GRID	555600	4194600	0	10
RECEPTOR	218 GRID	555800	4194600	0	10
RECEPTOR	219 GRID	556000	4194600	0	10
RECEPTOR	220 GRID	556200	4194600	0	10
RECEPTOR	221 GRID	556400	4194600	0	10
RECEPTOR	222 GRID	556600	4194600	31.8	10
RECEPTOR	223 GRID	556800	4194600	17.3	10
RECEPTOR	224 GRID	557000	4194600	0	10
RECEPTOR	225 GRID	557200	4194600	0	10
RECEPTOR	226 GRID	557400	4194600	0	10
RECEPTOR	227 GRID	557600	4194600	0	10
RECEPTOR	228 GRID	557800	4194600	0	10
RECEPTOR	229 GRID	558000	4194600	0	10
RECEPTOR	230 GRID	558200	4194600	0	10
RECEPTOR	231 GRID	558400	4194600	0	10
RECEPTOR	232 GRID	558600	4194600	0	10
RECEPTOR	233 GRID	558800	4194600	0	10
RECEPTOR	234 GRID	559000	4194600	0	10
RECEPTOR	235 GRID	559200	4194600	0	10
RECEPTOR	236 GRID	559400	4194600	3.9	10

File: Cancer_MNTUG.SRC

RECEPTOR	237 GRID	559600	4194600	3.7	10
RECEPTOR	238 GRID	559800	4194600	0.3	10
RECEPTOR	239 GRID	560000	4194600	0.3	10
RECEPTOR	240 GRID	560200	4194600	0.6	10
RECEPTOR	241 GRID	560400	4194600	1	10
RECEPTOR	242 GRID	560600	4194600	3	10
RECEPTOR	243 GRID	560800	4194600	6.4	10
RECEPTOR	244 GRID	561000	4194600	51.2	10
RECEPTOR	245 GRID	549000	4194800	0	10
RECEPTOR	246 GRID	549200	4194800	0	10
RECEPTOR	247 GRID	549400	4194800	0	10
RECEPTOR	248 GRID	549600	4194800	0	10
RECEPTOR	249 GRID	549800	4194800	0	10
RECEPTOR	250 GRID	550000	4194800	0	10
RECEPTOR	251 GRID	550200	4194800	0	10
RECEPTOR	252 GRID	550400	4194800	0	10
RECEPTOR	253 GRID	550600	4194800	0	10
RECEPTOR	254 GRID	550800	4194800	0	10
RECEPTOR	255 GRID	551000	4194800	0	10
RECEPTOR	256 GRID	551200	4194800	0	10
RECEPTOR	257 GRID	551400	4194800	0	10
RECEPTOR	258 GRID	551600	4194800	0	10
RECEPTOR	259 GRID	551800	4194800	0	10
RECEPTOR	260 GRID	552000	4194800	0	10
RECEPTOR	261 GRID	552200	4194800	0	10
RECEPTOR	262 GRID	552400	4194800	0	10
RECEPTOR	263 GRID	552600	4194800	0	10
RECEPTOR	264 GRID	552800	4194800	0	10
RECEPTOR	265 GRID	553000	4194800	0	10
RECEPTOR	266 GRID	553200	4194800	0	10
RECEPTOR	267 GRID	553400	4194800	0	10
RECEPTOR	268 GRID	553600	4194800	0	10
RECEPTOR	269 GRID	553800	4194800	0	10
RECEPTOR	270 GRID	554000	4194800	0	10
RECEPTOR	271 GRID	554200	4194800	0	10
RECEPTOR	272 GRID	554400	4194800	0	10
RECEPTOR	273 GRID	554600	4194800	0	10
RECEPTOR	274 GRID	554800	4194800	-0.2	10
RECEPTOR	275 GRID	555000	4194800	0	10
RECEPTOR	276 GRID	555200	4194800	0	10
RECEPTOR	277 GRID	555400	4194800	0	10
RECEPTOR	278 GRID	555600	4194800	-0.3	10
RECEPTOR	279 GRID	555800	4194800	-0.2	10
RECEPTOR	280 GRID	556000	4194800	0	10
RECEPTOR	281 GRID	556200	4194800	0.2	10
RECEPTOR	282 GRID	556400	4194800	1.9	10
RECEPTOR	283 GRID	556600	4194800	17.9	10
RECEPTOR	284 GRID	556800	4194800	0	10
RECEPTOR	285 GRID	557000	4194800	0	10
RECEPTOR	286 GRID	557200	4194800	0	10
RECEPTOR	287 GRID	557400	4194800	0	10
RECEPTOR	288 GRID	557600	4194800	0	10
RECEPTOR	289 GRID	557800	4194800	0	10
RECEPTOR	290 GRID	558000	4194800	0	10
RECEPTOR	291 GRID	558200	4194800	0	10
RECEPTOR	292 GRID	558400	4194800	0	10
RECEPTOR	293 GRID	558600	4194800	0	10
RECEPTOR	294 GRID	558800	4194800	0	10
RECEPTOR	295 GRID	559000	4194800	0	10
RECEPTOR	296 GRID	559200	4194800	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	297 GRID	559400	4194800	3.9	10
RECEPTOR	298 GRID	559600	4194800	4	10
RECEPTOR	299 GRID	559800	4194800	4.6	10
RECEPTOR	300 GRID	560000	4194800	6.6	10
RECEPTOR	301 GRID	560200	4194800	2.1	10
RECEPTOR	302 GRID	560400	4194800	4.3	10
RECEPTOR	303 GRID	560600	4194800	3	10
RECEPTOR	304 GRID	560800	4194800	4.1	10
RECEPTOR	305 GRID	561000	4194800	3.6	10
RECEPTOR	306 GRID	549000	4195000	0	10
RECEPTOR	307 GRID	549200	4195000	0	10
RECEPTOR	308 GRID	549400	4195000	0	10
RECEPTOR	309 GRID	549600	4195000	0	10
RECEPTOR	310 GRID	549800	4195000	0	10
RECEPTOR	311 GRID	550000	4195000	0	10
RECEPTOR	312 GRID	550200	4195000	0	10
RECEPTOR	313 GRID	550400	4195000	0	10
RECEPTOR	314 GRID	550600	4195000	0	10
RECEPTOR	315 GRID	550800	4195000	0	10
RECEPTOR	316 GRID	551000	4195000	0	10
RECEPTOR	317 GRID	551200	4195000	0	10
RECEPTOR	318 GRID	551400	4195000	0	10
RECEPTOR	319 GRID	551600	4195000	0	10
RECEPTOR	320 GRID	551800	4195000	0	10
RECEPTOR	321 GRID	552000	4195000	0	10
RECEPTOR	322 GRID	552200	4195000	0	10
RECEPTOR	323 GRID	552400	4195000	0	10
RECEPTOR	324 GRID	552600	4195000	0	10
RECEPTOR	325 GRID	552800	4195000	0	10
RECEPTOR	326 GRID	553000	4195000	0	10
RECEPTOR	327 GRID	553200	4195000	0	10
RECEPTOR	328 GRID	553400	4195000	0	10
RECEPTOR	329 GRID	553600	4195000	0	10
RECEPTOR	330 GRID	553800	4195000	0	10
RECEPTOR	331 GRID	554000	4195000	0	10
RECEPTOR	332 GRID	554200	4195000	0	10
RECEPTOR	333 GRID	554400	4195000	0	10
RECEPTOR	334 GRID	554600	4195000	0	10
RECEPTOR	335 GRID	554800	4195000	0	10
RECEPTOR	336 GRID	555000	4195000	0	10
RECEPTOR	337 GRID	555200	4195000	2	10
RECEPTOR	338 GRID	555400	4195000	0.4	10
RECEPTOR	339 GRID	555600	4195000	1.6	10
RECEPTOR	340 GRID	555800	4195000	0	10
RECEPTOR	341 GRID	556000	4195000	-0.3	10
RECEPTOR	342 GRID	556200	4195000	-0.1	10
RECEPTOR	343 GRID	556400	4195000	0.1	10
RECEPTOR	344 GRID	556600	4195000	-0.1	10
RECEPTOR	345 GRID	556800	4195000	0	10
RECEPTOR	346 GRID	557000	4195000	0	10
RECEPTOR	347 GRID	557200	4195000	0	10
RECEPTOR	348 GRID	557400	4195000	0	10
RECEPTOR	349 GRID	557600	4195000	0	10
RECEPTOR	350 GRID	557800	4195000	0	10
RECEPTOR	351 GRID	558000	4195000	0	10
RECEPTOR	352 GRID	558200	4195000	0	10
RECEPTOR	353 GRID	558400	4195000	0	10
RECEPTOR	354 GRID	558600	4195000	0	10
RECEPTOR	355 GRID	558800	4195000	0	10
RECEPTOR	356 GRID	559000	4195000	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	357 GRID	559200	4195000	0	10
RECEPTOR	358 GRID	559400	4195000	3.8	10
RECEPTOR	359 GRID	559600	4195000	3.7	10
RECEPTOR	360 GRID	559800	4195000	5.2	10
RECEPTOR	361 GRID	560000	4195000	3.9	10
RECEPTOR	362 GRID	560200	4195000	1.6	10
RECEPTOR	363 GRID	560400	4195000	2.6	10
RECEPTOR	364 GRID	560600	4195000	8.8	10
RECEPTOR	365 GRID	560800	4195000	3.7	10
RECEPTOR	366 GRID	561000	4195000	4.1	10
RECEPTOR	367 GRID	549000	4195200	0	10
RECEPTOR	368 GRID	549200	4195200	0	10
RECEPTOR	369 GRID	549400	4195200	0	10
RECEPTOR	370 GRID	549600	4195200	0	10
RECEPTOR	371 GRID	549800	4195200	0	10
RECEPTOR	372 GRID	550000	4195200	0	10
RECEPTOR	373 GRID	550200	4195200	0	10
RECEPTOR	374 GRID	550400	4195200	0	10
RECEPTOR	375 GRID	550600	4195200	0	10
RECEPTOR	376 GRID	550800	4195200	0	10
RECEPTOR	377 GRID	551000	4195200	0	10
RECEPTOR	378 GRID	551200	4195200	0	10
RECEPTOR	379 GRID	551400	4195200	0	10
RECEPTOR	380 GRID	551600	4195200	0	10
RECEPTOR	381 GRID	551800	4195200	0	10
RECEPTOR	382 GRID	552000	4195200	0	10
RECEPTOR	383 GRID	552200	4195200	0	10
RECEPTOR	384 GRID	552400	4195200	0	10
RECEPTOR	385 GRID	552600	4195200	0	10
RECEPTOR	386 GRID	552800	4195200	0	10
RECEPTOR	387 GRID	553000	4195200	0	10
RECEPTOR	388 GRID	553200	4195200	0	10
RECEPTOR	389 GRID	553400	4195200	0	10
RECEPTOR	390 GRID	553600	4195200	0	10
RECEPTOR	391 GRID	553800	4195200	0	10
RECEPTOR	392 GRID	554000	4195200	0	10
RECEPTOR	393 GRID	554200	4195200	0	10
RECEPTOR	394 GRID	554400	4195200	0	10
RECEPTOR	395 GRID	554600	4195200	0	10
RECEPTOR	396 GRID	554800	4195200	0	10
RECEPTOR	397 GRID	555000	4195200	-0.2	10
RECEPTOR	398 GRID	555200	4195200	0	10
RECEPTOR	399 GRID	555400	4195200	0.2	10
RECEPTOR	400 GRID	555600	4195200	0.3	10
RECEPTOR	401 GRID	555800	4195200	0.3	10
RECEPTOR	402 GRID	556000	4195200	0.1	10
RECEPTOR	403 GRID	556200	4195200	0.1	10
RECEPTOR	404 GRID	556400	4195200	-0.1	10
RECEPTOR	405 GRID	556600	4195200	-0.3	10
RECEPTOR	406 GRID	556800	4195200	0	10
RECEPTOR	407 GRID	557000	4195200	0	10
RECEPTOR	408 GRID	557200	4195200	0	10
RECEPTOR	409 GRID	557400	4195200	0	10
RECEPTOR	410 GRID	557600	4195200	0	10
RECEPTOR	411 GRID	557800	4195200	0	10
RECEPTOR	412 GRID	558000	4195200	0	10
RECEPTOR	413 GRID	558200	4195200	0	10
RECEPTOR	414 GRID	558400	4195200	0	10
RECEPTOR	415 GRID	558600	4195200	0	10
RECEPTOR	416 GRID	558800	4195200	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	417 GRID	559000	4195200	0	10
RECEPTOR	418 GRID	559200	4195200	0	10
RECEPTOR	419 GRID	559400	4195200	4	10
RECEPTOR	420 GRID	559600	4195200	5.5	10
RECEPTOR	421 GRID	559800	4195200	3.9	10
RECEPTOR	422 GRID	560000	4195200	1.4	10
RECEPTOR	423 GRID	560200	4195200	3.6	10
RECEPTOR	424 GRID	560400	4195200	3.8	10
RECEPTOR	425 GRID	560600	4195200	20	10
RECEPTOR	426 GRID	560800	4195200	13.9	10
RECEPTOR	427 GRID	561000	4195200	5.8	10
RECEPTOR	428 GRID	549000	4195400	0	10
RECEPTOR	429 GRID	549200	4195400	0	10
RECEPTOR	430 GRID	549400	4195400	0	10
RECEPTOR	431 GRID	549600	4195400	0	10
RECEPTOR	432 GRID	549800	4195400	0	10
RECEPTOR	433 GRID	550000	4195400	0	10
RECEPTOR	434 GRID	550200	4195400	0	10
RECEPTOR	435 GRID	550400	4195400	0	10
RECEPTOR	436 GRID	550600	4195400	0	10
RECEPTOR	437 GRID	550800	4195400	0	10
RECEPTOR	438 GRID	551000	4195400	0	10
RECEPTOR	439 GRID	551200	4195400	0	10
RECEPTOR	440 GRID	551400	4195400	0	10
RECEPTOR	441 GRID	551600	4195400	0	10
RECEPTOR	442 GRID	551800	4195400	0	10
RECEPTOR	443 GRID	552000	4195400	0	10
RECEPTOR	444 GRID	552200	4195400	0	10
RECEPTOR	445 GRID	552400	4195400	0	10
RECEPTOR	446 GRID	552600	4195400	0	10
RECEPTOR	447 GRID	552800	4195400	0	10
RECEPTOR	448 GRID	553000	4195400	0	10
RECEPTOR	449 GRID	553200	4195400	0	10
RECEPTOR	450 GRID	553400	4195400	0	10
RECEPTOR	451 GRID	553600	4195400	0	10
RECEPTOR	452 GRID	553800	4195400	0	10
RECEPTOR	453 GRID	554000	4195400	0	10
RECEPTOR	454 GRID	554200	4195400	0	10
RECEPTOR	455 GRID	554400	4195400	0	10
RECEPTOR	456 GRID	554600	4195400	0	10
RECEPTOR	457 GRID	554800	4195400	0.4	10
RECEPTOR	458 GRID	555000	4195400	0.4	10
RECEPTOR	459 GRID	555200	4195400	0.5	10
RECEPTOR	460 GRID	555400	4195400	0.9	10
RECEPTOR	461 GRID	555600	4195400	1.1	10
RECEPTOR	462 GRID	555800	4195400	0.9	10
RECEPTOR	463 GRID	556000	4195400	0.8	10
RECEPTOR	464 GRID	556200	4195400	0.5	10
RECEPTOR	465 GRID	556400	4195400	0.3	10
RECEPTOR	466 GRID	556600	4195400	-0.2	10
RECEPTOR	467 GRID	556800	4195400	0	10
RECEPTOR	468 GRID	557000	4195400	0	10
RECEPTOR	469 GRID	557200	4195400	0	10
RECEPTOR	470 GRID	557400	4195400	0	10
RECEPTOR	471 GRID	557600	4195400	0	10
RECEPTOR	472 GRID	557800	4195400	0	10
RECEPTOR	473 GRID	558000	4195400	0	10
RECEPTOR	474 GRID	558200	4195400	0	10
RECEPTOR	475 GRID	558400	4195400	0	10
RECEPTOR	476 GRID	558600	4195400	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	477 GRID	558800	4195400	0	10
RECEPTOR	478 GRID	559000	4195400	0	10
RECEPTOR	479 GRID	559200	4195400	0	10
RECEPTOR	480 GRID	559400	4195400	1.1	10
RECEPTOR	481 GRID	559600	4195400	6.2	10
RECEPTOR	482 GRID	559800	4195400	2.8	10
RECEPTOR	483 GRID	560000	4195400	3.6	10
RECEPTOR	484 GRID	560200	4195400	16.7	10
RECEPTOR	485 GRID	560400	4195400	10.6	10
RECEPTOR	486 GRID	560600	4195400	15.8	10
RECEPTOR	487 GRID	560800	4195400	11.2	10
RECEPTOR	488 GRID	561000	4195400	7.5	10
RECEPTOR	489 GRID	549000	4195600	0	10
RECEPTOR	490 GRID	549200	4195600	0	10
RECEPTOR	491 GRID	549400	4195600	0	10
RECEPTOR	492 GRID	549600	4195600	0	10
RECEPTOR	493 GRID	549800	4195600	0	10
RECEPTOR	494 GRID	550000	4195600	0	10
RECEPTOR	495 GRID	550200	4195600	0	10
RECEPTOR	496 GRID	550400	4195600	0	10
RECEPTOR	497 GRID	550600	4195600	0	10
RECEPTOR	498 GRID	550800	4195600	0	10
RECEPTOR	499 GRID	551000	4195600	0	10
RECEPTOR	500 GRID	551200	4195600	0	10
RECEPTOR	501 GRID	551400	4195600	0	10
RECEPTOR	502 GRID	551600	4195600	0	10
RECEPTOR	503 GRID	551800	4195600	0	10
RECEPTOR	504 GRID	552000	4195600	0	10
RECEPTOR	505 GRID	552200	4195600	0	10
RECEPTOR	506 GRID	552400	4195600	0	10
RECEPTOR	507 GRID	552600	4195600	0	10
RECEPTOR	508 GRID	552800	4195600	0	10
RECEPTOR	509 GRID	553000	4195600	0	10
RECEPTOR	510 GRID	553200	4195600	0	10
RECEPTOR	511 GRID	553400	4195600	0	10
RECEPTOR	512 GRID	553600	4195600	0	10
RECEPTOR	513 GRID	553800	4195600	0	10
RECEPTOR	514 GRID	554000	4195600	0	10
RECEPTOR	515 GRID	554200	4195600	0	10
RECEPTOR	516 GRID	554400	4195600	0	10
RECEPTOR	517 GRID	554600	4195600	0	10
RECEPTOR	518 GRID	554800	4195600	0.8	10
RECEPTOR	519 GRID	555000	4195600	0.9	10
RECEPTOR	520 GRID	555200	4195600	1.1	10
RECEPTOR	521 GRID	555400	4195600	5.3	10
RECEPTOR	522 GRID	555600	4195600	5.3	10
RECEPTOR	523 GRID	555800	4195600	4.9	10
RECEPTOR	524 GRID	556000	4195600	1.1	10
RECEPTOR	525 GRID	556200	4195600	0.9	10
RECEPTOR	526 GRID	556400	4195600	0.6	10
RECEPTOR	527 GRID	556600	4195600	0	10
RECEPTOR	528 GRID	556800	4195600	0	10
RECEPTOR	529 GRID	557000	4195600	0	10
RECEPTOR	530 GRID	557200	4195600	0	10
RECEPTOR	531 GRID	557400	4195600	0	10
RECEPTOR	532 GRID	557600	4195600	0	10
RECEPTOR	533 GRID	557800	4195600	0	10
RECEPTOR	534 GRID	558000	4195600	0	10
RECEPTOR	535 GRID	558200	4195600	0	10
RECEPTOR	536 GRID	558400	4195600	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	537 GRID	558600	4195600	0	10
RECEPTOR	538 GRID	558800	4195600	0	10
RECEPTOR	539 GRID	559000	4195600	0	10
RECEPTOR	540 GRID	559200	4195600	0	10
RECEPTOR	541 GRID	559400	4195600	1.1	10
RECEPTOR	542 GRID	559600	4195600	4.1	10
RECEPTOR	543 GRID	559800	4195600	1.7	10
RECEPTOR	544 GRID	560000	4195600	3.9	10
RECEPTOR	545 GRID	560200	4195600	4.1	10
RECEPTOR	546 GRID	560400	4195600	10.5	10
RECEPTOR	547 GRID	560600	4195600	20.7	10
RECEPTOR	548 GRID	560800	4195600	10.6	10
RECEPTOR	549 GRID	561000	4195600	10.3	10
RECEPTOR	550 GRID	549000	4195800	0	10
RECEPTOR	551 GRID	549200	4195800	0	10
RECEPTOR	552 GRID	549400	4195800	0	10
RECEPTOR	553 GRID	549600	4195800	0	10
RECEPTOR	554 GRID	549800	4195800	0	10
RECEPTOR	555 GRID	550000	4195800	0	10
RECEPTOR	556 GRID	550200	4195800	0	10
RECEPTOR	557 GRID	550400	4195800	0	10
RECEPTOR	558 GRID	550600	4195800	0	10
RECEPTOR	559 GRID	550800	4195800	0	10
RECEPTOR	560 GRID	551000	4195800	0	10
RECEPTOR	561 GRID	551200	4195800	0	10
RECEPTOR	562 GRID	551400	4195800	0	10
RECEPTOR	563 GRID	551600	4195800	0	10
RECEPTOR	564 GRID	551800	4195800	0	10
RECEPTOR	565 GRID	552000	4195800	0	10
RECEPTOR	566 GRID	552200	4195800	0	10
RECEPTOR	567 GRID	552400	4195800	0	10
RECEPTOR	568 GRID	552600	4195800	0	10
RECEPTOR	569 GRID	552800	4195800	0	10
RECEPTOR	570 GRID	553000	4195800	0	10
RECEPTOR	571 GRID	553200	4195800	0	10
RECEPTOR	572 GRID	553400	4195800	2.3	10
RECEPTOR	573 GRID	553600	4195800	1	10
RECEPTOR	574 GRID	553800	4195800	1.1	10
RECEPTOR	575 GRID	554000	4195800	1.1	10
RECEPTOR	576 GRID	554200	4195800	1.5	10
RECEPTOR	577 GRID	554400	4195800	1	10
RECEPTOR	578 GRID	554600	4195800	1.1	10
RECEPTOR	579 GRID	554800	4195800	1.1	10
RECEPTOR	580 GRID	555000	4195800	4.5	10
RECEPTOR	581 GRID	555200	4195800	6.9	10
RECEPTOR	582 GRID	555400	4195800	7.4	10
RECEPTOR	583 GRID	555600	4195800	5.5	10
RECEPTOR	584 GRID	555800	4195800	4.7	10
RECEPTOR	585 GRID	556000	4195800	1.2	10
RECEPTOR	586 GRID	556200	4195800	1.1	10
RECEPTOR	587 GRID	556400	4195800	1	10
RECEPTOR	588 GRID	556600	4195800	0.4	10
RECEPTOR	589 GRID	556800	4195800	-0.2	10
RECEPTOR	590 GRID	557000	4195800	3.6	10
RECEPTOR	591 GRID	557200	4195800	4	10
RECEPTOR	592 GRID	557400	4195800	4.3	10
RECEPTOR	593 GRID	557600	4195800	4.2	10
RECEPTOR	594 GRID	557800	4195800	3.4	10
RECEPTOR	595 GRID	558000	4195800	1.1	10
RECEPTOR	596 GRID	558200	4195800	1.1	10

File: Cancer_MNTUG.SRC

RECEPTOR	597 GRID	558400	4195800	1.5	10
RECEPTOR	598 GRID	558600	4195800	1.1	10
RECEPTOR	599 GRID	558800	4195800	1.5	10
RECEPTOR	600 GRID	559000	4195800	1.5	10
RECEPTOR	601 GRID	559200	4195800	1.1	10
RECEPTOR	602 GRID	559400	4195800	1.9	10
RECEPTOR	603 GRID	559600	4195800	1.6	10
RECEPTOR	604 GRID	559800	4195800	4.9	10
RECEPTOR	605 GRID	560000	4195800	2.7	10
RECEPTOR	606 GRID	560200	4195800	3.7	10
RECEPTOR	607 GRID	560400	4195800	18.3	10
RECEPTOR	608 GRID	560600	4195800	20.4	10
RECEPTOR	609 GRID	560800	4195800	11.9	10
RECEPTOR	610 GRID	561000	4195800	12.8	10
RECEPTOR	611 GRID	549000	4196000	0	10
RECEPTOR	612 GRID	549200	4196000	0	10
RECEPTOR	613 GRID	549400	4196000	0	10
RECEPTOR	614 GRID	549600	4196000	0	10
RECEPTOR	615 GRID	549800	4196000	0	10
RECEPTOR	616 GRID	550000	4196000	0	10
RECEPTOR	617 GRID	550200	4196000	0	10
RECEPTOR	618 GRID	550400	4196000	0	10
RECEPTOR	619 GRID	550600	4196000	0	10
RECEPTOR	620 GRID	550800	4196000	0	10
RECEPTOR	621 GRID	551000	4196000	0	10
RECEPTOR	622 GRID	551200	4196000	0	10
RECEPTOR	623 GRID	551400	4196000	0	10
RECEPTOR	624 GRID	551600	4196000	0	10
RECEPTOR	625 GRID	551800	4196000	0	10
RECEPTOR	626 GRID	552000	4196000	0	10
RECEPTOR	627 GRID	552200	4196000	0	10
RECEPTOR	628 GRID	552400	4196000	0	10
RECEPTOR	629 GRID	552600	4196000	0	10
RECEPTOR	630 GRID	552800	4196000	0	10
RECEPTOR	631 GRID	553000	4196000	0	10
RECEPTOR	632 GRID	553200	4196000	0	10
RECEPTOR	633 GRID	553400	4196000	0	10
RECEPTOR	634 GRID	553600	4196000	1.8	10
RECEPTOR	635 GRID	553800	4196000	4.4	10
RECEPTOR	636 GRID	554000	4196000	4.6	10
RECEPTOR	637 GRID	554200	4196000	2.9	10
RECEPTOR	638 GRID	554400	4196000	2.1	10
RECEPTOR	639 GRID	554600	4196000	1.5	10
RECEPTOR	640 GRID	554800	4196000	3.9	10
RECEPTOR	641 GRID	555000	4196000	16.4	10
RECEPTOR	642 GRID	555200	4196000	8.4	10
RECEPTOR	643 GRID	555400	4196000	7.8	10
RECEPTOR	644 GRID	555600	4196000	5.1	10
RECEPTOR	645 GRID	555800	4196000	4.3	10
RECEPTOR	646 GRID	556000	4196000	1.1	10
RECEPTOR	647 GRID	556200	4196000	1.5	10
RECEPTOR	648 GRID	556400	4196000	4.5	10
RECEPTOR	649 GRID	556600	4196000	4.4	10
RECEPTOR	650 GRID	556800	4196000	0.9	10
RECEPTOR	651 GRID	557000	4196000	0	10
RECEPTOR	652 GRID	557200	4196000	1.1	10
RECEPTOR	653 GRID	557400	4196000	1.3	10
RECEPTOR	654 GRID	557600	4196000	5.2	10
RECEPTOR	655 GRID	557800	4196000	4.6	10
RECEPTOR	656 GRID	558000	4196000	4.4	10

File: Cancer_MNTUG.SRC

RECEPTOR	657 GRID	558200	4196000	1.5	10
RECEPTOR	658 GRID	558400	4196000	1.5	10
RECEPTOR	659 GRID	558600	4196000	0.6	10
RECEPTOR	660 GRID	558800	4196000	1.2	10
RECEPTOR	661 GRID	559000	4196000	2	10
RECEPTOR	662 GRID	559200	4196000	3.4	10
RECEPTOR	663 GRID	559400	4196000	2.1	10
RECEPTOR	664 GRID	559600	4196000	4.2	10
RECEPTOR	665 GRID	559800	4196000	2.7	10
RECEPTOR	666 GRID	560000	4196000	3.4	10
RECEPTOR	667 GRID	560200	4196000	4.9	10
RECEPTOR	668 GRID	560400	4196000	7.5	10
RECEPTOR	669 GRID	560600	4196000	10.2	10
RECEPTOR	670 GRID	560800	4196000	12.4	10
RECEPTOR	671 GRID	561000	4196000	15	10
RECEPTOR	672 GRID	549000	4196200	0	10
RECEPTOR	673 GRID	549200	4196200	0	10
RECEPTOR	674 GRID	549400	4196200	0	10
RECEPTOR	675 GRID	549600	4196200	0	10
RECEPTOR	676 GRID	549800	4196200	0	10
RECEPTOR	677 GRID	550000	4196200	0	10
RECEPTOR	678 GRID	550200	4196200	0	10
RECEPTOR	679 GRID	550400	4196200	0	10
RECEPTOR	680 GRID	550600	4196200	0	10
RECEPTOR	681 GRID	550800	4196200	0	10
RECEPTOR	682 GRID	551000	4196200	0	10
RECEPTOR	683 GRID	551200	4196200	0	10
RECEPTOR	684 GRID	551400	4196200	0	10
RECEPTOR	685 GRID	551600	4196200	0	10
RECEPTOR	686 GRID	551800	4196200	0	10
RECEPTOR	687 GRID	552000	4196200	0	10
RECEPTOR	688 GRID	552200	4196200	0	10
RECEPTOR	689 GRID	552400	4196200	0	10
RECEPTOR	690 GRID	552600	4196200	0	10
RECEPTOR	691 GRID	552800	4196200	0	10
RECEPTOR	692 GRID	553000	4196200	0	10
RECEPTOR	693 GRID	553200	4196200	0	10
RECEPTOR	694 GRID	553400	4196200	0	10
RECEPTOR	695 GRID	553600	4196200	1	10
RECEPTOR	696 GRID	553800	4196200	3.8	10
RECEPTOR	697 GRID	554000	4196200	25.8	10
RECEPTOR	698 GRID	554200	4196200	28.8	10
RECEPTOR	699 GRID	554400	4196200	3.6	10
RECEPTOR	700 GRID	554600	4196200	4.2	10
RECEPTOR	701 GRID	554800	4196200	15.5	10
RECEPTOR	702 GRID	555000	4196200	49.7	10
RECEPTOR	703 GRID	555200	4196200	34.4	10
RECEPTOR	704 GRID	555400	4196200	40.6	10
RECEPTOR	705 GRID	555600	4196200	3.8	10
RECEPTOR	706 GRID	555800	4196200	3.6	10
RECEPTOR	707 GRID	556000	4196200	1.2	10
RECEPTOR	708 GRID	556200	4196200	3.8	10
RECEPTOR	709 GRID	556400	4196200	4.6	10
RECEPTOR	710 GRID	556600	4196200	4.5	10
RECEPTOR	711 GRID	556800	4196200	1.1	10
RECEPTOR	712 GRID	557000	4196200	0.8	10
RECEPTOR	713 GRID	557200	4196200	1.1	10
RECEPTOR	714 GRID	557400	4196200	1.5	10
RECEPTOR	715 GRID	557600	4196200	5	10
RECEPTOR	716 GRID	557800	4196200	5	10

File: Cancer_MNTUG.SRC

RECEPTOR	717 GRID	558000	4196200	3.8	10
RECEPTOR	718 GRID	558200	4196200	4.5	10
RECEPTOR	719 GRID	558400	4196200	1.2	10
RECEPTOR	720 GRID	558600	4196200	5.3	10
RECEPTOR	721 GRID	558800	4196200	5.4	10
RECEPTOR	722 GRID	559000	4196200	3.8	10
RECEPTOR	723 GRID	559200	4196200	3.6	10
RECEPTOR	724 GRID	559400	4196200	1.7	10
RECEPTOR	725 GRID	559600	4196200	3.1	10
RECEPTOR	726 GRID	559800	4196200	4.1	10
RECEPTOR	727 GRID	560000	4196200	12.5	10
RECEPTOR	728 GRID	560200	4196200	12.9	10
RECEPTOR	729 GRID	560400	4196200	28.9	10
RECEPTOR	730 GRID	560600	4196200	34.1	10
RECEPTOR	731 GRID	560800	4196200	15.8	10
RECEPTOR	732 GRID	561000	4196200	17.3	10
RECEPTOR	733 GRID	549000	4196400	0	10
RECEPTOR	734 GRID	549200	4196400	0	10
RECEPTOR	735 GRID	549400	4196400	0	10
RECEPTOR	736 GRID	549600	4196400	0	10
RECEPTOR	737 GRID	549800	4196400	0	10
RECEPTOR	738 GRID	550000	4196400	0	10
RECEPTOR	739 GRID	550200	4196400	0	10
RECEPTOR	740 GRID	550400	4196400	0	10
RECEPTOR	741 GRID	550600	4196400	0	10
RECEPTOR	742 GRID	550800	4196400	0	10
RECEPTOR	743 GRID	551000	4196400	0	10
RECEPTOR	744 GRID	551200	4196400	0	10
RECEPTOR	745 GRID	551400	4196400	0	10
RECEPTOR	746 GRID	551600	4196400	0	10
RECEPTOR	747 GRID	551800	4196400	0	10
RECEPTOR	748 GRID	552000	4196400	0	10
RECEPTOR	749 GRID	552200	4196400	0	10
RECEPTOR	750 GRID	552400	4196400	0	10
RECEPTOR	751 GRID	552600	4196400	0	10
RECEPTOR	752 GRID	552800	4196400	0	10
RECEPTOR	753 GRID	553000	4196400	0	10
RECEPTOR	754 GRID	553200	4196400	0	10
RECEPTOR	755 GRID	553400	4196400	0	10
RECEPTOR	756 GRID	553600	4196400	0	10
RECEPTOR	757 GRID	553800	4196400	2.7	10
RECEPTOR	758 GRID	554000	4196400	5.3	10
RECEPTOR	759 GRID	554200	4196400	19.5	10
RECEPTOR	760 GRID	554400	4196400	27	10
RECEPTOR	761 GRID	554600	4196400	28	10
RECEPTOR	762 GRID	554800	4196400	67.5	10
RECEPTOR	763 GRID	555000	4196400	80	10
RECEPTOR	764 GRID	555200	4196400	14.7	10
RECEPTOR	765 GRID	555400	4196400	4.1	10
RECEPTOR	766 GRID	555600	4196400	3.9	10
RECEPTOR	767 GRID	555800	4196400	1.3	10
RECEPTOR	768 GRID	556000	4196400	1.2	10
RECEPTOR	769 GRID	556200	4196400	3.7	10
RECEPTOR	770 GRID	556400	4196400	4.3	10
RECEPTOR	771 GRID	556600	4196400	4.3	10
RECEPTOR	772 GRID	556800	4196400	1.1	10
RECEPTOR	773 GRID	557000	4196400	1.3	10
RECEPTOR	774 GRID	557200	4196400	1.4	10
RECEPTOR	775 GRID	557400	4196400	5.1	10
RECEPTOR	776 GRID	557600	4196400	4	10

File: Cancer_MNTUG.SRC

RECEPTOR	777 GRID	557800	4196400	4.9	10
RECEPTOR	778 GRID	558000	4196400	4.3	10
RECEPTOR	779 GRID	558200	4196400	4	10
RECEPTOR	780 GRID	558400	4196400	4.4	10
RECEPTOR	781 GRID	558600	4196400	4.3	10
RECEPTOR	782 GRID	558800	4196400	6.6	10
RECEPTOR	783 GRID	559000	4196400	4.9	10
RECEPTOR	784 GRID	559200	4196400	4.9	10
RECEPTOR	785 GRID	559400	4196400	5.1	10
RECEPTOR	786 GRID	559600	4196400	6.5	10
RECEPTOR	787 GRID	559800	4196400	6.7	10
RECEPTOR	788 GRID	560000	4196400	13.4	10
RECEPTOR	789 GRID	560200	4196400	39.6	10
RECEPTOR	790 GRID	560400	4196400	36.1	10
RECEPTOR	791 GRID	560600	4196400	22.1	10
RECEPTOR	792 GRID	560800	4196400	20	10
RECEPTOR	793 GRID	561000	4196400	23.8	10
RECEPTOR	794 GRID	549000	4196600	0	10
RECEPTOR	795 GRID	549200	4196600	0	10
RECEPTOR	796 GRID	549400	4196600	0	10
RECEPTOR	797 GRID	549600	4196600	0	10
RECEPTOR	798 GRID	549800	4196600	0	10
RECEPTOR	799 GRID	550000	4196600	0	10
RECEPTOR	800 GRID	550200	4196600	0	10
RECEPTOR	801 GRID	550400	4196600	0	10
RECEPTOR	802 GRID	550600	4196600	0	10
RECEPTOR	803 GRID	550800	4196600	0	10
RECEPTOR	804 GRID	551000	4196600	0	10
RECEPTOR	805 GRID	551200	4196600	0	10
RECEPTOR	806 GRID	551400	4196600	0	10
RECEPTOR	807 GRID	551600	4196600	0	10
RECEPTOR	808 GRID	551800	4196600	0	10
RECEPTOR	809 GRID	552000	4196600	0	10
RECEPTOR	810 GRID	552200	4196600	0	10
RECEPTOR	811 GRID	552400	4196600	0	10
RECEPTOR	812 GRID	552600	4196600	0	10
RECEPTOR	813 GRID	552800	4196600	0	10
RECEPTOR	814 GRID	553000	4196600	0	10
RECEPTOR	815 GRID	553200	4196600	0	10
RECEPTOR	816 GRID	553400	4196600	0	10
RECEPTOR	817 GRID	553600	4196600	0	10
RECEPTOR	818 GRID	553800	4196600	1.2	10
RECEPTOR	819 GRID	554000	4196600	2.6	10
RECEPTOR	820 GRID	554200	4196600	4	10
RECEPTOR	821 GRID	554400	4196600	69.3	10
RECEPTOR	822 GRID	554600	4196600	96.1	10
RECEPTOR	823 GRID	554800	4196600	82	10
RECEPTOR	824 GRID	555000	4196600	67.9	10
RECEPTOR	825 GRID	555200	4196600	10.4	10
RECEPTOR	826 GRID	555400	4196600	4.1	10
RECEPTOR	827 GRID	555600	4196600	3.9	10
RECEPTOR	828 GRID	555800	4196600	4	10
RECEPTOR	829 GRID	556000	4196600	1.1	10
RECEPTOR	830 GRID	556200	4196600	3.7	10
RECEPTOR	831 GRID	556400	4196600	3.9	10
RECEPTOR	832 GRID	556600	4196600	4.1	10
RECEPTOR	833 GRID	556800	4196600	3.6	10
RECEPTOR	834 GRID	557000	4196600	3.4	10
RECEPTOR	835 GRID	557200	4196600	4	10
RECEPTOR	836 GRID	557400	4196600	3.2	10

File: Cancer_MNTUG.SRC

RECEPTOR	837 GRID	557600	4196600	4	10
RECEPTOR	838 GRID	557800	4196600	3.3	10
RECEPTOR	839 GRID	558000	4196600	3.7	10
RECEPTOR	840 GRID	558200	4196600	5.1	10
RECEPTOR	841 GRID	558400	4196600	5.4	10
RECEPTOR	842 GRID	558600	4196600	5.8	10
RECEPTOR	843 GRID	558800	4196600	6.9	10
RECEPTOR	844 GRID	559000	4196600	6.4	10
RECEPTOR	845 GRID	559200	4196600	7.4	10
RECEPTOR	846 GRID	559400	4196600	5.2	10
RECEPTOR	847 GRID	559600	4196600	9.2	10
RECEPTOR	848 GRID	559800	4196600	27.7	10
RECEPTOR	849 GRID	560000	4196600	14.8	10
RECEPTOR	850 GRID	560200	4196600	20.6	10
RECEPTOR	851 GRID	560400	4196600	29.2	10
RECEPTOR	852 GRID	560600	4196600	20.5	10
RECEPTOR	853 GRID	560800	4196600	24.2	10
RECEPTOR	854 GRID	561000	4196600	27.5	10
RECEPTOR	855 GRID	549000	4196800	0	10
RECEPTOR	856 GRID	549200	4196800	0	10
RECEPTOR	857 GRID	549400	4196800	0	10
RECEPTOR	858 GRID	549600	4196800	0	10
RECEPTOR	859 GRID	549800	4196800	0	10
RECEPTOR	860 GRID	550000	4196800	0	10
RECEPTOR	861 GRID	550200	4196800	0	10
RECEPTOR	862 GRID	550400	4196800	0	10
RECEPTOR	863 GRID	550600	4196800	0	10
RECEPTOR	864 GRID	550800	4196800	0	10
RECEPTOR	865 GRID	551000	4196800	0	10
RECEPTOR	866 GRID	551200	4196800	0	10
RECEPTOR	867 GRID	551400	4196800	0	10
RECEPTOR	868 GRID	551600	4196800	0	10
RECEPTOR	869 GRID	551800	4196800	0	10
RECEPTOR	870 GRID	552000	4196800	0	10
RECEPTOR	871 GRID	552200	4196800	0	10
RECEPTOR	872 GRID	552400	4196800	0	10
RECEPTOR	873 GRID	552600	4196800	0	10
RECEPTOR	874 GRID	552800	4196800	0	10
RECEPTOR	875 GRID	553000	4196800	0	10
RECEPTOR	876 GRID	553200	4196800	0	10
RECEPTOR	877 GRID	553400	4196800	0	10
RECEPTOR	878 GRID	553600	4196800	0	10
RECEPTOR	879 GRID	553800	4196800	1.2	10
RECEPTOR	880 GRID	554000	4196800	3	10
RECEPTOR	881 GRID	554200	4196800	5	10
RECEPTOR	882 GRID	554400	4196800	26.8	10
RECEPTOR	883 GRID	554600	4196800	56.9	10
RECEPTOR	884 GRID	554800	4196800	6.8	10
RECEPTOR	885 GRID	555000	4196800	6.2	10
RECEPTOR	886 GRID	555200	4196800	4.5	10
RECEPTOR	887 GRID	555400	4196800	4.2	10
RECEPTOR	888 GRID	555600	4196800	3.6	10
RECEPTOR	889 GRID	555800	4196800	1.1	10
RECEPTOR	890 GRID	556000	4196800	1.1	10
RECEPTOR	891 GRID	556200	4196800	3.3	10
RECEPTOR	892 GRID	556400	4196800	3.7	10
RECEPTOR	893 GRID	556600	4196800	3.9	10
RECEPTOR	894 GRID	556800	4196800	4	10
RECEPTOR	895 GRID	557000	4196800	4.2	10
RECEPTOR	896 GRID	557200	4196800	4.4	10

File: Cancer_MNTUG.SRC

RECEPTOR	897 GRID	557400	4196800	4	10
RECEPTOR	898 GRID	557600	4196800	3.6	10
RECEPTOR	899 GRID	557800	4196800	3.4	10
RECEPTOR	900 GRID	558000	4196800	3.9	10
RECEPTOR	901 GRID	558200	4196800	5.3	10
RECEPTOR	902 GRID	558400	4196800	6.9	10
RECEPTOR	903 GRID	558600	4196800	7.2	10
RECEPTOR	904 GRID	558800	4196800	7.8	10
RECEPTOR	905 GRID	559000	4196800	8	10
RECEPTOR	906 GRID	559200	4196800	7.4	10
RECEPTOR	907 GRID	559400	4196800	6.4	10
RECEPTOR	908 GRID	559600	4196800	7	10
RECEPTOR	909 GRID	559800	4196800	9.5	10
RECEPTOR	910 GRID	560000	4196800	16	10
RECEPTOR	911 GRID	560200	4196800	15.8	10
RECEPTOR	912 GRID	560400	4196800	19.5	10
RECEPTOR	913 GRID	560600	4196800	21.4	10
RECEPTOR	914 GRID	560800	4196800	26.5	10
RECEPTOR	915 GRID	561000	4196800	31.6	10
RECEPTOR	916 GRID	549000	4197000	0	10
RECEPTOR	917 GRID	549200	4197000	0	10
RECEPTOR	918 GRID	549400	4197000	0	10
RECEPTOR	919 GRID	549600	4197000	0	10
RECEPTOR	920 GRID	549800	4197000	0	10
RECEPTOR	921 GRID	550000	4197000	0	10
RECEPTOR	922 GRID	550200	4197000	0	10
RECEPTOR	923 GRID	550400	4197000	0	10
RECEPTOR	924 GRID	550600	4197000	0	10
RECEPTOR	925 GRID	550800	4197000	0	10
RECEPTOR	926 GRID	551000	4197000	0	10
RECEPTOR	927 GRID	551200	4197000	0	10
RECEPTOR	928 GRID	551400	4197000	0	10
RECEPTOR	929 GRID	551600	4197000	0	10
RECEPTOR	930 GRID	551800	4197000	0	10
RECEPTOR	931 GRID	552000	4197000	0	10
RECEPTOR	932 GRID	552200	4197000	0	10
RECEPTOR	933 GRID	552400	4197000	0	10
RECEPTOR	934 GRID	552600	4197000	0	10
RECEPTOR	935 GRID	552800	4197000	0	10
RECEPTOR	936 GRID	553000	4197000	0	10
RECEPTOR	937 GRID	553200	4197000	0	10
RECEPTOR	938 GRID	553400	4197000	0	10
RECEPTOR	939 GRID	553600	4197000	0	10
RECEPTOR	940 GRID	553800	4197000	1.2	10
RECEPTOR	941 GRID	554000	4197000	3.6	10
RECEPTOR	942 GRID	554200	4197000	50.3	10
RECEPTOR	943 GRID	554400	4197000	69.9	10
RECEPTOR	944 GRID	554600	4197000	7.4	10
RECEPTOR	945 GRID	554800	4197000	5.2	10
RECEPTOR	946 GRID	555000	4197000	4	10
RECEPTOR	947 GRID	555200	4197000	3.8	10
RECEPTOR	948 GRID	555400	4197000	3.9	10
RECEPTOR	949 GRID	555600	4197000	1.1	10
RECEPTOR	950 GRID	555800	4197000	3.3	10
RECEPTOR	951 GRID	556000	4197000	2.3	10
RECEPTOR	952 GRID	556200	4197000	3.5	10
RECEPTOR	953 GRID	556400	4197000	2.8	10
RECEPTOR	954 GRID	556600	4197000	3.2	10
RECEPTOR	955 GRID	556800	4197000	3.6	10
RECEPTOR	956 GRID	557000	4197000	3.8	10

File: Cancer_MNTUG.SRC

RECEPTOR	957 GRID	557200	4197000	3.6	10
RECEPTOR	958 GRID	557400	4197000	3.9	10
RECEPTOR	959 GRID	557600	4197000	5.6	10
RECEPTOR	960 GRID	557800	4197000	5.4	10
RECEPTOR	961 GRID	558000	4197000	5.5	10
RECEPTOR	962 GRID	558200	4197000	6.3	10
RECEPTOR	963 GRID	558400	4197000	7.7	10
RECEPTOR	964 GRID	558600	4197000	9.4	10
RECEPTOR	965 GRID	558800	4197000	8	10
RECEPTOR	966 GRID	559000	4197000	9.6	10
RECEPTOR	967 GRID	559200	4197000	8.7	10
RECEPTOR	968 GRID	559400	4197000	8.4	10
RECEPTOR	969 GRID	559600	4197000	9.4	10
RECEPTOR	970 GRID	559800	4197000	9.7	10
RECEPTOR	971 GRID	560000	4197000	17.8	10
RECEPTOR	972 GRID	560200	4197000	15.8	10
RECEPTOR	973 GRID	560400	4197000	18.6	10
RECEPTOR	974 GRID	560600	4197000	21.9	10
RECEPTOR	975 GRID	560800	4197000	26.3	10
RECEPTOR	976 GRID	561000	4197000	32.7	10
RECEPTOR	977 GRID	549000	4197200	0	10
RECEPTOR	978 GRID	549200	4197200	0	10
RECEPTOR	979 GRID	549400	4197200	0	10
RECEPTOR	980 GRID	549600	4197200	0	10
RECEPTOR	981 GRID	549800	4197200	0	10
RECEPTOR	982 GRID	550000	4197200	0	10
RECEPTOR	983 GRID	550200	4197200	0	10
RECEPTOR	984 GRID	550400	4197200	0	10
RECEPTOR	985 GRID	550600	4197200	0	10
RECEPTOR	986 GRID	550800	4197200	0	10
RECEPTOR	987 GRID	551000	4197200	0	10
RECEPTOR	988 GRID	551200	4197200	0	10
RECEPTOR	989 GRID	551400	4197200	0	10
RECEPTOR	990 GRID	551600	4197200	0	10
RECEPTOR	991 GRID	551800	4197200	0	10
RECEPTOR	992 GRID	552000	4197200	0	10
RECEPTOR	993 GRID	552200	4197200	0	10
RECEPTOR	994 GRID	552400	4197200	0	10
RECEPTOR	995 GRID	552600	4197200	0	10
RECEPTOR	996 GRID	552800	4197200	0	10
RECEPTOR	997 GRID	553000	4197200	0	10
RECEPTOR	998 GRID	553200	4197200	0	10
RECEPTOR	999 GRID	553400	4197200	0	10
RECEPTOR	1000 GRID	553600	4197200	0	10
RECEPTOR	1001 GRID	553800	4197200	1.2	10
RECEPTOR	1002 GRID	554000	4197200	14.7	10
RECEPTOR	1003 GRID	554200	4197200	93	10
RECEPTOR	1004 GRID	554400	4197200	68	10
RECEPTOR	1005 GRID	554600	4197200	6.6	10
RECEPTOR	1006 GRID	554800	4197200	4.1	10
RECEPTOR	1007 GRID	555000	4197200	4	10
RECEPTOR	1008 GRID	555200	4197200	4.1	10
RECEPTOR	1009 GRID	555400	4197200	1.1	10
RECEPTOR	1010 GRID	555600	4197200	1.1	10
RECEPTOR	1011 GRID	555800	4197200	3.7	10
RECEPTOR	1012 GRID	556000	4197200	4.3	10
RECEPTOR	1013 GRID	556200	4197200	3.4	10
RECEPTOR	1014 GRID	556400	4197200	2.7	10
RECEPTOR	1015 GRID	556600	4197200	2.7	10
RECEPTOR	1016 GRID	556800	4197200	3.7	10

File: Cancer_MNTUG.SRC

RECEPTOR	1017 GRID	557000	4197200	3.2	10
RECEPTOR	1018 GRID	557200	4197200	4.1	10
RECEPTOR	1019 GRID	557400	4197200	5.3	10
RECEPTOR	1020 GRID	557600	4197200	6.3	10
RECEPTOR	1021 GRID	557800	4197200	6.4	10
RECEPTOR	1022 GRID	558000	4197200	6	10
RECEPTOR	1023 GRID	558200	4197200	5.6	10
RECEPTOR	1024 GRID	558400	4197200	8.4	10
RECEPTOR	1025 GRID	558600	4197200	5.7	10
RECEPTOR	1026 GRID	558800	4197200	9.9	10
RECEPTOR	1027 GRID	559000	4197200	11	10
RECEPTOR	1028 GRID	559200	4197200	9.8	10
RECEPTOR	1029 GRID	559400	4197200	10.8	10
RECEPTOR	1030 GRID	559600	4197200	11	10
RECEPTOR	1031 GRID	559800	4197200	11.8	10
RECEPTOR	1032 GRID	560000	4197200	16.3	10
RECEPTOR	1033 GRID	560200	4197200	16.6	10
RECEPTOR	1034 GRID	560400	4197200	20.1	10
RECEPTOR	1035 GRID	560600	4197200	24.9	10
RECEPTOR	1036 GRID	560800	4197200	30.8	10
RECEPTOR	1037 GRID	561000	4197200	42.3	10
RECEPTOR	1038 GRID	549000	4197400	0	10
RECEPTOR	1039 GRID	549200	4197400	0	10
RECEPTOR	1040 GRID	549400	4197400	0	10
RECEPTOR	1041 GRID	549600	4197400	0	10
RECEPTOR	1042 GRID	549800	4197400	0	10
RECEPTOR	1043 GRID	550000	4197400	0	10
RECEPTOR	1044 GRID	550200	4197400	0	10
RECEPTOR	1045 GRID	550400	4197400	0	10
RECEPTOR	1046 GRID	550600	4197400	0	10
RECEPTOR	1047 GRID	550800	4197400	0	10
RECEPTOR	1048 GRID	551000	4197400	0	10
RECEPTOR	1049 GRID	551200	4197400	0	10
RECEPTOR	1050 GRID	551400	4197400	0	10
RECEPTOR	1051 GRID	551600	4197400	0	10
RECEPTOR	1052 GRID	551800	4197400	5.1	10
RECEPTOR	1053 GRID	552000	4197400	0	10
RECEPTOR	1054 GRID	552200	4197400	0	10
RECEPTOR	1055 GRID	552400	4197400	0	10
RECEPTOR	1056 GRID	552600	4197400	0	10
RECEPTOR	1057 GRID	552800	4197400	0	10
RECEPTOR	1058 GRID	553000	4197400	0	10
RECEPTOR	1059 GRID	553200	4197400	0	10
RECEPTOR	1060 GRID	553400	4197400	0	10
RECEPTOR	1061 GRID	553600	4197400	1.1	10
RECEPTOR	1062 GRID	553800	4197400	8.2	10
RECEPTOR	1063 GRID	554000	4197400	50.6	10
RECEPTOR	1064 GRID	554200	4197400	21.2	10
RECEPTOR	1065 GRID	554400	4197400	25.7	10
RECEPTOR	1066 GRID	554600	4197400	4.6	10
RECEPTOR	1067 GRID	554800	4197400	3.4	10
RECEPTOR	1068 GRID	555000	4197400	1.1	10
RECEPTOR	1069 GRID	555200	4197400	1.1	10
RECEPTOR	1070 GRID	555400	4197400	2.8	10
RECEPTOR	1071 GRID	555600	4197400	1.6	10
RECEPTOR	1072 GRID	555800	4197400	3.8	10
RECEPTOR	1073 GRID	556000	4197400	4	10
RECEPTOR	1074 GRID	556200	4197400	3.2	10
RECEPTOR	1075 GRID	556400	4197400	-0.9	10
RECEPTOR	1076 GRID	556600	4197400	5.4	10

File: Cancer_MNTUG.SRC

RECEPTOR	1077 GRID	556800	4197400	5	10
RECEPTOR	1078 GRID	557000	4197400	5.3	10
RECEPTOR	1079 GRID	557200	4197400	5.7	10
RECEPTOR	1080 GRID	557400	4197400	2.6	10
RECEPTOR	1081 GRID	557600	4197400	8.4	10
RECEPTOR	1082 GRID	557800	4197400	9	10
RECEPTOR	1083 GRID	558000	4197400	8.6	10
RECEPTOR	1084 GRID	558200	4197400	9.1	10
RECEPTOR	1085 GRID	558400	4197400	10.1	10
RECEPTOR	1086 GRID	558600	4197400	11.5	10
RECEPTOR	1087 GRID	558800	4197400	12.6	10
RECEPTOR	1088 GRID	559000	4197400	12.3	10
RECEPTOR	1089 GRID	559200	4197400	12	10
RECEPTOR	1090 GRID	559400	4197400	12.2	10
RECEPTOR	1091 GRID	559600	4197400	13.3	10
RECEPTOR	1092 GRID	559800	4197400	13.3	10
RECEPTOR	1093 GRID	560000	4197400	14.6	10
RECEPTOR	1094 GRID	560200	4197400	17.9	10
RECEPTOR	1095 GRID	560400	4197400	21.6	10
RECEPTOR	1096 GRID	560600	4197400	28.7	10
RECEPTOR	1097 GRID	560800	4197400	36	10
RECEPTOR	1098 GRID	561000	4197400	43	10
RECEPTOR	1099 GRID	549000	4197600	0	10
RECEPTOR	1100 GRID	549200	4197600	0	10
RECEPTOR	1101 GRID	549400	4197600	0	10
RECEPTOR	1102 GRID	549600	4197600	0	10
RECEPTOR	1103 GRID	549800	4197600	0	10
RECEPTOR	1104 GRID	550000	4197600	0	10
RECEPTOR	1105 GRID	550200	4197600	0	10
RECEPTOR	1106 GRID	550400	4197600	0	10
RECEPTOR	1107 GRID	550600	4197600	0	10
RECEPTOR	1108 GRID	550800	4197600	0	10
RECEPTOR	1109 GRID	551000	4197600	0	10
RECEPTOR	1110 GRID	551200	4197600	0	10
RECEPTOR	1111 GRID	551400	4197600	0	10
RECEPTOR	1112 GRID	551600	4197600	0	10
RECEPTOR	1113 GRID	551800	4197600	0	10
RECEPTOR	1114 GRID	552000	4197600	0	10
RECEPTOR	1115 GRID	552200	4197600	0	10
RECEPTOR	1116 GRID	552400	4197600	0	10
RECEPTOR	1117 GRID	552600	4197600	0	10
RECEPTOR	1118 GRID	552800	4197600	0	10
RECEPTOR	1119 GRID	553000	4197600	0	10
RECEPTOR	1120 GRID	553200	4197600	0	10
RECEPTOR	1121 GRID	553400	4197600	1.1	10
RECEPTOR	1122 GRID	553600	4197600	19.9	10
RECEPTOR	1123 GRID	553800	4197600	40.2	10
RECEPTOR	1124 GRID	554000	4197600	13.8	10
RECEPTOR	1125 GRID	554200	4197600	3.7	10
RECEPTOR	1126 GRID	554400	4197600	2.8	10
RECEPTOR	1127 GRID	554600	4197600	3.7	10
RECEPTOR	1128 GRID	554800	4197600	2.9	10
RECEPTOR	1129 GRID	555000	4197600	3.3	10
RECEPTOR	1130 GRID	555200	4197600	3.2	10
RECEPTOR	1131 GRID	555400	4197600	3	10
RECEPTOR	1132 GRID	555600	4197600	2.3	10
RECEPTOR	1133 GRID	555800	4197600	4	10
RECEPTOR	1134 GRID	556000	4197600	3	10
RECEPTOR	1135 GRID	556200	4197600	0	10
RECEPTOR	1136 GRID	556400	4197600	3.7	10

File: Cancer_MNTUG.SRC

RECEPTOR	1137 GRID	556600	4197600	3.8	10
RECEPTOR	1138 GRID	556800	4197600	6.1	10
RECEPTOR	1139 GRID	557000	4197600	6.7	10
RECEPTOR	1140 GRID	557200	4197600	7.1	10
RECEPTOR	1141 GRID	557400	4197600	8.7	10
RECEPTOR	1142 GRID	557600	4197600	13.7	10
RECEPTOR	1143 GRID	557800	4197600	12.5	10
RECEPTOR	1144 GRID	558000	4197600	10.5	10
RECEPTOR	1145 GRID	558200	4197600	10.6	10
RECEPTOR	1146 GRID	558400	4197600	11.8	10
RECEPTOR	1147 GRID	558600	4197600	11.8	10
RECEPTOR	1148 GRID	558800	4197600	13.6	10
RECEPTOR	1149 GRID	559000	4197600	14.1	10
RECEPTOR	1150 GRID	559200	4197600	13	10
RECEPTOR	1151 GRID	559400	4197600	12.8	10
RECEPTOR	1152 GRID	559600	4197600	14.6	10
RECEPTOR	1153 GRID	559800	4197600	18.9	10
RECEPTOR	1154 GRID	560000	4197600	16.4	10
RECEPTOR	1155 GRID	560200	4197600	19.2	10
RECEPTOR	1156 GRID	560400	4197600	24.4	10
RECEPTOR	1157 GRID	560600	4197600	31.5	10
RECEPTOR	1158 GRID	560800	4197600	38.3	10
RECEPTOR	1159 GRID	561000	4197600	60	10
RECEPTOR	1160 GRID	549000	4197800	0	10
RECEPTOR	1161 GRID	549200	4197800	0	10
RECEPTOR	1162 GRID	549400	4197800	0	10
RECEPTOR	1163 GRID	549600	4197800	0	10
RECEPTOR	1164 GRID	549800	4197800	0	10
RECEPTOR	1165 GRID	550000	4197800	0	10
RECEPTOR	1166 GRID	550200	4197800	0	10
RECEPTOR	1167 GRID	550400	4197800	0	10
RECEPTOR	1168 GRID	550600	4197800	0	10
RECEPTOR	1169 GRID	550800	4197800	0	10
RECEPTOR	1170 GRID	551000	4197800	0	10
RECEPTOR	1171 GRID	551200	4197800	0	10
RECEPTOR	1172 GRID	551400	4197800	0	10
RECEPTOR	1173 GRID	551600	4197800	0	10
RECEPTOR	1174 GRID	551800	4197800	0	10
RECEPTOR	1175 GRID	552000	4197800	0	10
RECEPTOR	1176 GRID	552200	4197800	0	10
RECEPTOR	1177 GRID	552400	4197800	0	10
RECEPTOR	1178 GRID	552600	4197800	0	10
RECEPTOR	1179 GRID	552800	4197800	0	10
RECEPTOR	1180 GRID	553000	4197800	1.1	10
RECEPTOR	1181 GRID	553200	4197800	1.1	10
RECEPTOR	1182 GRID	553400	4197800	1.1	10
RECEPTOR	1183 GRID	553600	4197800	39.3	10
RECEPTOR	1184 GRID	553800	4197800	25.6	10
RECEPTOR	1185 GRID	554000	4197800	6	10
RECEPTOR	1186 GRID	554200	4197800	3.5	10
RECEPTOR	1187 GRID	554400	4197800	2.7	10
RECEPTOR	1188 GRID	554600	4197800	2.8	10
RECEPTOR	1189 GRID	554800	4197800	2.6	10
RECEPTOR	1190 GRID	555000	4197800	2.9	10
RECEPTOR	1191 GRID	555200	4197800	2.7	10
RECEPTOR	1192 GRID	555400	4197800	3.2	10
RECEPTOR	1193 GRID	555600	4197800	2.6	10
RECEPTOR	1194 GRID	555800	4197800	4.5	10
RECEPTOR	1195 GRID	556000	4197800	3.6	10
RECEPTOR	1196 GRID	556200	4197800	4.5	10

File: Cancer_MNTUG.SRC

RECEPTOR	1197 GRID	556400	4197800	4.8	10
RECEPTOR	1198 GRID	556600	4197800	4.8	10
RECEPTOR	1199 GRID	556800	4197800	6.1	10
RECEPTOR	1200 GRID	557000	4197800	8	10
RECEPTOR	1201 GRID	557200	4197800	8.4	10
RECEPTOR	1202 GRID	557400	4197800	9	10
RECEPTOR	1203 GRID	557600	4197800	9.9	10
RECEPTOR	1204 GRID	557800	4197800	11.6	10
RECEPTOR	1205 GRID	558000	4197800	12.1	10
RECEPTOR	1206 GRID	558200	4197800	12.4	10
RECEPTOR	1207 GRID	558400	4197800	12.9	10
RECEPTOR	1208 GRID	558600	4197800	13.8	10
RECEPTOR	1209 GRID	558800	4197800	14.3	10
RECEPTOR	1210 GRID	559000	4197800	15.3	10
RECEPTOR	1211 GRID	559200	4197800	15.5	10
RECEPTOR	1212 GRID	559400	4197800	14.8	10
RECEPTOR	1213 GRID	559600	4197800	16.8	10
RECEPTOR	1214 GRID	559800	4197800	16.2	10
RECEPTOR	1215 GRID	560000	4197800	19.3	10
RECEPTOR	1216 GRID	560200	4197800	25.2	10
RECEPTOR	1217 GRID	560400	4197800	34.6	10
RECEPTOR	1218 GRID	560600	4197800	49.3	10
RECEPTOR	1219 GRID	560800	4197800	51.8	10
RECEPTOR	1220 GRID	561000	4197800	104.2	10
RECEPTOR	1221 GRID	549000	4198000	0	10
RECEPTOR	1222 GRID	549200	4198000	0	10
RECEPTOR	1223 GRID	549400	4198000	0	10
RECEPTOR	1224 GRID	549600	4198000	0	10
RECEPTOR	1225 GRID	549800	4198000	0	10
RECEPTOR	1226 GRID	550000	4198000	0	10
RECEPTOR	1227 GRID	550200	4198000	0	10
RECEPTOR	1228 GRID	550400	4198000	0	10
RECEPTOR	1229 GRID	550600	4198000	0	10
RECEPTOR	1230 GRID	550800	4198000	0	10
RECEPTOR	1231 GRID	551000	4198000	0	10
RECEPTOR	1232 GRID	551200	4198000	0	10
RECEPTOR	1233 GRID	551400	4198000	0	10
RECEPTOR	1234 GRID	551600	4198000	0	10
RECEPTOR	1235 GRID	551800	4198000	0	10
RECEPTOR	1236 GRID	552000	4198000	0	10
RECEPTOR	1237 GRID	552200	4198000	0	10
RECEPTOR	1238 GRID	552400	4198000	0	10
RECEPTOR	1239 GRID	552600	4198000	0	10
RECEPTOR	1240 GRID	552800	4198000	1.1	10
RECEPTOR	1241 GRID	553000	4198000	1	10
RECEPTOR	1242 GRID	553200	4198000	1.1	10
RECEPTOR	1243 GRID	553400	4198000	33	10
RECEPTOR	1244 GRID	553600	4198000	39.6	10
RECEPTOR	1245 GRID	553800	4198000	12.9	10
RECEPTOR	1246 GRID	554000	4198000	8.1	10
RECEPTOR	1247 GRID	554200	4198000	3.3	10
RECEPTOR	1248 GRID	554400	4198000	2.8	10
RECEPTOR	1249 GRID	554600	4198000	2.7	10
RECEPTOR	1250 GRID	554800	4198000	3.5	10
RECEPTOR	1251 GRID	555000	4198000	3.2	10
RECEPTOR	1252 GRID	555200	4198000	4.3	10
RECEPTOR	1253 GRID	555400	4198000	4.2	10
RECEPTOR	1254 GRID	555600	4198000	3.6	10
RECEPTOR	1255 GRID	555800	4198000	3.5	10
RECEPTOR	1256 GRID	556000	4198000	4.1	10

File: Cancer_MNTUG.SRC

RECEPTOR	1257 GRID	556200	4198000	4.9	10
RECEPTOR	1258 GRID	556400	4198000	6	10
RECEPTOR	1259 GRID	556600	4198000	5.6	10
RECEPTOR	1260 GRID	556800	4198000	7.3	10
RECEPTOR	1261 GRID	557000	4198000	8.6	10
RECEPTOR	1262 GRID	557200	4198000	9.7	10
RECEPTOR	1263 GRID	557400	4198000	10.4	10
RECEPTOR	1264 GRID	557600	4198000	11.4	10
RECEPTOR	1265 GRID	557800	4198000	11.5	10
RECEPTOR	1266 GRID	558000	4198000	13.5	10
RECEPTOR	1267 GRID	558200	4198000	14.3	10
RECEPTOR	1268 GRID	558400	4198000	14	10
RECEPTOR	1269 GRID	558600	4198000	14.9	10
RECEPTOR	1270 GRID	558800	4198000	15.1	10
RECEPTOR	1271 GRID	559000	4198000	16.8	10
RECEPTOR	1272 GRID	559200	4198000	16.7	10
RECEPTOR	1273 GRID	559400	4198000	16.5	10
RECEPTOR	1274 GRID	559600	4198000	17.9	10
RECEPTOR	1275 GRID	559800	4198000	19.3	10
RECEPTOR	1276 GRID	560000	4198000	26.3	10
RECEPTOR	1277 GRID	560200	4198000	45.2	10
RECEPTOR	1278 GRID	560400	4198000	56.9	10
RECEPTOR	1279 GRID	560600	4198000	68.4	10
RECEPTOR	1280 GRID	560800	4198000	84.3	10
RECEPTOR	1281 GRID	561000	4198000	137.8	10
RECEPTOR	1282 GRID	549000	4198200	0	10
RECEPTOR	1283 GRID	549200	4198200	0	10
RECEPTOR	1284 GRID	549400	4198200	0	10
RECEPTOR	1285 GRID	549600	4198200	0	10
RECEPTOR	1286 GRID	549800	4198200	0	10
RECEPTOR	1287 GRID	550000	4198200	1.4	10
RECEPTOR	1288 GRID	550200	4198200	0	10
RECEPTOR	1289 GRID	550400	4198200	0	10
RECEPTOR	1290 GRID	550600	4198200	0	10
RECEPTOR	1291 GRID	550800	4198200	0	10
RECEPTOR	1292 GRID	551000	4198200	0	10
RECEPTOR	1293 GRID	551200	4198200	0	10
RECEPTOR	1294 GRID	551400	4198200	0	10
RECEPTOR	1295 GRID	551600	4198200	0	10
RECEPTOR	1296 GRID	551800	4198200	0	10
RECEPTOR	1297 GRID	552000	4198200	0	10
RECEPTOR	1298 GRID	552200	4198200	1	10
RECEPTOR	1299 GRID	552400	4198200	1.1	10
RECEPTOR	1300 GRID	552600	4198200	1.1	10
RECEPTOR	1301 GRID	552800	4198200	5.6	10
RECEPTOR	1302 GRID	553000	4198200	6.1	10
RECEPTOR	1303 GRID	553200	4198200	28.6	10
RECEPTOR	1304 GRID	553400	4198200	27.1	10
RECEPTOR	1305 GRID	553600	4198200	12.6	10
RECEPTOR	1306 GRID	553800	4198200	9.6	10
RECEPTOR	1307 GRID	554000	4198200	3.3	10
RECEPTOR	1308 GRID	554200	4198200	2.3	10
RECEPTOR	1309 GRID	554400	4198200	3.5	10
RECEPTOR	1310 GRID	554600	4198200	2.9	10
RECEPTOR	1311 GRID	554800	4198200	3.1	10
RECEPTOR	1312 GRID	555000	4198200	4.3	10
RECEPTOR	1313 GRID	555200	4198200	3.8	10
RECEPTOR	1314 GRID	555400	4198200	4.7	10
RECEPTOR	1315 GRID	555600	4198200	4.1	10
RECEPTOR	1316 GRID	555800	4198200	4.3	10

File: Cancer_MNTUG.SRC

RECEPTOR	1317 GRID	556000	4198200	4.7	10
RECEPTOR	1318 GRID	556200	4198200	5.4	10
RECEPTOR	1319 GRID	556400	4198200	6.6	10
RECEPTOR	1320 GRID	556600	4198200	6.7	10
RECEPTOR	1321 GRID	556800	4198200	7.7	10
RECEPTOR	1322 GRID	557000	4198200	9.6	10
RECEPTOR	1323 GRID	557200	4198200	11	10
RECEPTOR	1324 GRID	557400	4198200	11.6	10
RECEPTOR	1325 GRID	557600	4198200	11.8	10
RECEPTOR	1326 GRID	557800	4198200	12.4	10
RECEPTOR	1327 GRID	558000	4198200	14.2	10
RECEPTOR	1328 GRID	558200	4198200	14.7	10
RECEPTOR	1329 GRID	558400	4198200	15.6	10
RECEPTOR	1330 GRID	558600	4198200	15.8	10
RECEPTOR	1331 GRID	558800	4198200	16.8	10
RECEPTOR	1332 GRID	559000	4198200	18	10
RECEPTOR	1333 GRID	559200	4198200	18.4	10
RECEPTOR	1334 GRID	559400	4198200	17.1	10
RECEPTOR	1335 GRID	559600	4198200	20.6	10
RECEPTOR	1336 GRID	559800	4198200	35	10
RECEPTOR	1337 GRID	560000	4198200	62.2	10
RECEPTOR	1338 GRID	560200	4198200	81.1	10
RECEPTOR	1339 GRID	560400	4198200	75.5	10
RECEPTOR	1340 GRID	560600	4198200	83.3	10
RECEPTOR	1341 GRID	560800	4198200	105.6	10
RECEPTOR	1342 GRID	561000	4198200	150.9	10
RECEPTOR	1343 GRID	549000	4198400	0	10
RECEPTOR	1344 GRID	549200	4198400	0	10
RECEPTOR	1345 GRID	549400	4198400	0	10
RECEPTOR	1346 GRID	549600	4198400	0	10
RECEPTOR	1347 GRID	549800	4198400	0	10
RECEPTOR	1348 GRID	550000	4198400	0	10
RECEPTOR	1349 GRID	550200	4198400	0	10
RECEPTOR	1350 GRID	550400	4198400	0	10
RECEPTOR	1351 GRID	550600	4198400	0	10
RECEPTOR	1352 GRID	550800	4198400	0	10
RECEPTOR	1353 GRID	551000	4198400	0	10
RECEPTOR	1354 GRID	551200	4198400	0	10
RECEPTOR	1355 GRID	551400	4198400	0	10
RECEPTOR	1356 GRID	551600	4198400	0	10
RECEPTOR	1357 GRID	551800	4198400	1.1	10
RECEPTOR	1358 GRID	552000	4198400	1.1	10
RECEPTOR	1359 GRID	552200	4198400	1	10
RECEPTOR	1360 GRID	552400	4198400	1.3	10
RECEPTOR	1361 GRID	552600	4198400	3.7	10
RECEPTOR	1362 GRID	552800	4198400	10.3	10
RECEPTOR	1363 GRID	553000	4198400	43.7	10
RECEPTOR	1364 GRID	553200	4198400	36.1	10
RECEPTOR	1365 GRID	553400	4198400	15.6	10
RECEPTOR	1366 GRID	553600	4198400	2.9	10
RECEPTOR	1367 GRID	553800	4198400	3.1	10
RECEPTOR	1368 GRID	554000	4198400	3.3	10
RECEPTOR	1369 GRID	554200	4198400	3.1	10
RECEPTOR	1370 GRID	554400	4198400	4.1	10
RECEPTOR	1371 GRID	554600	4198400	3.6	10
RECEPTOR	1372 GRID	554800	4198400	3	10
RECEPTOR	1373 GRID	555000	4198400	3.6	10
RECEPTOR	1374 GRID	555200	4198400	3.8	10
RECEPTOR	1375 GRID	555400	4198400	4.3	10
RECEPTOR	1376 GRID	555600	4198400	4.8	10

File: Cancer_MNTUG.SRC

RECEPTOR	1377 GRID	555800	4198400	5	10
RECEPTOR	1378 GRID	556000	4198400	5.4	10
RECEPTOR	1379 GRID	556200	4198400	6.2	10
RECEPTOR	1380 GRID	556400	4198400	6.9	10
RECEPTOR	1381 GRID	556600	4198400	9.2	10
RECEPTOR	1382 GRID	556800	4198400	9	10
RECEPTOR	1383 GRID	557000	4198400	9.6	10
RECEPTOR	1384 GRID	557200	4198400	11.5	10
RECEPTOR	1385 GRID	557400	4198400	12.4	10
RECEPTOR	1386 GRID	557600	4198400	15.6	10
RECEPTOR	1387 GRID	557800	4198400	15.6	10
RECEPTOR	1388 GRID	558000	4198400	15.4	10
RECEPTOR	1389 GRID	558200	4198400	16.9	10
RECEPTOR	1390 GRID	558400	4198400	18.8	10
RECEPTOR	1391 GRID	558600	4198400	18.5	10
RECEPTOR	1392 GRID	558800	4198400	18.4	10
RECEPTOR	1393 GRID	559000	4198400	17.6	10
RECEPTOR	1394 GRID	559200	4198400	17.3	10
RECEPTOR	1395 GRID	559400	4198400	20.1	10
RECEPTOR	1396 GRID	559600	4198400	23.6	10
RECEPTOR	1397 GRID	559800	4198400	35.9	10
RECEPTOR	1398 GRID	560000	4198400	45.6	10
RECEPTOR	1399 GRID	560200	4198400	66.2	10
RECEPTOR	1400 GRID	560400	4198400	90.5	10
RECEPTOR	1401 GRID	560600	4198400	116.6	10
RECEPTOR	1402 GRID	560800	4198400	140.7	10
RECEPTOR	1403 GRID	561000	4198400	162	10
RECEPTOR	1404 GRID	549000	4198600	0	10
RECEPTOR	1405 GRID	549200	4198600	0	10
RECEPTOR	1406 GRID	549400	4198600	0	10
RECEPTOR	1407 GRID	549600	4198600	0	10
RECEPTOR	1408 GRID	549800	4198600	0	10
RECEPTOR	1409 GRID	550000	4198600	0	10
RECEPTOR	1410 GRID	550200	4198600	0	10
RECEPTOR	1411 GRID	550400	4198600	0	10
RECEPTOR	1412 GRID	550600	4198600	0	10
RECEPTOR	1413 GRID	550800	4198600	0	10
RECEPTOR	1414 GRID	551000	4198600	0	10
RECEPTOR	1415 GRID	551200	4198600	0	10
RECEPTOR	1416 GRID	551400	4198600	0	10
RECEPTOR	1417 GRID	551600	4198600	0	10
RECEPTOR	1418 GRID	551800	4198600	0.8	10
RECEPTOR	1419 GRID	552000	4198600	27.4	10
RECEPTOR	1420 GRID	552200	4198600	13.4	10
RECEPTOR	1421 GRID	552400	4198600	14.5	10
RECEPTOR	1422 GRID	552600	4198600	31.8	10
RECEPTOR	1423 GRID	552800	4198600	38.7	10
RECEPTOR	1424 GRID	553000	4198600	12.8	10
RECEPTOR	1425 GRID	553200	4198600	5	10
RECEPTOR	1426 GRID	553400	4198600	3.9	10
RECEPTOR	1427 GRID	553600	4198600	3.1	10
RECEPTOR	1428 GRID	553800	4198600	4	10
RECEPTOR	1429 GRID	554000	4198600	3	10
RECEPTOR	1430 GRID	554200	4198600	3.1	10
RECEPTOR	1431 GRID	554400	4198600	3.4	10
RECEPTOR	1432 GRID	554600	4198600	3.5	10
RECEPTOR	1433 GRID	554800	4198600	3.8	10
RECEPTOR	1434 GRID	555000	4198600	3.4	10
RECEPTOR	1435 GRID	555200	4198600	3.9	10
RECEPTOR	1436 GRID	555400	4198600	3.8	10

File: Cancer_MNTUG.SRC

RECEPTOR	1437 GRID	555600	4198600	5.5	10
RECEPTOR	1438 GRID	555800	4198600	5.8	10
RECEPTOR	1439 GRID	556000	4198600	6.5	10
RECEPTOR	1440 GRID	556200	4198600	6.8	10
RECEPTOR	1441 GRID	556400	4198600	7.7	10
RECEPTOR	1442 GRID	556600	4198600	8.8	10
RECEPTOR	1443 GRID	556800	4198600	9.6	10
RECEPTOR	1444 GRID	557000	4198600	10.3	10
RECEPTOR	1445 GRID	557200	4198600	12.1	10
RECEPTOR	1446 GRID	557400	4198600	13.8	10
RECEPTOR	1447 GRID	557600	4198600	15.7	10
RECEPTOR	1448 GRID	557800	4198600	16.3	10
RECEPTOR	1449 GRID	558000	4198600	16.4	10
RECEPTOR	1450 GRID	558200	4198600	16.8	10
RECEPTOR	1451 GRID	558400	4198600	18	10
RECEPTOR	1452 GRID	558600	4198600	18.9	10
RECEPTOR	1453 GRID	558800	4198600	19.9	10
RECEPTOR	1454 GRID	559000	4198600	20	10
RECEPTOR	1455 GRID	559200	4198600	27.1	10
RECEPTOR	1456 GRID	559400	4198600	21.2	10
RECEPTOR	1457 GRID	559600	4198600	25.3	10
RECEPTOR	1458 GRID	559800	4198600	39.9	10
RECEPTOR	1459 GRID	560000	4198600	58.5	10
RECEPTOR	1460 GRID	560200	4198600	73.2	10
RECEPTOR	1461 GRID	560400	4198600	97.5	10
RECEPTOR	1462 GRID	560600	4198600	129.8	10
RECEPTOR	1463 GRID	560800	4198600	147.6	10
RECEPTOR	1464 GRID	561000	4198600	160	10
RECEPTOR	1465 GRID	549000	4198800	0	10
RECEPTOR	1466 GRID	549200	4198800	0	10
RECEPTOR	1467 GRID	549400	4198800	0	10
RECEPTOR	1468 GRID	549600	4198800	0	10
RECEPTOR	1469 GRID	549800	4198800	0	10
RECEPTOR	1470 GRID	550000	4198800	0	10
RECEPTOR	1471 GRID	550200	4198800	0	10
RECEPTOR	1472 GRID	550400	4198800	0	10
RECEPTOR	1473 GRID	550600	4198800	0	10
RECEPTOR	1474 GRID	550800	4198800	0	10
RECEPTOR	1475 GRID	551000	4198800	0	10
RECEPTOR	1476 GRID	551200	4198800	0	10
RECEPTOR	1477 GRID	551400	4198800	0	10
RECEPTOR	1478 GRID	551600	4198800	0.9	10
RECEPTOR	1479 GRID	551800	4198800	20.4	10
RECEPTOR	1480 GRID	552000	4198800	30.5	10
RECEPTOR	1481 GRID	552200	4198800	29.6	10
RECEPTOR	1482 GRID	552400	4198800	32.7	10
RECEPTOR	1483 GRID	552600	4198800	28.6	10
RECEPTOR	1484 GRID	552800	4198800	75.7	10
RECEPTOR	1485 GRID	553000	4198800	18.3	10
RECEPTOR	1486 GRID	553200	4198800	5.3	10
RECEPTOR	1487 GRID	553400	4198800	3	10
RECEPTOR	1488 GRID	553600	4198800	3.1	10
RECEPTOR	1489 GRID	553800	4198800	2.9	10
RECEPTOR	1490 GRID	554000	4198800	3.3	10
RECEPTOR	1491 GRID	554200	4198800	3.6	10
RECEPTOR	1492 GRID	554400	4198800	2.6	10
RECEPTOR	1493 GRID	554600	4198800	4	10
RECEPTOR	1494 GRID	554800	4198800	3.5	10
RECEPTOR	1495 GRID	555000	4198800	4.1	10
RECEPTOR	1496 GRID	555200	4198800	4.4	10

File: Cancer_MNTUG.SRC

RECEPTOR	1497 GRID	555400	4198800	4.9	10
RECEPTOR	1498 GRID	555600	4198800	6	10
RECEPTOR	1499 GRID	555800	4198800	7.2	10
RECEPTOR	1500 GRID	556000	4198800	7.3	10
RECEPTOR	1501 GRID	556200	4198800	7.9	10
RECEPTOR	1502 GRID	556400	4198800	8.4	10
RECEPTOR	1503 GRID	556600	4198800	9	10
RECEPTOR	1504 GRID	556800	4198800	10.7	10
RECEPTOR	1505 GRID	557000	4198800	12.7	10
RECEPTOR	1506 GRID	557200	4198800	12.9	10
RECEPTOR	1507 GRID	557400	4198800	13.4	10
RECEPTOR	1508 GRID	557600	4198800	15.6	10
RECEPTOR	1509 GRID	557800	4198800	17.1	10
RECEPTOR	1510 GRID	558000	4198800	19.2	10
RECEPTOR	1511 GRID	558200	4198800	18.4	10
RECEPTOR	1512 GRID	558400	4198800	19.3	10
RECEPTOR	1513 GRID	558600	4198800	19.8	10
RECEPTOR	1514 GRID	558800	4198800	21.4	10
RECEPTOR	1515 GRID	559000	4198800	21.3	10
RECEPTOR	1516 GRID	559200	4198800	21.5	10
RECEPTOR	1517 GRID	559400	4198800	24.1	10
RECEPTOR	1518 GRID	559600	4198800	29.2	10
RECEPTOR	1519 GRID	559800	4198800	42.8	10
RECEPTOR	1520 GRID	560000	4198800	55.5	10
RECEPTOR	1521 GRID	560200	4198800	80.3	10
RECEPTOR	1522 GRID	560400	4198800	122.1	10
RECEPTOR	1523 GRID	560600	4198800	129.4	10
RECEPTOR	1524 GRID	560800	4198800	146.8	10
RECEPTOR	1525 GRID	561000	4198800	167.2	10
RECEPTOR	1526 GRID	549000	4199000	0	10
RECEPTOR	1527 GRID	549200	4199000	0	10
RECEPTOR	1528 GRID	549400	4199000	0	10
RECEPTOR	1529 GRID	549600	4199000	0	10
RECEPTOR	1530 GRID	549800	4199000	0	10
RECEPTOR	1531 GRID	550000	4199000	0	10
RECEPTOR	1532 GRID	550200	4199000	0	10
RECEPTOR	1533 GRID	550400	4199000	0	10
RECEPTOR	1534 GRID	550600	4199000	0	10
RECEPTOR	1535 GRID	550800	4199000	0	10
RECEPTOR	1536 GRID	551000	4199000	0	10
RECEPTOR	1537 GRID	551200	4199000	0	10
RECEPTOR	1538 GRID	551400	4199000	0	10
RECEPTOR	1539 GRID	551600	4199000	6.3	10
RECEPTOR	1540 GRID	551800	4199000	28.6	10
RECEPTOR	1541 GRID	552000	4199000	32.4	10
RECEPTOR	1542 GRID	552200	4199000	34.5	10
RECEPTOR	1543 GRID	552400	4199000	35.8	10
RECEPTOR	1544 GRID	552600	4199000	98.3	10
RECEPTOR	1545 GRID	552800	4199000	33.6	10
RECEPTOR	1546 GRID	553000	4199000	19.7	10
RECEPTOR	1547 GRID	553200	4199000	22	10
RECEPTOR	1548 GRID	553400	4199000	4.2	10
RECEPTOR	1549 GRID	553600	4199000	3.6	10
RECEPTOR	1550 GRID	553800	4199000	3	10
RECEPTOR	1551 GRID	554000	4199000	2.9	10
RECEPTOR	1552 GRID	554200	4199000	3	10
RECEPTOR	1553 GRID	554400	4199000	2.2	10
RECEPTOR	1554 GRID	554600	4199000	9.4	10
RECEPTOR	1555 GRID	554800	4199000	4.1	10
RECEPTOR	1556 GRID	555000	4199000	3.9	10

File: Cancer_MNTUG.SRC

RECEPTOR	1557 GRID	555200	4199000	4.8	10
RECEPTOR	1558 GRID	555400	4199000	4.6	10
RECEPTOR	1559 GRID	555600	4199000	5.6	10
RECEPTOR	1560 GRID	555800	4199000	6.3	10
RECEPTOR	1561 GRID	556000	4199000	7.4	10
RECEPTOR	1562 GRID	556200	4199000	8.4	10
RECEPTOR	1563 GRID	556400	4199000	9.2	10
RECEPTOR	1564 GRID	556600	4199000	10.3	10
RECEPTOR	1565 GRID	556800	4199000	12.1	10
RECEPTOR	1566 GRID	557000	4199000	13.2	10
RECEPTOR	1567 GRID	557200	4199000	14.2	10
RECEPTOR	1568 GRID	557400	4199000	14.4	10
RECEPTOR	1569 GRID	557600	4199000	17.1	10
RECEPTOR	1570 GRID	557800	4199000	18.4	10
RECEPTOR	1571 GRID	558000	4199000	19.8	10
RECEPTOR	1572 GRID	558200	4199000	20.8	10
RECEPTOR	1573 GRID	558400	4199000	20.5	10
RECEPTOR	1574 GRID	558600	4199000	21.9	10
RECEPTOR	1575 GRID	558800	4199000	23.3	10
RECEPTOR	1576 GRID	559000	4199000	23.8	10
RECEPTOR	1577 GRID	559200	4199000	30.3	10
RECEPTOR	1578 GRID	559400	4199000	27.4	10
RECEPTOR	1579 GRID	559600	4199000	36.5	10
RECEPTOR	1580 GRID	559800	4199000	51.4	10
RECEPTOR	1581 GRID	560000	4199000	70.5	10
RECEPTOR	1582 GRID	560200	4199000	87.3	10
RECEPTOR	1583 GRID	560400	4199000	109.3	10
RECEPTOR	1584 GRID	560600	4199000	123.5	10
RECEPTOR	1585 GRID	560800	4199000	158.4	10
RECEPTOR	1586 GRID	561000	4199000	174.1	10
RECEPTOR	1587 GRID	549000	4199200	0	10
RECEPTOR	1588 GRID	549200	4199200	0	10
RECEPTOR	1589 GRID	549400	4199200	0	10
RECEPTOR	1590 GRID	549600	4199200	0	10
RECEPTOR	1591 GRID	549800	4199200	0	10
RECEPTOR	1592 GRID	550000	4199200	0	10
RECEPTOR	1593 GRID	550200	4199200	0	10
RECEPTOR	1594 GRID	550400	4199200	0	10
RECEPTOR	1595 GRID	550600	4199200	0	10
RECEPTOR	1596 GRID	550800	4199200	0	10
RECEPTOR	1597 GRID	551000	4199200	0	10
RECEPTOR	1598 GRID	551200	4199200	0	10
RECEPTOR	1599 GRID	551400	4199200	0	10
RECEPTOR	1600 GRID	551600	4199200	0.9	10
RECEPTOR	1601 GRID	551800	4199200	7.9	10
RECEPTOR	1602 GRID	552000	4199200	39.1	10
RECEPTOR	1603 GRID	552200	4199200	60.2	10
RECEPTOR	1604 GRID	552400	4199200	85	10
RECEPTOR	1605 GRID	552600	4199200	81.1	10
RECEPTOR	1606 GRID	552800	4199200	51	10
RECEPTOR	1607 GRID	553000	4199200	40.9	10
RECEPTOR	1608 GRID	553200	4199200	56.7	10
RECEPTOR	1609 GRID	553400	4199200	11.9	10
RECEPTOR	1610 GRID	553600	4199200	3.4	10
RECEPTOR	1611 GRID	553800	4199200	0.8	10
RECEPTOR	1612 GRID	554000	4199200	2.8	10
RECEPTOR	1613 GRID	554200	4199200	3.3	10
RECEPTOR	1614 GRID	554400	4199200	3.7	10
RECEPTOR	1615 GRID	554600	4199200	4.4	10
RECEPTOR	1616 GRID	554800	4199200	2.3	10

File: Cancer_MNTUG.SRC

RECEPTOR	1617 GRID	555000	4199200	3.6	10
RECEPTOR	1618 GRID	555200	4199200	4.5	10
RECEPTOR	1619 GRID	555400	4199200	4	10
RECEPTOR	1620 GRID	555600	4199200	5	10
RECEPTOR	1621 GRID	555800	4199200	6	10
RECEPTOR	1622 GRID	556000	4199200	7.4	10
RECEPTOR	1623 GRID	556200	4199200	9	10
RECEPTOR	1624 GRID	556400	4199200	9.7	10
RECEPTOR	1625 GRID	556600	4199200	10.8	10
RECEPTOR	1626 GRID	556800	4199200	11.9	10
RECEPTOR	1627 GRID	557000	4199200	12.9	10
RECEPTOR	1628 GRID	557200	4199200	15	10
RECEPTOR	1629 GRID	557400	4199200	15.6	10
RECEPTOR	1630 GRID	557600	4199200	16.8	10
RECEPTOR	1631 GRID	557800	4199200	19.3	10
RECEPTOR	1632 GRID	558000	4199200	21.3	10
RECEPTOR	1633 GRID	558200	4199200	22	10
RECEPTOR	1634 GRID	558400	4199200	21.5	10
RECEPTOR	1635 GRID	558600	4199200	23.8	10
RECEPTOR	1636 GRID	558800	4199200	24.8	10
RECEPTOR	1637 GRID	559000	4199200	25.7	10
RECEPTOR	1638 GRID	559200	4199200	24.4	10
RECEPTOR	1639 GRID	559400	4199200	29.9	10
RECEPTOR	1640 GRID	559600	4199200	52.7	10
RECEPTOR	1641 GRID	559800	4199200	60.9	10
RECEPTOR	1642 GRID	560000	4199200	71.8	10
RECEPTOR	1643 GRID	560200	4199200	92.6	10
RECEPTOR	1644 GRID	560400	4199200	107.4	10
RECEPTOR	1645 GRID	560600	4199200	127.1	10
RECEPTOR	1646 GRID	560800	4199200	153.3	10
RECEPTOR	1647 GRID	561000	4199200	178.6	10
RECEPTOR	1648 GRID	549000	4199400	0	10
RECEPTOR	1649 GRID	549200	4199400	0	10
RECEPTOR	1650 GRID	549400	4199400	0	10
RECEPTOR	1651 GRID	549600	4199400	0	10
RECEPTOR	1652 GRID	549800	4199400	0	10
RECEPTOR	1653 GRID	550000	4199400	0	10
RECEPTOR	1654 GRID	550200	4199400	0	10
RECEPTOR	1655 GRID	550400	4199400	0	10
RECEPTOR	1656 GRID	550600	4199400	0	10
RECEPTOR	1657 GRID	550800	4199400	0	10
RECEPTOR	1658 GRID	551000	4199400	0	10
RECEPTOR	1659 GRID	551200	4199400	0	10
RECEPTOR	1660 GRID	551400	4199400	0	10
RECEPTOR	1661 GRID	551600	4199400	0.9	10
RECEPTOR	1662 GRID	551800	4199400	1.7	10
RECEPTOR	1663 GRID	552000	4199400	41.8	10
RECEPTOR	1664 GRID	552200	4199400	71.2	10
RECEPTOR	1665 GRID	552400	4199400	95.4	10
RECEPTOR	1666 GRID	552600	4199400	97.6	10
RECEPTOR	1667 GRID	552800	4199400	88.4	10
RECEPTOR	1668 GRID	553000	4199400	72.3	10
RECEPTOR	1669 GRID	553200	4199400	53.9	10
RECEPTOR	1670 GRID	553400	4199400	4	10
RECEPTOR	1671 GRID	553600	4199400	3.7	10
RECEPTOR	1672 GRID	553800	4199400	1.4	10
RECEPTOR	1673 GRID	554000	4199400	2.4	10
RECEPTOR	1674 GRID	554200	4199400	2.4	10
RECEPTOR	1675 GRID	554400	4199400	3.5	10
RECEPTOR	1676 GRID	554600	4199400	2.9	10

File: Cancer_MNTUG.SRC

RECEPTOR	1677 GRID	554800	4199400	2.8	10
RECEPTOR	1678 GRID	555000	4199400	3.5	10
RECEPTOR	1679 GRID	555200	4199400	3.4	10
RECEPTOR	1680 GRID	555400	4199400	4.6	10
RECEPTOR	1681 GRID	555600	4199400	4.9	10
RECEPTOR	1682 GRID	555800	4199400	6	10
RECEPTOR	1683 GRID	556000	4199400	6.9	10
RECEPTOR	1684 GRID	556200	4199400	8.2	10
RECEPTOR	1685 GRID	556400	4199400	9.8	10
RECEPTOR	1686 GRID	556600	4199400	11.2	10
RECEPTOR	1687 GRID	556800	4199400	12.8	10
RECEPTOR	1688 GRID	557000	4199400	14.1	10
RECEPTOR	1689 GRID	557200	4199400	15.3	10
RECEPTOR	1690 GRID	557400	4199400	17.3	10
RECEPTOR	1691 GRID	557600	4199400	17.6	10
RECEPTOR	1692 GRID	557800	4199400	20.1	10
RECEPTOR	1693 GRID	558000	4199400	22.3	10
RECEPTOR	1694 GRID	558200	4199400	24.2	10
RECEPTOR	1695 GRID	558400	4199400	23.6	10
RECEPTOR	1696 GRID	558600	4199400	27.4	10
RECEPTOR	1697 GRID	558800	4199400	27.3	10
RECEPTOR	1698 GRID	559000	4199400	27.2	10
RECEPTOR	1699 GRID	559200	4199400	27.4	10
RECEPTOR	1700 GRID	559400	4199400	27.4	10
RECEPTOR	1701 GRID	559600	4199400	55.4	10
RECEPTOR	1702 GRID	559800	4199400	64.8	10
RECEPTOR	1703 GRID	560000	4199400	78.2	10
RECEPTOR	1704 GRID	560200	4199400	96	10
RECEPTOR	1705 GRID	560400	4199400	112.2	10
RECEPTOR	1706 GRID	560600	4199400	128	10
RECEPTOR	1707 GRID	560800	4199400	152.2	10
RECEPTOR	1708 GRID	561000	4199400	148.1	10
RECEPTOR	1709 GRID	549000	4199600	0	10
RECEPTOR	1710 GRID	549200	4199600	0	10
RECEPTOR	1711 GRID	549400	4199600	0	10
RECEPTOR	1712 GRID	549600	4199600	0	10
RECEPTOR	1713 GRID	549800	4199600	0	10
RECEPTOR	1714 GRID	550000	4199600	0	10
RECEPTOR	1715 GRID	550200	4199600	0	10
RECEPTOR	1716 GRID	550400	4199600	0	10
RECEPTOR	1717 GRID	550600	4199600	0	10
RECEPTOR	1718 GRID	550800	4199600	0	10
RECEPTOR	1719 GRID	551000	4199600	0	10
RECEPTOR	1720 GRID	551200	4199600	0	10
RECEPTOR	1721 GRID	551400	4199600	0	10
RECEPTOR	1722 GRID	551600	4199600	0.1	10
RECEPTOR	1723 GRID	551800	4199600	6.2	10
RECEPTOR	1724 GRID	552000	4199600	18.1	10
RECEPTOR	1725 GRID	552200	4199600	37.3	10
RECEPTOR	1726 GRID	552400	4199600	102.5	10
RECEPTOR	1727 GRID	552600	4199600	109.7	10
RECEPTOR	1728 GRID	552800	4199600	82.6	10
RECEPTOR	1729 GRID	553000	4199600	48.8	10
RECEPTOR	1730 GRID	553200	4199600	9.5	10
RECEPTOR	1731 GRID	553400	4199600	4.1	10
RECEPTOR	1732 GRID	553600	4199600	3.5	10
RECEPTOR	1733 GRID	553800	4199600	2.5	10
RECEPTOR	1734 GRID	554000	4199600	1.5	10
RECEPTOR	1735 GRID	554200	4199600	3.3	10
RECEPTOR	1736 GRID	554400	4199600	3.4	10

File: Cancer_MNTUG.SRC

RECEPTOR	1737 GRID	554600	4199600	3.3	10
RECEPTOR	1738 GRID	554800	4199600	3.3	10
RECEPTOR	1739 GRID	555000	4199600	2.4	10
RECEPTOR	1740 GRID	555200	4199600	3	10
RECEPTOR	1741 GRID	555400	4199600	3.8	10
RECEPTOR	1742 GRID	555600	4199600	4.8	10
RECEPTOR	1743 GRID	555800	4199600	6.2	10
RECEPTOR	1744 GRID	556000	4199600	7.2	10
RECEPTOR	1745 GRID	556200	4199600	8.9	10
RECEPTOR	1746 GRID	556400	4199600	9.9	10
RECEPTOR	1747 GRID	556600	4199600	11.9	10
RECEPTOR	1748 GRID	556800	4199600	13	10
RECEPTOR	1749 GRID	557000	4199600	14.3	10
RECEPTOR	1750 GRID	557200	4199600	16.3	10
RECEPTOR	1751 GRID	557400	4199600	18.1	10
RECEPTOR	1752 GRID	557600	4199600	19	10
RECEPTOR	1753 GRID	557800	4199600	21.1	10
RECEPTOR	1754 GRID	558000	4199600	23.2	10
RECEPTOR	1755 GRID	558200	4199600	26	10
RECEPTOR	1756 GRID	558400	4199600	25.6	10
RECEPTOR	1757 GRID	558600	4199600	36.6	10
RECEPTOR	1758 GRID	558800	4199600	29.1	10
RECEPTOR	1759 GRID	559000	4199600	30.6	10
RECEPTOR	1760 GRID	559200	4199600	29.5	10
RECEPTOR	1761 GRID	559400	4199600	24.7	10
RECEPTOR	1762 GRID	559600	4199600	38.8	10
RECEPTOR	1763 GRID	559800	4199600	63.1	10
RECEPTOR	1764 GRID	560000	4199600	80.3	10
RECEPTOR	1765 GRID	560200	4199600	96.5	10
RECEPTOR	1766 GRID	560400	4199600	116.1	10
RECEPTOR	1767 GRID	560600	4199600	132.3	10
RECEPTOR	1768 GRID	560800	4199600	127.9	10
RECEPTOR	1769 GRID	561000	4199600	81.1	10
RECEPTOR	1770 GRID	549000	4199800	0	10
RECEPTOR	1771 GRID	549200	4199800	0	10
RECEPTOR	1772 GRID	549400	4199800	0	10
RECEPTOR	1773 GRID	549600	4199800	0	10
RECEPTOR	1774 GRID	549800	4199800	0	10
RECEPTOR	1775 GRID	550000	4199800	0	10
RECEPTOR	1776 GRID	550200	4199800	0	10
RECEPTOR	1777 GRID	550400	4199800	0	10
RECEPTOR	1778 GRID	550600	4199800	0	10
RECEPTOR	1779 GRID	550800	4199800	0	10
RECEPTOR	1780 GRID	551000	4199800	0	10
RECEPTOR	1781 GRID	551200	4199800	0	10
RECEPTOR	1782 GRID	551400	4199800	-0.1	10
RECEPTOR	1783 GRID	551600	4199800	2.6	10
RECEPTOR	1784 GRID	551800	4199800	11.9	10
RECEPTOR	1785 GRID	552000	4199800	28.7	10
RECEPTOR	1786 GRID	552200	4199800	87.7	10
RECEPTOR	1787 GRID	552400	4199800	115.1	10
RECEPTOR	1788 GRID	552600	4199800	69.3	10
RECEPTOR	1789 GRID	552800	4199800	89.7	10
RECEPTOR	1790 GRID	553000	4199800	39.5	10
RECEPTOR	1791 GRID	553200	4199800	5.7	10
RECEPTOR	1792 GRID	553400	4199800	4.1	10
RECEPTOR	1793 GRID	553600	4199800	4.2	10
RECEPTOR	1794 GRID	553800	4199800	2.7	10
RECEPTOR	1795 GRID	554000	4199800	2.9	10
RECEPTOR	1796 GRID	554200	4199800	5.1	10

File: Cancer_MNTUG.SRC

RECEPTOR	1797 GRID	554400	4199800	3.4	10
RECEPTOR	1798 GRID	554600	4199800	3.7	10
RECEPTOR	1799 GRID	554800	4199800	1.6	10
RECEPTOR	1800 GRID	555000	4199800	3	10
RECEPTOR	1801 GRID	555200	4199800	3.3	10
RECEPTOR	1802 GRID	555400	4199800	3.9	10
RECEPTOR	1803 GRID	555600	4199800	5.2	10
RECEPTOR	1804 GRID	555800	4199800	6.2	10
RECEPTOR	1805 GRID	556000	4199800	7.4	10
RECEPTOR	1806 GRID	556200	4199800	9.9	10
RECEPTOR	1807 GRID	556400	4199800	11.2	10
RECEPTOR	1808 GRID	556600	4199800	12.6	10
RECEPTOR	1809 GRID	556800	4199800	14.2	10
RECEPTOR	1810 GRID	557000	4199800	15.5	10
RECEPTOR	1811 GRID	557200	4199800	17.3	10
RECEPTOR	1812 GRID	557400	4199800	19.3	10
RECEPTOR	1813 GRID	557600	4199800	21.2	10
RECEPTOR	1814 GRID	557800	4199800	22	10
RECEPTOR	1815 GRID	558000	4199800	23.9	10
RECEPTOR	1816 GRID	558200	4199800	28.1	10
RECEPTOR	1817 GRID	558400	4199800	28.2	10
RECEPTOR	1818 GRID	558600	4199800	28.3	10
RECEPTOR	1819 GRID	558800	4199800	30.9	10
RECEPTOR	1820 GRID	559000	4199800	32.3	10
RECEPTOR	1821 GRID	559200	4199800	31.6	10
RECEPTOR	1822 GRID	559400	4199800	24.2	10
RECEPTOR	1823 GRID	559600	4199800	34.6	10
RECEPTOR	1824 GRID	559800	4199800	45.7	10
RECEPTOR	1825 GRID	560000	4199800	72.6	10
RECEPTOR	1826 GRID	560200	4199800	90	10
RECEPTOR	1827 GRID	560400	4199800	122.6	10
RECEPTOR	1828 GRID	560600	4199800	120.1	10
RECEPTOR	1829 GRID	560800	4199800	79.2	10
RECEPTOR	1830 GRID	561000	4199800	113.3	10
RECEPTOR	1831 GRID	549000	4200000	0	10
RECEPTOR	1832 GRID	549200	4200000	0	10
RECEPTOR	1833 GRID	549400	4200000	0	10
RECEPTOR	1834 GRID	549600	4200000	0	10
RECEPTOR	1835 GRID	549800	4200000	0	10
RECEPTOR	1836 GRID	550000	4200000	0	10
RECEPTOR	1837 GRID	550200	4200000	0	10
RECEPTOR	1838 GRID	550400	4200000	0	10
RECEPTOR	1839 GRID	550600	4200000	0	10
RECEPTOR	1840 GRID	550800	4200000	0.2	10
RECEPTOR	1841 GRID	551000	4200000	0.2	10
RECEPTOR	1842 GRID	551200	4200000	0.4	10
RECEPTOR	1843 GRID	551400	4200000	10.4	10
RECEPTOR	1844 GRID	551600	4200000	19.8	10
RECEPTOR	1845 GRID	551800	4200000	26.1	10
RECEPTOR	1846 GRID	552000	4200000	67.4	10
RECEPTOR	1847 GRID	552200	4200000	118.2	10
RECEPTOR	1848 GRID	552400	4200000	55.6	10
RECEPTOR	1849 GRID	552600	4200000	25.1	10
RECEPTOR	1850 GRID	552800	4200000	23.1	10
RECEPTOR	1851 GRID	553000	4200000	46.4	10
RECEPTOR	1852 GRID	553200	4200000	3.3	10
RECEPTOR	1853 GRID	553400	4200000	3.6	10
RECEPTOR	1854 GRID	553600	4200000	5	10
RECEPTOR	1855 GRID	553800	4200000	3.1	10
RECEPTOR	1856 GRID	554000	4200000	3	10

File: Cancer_MNTUG.SRC

RECEPTOR	1857 GRID	554200	4200000	2.6	10
RECEPTOR	1858 GRID	554400	4200000	3.2	10
RECEPTOR	1859 GRID	554600	4200000	6.2	10
RECEPTOR	1860 GRID	554800	4200000	2.1	10
RECEPTOR	1861 GRID	555000	4200000	5.1	10
RECEPTOR	1862 GRID	555200	4200000	2.8	10
RECEPTOR	1863 GRID	555400	4200000	3.9	10
RECEPTOR	1864 GRID	555600	4200000	4.2	10
RECEPTOR	1865 GRID	555800	4200000	9.7	10
RECEPTOR	1866 GRID	556000	4200000	7.6	10
RECEPTOR	1867 GRID	556200	4200000	8.8	10
RECEPTOR	1868 GRID	556400	4200000	11.4	10
RECEPTOR	1869 GRID	556600	4200000	12.7	10
RECEPTOR	1870 GRID	556800	4200000	13.8	10
RECEPTOR	1871 GRID	557000	4200000	16.3	10
RECEPTOR	1872 GRID	557200	4200000	18.8	10
RECEPTOR	1873 GRID	557400	4200000	19.4	10
RECEPTOR	1874 GRID	557600	4200000	21.8	10
RECEPTOR	1875 GRID	557800	4200000	22.9	10
RECEPTOR	1876 GRID	558000	4200000	25.4	10
RECEPTOR	1877 GRID	558200	4200000	28.5	10
RECEPTOR	1878 GRID	558400	4200000	31	10
RECEPTOR	1879 GRID	558600	4200000	31.4	10
RECEPTOR	1880 GRID	558800	4200000	33.1	10
RECEPTOR	1881 GRID	559000	4200000	35.5	10
RECEPTOR	1882 GRID	559200	4200000	34.3	10
RECEPTOR	1883 GRID	559400	4200000	34.5	10
RECEPTOR	1884 GRID	559600	4200000	48.4	10
RECEPTOR	1885 GRID	559800	4200000	66.8	10
RECEPTOR	1886 GRID	560000	4200000	74.2	10
RECEPTOR	1887 GRID	560200	4200000	108.4	10
RECEPTOR	1888 GRID	560400	4200000	115.4	10
RECEPTOR	1889 GRID	560600	4200000	76.9	10
RECEPTOR	1890 GRID	560800	4200000	99	10
RECEPTOR	1891 GRID	561000	4200000	149	10
RECEPTOR	1892 GRID	549000	4200200	0	10
RECEPTOR	1893 GRID	549200	4200200	0	10
RECEPTOR	1894 GRID	549400	4200200	0	10
RECEPTOR	1895 GRID	549600	4200200	0	10
RECEPTOR	1896 GRID	549800	4200200	0	10
RECEPTOR	1897 GRID	550000	4200200	0	10
RECEPTOR	1898 GRID	550200	4200200	0	10
RECEPTOR	1899 GRID	550400	4200200	0	10
RECEPTOR	1900 GRID	550600	4200200	0.1	10
RECEPTOR	1901 GRID	550800	4200200	3.6	10
RECEPTOR	1902 GRID	551000	4200200	28.8	10
RECEPTOR	1903 GRID	551200	4200200	27	10
RECEPTOR	1904 GRID	551400	4200200	41.1	10
RECEPTOR	1905 GRID	551600	4200200	56	10
RECEPTOR	1906 GRID	551800	4200200	81.2	10
RECEPTOR	1907 GRID	552000	4200200	87	10
RECEPTOR	1908 GRID	552200	4200200	82.2	10
RECEPTOR	1909 GRID	552400	4200200	27.1	10
RECEPTOR	1910 GRID	552600	4200200	7.5	10
RECEPTOR	1911 GRID	552800	4200200	5	10
RECEPTOR	1912 GRID	553000	4200200	6.2	10
RECEPTOR	1913 GRID	553200	4200200	4.1	10
RECEPTOR	1914 GRID	553400	4200200	4.4	10
RECEPTOR	1915 GRID	553600	4200200	3	10
RECEPTOR	1916 GRID	553800	4200200	1.4	10

File: Cancer_MNTUG.SRC

RECEPTOR	1917 GRID	554000	4200200	2.1	10
RECEPTOR	1918 GRID	554200	4200200	2	10
RECEPTOR	1919 GRID	554400	4200200	1.8	10
RECEPTOR	1920 GRID	554600	4200200	3.7	10
RECEPTOR	1921 GRID	554800	4200200	2.8	10
RECEPTOR	1922 GRID	555000	4200200	6.1	10
RECEPTOR	1923 GRID	555200	4200200	2.8	10
RECEPTOR	1924 GRID	555400	4200200	4.4	10
RECEPTOR	1925 GRID	555600	4200200	4.8	10
RECEPTOR	1926 GRID	555800	4200200	6.3	10
RECEPTOR	1927 GRID	556000	4200200	10.4	10
RECEPTOR	1928 GRID	556200	4200200	10.3	10
RECEPTOR	1929 GRID	556400	4200200	11.6	10
RECEPTOR	1930 GRID	556600	4200200	12.8	10
RECEPTOR	1931 GRID	556800	4200200	14.7	10
RECEPTOR	1932 GRID	557000	4200200	16.4	10
RECEPTOR	1933 GRID	557200	4200200	17.6	10
RECEPTOR	1934 GRID	557400	4200200	19.8	10
RECEPTOR	1935 GRID	557600	4200200	21.6	10
RECEPTOR	1936 GRID	557800	4200200	24.1	10
RECEPTOR	1937 GRID	558000	4200200	24.8	10
RECEPTOR	1938 GRID	558200	4200200	27.9	10
RECEPTOR	1939 GRID	558400	4200200	30.3	10
RECEPTOR	1940 GRID	558600	4200200	33.9	10
RECEPTOR	1941 GRID	558800	4200200	34	10
RECEPTOR	1942 GRID	559000	4200200	37	10
RECEPTOR	1943 GRID	559200	4200200	36.4	10
RECEPTOR	1944 GRID	559400	4200200	39.1	10
RECEPTOR	1945 GRID	559600	4200200	51.8	10
RECEPTOR	1946 GRID	559800	4200200	77.2	10
RECEPTOR	1947 GRID	560000	4200200	100.9	10
RECEPTOR	1948 GRID	560200	4200200	105.5	10
RECEPTOR	1949 GRID	560400	4200200	59.1	10
RECEPTOR	1950 GRID	560600	4200200	90.6	10
RECEPTOR	1951 GRID	560800	4200200	141	10
RECEPTOR	1952 GRID	561000	4200200	185.1	10
RECEPTOR	1953 GRID	549000	4200400	0	10
RECEPTOR	1954 GRID	549200	4200400	0	10
RECEPTOR	1955 GRID	549400	4200400	0	10
RECEPTOR	1956 GRID	549600	4200400	0	10
RECEPTOR	1957 GRID	549800	4200400	0	10
RECEPTOR	1958 GRID	550000	4200400	0	10
RECEPTOR	1959 GRID	550200	4200400	0	10
RECEPTOR	1960 GRID	550400	4200400	0	10
RECEPTOR	1961 GRID	550600	4200400	0	10
RECEPTOR	1962 GRID	550800	4200400	0.2	10
RECEPTOR	1963 GRID	551000	4200400	5.1	10
RECEPTOR	1964 GRID	551200	4200400	11.7	10
RECEPTOR	1965 GRID	551400	4200400	24.9	10
RECEPTOR	1966 GRID	551600	4200400	98.5	10
RECEPTOR	1967 GRID	551800	4200400	98.9	10
RECEPTOR	1968 GRID	552000	4200400	97	10
RECEPTOR	1969 GRID	552200	4200400	46.6	10
RECEPTOR	1970 GRID	552400	4200400	50.4	10
RECEPTOR	1971 GRID	552600	4200400	4.7	10
RECEPTOR	1972 GRID	552800	4200400	3.8	10
RECEPTOR	1973 GRID	553000	4200400	4.2	10
RECEPTOR	1974 GRID	553200	4200400	3.4	10
RECEPTOR	1975 GRID	553400	4200400	2.2	10
RECEPTOR	1976 GRID	553600	4200400	2.2	10

File: Cancer_MNTUG.SRC

RECEPTOR	1977 GRID	553800	4200400	1.3	10
RECEPTOR	1978 GRID	554000	4200400	1.4	10
RECEPTOR	1979 GRID	554200	4200400	1.7	10
RECEPTOR	1980 GRID	554400	4200400	2.7	10
RECEPTOR	1981 GRID	554600	4200400	3.4	10
RECEPTOR	1982 GRID	554800	4200400	0.2	10
RECEPTOR	1983 GRID	555000	4200400	2.3	10
RECEPTOR	1984 GRID	555200	4200400	9.5	10
RECEPTOR	1985 GRID	555400	4200400	3.6	10
RECEPTOR	1986 GRID	555600	4200400	4.5	10
RECEPTOR	1987 GRID	555800	4200400	5.8	10
RECEPTOR	1988 GRID	556000	4200400	7.3	10
RECEPTOR	1989 GRID	556200	4200400	9.5	10
RECEPTOR	1990 GRID	556400	4200400	11	10
RECEPTOR	1991 GRID	556600	4200400	13	10
RECEPTOR	1992 GRID	556800	4200400	14.9	10
RECEPTOR	1993 GRID	557000	4200400	16.2	10
RECEPTOR	1994 GRID	557200	4200400	18.1	10
RECEPTOR	1995 GRID	557400	4200400	19.8	10
RECEPTOR	1996 GRID	557600	4200400	21.5	10
RECEPTOR	1997 GRID	557800	4200400	23.2	10
RECEPTOR	1998 GRID	558000	4200400	26.6	10
RECEPTOR	1999 GRID	558200	4200400	27.8	10
RECEPTOR	2000 GRID	558400	4200400	30.4	10
RECEPTOR	2001 GRID	558600	4200400	32	10
RECEPTOR	2002 GRID	558800	4200400	36.8	10
RECEPTOR	2003 GRID	559000	4200400	35.2	10
RECEPTOR	2004 GRID	559200	4200400	33	10
RECEPTOR	2005 GRID	559400	4200400	41.2	10
RECEPTOR	2006 GRID	559600	4200400	62.2	10
RECEPTOR	2007 GRID	559800	4200400	90.3	10
RECEPTOR	2008 GRID	560000	4200400	99.6	10
RECEPTOR	2009 GRID	560200	4200400	61.2	10
RECEPTOR	2010 GRID	560400	4200400	82.1	10
RECEPTOR	2011 GRID	560600	4200400	108.3	10
RECEPTOR	2012 GRID	560800	4200400	139.6	10
RECEPTOR	2013 GRID	561000	4200400	163.7	10
RECEPTOR	2014 GRID	549000	4200600	0	10
RECEPTOR	2015 GRID	549200	4200600	0	10
RECEPTOR	2016 GRID	549400	4200600	0	10
RECEPTOR	2017 GRID	549600	4200600	0	10
RECEPTOR	2018 GRID	549800	4200600	0	10
RECEPTOR	2019 GRID	550000	4200600	0	10
RECEPTOR	2020 GRID	550200	4200600	0	10
RECEPTOR	2021 GRID	550400	4200600	0	10
RECEPTOR	2022 GRID	550600	4200600	0	10
RECEPTOR	2023 GRID	550800	4200600	0	10
RECEPTOR	2024 GRID	551000	4200600	0.4	10
RECEPTOR	2025 GRID	551200	4200600	11.1	10
RECEPTOR	2026 GRID	551400	4200600	50.6	10
RECEPTOR	2027 GRID	551600	4200600	83.4	10
RECEPTOR	2028 GRID	551800	4200600	90.1	10
RECEPTOR	2029 GRID	552000	4200600	66.2	10
RECEPTOR	2030 GRID	552200	4200600	4.5	10
RECEPTOR	2031 GRID	552400	4200600	5.8	10
RECEPTOR	2032 GRID	552600	4200600	2.9	10
RECEPTOR	2033 GRID	552800	4200600	4	10
RECEPTOR	2034 GRID	553000	4200600	3.5	10
RECEPTOR	2035 GRID	553200	4200600	3	10
RECEPTOR	2036 GRID	553400	4200600	2.7	10

File: Cancer_MNTUG.SRC

RECEPTOR	2037 GRID	553600	4200600	2.3	10
RECEPTOR	2038 GRID	553800	4200600	0.4	10
RECEPTOR	2039 GRID	554000	4200600	1.7	10
RECEPTOR	2040 GRID	554200	4200600	2.2	10
RECEPTOR	2041 GRID	554400	4200600	3	10
RECEPTOR	2042 GRID	554600	4200600	3.7	10
RECEPTOR	2043 GRID	554800	4200600	3.5	10
RECEPTOR	2044 GRID	555000	4200600	2.6	10
RECEPTOR	2045 GRID	555200	4200600	2.2	10
RECEPTOR	2046 GRID	555400	4200600	3.5	10
RECEPTOR	2047 GRID	555600	4200600	4.7	10
RECEPTOR	2048 GRID	555800	4200600	6.7	10
RECEPTOR	2049 GRID	556000	4200600	8.8	10
RECEPTOR	2050 GRID	556200	4200600	9.9	10
RECEPTOR	2051 GRID	556400	4200600	12	10
RECEPTOR	2052 GRID	556600	4200600	14.5	10
RECEPTOR	2053 GRID	556800	4200600	15.7	10
RECEPTOR	2054 GRID	557000	4200600	17.5	10
RECEPTOR	2055 GRID	557200	4200600	19.2	10
RECEPTOR	2056 GRID	557400	4200600	20.7	10
RECEPTOR	2057 GRID	557600	4200600	22.7	10
RECEPTOR	2058 GRID	557800	4200600	23.8	10
RECEPTOR	2059 GRID	558000	4200600	25.5	10
RECEPTOR	2060 GRID	558200	4200600	27.4	10
RECEPTOR	2061 GRID	558400	4200600	29.2	10
RECEPTOR	2062 GRID	558600	4200600	31.5	10
RECEPTOR	2063 GRID	558800	4200600	33.3	10
RECEPTOR	2064 GRID	559000	4200600	31.4	10
RECEPTOR	2065 GRID	559200	4200600	37.3	10
RECEPTOR	2066 GRID	559400	4200600	43.7	10
RECEPTOR	2067 GRID	559600	4200600	59.8	10
RECEPTOR	2068 GRID	559800	4200600	75.2	10
RECEPTOR	2069 GRID	560000	4200600	57.6	10
RECEPTOR	2070 GRID	560200	4200600	73.6	10
RECEPTOR	2071 GRID	560400	4200600	94.9	10
RECEPTOR	2072 GRID	560600	4200600	125.4	10
RECEPTOR	2073 GRID	560800	4200600	149.3	10
RECEPTOR	2074 GRID	561000	4200600	180.1	10
RECEPTOR	2075 GRID	549000	4200800	0	10
RECEPTOR	2076 GRID	549200	4200800	0	10
RECEPTOR	2077 GRID	549400	4200800	0	10
RECEPTOR	2078 GRID	549600	4200800	0	10
RECEPTOR	2079 GRID	549800	4200800	0	10
RECEPTOR	2080 GRID	550000	4200800	0	10
RECEPTOR	2081 GRID	550200	4200800	0	10
RECEPTOR	2082 GRID	550400	4200800	0	10
RECEPTOR	2083 GRID	550600	4200800	0	10
RECEPTOR	2084 GRID	550800	4200800	0.4	10
RECEPTOR	2085 GRID	551000	4200800	9.2	10
RECEPTOR	2086 GRID	551200	4200800	20.2	10
RECEPTOR	2087 GRID	551400	4200800	71.4	10
RECEPTOR	2088 GRID	551600	4200800	81.2	10
RECEPTOR	2089 GRID	551800	4200800	59.4	10
RECEPTOR	2090 GRID	552000	4200800	33	10
RECEPTOR	2091 GRID	552200	4200800	4.6	10
RECEPTOR	2092 GRID	552400	4200800	2.3	10
RECEPTOR	2093 GRID	552600	4200800	1.2	10
RECEPTOR	2094 GRID	552800	4200800	0.1	10
RECEPTOR	2095 GRID	553000	4200800	-0.6	10
RECEPTOR	2096 GRID	553200	4200800	0.1	10

File: Cancer_MNTUG.SRC

RECEPTOR	2097 GRID	553400	4200800	0.1	10
RECEPTOR	2098 GRID	553600	4200800	1.7	10
RECEPTOR	2099 GRID	553800	4200800	1.6	10
RECEPTOR	2100 GRID	554000	4200800	1.6	10
RECEPTOR	2101 GRID	554200	4200800	1.4	10
RECEPTOR	2102 GRID	554400	4200800	4.4	10
RECEPTOR	2103 GRID	554600	4200800	4.9	10
RECEPTOR	2104 GRID	554800	4200800	0.6	10
RECEPTOR	2105 GRID	555000	4200800	1.5	10
RECEPTOR	2106 GRID	555200	4200800	3.6	10
RECEPTOR	2107 GRID	555400	4200800	3.3	10
RECEPTOR	2108 GRID	555600	4200800	4.8	10
RECEPTOR	2109 GRID	555800	4200800	6.5	10
RECEPTOR	2110 GRID	556000	4200800	7.9	10
RECEPTOR	2111 GRID	556200	4200800	10.1	10
RECEPTOR	2112 GRID	556400	4200800	12.3	10
RECEPTOR	2113 GRID	556600	4200800	13.9	10
RECEPTOR	2114 GRID	556800	4200800	14.8	10
RECEPTOR	2115 GRID	557000	4200800	16.8	10
RECEPTOR	2116 GRID	557200	4200800	18.8	10
RECEPTOR	2117 GRID	557400	4200800	20.9	10
RECEPTOR	2118 GRID	557600	4200800	23	10
RECEPTOR	2119 GRID	557800	4200800	24.6	10
RECEPTOR	2120 GRID	558000	4200800	24.7	10
RECEPTOR	2121 GRID	558200	4200800	27.1	10
RECEPTOR	2122 GRID	558400	4200800	28.8	10
RECEPTOR	2123 GRID	558600	4200800	31.5	10
RECEPTOR	2124 GRID	558800	4200800	33.8	10
RECEPTOR	2125 GRID	559000	4200800	37.7	10
RECEPTOR	2126 GRID	559200	4200800	39.5	10
RECEPTOR	2127 GRID	559400	4200800	50.5	10
RECEPTOR	2128 GRID	559600	4200800	54.7	10
RECEPTOR	2129 GRID	559800	4200800	70	10
RECEPTOR	2130 GRID	560000	4200800	109.5	10
RECEPTOR	2131 GRID	560200	4200800	94.9	10
RECEPTOR	2132 GRID	560400	4200800	117.5	10
RECEPTOR	2133 GRID	560600	4200800	145.3	10
RECEPTOR	2134 GRID	560800	4200800	192.3	10
RECEPTOR	2135 GRID	561000	4200800	208.5	10
RECEPTOR	2136 GRID	549000	4201000	0	10
RECEPTOR	2137 GRID	549200	4201000	0	10
RECEPTOR	2138 GRID	549400	4201000	0	10
RECEPTOR	2139 GRID	549600	4201000	0	10
RECEPTOR	2140 GRID	549800	4201000	0	10
RECEPTOR	2141 GRID	550000	4201000	0	10
RECEPTOR	2142 GRID	550200	4201000	0	10
RECEPTOR	2143 GRID	550400	4201000	0	10
RECEPTOR	2144 GRID	550600	4201000	0.4	10
RECEPTOR	2145 GRID	550800	4201000	3	10
RECEPTOR	2146 GRID	551000	4201000	14.6	10
RECEPTOR	2147 GRID	551200	4201000	44.6	10
RECEPTOR	2148 GRID	551400	4201000	66.2	10
RECEPTOR	2149 GRID	551600	4201000	29.3	10
RECEPTOR	2150 GRID	551800	4201000	8.7	10
RECEPTOR	2151 GRID	552000	4201000	1	10
RECEPTOR	2152 GRID	552200	4201000	2.9	10
RECEPTOR	2153 GRID	552400	4201000	0.9	10
RECEPTOR	2154 GRID	552600	4201000	0.6	10
RECEPTOR	2155 GRID	552800	4201000	1.2	10
RECEPTOR	2156 GRID	553000	4201000	0.9	10

File: Cancer_MNTUG.SRC

RECEPTOR	2157 GRID	553200	4201000	1.7	10
RECEPTOR	2158 GRID	553400	4201000	0.9	10
RECEPTOR	2159 GRID	553600	4201000	1.6	10
RECEPTOR	2160 GRID	553800	4201000	1.8	10
RECEPTOR	2161 GRID	554000	4201000	1.8	10
RECEPTOR	2162 GRID	554200	4201000	2	10
RECEPTOR	2163 GRID	554400	4201000	4.1	10
RECEPTOR	2164 GRID	554600	4201000	2.3	10
RECEPTOR	2165 GRID	554800	4201000	3.2	10
RECEPTOR	2166 GRID	555000	4201000	3	10
RECEPTOR	2167 GRID	555200	4201000	4.5	10
RECEPTOR	2168 GRID	555400	4201000	3.5	10
RECEPTOR	2169 GRID	555600	4201000	4.1	10
RECEPTOR	2170 GRID	555800	4201000	5.6	10
RECEPTOR	2171 GRID	556000	4201000	7.6	10
RECEPTOR	2172 GRID	556200	4201000	9.6	10
RECEPTOR	2173 GRID	556400	4201000	11.5	10
RECEPTOR	2174 GRID	556600	4201000	11.6	10
RECEPTOR	2175 GRID	556800	4201000	13.5	10
RECEPTOR	2176 GRID	557000	4201000	15.3	10
RECEPTOR	2177 GRID	557200	4201000	17.4	10
RECEPTOR	2178 GRID	557400	4201000	19	10
RECEPTOR	2179 GRID	557600	4201000	20.5	10
RECEPTOR	2180 GRID	557800	4201000	21.3	10
RECEPTOR	2181 GRID	558000	4201000	24	10
RECEPTOR	2182 GRID	558200	4201000	24.8	10
RECEPTOR	2183 GRID	558400	4201000	29.9	10
RECEPTOR	2184 GRID	558600	4201000	34.3	10
RECEPTOR	2185 GRID	558800	4201000	39.7	10
RECEPTOR	2186 GRID	559000	4201000	47.1	10
RECEPTOR	2187 GRID	559200	4201000	69.8	10
RECEPTOR	2188 GRID	559400	4201000	75.6	10
RECEPTOR	2189 GRID	559600	4201000	89.6	10
RECEPTOR	2190 GRID	559800	4201000	117.9	10
RECEPTOR	2191 GRID	560000	4201000	128.9	10
RECEPTOR	2192 GRID	560200	4201000	129.7	10
RECEPTOR	2193 GRID	560400	4201000	156.5	10
RECEPTOR	2194 GRID	560600	4201000	173.2	10
RECEPTOR	2195 GRID	560800	4201000	197.9	10
RECEPTOR	2196 GRID	561000	4201000	168.1	10
RECEPTOR	2197 GRID	549000	4201200	0	10
RECEPTOR	2198 GRID	549200	4201200	0	10
RECEPTOR	2199 GRID	549400	4201200	0	10
RECEPTOR	2200 GRID	549600	4201200	0	10
RECEPTOR	2201 GRID	549800	4201200	0	10
RECEPTOR	2202 GRID	550000	4201200	0	10
RECEPTOR	2203 GRID	550200	4201200	0	10
RECEPTOR	2204 GRID	550400	4201200	0.6	10
RECEPTOR	2205 GRID	550600	4201200	14.9	10
RECEPTOR	2206 GRID	550800	4201200	10.4	10
RECEPTOR	2207 GRID	551000	4201200	23.6	10
RECEPTOR	2208 GRID	551200	4201200	66.2	10
RECEPTOR	2209 GRID	551400	4201200	31.4	10
RECEPTOR	2210 GRID	551600	4201200	4.4	10
RECEPTOR	2211 GRID	551800	4201200	1	10
RECEPTOR	2212 GRID	552000	4201200	0.4	10
RECEPTOR	2213 GRID	552200	4201200	0	10
RECEPTOR	2214 GRID	552400	4201200	0	10
RECEPTOR	2215 GRID	552600	4201200	0	10
RECEPTOR	2216 GRID	552800	4201200	0.8	10

File: Cancer_MNTUG.SRC

RECEPTOR	2217 GRID	553000	4201200	1.5	10
RECEPTOR	2218 GRID	553200	4201200	1.7	10
RECEPTOR	2219 GRID	553400	4201200	1.8	10
RECEPTOR	2220 GRID	553600	4201200	1.7	10
RECEPTOR	2221 GRID	553800	4201200	1.8	10
RECEPTOR	2222 GRID	554000	4201200	1.9	10
RECEPTOR	2223 GRID	554200	4201200	2.1	10
RECEPTOR	2224 GRID	554400	4201200	2.4	10
RECEPTOR	2225 GRID	554600	4201200	3.7	10
RECEPTOR	2226 GRID	554800	4201200	4.1	10
RECEPTOR	2227 GRID	555000	4201200	3.1	10
RECEPTOR	2228 GRID	555200	4201200	3.9	10
RECEPTOR	2229 GRID	555400	4201200	3.6	10
RECEPTOR	2230 GRID	555600	4201200	4.2	10
RECEPTOR	2231 GRID	555800	4201200	5.1	10
RECEPTOR	2232 GRID	556000	4201200	7.2	10
RECEPTOR	2233 GRID	556200	4201200	9	10
RECEPTOR	2234 GRID	556400	4201200	10.8	10
RECEPTOR	2235 GRID	556600	4201200	10.2	10
RECEPTOR	2236 GRID	556800	4201200	12	10
RECEPTOR	2237 GRID	557000	4201200	14.1	10
RECEPTOR	2238 GRID	557200	4201200	15.9	10
RECEPTOR	2239 GRID	557400	4201200	17.6	10
RECEPTOR	2240 GRID	557600	4201200	19.5	10
RECEPTOR	2241 GRID	557800	4201200	20.7	10
RECEPTOR	2242 GRID	558000	4201200	23	10
RECEPTOR	2243 GRID	558200	4201200	26.9	10
RECEPTOR	2244 GRID	558400	4201200	30	10
RECEPTOR	2245 GRID	558600	4201200	29.5	10
RECEPTOR	2246 GRID	558800	4201200	41.9	10
RECEPTOR	2247 GRID	559000	4201200	66.1	10
RECEPTOR	2248 GRID	559200	4201200	93.6	10
RECEPTOR	2249 GRID	559400	4201200	114.5	10
RECEPTOR	2250 GRID	559600	4201200	128.9	10
RECEPTOR	2251 GRID	559800	4201200	157.7	10
RECEPTOR	2252 GRID	560000	4201200	147.6	10
RECEPTOR	2253 GRID	560200	4201200	163.5	10
RECEPTOR	2254 GRID	560400	4201200	179.7	10
RECEPTOR	2255 GRID	560600	4201200	208.5	10
RECEPTOR	2256 GRID	560800	4201200	168.3	10
RECEPTOR	2257 GRID	561000	4201200	136.3	10
RECEPTOR	2258 GRID	549000	4201400	0	10
RECEPTOR	2259 GRID	549200	4201400	0	10
RECEPTOR	2260 GRID	549400	4201400	0	10
RECEPTOR	2261 GRID	549600	4201400	0	10
RECEPTOR	2262 GRID	549800	4201400	0	10
RECEPTOR	2263 GRID	550000	4201400	0	10
RECEPTOR	2264 GRID	550200	4201400	0.7	10
RECEPTOR	2265 GRID	550400	4201400	0.5	10
RECEPTOR	2266 GRID	550600	4201400	5.3	10
RECEPTOR	2267 GRID	550800	4201400	42.2	10
RECEPTOR	2268 GRID	551000	4201400	62.2	10
RECEPTOR	2269 GRID	551200	4201400	84.5	10
RECEPTOR	2270 GRID	551400	4201400	67.4	10
RECEPTOR	2271 GRID	551600	4201400	19.9	10
RECEPTOR	2272 GRID	551800	4201400	0.4	10
RECEPTOR	2273 GRID	552000	4201400	0.3	10
RECEPTOR	2274 GRID	552200	4201400	0	10
RECEPTOR	2275 GRID	552400	4201400	0	10
RECEPTOR	2276 GRID	552600	4201400	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2277 GRID	552800	4201400	0.6	10
RECEPTOR	2278 GRID	553000	4201400	1.9	10
RECEPTOR	2279 GRID	553200	4201400	1.6	10
RECEPTOR	2280 GRID	553400	4201400	1.8	10
RECEPTOR	2281 GRID	553600	4201400	1.8	10
RECEPTOR	2282 GRID	553800	4201400	1.5	10
RECEPTOR	2283 GRID	554000	4201400	1.9	10
RECEPTOR	2284 GRID	554200	4201400	1.7	10
RECEPTOR	2285 GRID	554400	4201400	2.4	10
RECEPTOR	2286 GRID	554600	4201400	2.3	10
RECEPTOR	2287 GRID	554800	4201400	3.6	10
RECEPTOR	2288 GRID	555000	4201400	4.5	10
RECEPTOR	2289 GRID	555200	4201400	4.3	10
RECEPTOR	2290 GRID	555400	4201400	4.6	10
RECEPTOR	2291 GRID	555600	4201400	4.7	10
RECEPTOR	2292 GRID	555800	4201400	5.9	10
RECEPTOR	2293 GRID	556000	4201400	6.8	10
RECEPTOR	2294 GRID	556200	4201400	8.3	10
RECEPTOR	2295 GRID	556400	4201400	10.1	10
RECEPTOR	2296 GRID	556600	4201400	10.4	10
RECEPTOR	2297 GRID	556800	4201400	11.4	10
RECEPTOR	2298 GRID	557000	4201400	13.8	10
RECEPTOR	2299 GRID	557200	4201400	15.2	10
RECEPTOR	2300 GRID	557400	4201400	16.8	10
RECEPTOR	2301 GRID	557600	4201400	17.6	10
RECEPTOR	2302 GRID	557800	4201400	19.1	10
RECEPTOR	2303 GRID	558000	4201400	23.3	10
RECEPTOR	2304 GRID	558200	4201400	18.2	10
RECEPTOR	2305 GRID	558400	4201400	21	10
RECEPTOR	2306 GRID	558600	4201400	35	10
RECEPTOR	2307 GRID	558800	4201400	39.9	10
RECEPTOR	2308 GRID	559000	4201400	65.6	10
RECEPTOR	2309 GRID	559200	4201400	97.5	10
RECEPTOR	2310 GRID	559400	4201400	125.2	10
RECEPTOR	2311 GRID	559600	4201400	121.7	10
RECEPTOR	2312 GRID	559800	4201400	122.7	10
RECEPTOR	2313 GRID	560000	4201400	148.8	10
RECEPTOR	2314 GRID	560200	4201400	145.1	10
RECEPTOR	2315 GRID	560400	4201400	180.3	10
RECEPTOR	2316 GRID	560600	4201400	181.2	10
RECEPTOR	2317 GRID	560800	4201400	122	10
RECEPTOR	2318 GRID	561000	4201400	109.6	10
RECEPTOR	2319 GRID	549000	4201600	0	10
RECEPTOR	2320 GRID	549200	4201600	0	10
RECEPTOR	2321 GRID	549400	4201600	0	10
RECEPTOR	2322 GRID	549600	4201600	0	10
RECEPTOR	2323 GRID	549800	4201600	0.6	10
RECEPTOR	2324 GRID	550000	4201600	0.5	10
RECEPTOR	2325 GRID	550200	4201600	0.5	10
RECEPTOR	2326 GRID	550400	4201600	0.4	10
RECEPTOR	2327 GRID	550600	4201600	33.9	10
RECEPTOR	2328 GRID	550800	4201600	58.3	10
RECEPTOR	2329 GRID	551000	4201600	34.4	10
RECEPTOR	2330 GRID	551200	4201600	48.8	10
RECEPTOR	2331 GRID	551400	4201600	58.6	10
RECEPTOR	2332 GRID	551600	4201600	5.2	10
RECEPTOR	2333 GRID	551800	4201600	0.6	10
RECEPTOR	2334 GRID	552000	4201600	0	10
RECEPTOR	2335 GRID	552200	4201600	0	10
RECEPTOR	2336 GRID	552400	4201600	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2337 GRID	552600	4201600	0	10
RECEPTOR	2338 GRID	552800	4201600	1	10
RECEPTOR	2339 GRID	553000	4201600	1.8	10
RECEPTOR	2340 GRID	553200	4201600	1.8	10
RECEPTOR	2341 GRID	553400	4201600	1.8	10
RECEPTOR	2342 GRID	553600	4201600	1.7	10
RECEPTOR	2343 GRID	553800	4201600	1.8	10
RECEPTOR	2344 GRID	554000	4201600	1.8	10
RECEPTOR	2345 GRID	554200	4201600	1.8	10
RECEPTOR	2346 GRID	554400	4201600	2.2	10
RECEPTOR	2347 GRID	554600	4201600	1.8	10
RECEPTOR	2348 GRID	554800	4201600	2.8	10
RECEPTOR	2349 GRID	555000	4201600	4	10
RECEPTOR	2350 GRID	555200	4201600	7.2	10
RECEPTOR	2351 GRID	555400	4201600	3.2	10
RECEPTOR	2352 GRID	555600	4201600	2.9	10
RECEPTOR	2353 GRID	555800	4201600	6	10
RECEPTOR	2354 GRID	556000	4201600	6.4	10
RECEPTOR	2355 GRID	556200	4201600	8.1	10
RECEPTOR	2356 GRID	556400	4201600	9.8	10
RECEPTOR	2357 GRID	556600	4201600	10.7	10
RECEPTOR	2358 GRID	556800	4201600	12.4	10
RECEPTOR	2359 GRID	557000	4201600	13.7	10
RECEPTOR	2360 GRID	557200	4201600	15.6	10
RECEPTOR	2361 GRID	557400	4201600	16.3	10
RECEPTOR	2362 GRID	557600	4201600	16.6	10
RECEPTOR	2363 GRID	557800	4201600	18.5	10
RECEPTOR	2364 GRID	558000	4201600	19	10
RECEPTOR	2365 GRID	558200	4201600	19.6	10
RECEPTOR	2366 GRID	558400	4201600	19.5	10
RECEPTOR	2367 GRID	558600	4201600	29.3	10
RECEPTOR	2368 GRID	558800	4201600	39.5	10
RECEPTOR	2369 GRID	559000	4201600	64.1	10
RECEPTOR	2370 GRID	559200	4201600	84	10
RECEPTOR	2371 GRID	559400	4201600	87.4	10
RECEPTOR	2372 GRID	559600	4201600	91.7	10
RECEPTOR	2373 GRID	559800	4201600	98.3	10
RECEPTOR	2374 GRID	560000	4201600	101.6	10
RECEPTOR	2375 GRID	560200	4201600	90.6	10
RECEPTOR	2376 GRID	560400	4201600	125.6	10
RECEPTOR	2377 GRID	560600	4201600	114.1	10
RECEPTOR	2378 GRID	560800	4201600	89.4	10
RECEPTOR	2379 GRID	561000	4201600	81.6	10
RECEPTOR	2380 GRID	549000	4201800	0	10
RECEPTOR	2381 GRID	549200	4201800	0	10
RECEPTOR	2382 GRID	549400	4201800	0	10
RECEPTOR	2383 GRID	549600	4201800	0.5	10
RECEPTOR	2384 GRID	549800	4201800	0.4	10
RECEPTOR	2385 GRID	550000	4201800	0.4	10
RECEPTOR	2386 GRID	550200	4201800	0.5	10
RECEPTOR	2387 GRID	550400	4201800	10.7	10
RECEPTOR	2388 GRID	550600	4201800	59.4	10
RECEPTOR	2389 GRID	550800	4201800	31.9	10
RECEPTOR	2390 GRID	551000	4201800	2.9	10
RECEPTOR	2391 GRID	551200	4201800	9.8	10
RECEPTOR	2392 GRID	551400	4201800	30.3	10
RECEPTOR	2393 GRID	551600	4201800	1.6	10
RECEPTOR	2394 GRID	551800	4201800	0	10
RECEPTOR	2395 GRID	552000	4201800	0	10
RECEPTOR	2396 GRID	552200	4201800	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2397 GRID	552400	4201800	0	10
RECEPTOR	2398 GRID	552600	4201800	0	10
RECEPTOR	2399 GRID	552800	4201800	1.6	10
RECEPTOR	2400 GRID	553000	4201800	1.5	10
RECEPTOR	2401 GRID	553200	4201800	1.4	10
RECEPTOR	2402 GRID	553400	4201800	1.6	10
RECEPTOR	2403 GRID	553600	4201800	1.4	10
RECEPTOR	2404 GRID	553800	4201800	1.3	10
RECEPTOR	2405 GRID	554000	4201800	1.9	10
RECEPTOR	2406 GRID	554200	4201800	1.9	10
RECEPTOR	2407 GRID	554400	4201800	1.6	10
RECEPTOR	2408 GRID	554600	4201800	2.5	10
RECEPTOR	2409 GRID	554800	4201800	2.9	10
RECEPTOR	2410 GRID	555000	4201800	3.4	10
RECEPTOR	2411 GRID	555200	4201800	3.3	10
RECEPTOR	2412 GRID	555400	4201800	4.7	10
RECEPTOR	2413 GRID	555600	4201800	5.2	10
RECEPTOR	2414 GRID	555800	4201800	6.2	10
RECEPTOR	2415 GRID	556000	4201800	6.5	10
RECEPTOR	2416 GRID	556200	4201800	7.8	10
RECEPTOR	2417 GRID	556400	4201800	9.6	10
RECEPTOR	2418 GRID	556600	4201800	11.3	10
RECEPTOR	2419 GRID	556800	4201800	12	10
RECEPTOR	2420 GRID	557000	4201800	12.1	10
RECEPTOR	2421 GRID	557200	4201800	14	10
RECEPTOR	2422 GRID	557400	4201800	15.3	10
RECEPTOR	2423 GRID	557600	4201800	16.1	10
RECEPTOR	2424 GRID	557800	4201800	17	10
RECEPTOR	2425 GRID	558000	4201800	17.7	10
RECEPTOR	2426 GRID	558200	4201800	16.3	10
RECEPTOR	2427 GRID	558400	4201800	20.6	10
RECEPTOR	2428 GRID	558600	4201800	30.5	10
RECEPTOR	2429 GRID	558800	4201800	22.3	10
RECEPTOR	2430 GRID	559000	4201800	36.8	10
RECEPTOR	2431 GRID	559200	4201800	47.3	10
RECEPTOR	2432 GRID	559400	4201800	51.4	10
RECEPTOR	2433 GRID	559600	4201800	58.1	10
RECEPTOR	2434 GRID	559800	4201800	47.9	10
RECEPTOR	2435 GRID	560000	4201800	60.2	10
RECEPTOR	2436 GRID	560200	4201800	57.9	10
RECEPTOR	2437 GRID	560400	4201800	75	10
RECEPTOR	2438 GRID	560600	4201800	75.7	10
RECEPTOR	2439 GRID	560800	4201800	66.4	10
RECEPTOR	2440 GRID	561000	4201800	50.3	10
RECEPTOR	2441 GRID	549000	4202000	0	10
RECEPTOR	2442 GRID	549200	4202000	0	10
RECEPTOR	2443 GRID	549400	4202000	0	10
RECEPTOR	2444 GRID	549600	4202000	0	10
RECEPTOR	2445 GRID	549800	4202000	0	10
RECEPTOR	2446 GRID	550000	4202000	0.4	10
RECEPTOR	2447 GRID	550200	4202000	4.6	10
RECEPTOR	2448 GRID	550400	4202000	41.7	10
RECEPTOR	2449 GRID	550600	4202000	7.1	10
RECEPTOR	2450 GRID	550800	4202000	0.5	10
RECEPTOR	2451 GRID	551000	4202000	2.6	10
RECEPTOR	2452 GRID	551200	4202000	2	10
RECEPTOR	2453 GRID	551400	4202000	0	10
RECEPTOR	2454 GRID	551600	4202000	0	10
RECEPTOR	2455 GRID	551800	4202000	0	10
RECEPTOR	2456 GRID	552000	4202000	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2457 GRID	552200	4202000	0	10
RECEPTOR	2458 GRID	552400	4202000	0	10
RECEPTOR	2459 GRID	552600	4202000	0	10
RECEPTOR	2460 GRID	552800	4202000	1.5	10
RECEPTOR	2461 GRID	553000	4202000	1.7	10
RECEPTOR	2462 GRID	553200	4202000	1.7	10
RECEPTOR	2463 GRID	553400	4202000	1.4	10
RECEPTOR	2464 GRID	553600	4202000	8.1	10
RECEPTOR	2465 GRID	553800	4202000	2.3	10
RECEPTOR	2466 GRID	554000	4202000	1.4	10
RECEPTOR	2467 GRID	554200	4202000	1.7	10
RECEPTOR	2468 GRID	554400	4202000	2	10
RECEPTOR	2469 GRID	554600	4202000	2.2	10
RECEPTOR	2470 GRID	554800	4202000	3.2	10
RECEPTOR	2471 GRID	555000	4202000	4	10
RECEPTOR	2472 GRID	555200	4202000	4.6	10
RECEPTOR	2473 GRID	555400	4202000	4.5	10
RECEPTOR	2474 GRID	555600	4202000	5.3	10
RECEPTOR	2475 GRID	555800	4202000	5.5	10
RECEPTOR	2476 GRID	556000	4202000	6	10
RECEPTOR	2477 GRID	556200	4202000	7.2	10
RECEPTOR	2478 GRID	556400	4202000	8.4	10
RECEPTOR	2479 GRID	556600	4202000	11.2	10
RECEPTOR	2480 GRID	556800	4202000	11.9	10
RECEPTOR	2481 GRID	557000	4202000	10.5	10
RECEPTOR	2482 GRID	557200	4202000	14.3	10
RECEPTOR	2483 GRID	557400	4202000	14.2	10
RECEPTOR	2484 GRID	557600	4202000	15.9	10
RECEPTOR	2485 GRID	557800	4202000	17.1	10
RECEPTOR	2486 GRID	558000	4202000	17.9	10
RECEPTOR	2487 GRID	558200	4202000	19.2	10
RECEPTOR	2488 GRID	558400	4202000	20.9	10
RECEPTOR	2489 GRID	558600	4202000	23.3	10
RECEPTOR	2490 GRID	558800	4202000	24.1	10
RECEPTOR	2491 GRID	559000	4202000	25.2	10
RECEPTOR	2492 GRID	559200	4202000	25.6	10
RECEPTOR	2493 GRID	559400	4202000	34.4	10
RECEPTOR	2494 GRID	559600	4202000	30.5	10
RECEPTOR	2495 GRID	559800	4202000	30.4	10
RECEPTOR	2496 GRID	560000	4202000	35.2	10
RECEPTOR	2497 GRID	560200	4202000	33.4	10
RECEPTOR	2498 GRID	560400	4202000	36.1	10
RECEPTOR	2499 GRID	560600	4202000	67.8	10
RECEPTOR	2500 GRID	560800	4202000	49.3	10
RECEPTOR	2501 GRID	561000	4202000	62.4	10
RECEPTOR	2502 GRID	549000	4202200	0	10
RECEPTOR	2503 GRID	549200	4202200	0	10
RECEPTOR	2504 GRID	549400	4202200	0	10
RECEPTOR	2505 GRID	549600	4202200	0	10
RECEPTOR	2506 GRID	549800	4202200	0	10
RECEPTOR	2507 GRID	550000	4202200	0	10
RECEPTOR	2508 GRID	550200	4202200	0	10
RECEPTOR	2509 GRID	550400	4202200	0	10
RECEPTOR	2510 GRID	550600	4202200	0	10
RECEPTOR	2511 GRID	550800	4202200	0	10
RECEPTOR	2512 GRID	551000	4202200	0	10
RECEPTOR	2513 GRID	551200	4202200	0	10
RECEPTOR	2514 GRID	551400	4202200	0	10
RECEPTOR	2515 GRID	551600	4202200	0	10
RECEPTOR	2516 GRID	551800	4202200	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2517 GRID	552000	4202200	0	10
RECEPTOR	2518 GRID	552200	4202200	0	10
RECEPTOR	2519 GRID	552400	4202200	0	10
RECEPTOR	2520 GRID	552600	4202200	1.8	10
RECEPTOR	2521 GRID	552800	4202200	1.6	10
RECEPTOR	2522 GRID	553000	4202200	1.5	10
RECEPTOR	2523 GRID	553200	4202200	26.6	10
RECEPTOR	2524 GRID	553400	4202200	35.1	10
RECEPTOR	2525 GRID	553600	4202200	34	10
RECEPTOR	2526 GRID	553800	4202200	23.2	10
RECEPTOR	2527 GRID	554000	4202200	2.7	10
RECEPTOR	2528 GRID	554200	4202200	2.9	10
RECEPTOR	2529 GRID	554400	4202200	1.7	10
RECEPTOR	2530 GRID	554600	4202200	2.3	10
RECEPTOR	2531 GRID	554800	4202200	3.4	10
RECEPTOR	2532 GRID	555000	4202200	4.9	10
RECEPTOR	2533 GRID	555200	4202200	4.1	10
RECEPTOR	2534 GRID	555400	4202200	6.3	10
RECEPTOR	2535 GRID	555600	4202200	5.4	10
RECEPTOR	2536 GRID	555800	4202200	4.9	10
RECEPTOR	2537 GRID	556000	4202200	5.9	10
RECEPTOR	2538 GRID	556200	4202200	6.9	10
RECEPTOR	2539 GRID	556400	4202200	8.4	10
RECEPTOR	2540 GRID	556600	4202200	10.3	10
RECEPTOR	2541 GRID	556800	4202200	10.5	10
RECEPTOR	2542 GRID	557000	4202200	11.4	10
RECEPTOR	2543 GRID	557200	4202200	12	10
RECEPTOR	2544 GRID	557400	4202200	13.2	10
RECEPTOR	2545 GRID	557600	4202200	15.3	10
RECEPTOR	2546 GRID	557800	4202200	16.2	10
RECEPTOR	2547 GRID	558000	4202200	17.6	10
RECEPTOR	2548 GRID	558200	4202200	18.6	10
RECEPTOR	2549 GRID	558400	4202200	22.3	10
RECEPTOR	2550 GRID	558600	4202200	23.2	10
RECEPTOR	2551 GRID	558800	4202200	24.7	10
RECEPTOR	2552 GRID	559000	4202200	25.8	10
RECEPTOR	2553 GRID	559200	4202200	26.7	10
RECEPTOR	2554 GRID	559400	4202200	32.2	10
RECEPTOR	2555 GRID	559600	4202200	26.6	10
RECEPTOR	2556 GRID	559800	4202200	29.3	10
RECEPTOR	2557 GRID	560000	4202200	23	10
RECEPTOR	2558 GRID	560200	4202200	23.2	10
RECEPTOR	2559 GRID	560400	4202200	33.1	10
RECEPTOR	2560 GRID	560600	4202200	43.6	10
RECEPTOR	2561 GRID	560800	4202200	44.7	10
RECEPTOR	2562 GRID	561000	4202200	38.2	10
RECEPTOR	2563 GRID	549000	4202400	0	10
RECEPTOR	2564 GRID	549200	4202400	0	10
RECEPTOR	2565 GRID	549400	4202400	0	10
RECEPTOR	2566 GRID	549600	4202400	0	10
RECEPTOR	2567 GRID	549800	4202400	0	10
RECEPTOR	2568 GRID	550000	4202400	0	10
RECEPTOR	2569 GRID	550200	4202400	0	10
RECEPTOR	2570 GRID	550400	4202400	0	10
RECEPTOR	2571 GRID	550600	4202400	0	10
RECEPTOR	2572 GRID	550800	4202400	0	10
RECEPTOR	2573 GRID	551000	4202400	0	10
RECEPTOR	2574 GRID	551200	4202400	0	10
RECEPTOR	2575 GRID	551400	4202400	0	10
RECEPTOR	2576 GRID	551600	4202400	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2577 GRID	551800	4202400	0	10
RECEPTOR	2578 GRID	552000	4202400	0	10
RECEPTOR	2579 GRID	552200	4202400	0	10
RECEPTOR	2580 GRID	552400	4202400	0	10
RECEPTOR	2581 GRID	552600	4202400	1.8	10
RECEPTOR	2582 GRID	552800	4202400	1.6	10
RECEPTOR	2583 GRID	553000	4202400	2.5	10
RECEPTOR	2584 GRID	553200	4202400	37.3	10
RECEPTOR	2585 GRID	553400	4202400	47.8	10
RECEPTOR	2586 GRID	553600	4202400	47.1	10
RECEPTOR	2587 GRID	553800	4202400	45.6	10
RECEPTOR	2588 GRID	554000	4202400	6.9	10
RECEPTOR	2589 GRID	554200	4202400	4.2	10
RECEPTOR	2590 GRID	554400	4202400	1.8	10
RECEPTOR	2591 GRID	554600	4202400	2.5	10
RECEPTOR	2592 GRID	554800	4202400	1.6	10
RECEPTOR	2593 GRID	555000	4202400	4.8	10
RECEPTOR	2594 GRID	555200	4202400	3.6	10
RECEPTOR	2595 GRID	555400	4202400	4.2	10
RECEPTOR	2596 GRID	555600	4202400	5.3	10
RECEPTOR	2597 GRID	555800	4202400	2.5	10
RECEPTOR	2598 GRID	556000	4202400	7.3	10
RECEPTOR	2599 GRID	556200	4202400	3.6	10
RECEPTOR	2600 GRID	556400	4202400	8.8	10
RECEPTOR	2601 GRID	556600	4202400	8.1	10
RECEPTOR	2602 GRID	556800	4202400	8.3	10
RECEPTOR	2603 GRID	557000	4202400	10.5	10
RECEPTOR	2604 GRID	557200	4202400	11.5	10
RECEPTOR	2605 GRID	557400	4202400	13.1	10
RECEPTOR	2606 GRID	557600	4202400	15	10
RECEPTOR	2607 GRID	557800	4202400	16	10
RECEPTOR	2608 GRID	558000	4202400	15.8	10
RECEPTOR	2609 GRID	558200	4202400	18.6	10
RECEPTOR	2610 GRID	558400	4202400	20.9	10
RECEPTOR	2611 GRID	558600	4202400	31.3	10
RECEPTOR	2612 GRID	558800	4202400	30.3	10
RECEPTOR	2613 GRID	559000	4202400	26.2	10
RECEPTOR	2614 GRID	559200	4202400	31.8	10
RECEPTOR	2615 GRID	559400	4202400	38.8	10
RECEPTOR	2616 GRID	559600	4202400	41.9	10
RECEPTOR	2617 GRID	559800	4202400	35.4	10
RECEPTOR	2618 GRID	560000	4202400	34.9	10
RECEPTOR	2619 GRID	560200	4202400	38.2	10
RECEPTOR	2620 GRID	560400	4202400	27	10
RECEPTOR	2621 GRID	560600	4202400	34.3	10
RECEPTOR	2622 GRID	560800	4202400	31.7	10
RECEPTOR	2623 GRID	561000	4202400	26.8	10
RECEPTOR	2624 GRID	549000	4202600	0	10
RECEPTOR	2625 GRID	549200	4202600	0	10
RECEPTOR	2626 GRID	549400	4202600	0	10
RECEPTOR	2627 GRID	549600	4202600	0	10
RECEPTOR	2628 GRID	549800	4202600	0	10
RECEPTOR	2629 GRID	550000	4202600	0	10
RECEPTOR	2630 GRID	550200	4202600	0	10
RECEPTOR	2631 GRID	550400	4202600	0	10
RECEPTOR	2632 GRID	550600	4202600	0	10
RECEPTOR	2633 GRID	550800	4202600	0	10
RECEPTOR	2634 GRID	551000	4202600	0	10
RECEPTOR	2635 GRID	551200	4202600	0	10
RECEPTOR	2636 GRID	551400	4202600	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2637 GRID	551600	4202600	0	10
RECEPTOR	2638 GRID	551800	4202600	0	10
RECEPTOR	2639 GRID	552000	4202600	0	10
RECEPTOR	2640 GRID	552200	4202600	0	10
RECEPTOR	2641 GRID	552400	4202600	0	10
RECEPTOR	2642 GRID	552600	4202600	0	10
RECEPTOR	2643 GRID	552800	4202600	0	10
RECEPTOR	2644 GRID	553000	4202600	0	10
RECEPTOR	2645 GRID	553200	4202600	4.5	10
RECEPTOR	2646 GRID	553400	4202600	1.8	10
RECEPTOR	2647 GRID	553600	4202600	1.5	10
RECEPTOR	2648 GRID	553800	4202600	23.2	10
RECEPTOR	2649 GRID	554000	4202600	10.5	10
RECEPTOR	2650 GRID	554200	4202600	10.4	10
RECEPTOR	2651 GRID	554400	4202600	4.6	10
RECEPTOR	2652 GRID	554600	4202600	2.3	10
RECEPTOR	2653 GRID	554800	4202600	2.6	10
RECEPTOR	2654 GRID	555000	4202600	3.3	10
RECEPTOR	2655 GRID	555200	4202600	3.2	10
RECEPTOR	2656 GRID	555400	4202600	3.2	10
RECEPTOR	2657 GRID	555600	4202600	4.2	10
RECEPTOR	2658 GRID	555800	4202600	5.1	10
RECEPTOR	2659 GRID	556000	4202600	5.7	10
RECEPTOR	2660 GRID	556200	4202600	7.1	10
RECEPTOR	2661 GRID	556400	4202600	7.4	10
RECEPTOR	2662 GRID	556600	4202600	7.8	10
RECEPTOR	2663 GRID	556800	4202600	8.8	10
RECEPTOR	2664 GRID	557000	4202600	10	10
RECEPTOR	2665 GRID	557200	4202600	11.5	10
RECEPTOR	2666 GRID	557400	4202600	13.2	10
RECEPTOR	2667 GRID	557600	4202600	14.1	10
RECEPTOR	2668 GRID	557800	4202600	15.1	10
RECEPTOR	2669 GRID	558000	4202600	16.2	10
RECEPTOR	2670 GRID	558200	4202600	21.2	10
RECEPTOR	2671 GRID	558400	4202600	31.8	10
RECEPTOR	2672 GRID	558600	4202600	40.3	10
RECEPTOR	2673 GRID	558800	4202600	51.5	10
RECEPTOR	2674 GRID	559000	4202600	32.1	10
RECEPTOR	2675 GRID	559200	4202600	33.6	10
RECEPTOR	2676 GRID	559400	4202600	45.8	10
RECEPTOR	2677 GRID	559600	4202600	47.8	10
RECEPTOR	2678 GRID	559800	4202600	67.4	10
RECEPTOR	2679 GRID	560000	4202600	70.4	10
RECEPTOR	2680 GRID	560200	4202600	63.5	10
RECEPTOR	2681 GRID	560400	4202600	40	10
RECEPTOR	2682 GRID	560600	4202600	33.7	10
RECEPTOR	2683 GRID	560800	4202600	34.6	10
RECEPTOR	2684 GRID	561000	4202600	56	10
RECEPTOR	2685 GRID	549000	4202800	0	10
RECEPTOR	2686 GRID	549200	4202800	0	10
RECEPTOR	2687 GRID	549400	4202800	0	10
RECEPTOR	2688 GRID	549600	4202800	0	10
RECEPTOR	2689 GRID	549800	4202800	0	10
RECEPTOR	2690 GRID	550000	4202800	0	10
RECEPTOR	2691 GRID	550200	4202800	0	10
RECEPTOR	2692 GRID	550400	4202800	0	10
RECEPTOR	2693 GRID	550600	4202800	0	10
RECEPTOR	2694 GRID	550800	4202800	0	10
RECEPTOR	2695 GRID	551000	4202800	0	10
RECEPTOR	2696 GRID	551200	4202800	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2697 GRID	551400	4202800	0	10
RECEPTOR	2698 GRID	551600	4202800	0	10
RECEPTOR	2699 GRID	551800	4202800	0	10
RECEPTOR	2700 GRID	552000	4202800	0	10
RECEPTOR	2701 GRID	552200	4202800	0	10
RECEPTOR	2702 GRID	552400	4202800	0	10
RECEPTOR	2703 GRID	552600	4202800	0	10
RECEPTOR	2704 GRID	552800	4202800	0	10
RECEPTOR	2705 GRID	553000	4202800	0	10
RECEPTOR	2706 GRID	553200	4202800	0	10
RECEPTOR	2707 GRID	553400	4202800	0	10
RECEPTOR	2708 GRID	553600	4202800	1.7	10
RECEPTOR	2709 GRID	553800	4202800	5.8	10
RECEPTOR	2710 GRID	554000	4202800	7.4	10
RECEPTOR	2711 GRID	554200	4202800	7.1	10
RECEPTOR	2712 GRID	554400	4202800	2.1	10
RECEPTOR	2713 GRID	554600	4202800	2.3	10
RECEPTOR	2714 GRID	554800	4202800	2.4	10
RECEPTOR	2715 GRID	555000	4202800	2.5	10
RECEPTOR	2716 GRID	555200	4202800	3.5	10
RECEPTOR	2717 GRID	555400	4202800	2.7	10
RECEPTOR	2718 GRID	555600	4202800	3.2	10
RECEPTOR	2719 GRID	555800	4202800	4.5	10
RECEPTOR	2720 GRID	556000	4202800	4.6	10
RECEPTOR	2721 GRID	556200	4202800	5.6	10
RECEPTOR	2722 GRID	556400	4202800	6.2	10
RECEPTOR	2723 GRID	556600	4202800	7.6	10
RECEPTOR	2724 GRID	556800	4202800	9.3	10
RECEPTOR	2725 GRID	557000	4202800	9.9	10
RECEPTOR	2726 GRID	557200	4202800	11.5	10
RECEPTOR	2727 GRID	557400	4202800	12.3	10
RECEPTOR	2728 GRID	557600	4202800	13	10
RECEPTOR	2729 GRID	557800	4202800	14.7	10
RECEPTOR	2730 GRID	558000	4202800	21.6	10
RECEPTOR	2731 GRID	558200	4202800	24.6	10
RECEPTOR	2732 GRID	558400	4202800	54.2	10
RECEPTOR	2733 GRID	558600	4202800	59.2	10
RECEPTOR	2734 GRID	558800	4202800	46.2	10
RECEPTOR	2735 GRID	559000	4202800	63.8	10
RECEPTOR	2736 GRID	559200	4202800	43.3	10
RECEPTOR	2737 GRID	559400	4202800	52	10
RECEPTOR	2738 GRID	559600	4202800	55.1	10
RECEPTOR	2739 GRID	559800	4202800	70	10
RECEPTOR	2740 GRID	560000	4202800	67.9	10
RECEPTOR	2741 GRID	560200	4202800	75.4	10
RECEPTOR	2742 GRID	560400	4202800	62.1	10
RECEPTOR	2743 GRID	560600	4202800	63.2	10
RECEPTOR	2744 GRID	560800	4202800	40.6	10
RECEPTOR	2745 GRID	561000	4202800	35.5	10
RECEPTOR	2746 GRID	549000	4203000	0	10
RECEPTOR	2747 GRID	549200	4203000	0	10
RECEPTOR	2748 GRID	549400	4203000	0	10
RECEPTOR	2749 GRID	549600	4203000	0	10
RECEPTOR	2750 GRID	549800	4203000	0	10
RECEPTOR	2751 GRID	550000	4203000	0	10
RECEPTOR	2752 GRID	550200	4203000	0	10
RECEPTOR	2753 GRID	550400	4203000	0	10
RECEPTOR	2754 GRID	550600	4203000	0	10
RECEPTOR	2755 GRID	550800	4203000	0	10
RECEPTOR	2756 GRID	551000	4203000	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2757 GRID	551200	4203000	0	10
RECEPTOR	2758 GRID	551400	4203000	0	10
RECEPTOR	2759 GRID	551600	4203000	0	10
RECEPTOR	2760 GRID	551800	4203000	0	10
RECEPTOR	2761 GRID	552000	4203000	0	10
RECEPTOR	2762 GRID	552200	4203000	0	10
RECEPTOR	2763 GRID	552400	4203000	0	10
RECEPTOR	2764 GRID	552600	4203000	0	10
RECEPTOR	2765 GRID	552800	4203000	0	10
RECEPTOR	2766 GRID	553000	4203000	0	10
RECEPTOR	2767 GRID	553200	4203000	0	10
RECEPTOR	2768 GRID	553400	4203000	0	10
RECEPTOR	2769 GRID	553600	4203000	0	10
RECEPTOR	2770 GRID	553800	4203000	1.6	10
RECEPTOR	2771 GRID	554000	4203000	1.4	10
RECEPTOR	2772 GRID	554200	4203000	1.7	10
RECEPTOR	2773 GRID	554400	4203000	1.8	10
RECEPTOR	2774 GRID	554600	4203000	1.9	10
RECEPTOR	2775 GRID	554800	4203000	1.8	10
RECEPTOR	2776 GRID	555000	4203000	1.7	10
RECEPTOR	2777 GRID	555200	4203000	2	10
RECEPTOR	2778 GRID	555400	4203000	4.4	10
RECEPTOR	2779 GRID	555600	4203000	3.4	10
RECEPTOR	2780 GRID	555800	4203000	3.9	10
RECEPTOR	2781 GRID	556000	4203000	4.3	10
RECEPTOR	2782 GRID	556200	4203000	5.7	10
RECEPTOR	2783 GRID	556400	4203000	7.4	10
RECEPTOR	2784 GRID	556600	4203000	8.4	10
RECEPTOR	2785 GRID	556800	4203000	8.9	10
RECEPTOR	2786 GRID	557000	4203000	10.2	10
RECEPTOR	2787 GRID	557200	4203000	10.9	10
RECEPTOR	2788 GRID	557400	4203000	10.9	10
RECEPTOR	2789 GRID	557600	4203000	12.7	10
RECEPTOR	2790 GRID	557800	4203000	19	10
RECEPTOR	2791 GRID	558000	4203000	33.2	10
RECEPTOR	2792 GRID	558200	4203000	59.6	10
RECEPTOR	2793 GRID	558400	4203000	60.6	10
RECEPTOR	2794 GRID	558600	4203000	67.8	10
RECEPTOR	2795 GRID	558800	4203000	76.5	10
RECEPTOR	2796 GRID	559000	4203000	69.8	10
RECEPTOR	2797 GRID	559200	4203000	71.3	10
RECEPTOR	2798 GRID	559400	4203000	65.6	10
RECEPTOR	2799 GRID	559600	4203000	57.3	10
RECEPTOR	2800 GRID	559800	4203000	63.1	10
RECEPTOR	2801 GRID	560000	4203000	75.3	10
RECEPTOR	2802 GRID	560200	4203000	85	10
RECEPTOR	2803 GRID	560400	4203000	87	10
RECEPTOR	2804 GRID	560600	4203000	82.2	10
RECEPTOR	2805 GRID	560800	4203000	51.2	10
RECEPTOR	2806 GRID	561000	4203000	51.5	10
RECEPTOR	2807 GRID	549000	4203200	0	10
RECEPTOR	2808 GRID	549200	4203200	0	10
RECEPTOR	2809 GRID	549400	4203200	0	10
RECEPTOR	2810 GRID	549600	4203200	0	10
RECEPTOR	2811 GRID	549800	4203200	0	10
RECEPTOR	2812 GRID	550000	4203200	0	10
RECEPTOR	2813 GRID	550200	4203200	0	10
RECEPTOR	2814 GRID	550400	4203200	0	10
RECEPTOR	2815 GRID	550600	4203200	0	10
RECEPTOR	2816 GRID	550800	4203200	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2817 GRID	551000	4203200	0	10
RECEPTOR	2818 GRID	551200	4203200	0	10
RECEPTOR	2819 GRID	551400	4203200	0	10
RECEPTOR	2820 GRID	551600	4203200	0	10
RECEPTOR	2821 GRID	551800	4203200	0	10
RECEPTOR	2822 GRID	552000	4203200	0	10
RECEPTOR	2823 GRID	552200	4203200	0	10
RECEPTOR	2824 GRID	552400	4203200	0	10
RECEPTOR	2825 GRID	552600	4203200	0	10
RECEPTOR	2826 GRID	552800	4203200	0	10
RECEPTOR	2827 GRID	553000	4203200	0	10
RECEPTOR	2828 GRID	553200	4203200	0	10
RECEPTOR	2829 GRID	553400	4203200	0	10
RECEPTOR	2830 GRID	553600	4203200	0	10
RECEPTOR	2831 GRID	553800	4203200	0	10
RECEPTOR	2832 GRID	554000	4203200	1.5	10
RECEPTOR	2833 GRID	554200	4203200	1.9	10
RECEPTOR	2834 GRID	554400	4203200	1.8	10
RECEPTOR	2835 GRID	554600	4203200	1.7	10
RECEPTOR	2836 GRID	554800	4203200	1.5	10
RECEPTOR	2837 GRID	555000	4203200	1.4	10
RECEPTOR	2838 GRID	555200	4203200	1.9	10
RECEPTOR	2839 GRID	555400	4203200	3.5	10
RECEPTOR	2840 GRID	555600	4203200	3.8	10
RECEPTOR	2841 GRID	555800	4203200	2.9	10
RECEPTOR	2842 GRID	556000	4203200	4.1	10
RECEPTOR	2843 GRID	556200	4203200	4.9	10
RECEPTOR	2844 GRID	556400	4203200	6	10
RECEPTOR	2845 GRID	556600	4203200	7.4	10
RECEPTOR	2846 GRID	556800	4203200	8.4	10
RECEPTOR	2847 GRID	557000	4203200	9.3	10
RECEPTOR	2848 GRID	557200	4203200	11.1	10
RECEPTOR	2849 GRID	557400	4203200	11.1	10
RECEPTOR	2850 GRID	557600	4203200	13.8	10
RECEPTOR	2851 GRID	557800	4203200	30.6	10
RECEPTOR	2852 GRID	558000	4203200	48.4	10
RECEPTOR	2853 GRID	558200	4203200	62.8	10
RECEPTOR	2854 GRID	558400	4203200	69.9	10
RECEPTOR	2855 GRID	558600	4203200	77.1	10
RECEPTOR	2856 GRID	558800	4203200	73.9	10
RECEPTOR	2857 GRID	559000	4203200	74.7	10
RECEPTOR	2858 GRID	559200	4203200	71.5	10
RECEPTOR	2859 GRID	559400	4203200	80.7	10
RECEPTOR	2860 GRID	559600	4203200	82.6	10
RECEPTOR	2861 GRID	559800	4203200	70.1	10
RECEPTOR	2862 GRID	560000	4203200	82.8	10
RECEPTOR	2863 GRID	560200	4203200	90.3	10
RECEPTOR	2864 GRID	560400	4203200	103.1	10
RECEPTOR	2865 GRID	560600	4203200	87.7	10
RECEPTOR	2866 GRID	560800	4203200	81.4	10
RECEPTOR	2867 GRID	561000	4203200	62.5	10
RECEPTOR	2868 GRID	549000	4203400	0	10
RECEPTOR	2869 GRID	549200	4203400	0	10
RECEPTOR	2870 GRID	549400	4203400	0	10
RECEPTOR	2871 GRID	549600	4203400	0	10
RECEPTOR	2872 GRID	549800	4203400	0	10
RECEPTOR	2873 GRID	550000	4203400	0	10
RECEPTOR	2874 GRID	550200	4203400	0	10
RECEPTOR	2875 GRID	550400	4203400	0	10
RECEPTOR	2876 GRID	550600	4203400	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2877 GRID	550800	4203400	0	10
RECEPTOR	2878 GRID	551000	4203400	0	10
RECEPTOR	2879 GRID	551200	4203400	0	10
RECEPTOR	2880 GRID	551400	4203400	0	10
RECEPTOR	2881 GRID	551600	4203400	0	10
RECEPTOR	2882 GRID	551800	4203400	0	10
RECEPTOR	2883 GRID	552000	4203400	0	10
RECEPTOR	2884 GRID	552200	4203400	0	10
RECEPTOR	2885 GRID	552400	4203400	0	10
RECEPTOR	2886 GRID	552600	4203400	0	10
RECEPTOR	2887 GRID	552800	4203400	0	10
RECEPTOR	2888 GRID	553000	4203400	0	10
RECEPTOR	2889 GRID	553200	4203400	0	10
RECEPTOR	2890 GRID	553400	4203400	0	10
RECEPTOR	2891 GRID	553600	4203400	0	10
RECEPTOR	2892 GRID	553800	4203400	0	10
RECEPTOR	2893 GRID	554000	4203400	0	10
RECEPTOR	2894 GRID	554200	4203400	0	10
RECEPTOR	2895 GRID	554400	4203400	0	10
RECEPTOR	2896 GRID	554600	4203400	0	10
RECEPTOR	2897 GRID	554800	4203400	0	10
RECEPTOR	2898 GRID	555000	4203400	0	10
RECEPTOR	2899 GRID	555200	4203400	1.3	10
RECEPTOR	2900 GRID	555400	4203400	2.2	10
RECEPTOR	2901 GRID	555600	4203400	3.5	10
RECEPTOR	2902 GRID	555800	4203400	3.2	10
RECEPTOR	2903 GRID	556000	4203400	4	10
RECEPTOR	2904 GRID	556200	4203400	4.5	10
RECEPTOR	2905 GRID	556400	4203400	5.5	10
RECEPTOR	2906 GRID	556600	4203400	7.3	10
RECEPTOR	2907 GRID	556800	4203400	7.8	10
RECEPTOR	2908 GRID	557000	4203400	8.9	10
RECEPTOR	2909 GRID	557200	4203400	11	10
RECEPTOR	2910 GRID	557400	4203400	21.8	10
RECEPTOR	2911 GRID	557600	4203400	40.5	10
RECEPTOR	2912 GRID	557800	4203400	41.3	10
RECEPTOR	2913 GRID	558000	4203400	68.2	10
RECEPTOR	2914 GRID	558200	4203400	63.3	10
RECEPTOR	2915 GRID	558400	4203400	74.5	10
RECEPTOR	2916 GRID	558600	4203400	75.5	10
RECEPTOR	2917 GRID	558800	4203400	74.5	10
RECEPTOR	2918 GRID	559000	4203400	73	10
RECEPTOR	2919 GRID	559200	4203400	79.2	10
RECEPTOR	2920 GRID	559400	4203400	88.5	10
RECEPTOR	2921 GRID	559600	4203400	87.2	10
RECEPTOR	2922 GRID	559800	4203400	83.4	10
RECEPTOR	2923 GRID	560000	4203400	89.6	10
RECEPTOR	2924 GRID	560200	4203400	101.4	10
RECEPTOR	2925 GRID	560400	4203400	107.3	10
RECEPTOR	2926 GRID	560600	4203400	101.3	10
RECEPTOR	2927 GRID	560800	4203400	99.2	10
RECEPTOR	2928 GRID	561000	4203400	95.6	10
RECEPTOR	2929 GRID	549000	4203600	0	10
RECEPTOR	2930 GRID	549200	4203600	0	10
RECEPTOR	2931 GRID	549400	4203600	0	10
RECEPTOR	2932 GRID	549600	4203600	0	10
RECEPTOR	2933 GRID	549800	4203600	0	10
RECEPTOR	2934 GRID	550000	4203600	0	10
RECEPTOR	2935 GRID	550200	4203600	0	10
RECEPTOR	2936 GRID	550400	4203600	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2937 GRID	550600	4203600	0	10
RECEPTOR	2938 GRID	550800	4203600	0	10
RECEPTOR	2939 GRID	551000	4203600	0	10
RECEPTOR	2940 GRID	551200	4203600	0	10
RECEPTOR	2941 GRID	551400	4203600	0	10
RECEPTOR	2942 GRID	551600	4203600	0	10
RECEPTOR	2943 GRID	551800	4203600	0	10
RECEPTOR	2944 GRID	552000	4203600	0	10
RECEPTOR	2945 GRID	552200	4203600	0	10
RECEPTOR	2946 GRID	552400	4203600	0	10
RECEPTOR	2947 GRID	552600	4203600	0	10
RECEPTOR	2948 GRID	552800	4203600	0	10
RECEPTOR	2949 GRID	553000	4203600	0	10
RECEPTOR	2950 GRID	553200	4203600	0	10
RECEPTOR	2951 GRID	553400	4203600	0	10
RECEPTOR	2952 GRID	553600	4203600	0	10
RECEPTOR	2953 GRID	553800	4203600	0	10
RECEPTOR	2954 GRID	554000	4203600	0	10
RECEPTOR	2955 GRID	554200	4203600	0	10
RECEPTOR	2956 GRID	554400	4203600	0	10
RECEPTOR	2957 GRID	554600	4203600	0	10
RECEPTOR	2958 GRID	554800	4203600	0	10
RECEPTOR	2959 GRID	555000	4203600	0	10
RECEPTOR	2960 GRID	555200	4203600	1.2	10
RECEPTOR	2961 GRID	555400	4203600	1.6	10
RECEPTOR	2962 GRID	555600	4203600	3.1	10
RECEPTOR	2963 GRID	555800	4203600	3.3	10
RECEPTOR	2964 GRID	556000	4203600	3.7	10
RECEPTOR	2965 GRID	556200	4203600	4.2	10
RECEPTOR	2966 GRID	556400	4203600	6	10
RECEPTOR	2967 GRID	556600	4203600	6.6	10
RECEPTOR	2968 GRID	556800	4203600	8	10
RECEPTOR	2969 GRID	557000	4203600	10.7	10
RECEPTOR	2970 GRID	557200	4203600	14.8	10
RECEPTOR	2971 GRID	557400	4203600	33.8	10
RECEPTOR	2972 GRID	557600	4203600	43	10
RECEPTOR	2973 GRID	557800	4203600	47.8	10
RECEPTOR	2974 GRID	558000	4203600	71.1	10
RECEPTOR	2975 GRID	558200	4203600	79.5	10
RECEPTOR	2976 GRID	558400	4203600	79.4	10
RECEPTOR	2977 GRID	558600	4203600	69.9	10
RECEPTOR	2978 GRID	558800	4203600	63.1	10
RECEPTOR	2979 GRID	559000	4203600	62.1	10
RECEPTOR	2980 GRID	559200	4203600	70.7	10
RECEPTOR	2981 GRID	559400	4203600	81.9	10
RECEPTOR	2982 GRID	559600	4203600	87.2	10
RECEPTOR	2983 GRID	559800	4203600	88.2	10
RECEPTOR	2984 GRID	560000	4203600	98.2	10
RECEPTOR	2985 GRID	560200	4203600	92.6	10
RECEPTOR	2986 GRID	560400	4203600	95.4	10
RECEPTOR	2987 GRID	560600	4203600	85.2	10
RECEPTOR	2988 GRID	560800	4203600	101.4	10
RECEPTOR	2989 GRID	561000	4203600	102.9	10
RECEPTOR	2990 GRID	549000	4203800	0	10
RECEPTOR	2991 GRID	549200	4203800	0	10
RECEPTOR	2992 GRID	549400	4203800	0	10
RECEPTOR	2993 GRID	549600	4203800	0	10
RECEPTOR	2994 GRID	549800	4203800	0	10
RECEPTOR	2995 GRID	550000	4203800	0	10
RECEPTOR	2996 GRID	550200	4203800	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	2997 GRID	550400	4203800	0	10
RECEPTOR	2998 GRID	550600	4203800	0	10
RECEPTOR	2999 GRID	550800	4203800	0	10
RECEPTOR	3000 GRID	551000	4203800	0	10
RECEPTOR	3001 GRID	551200	4203800	0	10
RECEPTOR	3002 GRID	551400	4203800	0	10
RECEPTOR	3003 GRID	551600	4203800	0	10
RECEPTOR	3004 GRID	551800	4203800	0	10
RECEPTOR	3005 GRID	552000	4203800	0	10
RECEPTOR	3006 GRID	552200	4203800	0	10
RECEPTOR	3007 GRID	552400	4203800	0	10
RECEPTOR	3008 GRID	552600	4203800	0	10
RECEPTOR	3009 GRID	552800	4203800	0	10
RECEPTOR	3010 GRID	553000	4203800	0	10
RECEPTOR	3011 GRID	553200	4203800	0	10
RECEPTOR	3012 GRID	553400	4203800	0	10
RECEPTOR	3013 GRID	553600	4203800	0	10
RECEPTOR	3014 GRID	553800	4203800	0	10
RECEPTOR	3015 GRID	554000	4203800	0	10
RECEPTOR	3016 GRID	554200	4203800	0	10
RECEPTOR	3017 GRID	554400	4203800	0	10
RECEPTOR	3018 GRID	554600	4203800	0	10
RECEPTOR	3019 GRID	554800	4203800	0	10
RECEPTOR	3020 GRID	555000	4203800	0	10
RECEPTOR	3021 GRID	555200	4203800	0	10
RECEPTOR	3022 GRID	555400	4203800	1.2	10
RECEPTOR	3023 GRID	555600	4203800	2.5	10
RECEPTOR	3024 GRID	555800	4203800	3	10
RECEPTOR	3025 GRID	556000	4203800	4.3	10
RECEPTOR	3026 GRID	556200	4203800	4.5	10
RECEPTOR	3027 GRID	556400	4203800	7.3	10
RECEPTOR	3028 GRID	556600	4203800	7.9	10
RECEPTOR	3029 GRID	556800	4203800	8.4	10
RECEPTOR	3030 GRID	557000	4203800	12.2	10
RECEPTOR	3031 GRID	557200	4203800	19.9	10
RECEPTOR	3032 GRID	557400	4203800	42.2	10
RECEPTOR	3033 GRID	557600	4203800	58.1	10
RECEPTOR	3034 GRID	557800	4203800	74.4	10
RECEPTOR	3035 GRID	558000	4203800	66.1	10
RECEPTOR	3036 GRID	558200	4203800	72.7	10
RECEPTOR	3037 GRID	558400	4203800	76.2	10
RECEPTOR	3038 GRID	558600	4203800	60.2	10
RECEPTOR	3039 GRID	558800	4203800	57	10
RECEPTOR	3040 GRID	559000	4203800	61.9	10
RECEPTOR	3041 GRID	559200	4203800	64.6	10
RECEPTOR	3042 GRID	559400	4203800	67.2	10
RECEPTOR	3043 GRID	559600	4203800	56.9	10
RECEPTOR	3044 GRID	559800	4203800	49.9	10
RECEPTOR	3045 GRID	560000	4203800	75.8	10
RECEPTOR	3046 GRID	560200	4203800	70.6	10
RECEPTOR	3047 GRID	560400	4203800	68.2	10
RECEPTOR	3048 GRID	560600	4203800	70.2	10
RECEPTOR	3049 GRID	560800	4203800	72.2	10
RECEPTOR	3050 GRID	561000	4203800	86.9	10
RECEPTOR	3051 GRID	549000	4204000	0	10
RECEPTOR	3052 GRID	549200	4204000	0	10
RECEPTOR	3053 GRID	549400	4204000	0	10
RECEPTOR	3054 GRID	549600	4204000	0	10
RECEPTOR	3055 GRID	549800	4204000	0	10
RECEPTOR	3056 GRID	550000	4204000	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	3057 GRID	550200	4204000	0	10
RECEPTOR	3058 GRID	550400	4204000	0	10
RECEPTOR	3059 GRID	550600	4204000	0	10
RECEPTOR	3060 GRID	550800	4204000	0	10
RECEPTOR	3061 GRID	551000	4204000	0	10
RECEPTOR	3062 GRID	551200	4204000	0	10
RECEPTOR	3063 GRID	551400	4204000	0	10
RECEPTOR	3064 GRID	551600	4204000	0	10
RECEPTOR	3065 GRID	551800	4204000	0	10
RECEPTOR	3066 GRID	552000	4204000	0	10
RECEPTOR	3067 GRID	552200	4204000	0	10
RECEPTOR	3068 GRID	552400	4204000	0	10
RECEPTOR	3069 GRID	552600	4204000	0	10
RECEPTOR	3070 GRID	552800	4204000	0	10
RECEPTOR	3071 GRID	553000	4204000	0	10
RECEPTOR	3072 GRID	553200	4204000	0	10
RECEPTOR	3073 GRID	553400	4204000	0	10
RECEPTOR	3074 GRID	553600	4204000	0	10
RECEPTOR	3075 GRID	553800	4204000	0	10
RECEPTOR	3076 GRID	554000	4204000	0	10
RECEPTOR	3077 GRID	554200	4204000	0	10
RECEPTOR	3078 GRID	554400	4204000	0	10
RECEPTOR	3079 GRID	554600	4204000	0	10
RECEPTOR	3080 GRID	554800	4204000	0	10
RECEPTOR	3081 GRID	555000	4204000	0	10
RECEPTOR	3082 GRID	555200	4204000	0	10
RECEPTOR	3083 GRID	555400	4204000	0	10
RECEPTOR	3084 GRID	555600	4204000	1.3	10
RECEPTOR	3085 GRID	555800	4204000	1.9	10
RECEPTOR	3086 GRID	556000	4204000	3.4	10
RECEPTOR	3087 GRID	556200	4204000	3.5	10
RECEPTOR	3088 GRID	556400	4204000	5.5	10
RECEPTOR	3089 GRID	556600	4204000	5.7	10
RECEPTOR	3090 GRID	556800	4204000	9.4	10
RECEPTOR	3091 GRID	557000	4204000	16.1	10
RECEPTOR	3092 GRID	557200	4204000	25.1	10
RECEPTOR	3093 GRID	557400	4204000	44	10
RECEPTOR	3094 GRID	557600	4204000	63.5	10
RECEPTOR	3095 GRID	557800	4204000	75.6	10
RECEPTOR	3096 GRID	558000	4204000	75.1	10
RECEPTOR	3097 GRID	558200	4204000	79.1	10
RECEPTOR	3098 GRID	558400	4204000	62.4	10
RECEPTOR	3099 GRID	558600	4204000	57	10
RECEPTOR	3100 GRID	558800	4204000	60.9	10
RECEPTOR	3101 GRID	559000	4204000	57.6	10
RECEPTOR	3102 GRID	559200	4204000	57.4	10
RECEPTOR	3103 GRID	559400	4204000	57.6	10
RECEPTOR	3104 GRID	559600	4204000	52.5	10
RECEPTOR	3105 GRID	559800	4204000	58.7	10
RECEPTOR	3106 GRID	560000	4204000	81.2	10
RECEPTOR	3107 GRID	560200	4204000	61.9	10
RECEPTOR	3108 GRID	560400	4204000	71.6	10
RECEPTOR	3109 GRID	560600	4204000	85	10
RECEPTOR	3110 GRID	560800	4204000	73.1	10
RECEPTOR	3111 GRID	561000	4204000	101.2	10
RECEPTOR	3112 GRID	549000	4204200	0	10
RECEPTOR	3113 GRID	549200	4204200	0	10
RECEPTOR	3114 GRID	549400	4204200	0	10
RECEPTOR	3115 GRID	549600	4204200	0	10
RECEPTOR	3116 GRID	549800	4204200	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	3117 GRID	550000	4204200	0	10
RECEPTOR	3118 GRID	550200	4204200	0	10
RECEPTOR	3119 GRID	550400	4204200	0	10
RECEPTOR	3120 GRID	550600	4204200	0	10
RECEPTOR	3121 GRID	550800	4204200	0	10
RECEPTOR	3122 GRID	551000	4204200	0	10
RECEPTOR	3123 GRID	551200	4204200	0	10
RECEPTOR	3124 GRID	551400	4204200	0	10
RECEPTOR	3125 GRID	551600	4204200	0	10
RECEPTOR	3126 GRID	551800	4204200	0	10
RECEPTOR	3127 GRID	552000	4204200	0	10
RECEPTOR	3128 GRID	552200	4204200	0	10
RECEPTOR	3129 GRID	552400	4204200	0	10
RECEPTOR	3130 GRID	552600	4204200	0	10
RECEPTOR	3131 GRID	552800	4204200	0	10
RECEPTOR	3132 GRID	553000	4204200	0	10
RECEPTOR	3133 GRID	553200	4204200	0	10
RECEPTOR	3134 GRID	553400	4204200	0	10
RECEPTOR	3135 GRID	553600	4204200	0	10
RECEPTOR	3136 GRID	553800	4204200	0	10
RECEPTOR	3137 GRID	554000	4204200	0	10
RECEPTOR	3138 GRID	554200	4204200	0	10
RECEPTOR	3139 GRID	554400	4204200	0	10
RECEPTOR	3140 GRID	554600	4204200	0	10
RECEPTOR	3141 GRID	554800	4204200	0	10
RECEPTOR	3142 GRID	555000	4204200	0	10
RECEPTOR	3143 GRID	555200	4204200	0	10
RECEPTOR	3144 GRID	555400	4204200	0	10
RECEPTOR	3145 GRID	555600	4204200	0	10
RECEPTOR	3146 GRID	555800	4204200	1.1	10
RECEPTOR	3147 GRID	556000	4204200	2.5	10
RECEPTOR	3148 GRID	556200	4204200	2.9	10
RECEPTOR	3149 GRID	556400	4204200	3.8	10
RECEPTOR	3150 GRID	556600	4204200	6	10
RECEPTOR	3151 GRID	556800	4204200	9.4	10
RECEPTOR	3152 GRID	557000	4204200	14.2	10
RECEPTOR	3153 GRID	557200	4204200	31.8	10
RECEPTOR	3154 GRID	557400	4204200	40.5	10
RECEPTOR	3155 GRID	557600	4204200	55.8	10
RECEPTOR	3156 GRID	557800	4204200	66	10
RECEPTOR	3157 GRID	558000	4204200	70.3	10
RECEPTOR	3158 GRID	558200	4204200	70.7	10
RECEPTOR	3159 GRID	558400	4204200	57.6	10
RECEPTOR	3160 GRID	558600	4204200	47.9	10
RECEPTOR	3161 GRID	558800	4204200	44.2	10
RECEPTOR	3162 GRID	559000	4204200	51.9	10
RECEPTOR	3163 GRID	559200	4204200	33.9	10
RECEPTOR	3164 GRID	559400	4204200	55.8	10
RECEPTOR	3165 GRID	559600	4204200	59	10
RECEPTOR	3166 GRID	559800	4204200	65.3	10
RECEPTOR	3167 GRID	560000	4204200	75.3	10
RECEPTOR	3168 GRID	560200	4204200	67.6	10
RECEPTOR	3169 GRID	560400	4204200	69.3	10
RECEPTOR	3170 GRID	560600	4204200	96.2	10
RECEPTOR	3171 GRID	560800	4204200	83.8	10
RECEPTOR	3172 GRID	561000	4204200	90.1	10
RECEPTOR	3173 GRID	549000	4204400	0	10
RECEPTOR	3174 GRID	549200	4204400	0	10
RECEPTOR	3175 GRID	549400	4204400	0	10
RECEPTOR	3176 GRID	549600	4204400	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	3177 GRID	549800	4204400	0	10
RECEPTOR	3178 GRID	550000	4204400	0	10
RECEPTOR	3179 GRID	550200	4204400	0	10
RECEPTOR	3180 GRID	550400	4204400	0	10
RECEPTOR	3181 GRID	550600	4204400	0	10
RECEPTOR	3182 GRID	550800	4204400	0	10
RECEPTOR	3183 GRID	551000	4204400	0	10
RECEPTOR	3184 GRID	551200	4204400	0	10
RECEPTOR	3185 GRID	551400	4204400	0	10
RECEPTOR	3186 GRID	551600	4204400	0	10
RECEPTOR	3187 GRID	551800	4204400	0	10
RECEPTOR	3188 GRID	552000	4204400	0	10
RECEPTOR	3189 GRID	552200	4204400	0	10
RECEPTOR	3190 GRID	552400	4204400	0	10
RECEPTOR	3191 GRID	552600	4204400	0	10
RECEPTOR	3192 GRID	552800	4204400	0	10
RECEPTOR	3193 GRID	553000	4204400	0	10
RECEPTOR	3194 GRID	553200	4204400	0	10
RECEPTOR	3195 GRID	553400	4204400	0	10
RECEPTOR	3196 GRID	553600	4204400	0	10
RECEPTOR	3197 GRID	553800	4204400	0	10
RECEPTOR	3198 GRID	554000	4204400	0	10
RECEPTOR	3199 GRID	554200	4204400	0	10
RECEPTOR	3200 GRID	554400	4204400	0	10
RECEPTOR	3201 GRID	554600	4204400	0	10
RECEPTOR	3202 GRID	554800	4204400	0	10
RECEPTOR	3203 GRID	555000	4204400	0	10
RECEPTOR	3204 GRID	555200	4204400	0	10
RECEPTOR	3205 GRID	555400	4204400	0	10
RECEPTOR	3206 GRID	555600	4204400	0	10
RECEPTOR	3207 GRID	555800	4204400	2.8	10
RECEPTOR	3208 GRID	556000	4204400	3.9	10
RECEPTOR	3209 GRID	556200	4204400	2.7	10
RECEPTOR	3210 GRID	556400	4204400	2.8	10
RECEPTOR	3211 GRID	556600	4204400	4.5	10
RECEPTOR	3212 GRID	556800	4204400	9.3	10
RECEPTOR	3213 GRID	557000	4204400	22.9	10
RECEPTOR	3214 GRID	557200	4204400	27.3	10
RECEPTOR	3215 GRID	557400	4204400	32.7	10
RECEPTOR	3216 GRID	557600	4204400	48.2	10
RECEPTOR	3217 GRID	557800	4204400	54.1	10
RECEPTOR	3218 GRID	558000	4204400	52.6	10
RECEPTOR	3219 GRID	558200	4204400	56.5	10
RECEPTOR	3220 GRID	558400	4204400	60.9	10
RECEPTOR	3221 GRID	558600	4204400	50.9	10
RECEPTOR	3222 GRID	558800	4204400	41.8	10
RECEPTOR	3223 GRID	559000	4204400	27	10
RECEPTOR	3224 GRID	559200	4204400	43.1	10
RECEPTOR	3225 GRID	559400	4204400	59.4	10
RECEPTOR	3226 GRID	559600	4204400	63.3	10
RECEPTOR	3227 GRID	559800	4204400	68.2	10
RECEPTOR	3228 GRID	560000	4204400	71.9	10
RECEPTOR	3229 GRID	560200	4204400	78.7	10
RECEPTOR	3230 GRID	560400	4204400	77.3	10
RECEPTOR	3231 GRID	560600	4204400	84.3	10
RECEPTOR	3232 GRID	560800	4204400	82.3	10
RECEPTOR	3233 GRID	561000	4204400	78.1	10
RECEPTOR	3234 GRID	549000	4204600	0	10
RECEPTOR	3235 GRID	549200	4204600	0	10
RECEPTOR	3236 GRID	549400	4204600	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	3237 GRID	549600	4204600	0	10
RECEPTOR	3238 GRID	549800	4204600	0	10
RECEPTOR	3239 GRID	550000	4204600	0	10
RECEPTOR	3240 GRID	550200	4204600	0	10
RECEPTOR	3241 GRID	550400	4204600	0	10
RECEPTOR	3242 GRID	550600	4204600	0	10
RECEPTOR	3243 GRID	550800	4204600	0	10
RECEPTOR	3244 GRID	551000	4204600	0	10
RECEPTOR	3245 GRID	551200	4204600	0	10
RECEPTOR	3246 GRID	551400	4204600	0	10
RECEPTOR	3247 GRID	551600	4204600	0	10
RECEPTOR	3248 GRID	551800	4204600	0	10
RECEPTOR	3249 GRID	552000	4204600	0	10
RECEPTOR	3250 GRID	552200	4204600	0	10
RECEPTOR	3251 GRID	552400	4204600	0	10
RECEPTOR	3252 GRID	552600	4204600	0	10
RECEPTOR	3253 GRID	552800	4204600	0	10
RECEPTOR	3254 GRID	553000	4204600	0	10
RECEPTOR	3255 GRID	553200	4204600	0	10
RECEPTOR	3256 GRID	553400	4204600	0	10
RECEPTOR	3257 GRID	553600	4204600	0	10
RECEPTOR	3258 GRID	553800	4204600	0	10
RECEPTOR	3259 GRID	554000	4204600	0	10
RECEPTOR	3260 GRID	554200	4204600	0	10
RECEPTOR	3261 GRID	554400	4204600	0	10
RECEPTOR	3262 GRID	554600	4204600	0	10
RECEPTOR	3263 GRID	554800	4204600	0	10
RECEPTOR	3264 GRID	555000	4204600	0	10
RECEPTOR	3265 GRID	555200	4204600	0	10
RECEPTOR	3266 GRID	555400	4204600	0	10
RECEPTOR	3267 GRID	555600	4204600	0	10
RECEPTOR	3268 GRID	555800	4204600	0	10
RECEPTOR	3269 GRID	556000	4204600	1.2	10
RECEPTOR	3270 GRID	556200	4204600	2	10
RECEPTOR	3271 GRID	556400	4204600	2	10
RECEPTOR	3272 GRID	556600	4204600	4.4	10
RECEPTOR	3273 GRID	556800	4204600	10.8	10
RECEPTOR	3274 GRID	557000	4204600	30.7	10
RECEPTOR	3275 GRID	557200	4204600	40.6	10
RECEPTOR	3276 GRID	557400	4204600	34.9	10
RECEPTOR	3277 GRID	557600	4204600	34	10
RECEPTOR	3278 GRID	557800	4204600	51.7	10
RECEPTOR	3279 GRID	558000	4204600	49.9	10
RECEPTOR	3280 GRID	558200	4204600	47.4	10
RECEPTOR	3281 GRID	558400	4204600	52.5	10
RECEPTOR	3282 GRID	558600	4204600	49.6	10
RECEPTOR	3283 GRID	558800	4204600	41.3	10
RECEPTOR	3284 GRID	559000	4204600	27.9	10
RECEPTOR	3285 GRID	559200	4204600	33.9	10
RECEPTOR	3286 GRID	559400	4204600	63.1	10
RECEPTOR	3287 GRID	559600	4204600	71.4	10
RECEPTOR	3288 GRID	559800	4204600	72.3	10
RECEPTOR	3289 GRID	560000	4204600	75.6	10
RECEPTOR	3290 GRID	560200	4204600	76	10
RECEPTOR	3291 GRID	560400	4204600	82.1	10
RECEPTOR	3292 GRID	560600	4204600	72.7	10
RECEPTOR	3293 GRID	560800	4204600	79.4	10
RECEPTOR	3294 GRID	561000	4204600	88.2	10
RECEPTOR	3295 GRID	549000	4204800	0	10
RECEPTOR	3296 GRID	549200	4204800	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	3297 GRID	549400	4204800	0	10
RECEPTOR	3298 GRID	549600	4204800	0	10
RECEPTOR	3299 GRID	549800	4204800	0	10
RECEPTOR	3300 GRID	550000	4204800	0	10
RECEPTOR	3301 GRID	550200	4204800	0	10
RECEPTOR	3302 GRID	550400	4204800	0	10
RECEPTOR	3303 GRID	550600	4204800	0	10
RECEPTOR	3304 GRID	550800	4204800	0	10
RECEPTOR	3305 GRID	551000	4204800	0	10
RECEPTOR	3306 GRID	551200	4204800	0	10
RECEPTOR	3307 GRID	551400	4204800	0	10
RECEPTOR	3308 GRID	551600	4204800	0	10
RECEPTOR	3309 GRID	551800	4204800	0	10
RECEPTOR	3310 GRID	552000	4204800	0	10
RECEPTOR	3311 GRID	552200	4204800	0	10
RECEPTOR	3312 GRID	552400	4204800	0	10
RECEPTOR	3313 GRID	552600	4204800	0	10
RECEPTOR	3314 GRID	552800	4204800	0	10
RECEPTOR	3315 GRID	553000	4204800	0	10
RECEPTOR	3316 GRID	553200	4204800	0	10
RECEPTOR	3317 GRID	553400	4204800	0	10
RECEPTOR	3318 GRID	553600	4204800	0	10
RECEPTOR	3319 GRID	553800	4204800	0	10
RECEPTOR	3320 GRID	554000	4204800	0	10
RECEPTOR	3321 GRID	554200	4204800	0	10
RECEPTOR	3322 GRID	554400	4204800	0	10
RECEPTOR	3323 GRID	554600	4204800	0	10
RECEPTOR	3324 GRID	554800	4204800	0	10
RECEPTOR	3325 GRID	555000	4204800	0	10
RECEPTOR	3326 GRID	555200	4204800	0	10
RECEPTOR	3327 GRID	555400	4204800	0	10
RECEPTOR	3328 GRID	555600	4204800	0	10
RECEPTOR	3329 GRID	555800	4204800	0	10
RECEPTOR	3330 GRID	556000	4204800	1.3	10
RECEPTOR	3331 GRID	556200	4204800	1.3	10
RECEPTOR	3332 GRID	556400	4204800	2.1	10
RECEPTOR	3333 GRID	556600	4204800	8.1	10
RECEPTOR	3334 GRID	556800	4204800	15.9	10
RECEPTOR	3335 GRID	557000	4204800	31.6	10
RECEPTOR	3336 GRID	557200	4204800	39.6	10
RECEPTOR	3337 GRID	557400	4204800	43.8	10
RECEPTOR	3338 GRID	557600	4204800	47.2	10
RECEPTOR	3339 GRID	557800	4204800	44.6	10
RECEPTOR	3340 GRID	558000	4204800	45.8	10
RECEPTOR	3341 GRID	558200	4204800	40.8	10
RECEPTOR	3342 GRID	558400	4204800	44.7	10
RECEPTOR	3343 GRID	558600	4204800	44.9	10
RECEPTOR	3344 GRID	558800	4204800	38.7	10
RECEPTOR	3345 GRID	559000	4204800	28.6	10
RECEPTOR	3346 GRID	559200	4204800	31.9	10
RECEPTOR	3347 GRID	559400	4204800	51.1	10
RECEPTOR	3348 GRID	559600	4204800	47.6	10
RECEPTOR	3349 GRID	559800	4204800	60.7	10
RECEPTOR	3350 GRID	560000	4204800	64.4	10
RECEPTOR	3351 GRID	560200	4204800	63.4	10
RECEPTOR	3352 GRID	560400	4204800	73.1	10
RECEPTOR	3353 GRID	560600	4204800	68.3	10
RECEPTOR	3354 GRID	560800	4204800	81.7	10
RECEPTOR	3355 GRID	561000	4204800	82.7	10
RECEPTOR	3356 GRID	549000	4205000	0	10

File: Cancer_MNTUG.SRC

RECEPTOR	3357 GRID	549200	4205000	0	10
RECEPTOR	3358 GRID	549400	4205000	0	10
RECEPTOR	3359 GRID	549600	4205000	0	10
RECEPTOR	3360 GRID	549800	4205000	0	10
RECEPTOR	3361 GRID	550000	4205000	0	10
RECEPTOR	3362 GRID	550200	4205000	0	10
RECEPTOR	3363 GRID	550400	4205000	0	10
RECEPTOR	3364 GRID	550600	4205000	0	10
RECEPTOR	3365 GRID	550800	4205000	0	10
RECEPTOR	3366 GRID	551000	4205000	0	10
RECEPTOR	3367 GRID	551200	4205000	0	10
RECEPTOR	3368 GRID	551400	4205000	0	10
RECEPTOR	3369 GRID	551600	4205000	0	10
RECEPTOR	3370 GRID	551800	4205000	0	10
RECEPTOR	3371 GRID	552000	4205000	0	10
RECEPTOR	3372 GRID	552200	4205000	0	10
RECEPTOR	3373 GRID	552400	4205000	0	10
RECEPTOR	3374 GRID	552600	4205000	0	10
RECEPTOR	3375 GRID	552800	4205000	0	10
RECEPTOR	3376 GRID	553000	4205000	0	10
RECEPTOR	3377 GRID	553200	4205000	0	10
RECEPTOR	3378 GRID	553400	4205000	0	10
RECEPTOR	3379 GRID	553600	4205000	0	10
RECEPTOR	3380 GRID	553800	4205000	0	10
RECEPTOR	3381 GRID	554000	4205000	0	10
RECEPTOR	3382 GRID	554200	4205000	0	10
RECEPTOR	3383 GRID	554400	4205000	0	10
RECEPTOR	3384 GRID	554600	4205000	0	10
RECEPTOR	3385 GRID	554800	4205000	0	10
RECEPTOR	3386 GRID	555000	4205000	0	10
RECEPTOR	3387 GRID	555200	4205000	0	10
RECEPTOR	3388 GRID	555400	4205000	0	10
RECEPTOR	3389 GRID	555600	4205000	0	10
RECEPTOR	3390 GRID	555800	4205000	0	10
RECEPTOR	3391 GRID	556000	4205000	0	10
RECEPTOR	3392 GRID	556200	4205000	1.3	10
RECEPTOR	3393 GRID	556400	4205000	2	10
RECEPTOR	3394 GRID	556600	4205000	10.3	10
RECEPTOR	3395 GRID	556800	4205000	22.3	10
RECEPTOR	3396 GRID	557000	4205000	31.1	10
RECEPTOR	3397 GRID	557200	4205000	32.9	10
RECEPTOR	3398 GRID	557400	4205000	34.8	10
RECEPTOR	3399 GRID	557600	4205000	37.6	10
RECEPTOR	3400 GRID	557800	4205000	44.4	10
RECEPTOR	3401 GRID	558000	4205000	37.7	10
RECEPTOR	3402 GRID	558200	4205000	37	10
RECEPTOR	3403 GRID	558400	4205000	42	10
RECEPTOR	3404 GRID	558600	4205000	40.6	10
RECEPTOR	3405 GRID	558800	4205000	35.6	10
RECEPTOR	3406 GRID	559000	4205000	20.6	10
RECEPTOR	3407 GRID	559200	4205000	30.3	10
RECEPTOR	3408 GRID	559400	4205000	25.9	10
RECEPTOR	3409 GRID	559600	4205000	42	10
RECEPTOR	3410 GRID	559800	4205000	50.1	10
RECEPTOR	3411 GRID	560000	4205000	61.4	10
RECEPTOR	3412 GRID	560200	4205000	41	10
RECEPTOR	3413 GRID	560400	4205000	52	10
RECEPTOR	3414 GRID	560600	4205000	64.9	10
RECEPTOR	3415 GRID	560800	4205000	72.6	10
RECEPTOR	3416 GRID	561000	4205000	64.6	10

File: Cancer_MNTUG.SRC

RECEPTOR	3417 GRID	549000	4205200	0	10
RECEPTOR	3418 GRID	549200	4205200	0	10
RECEPTOR	3419 GRID	549400	4205200	0	10
RECEPTOR	3420 GRID	549600	4205200	0	10
RECEPTOR	3421 GRID	549800	4205200	0	10
RECEPTOR	3422 GRID	550000	4205200	0	10
RECEPTOR	3423 GRID	550200	4205200	0	10
RECEPTOR	3424 GRID	550400	4205200	0	10
RECEPTOR	3425 GRID	550600	4205200	0	10
RECEPTOR	3426 GRID	550800	4205200	0	10
RECEPTOR	3427 GRID	551000	4205200	0	10
RECEPTOR	3428 GRID	551200	4205200	0	10
RECEPTOR	3429 GRID	551400	4205200	0	10
RECEPTOR	3430 GRID	551600	4205200	0	10
RECEPTOR	3431 GRID	551800	4205200	0	10
RECEPTOR	3432 GRID	552000	4205200	0	10
RECEPTOR	3433 GRID	552200	4205200	0	10
RECEPTOR	3434 GRID	552400	4205200	0	10
RECEPTOR	3435 GRID	552600	4205200	0	10
RECEPTOR	3436 GRID	552800	4205200	0	10
RECEPTOR	3437 GRID	553000	4205200	0	10
RECEPTOR	3438 GRID	553200	4205200	0	10
RECEPTOR	3439 GRID	553400	4205200	0	10
RECEPTOR	3440 GRID	553600	4205200	0	10
RECEPTOR	3441 GRID	553800	4205200	0	10
RECEPTOR	3442 GRID	554000	4205200	0	10
RECEPTOR	3443 GRID	554200	4205200	0	10
RECEPTOR	3444 GRID	554400	4205200	0	10
RECEPTOR	3445 GRID	554600	4205200	0	10
RECEPTOR	3446 GRID	554800	4205200	0	10
RECEPTOR	3447 GRID	555000	4205200	0	10
RECEPTOR	3448 GRID	555200	4205200	0	10
RECEPTOR	3449 GRID	555400	4205200	0	10
RECEPTOR	3450 GRID	555600	4205200	0	10
RECEPTOR	3451 GRID	555800	4205200	0	10
RECEPTOR	3452 GRID	556000	4205200	1.4	10
RECEPTOR	3453 GRID	556200	4205200	1.3	10
RECEPTOR	3454 GRID	556400	4205200	6.6	10
RECEPTOR	3455 GRID	556600	4205200	13.4	10
RECEPTOR	3456 GRID	556800	4205200	22.7	10
RECEPTOR	3457 GRID	557000	4205200	28.2	10
RECEPTOR	3458 GRID	557200	4205200	28.7	10
RECEPTOR	3459 GRID	557400	4205200	26.9	10
RECEPTOR	3460 GRID	557600	4205200	26.2	10
RECEPTOR	3461 GRID	557800	4205200	33.4	10
RECEPTOR	3462 GRID	558000	4205200	25.5	10
RECEPTOR	3463 GRID	558200	4205200	27.9	10
RECEPTOR	3464 GRID	558400	4205200	32.9	10
RECEPTOR	3465 GRID	558600	4205200	35.3	10
RECEPTOR	3466 GRID	558800	4205200	36.7	10
RECEPTOR	3467 GRID	559000	4205200	34.5	10
RECEPTOR	3468 GRID	559200	4205200	15.4	10
RECEPTOR	3469 GRID	559400	4205200	18.3	10
RECEPTOR	3470 GRID	559600	4205200	39	10
RECEPTOR	3471 GRID	559800	4205200	52.1	10
RECEPTOR	3472 GRID	560000	4205200	32.4	10
RECEPTOR	3473 GRID	560200	4205200	51	10
RECEPTOR	3474 GRID	560400	4205200	65.8	10
RECEPTOR	3475 GRID	560600	4205200	55.5	10
RECEPTOR	3476 GRID	560800	4205200	64.7	10

File: Cancer_MNTUG.SRC

RECEPTOR	3477 GRID	561000	4205200	55.1	10
RECEPTOR	3478 GRID	549000	4205400	0	10
RECEPTOR	3479 GRID	549200	4205400	0	10
RECEPTOR	3480 GRID	549400	4205400	0	10
RECEPTOR	3481 GRID	549600	4205400	0	10
RECEPTOR	3482 GRID	549800	4205400	0	10
RECEPTOR	3483 GRID	550000	4205400	0	10
RECEPTOR	3484 GRID	550200	4205400	0	10
RECEPTOR	3485 GRID	550400	4205400	0	10
RECEPTOR	3486 GRID	550600	4205400	0	10
RECEPTOR	3487 GRID	550800	4205400	0	10
RECEPTOR	3488 GRID	551000	4205400	0	10
RECEPTOR	3489 GRID	551200	4205400	0	10
RECEPTOR	3490 GRID	551400	4205400	0	10
RECEPTOR	3491 GRID	551600	4205400	0	10
RECEPTOR	3492 GRID	551800	4205400	0	10
RECEPTOR	3493 GRID	552000	4205400	0	10
RECEPTOR	3494 GRID	552200	4205400	0	10
RECEPTOR	3495 GRID	552400	4205400	0	10
RECEPTOR	3496 GRID	552600	4205400	0	10
RECEPTOR	3497 GRID	552800	4205400	0	10
RECEPTOR	3498 GRID	553000	4205400	0	10
RECEPTOR	3499 GRID	553200	4205400	0	10
RECEPTOR	3500 GRID	553400	4205400	0	10
RECEPTOR	3501 GRID	553600	4205400	0	10
RECEPTOR	3502 GRID	553800	4205400	0	10
RECEPTOR	3503 GRID	554000	4205400	0	10
RECEPTOR	3504 GRID	554200	4205400	0	10
RECEPTOR	3505 GRID	554400	4205400	0	10
RECEPTOR	3506 GRID	554600	4205400	0	10
RECEPTOR	3507 GRID	554800	4205400	0	10
RECEPTOR	3508 GRID	555000	4205400	0	10
RECEPTOR	3509 GRID	555200	4205400	0	10
RECEPTOR	3510 GRID	555400	4205400	0	10
RECEPTOR	3511 GRID	555600	4205400	0	10
RECEPTOR	3512 GRID	555800	4205400	0	10
RECEPTOR	3513 GRID	556000	4205400	1.6	10
RECEPTOR	3514 GRID	556200	4205400	6.5	10
RECEPTOR	3515 GRID	556400	4205400	19.4	10
RECEPTOR	3516 GRID	556600	4205400	21.3	10
RECEPTOR	3517 GRID	556800	4205400	23	10
RECEPTOR	3518 GRID	557000	4205400	21.7	10
RECEPTOR	3519 GRID	557200	4205400	26.4	10
RECEPTOR	3520 GRID	557400	4205400	24.7	10
RECEPTOR	3521 GRID	557600	4205400	17.1	10
RECEPTOR	3522 GRID	557800	4205400	18.3	10
RECEPTOR	3523 GRID	558000	4205400	9.3	10
RECEPTOR	3524 GRID	558200	4205400	24.5	10
RECEPTOR	3525 GRID	558400	4205400	29.2	10
RECEPTOR	3526 GRID	558600	4205400	28.9	10
RECEPTOR	3527 GRID	558800	4205400	26.9	10
RECEPTOR	3528 GRID	559000	4205400	34.8	10
RECEPTOR	3529 GRID	559200	4205400	20.2	10
RECEPTOR	3530 GRID	559400	4205400	11.9	10
RECEPTOR	3531 GRID	559600	4205400	38.2	10
RECEPTOR	3532 GRID	559800	4205400	39.1	10
RECEPTOR	3533 GRID	560000	4205400	26.3	10
RECEPTOR	3534 GRID	560200	4205400	38	10
RECEPTOR	3535 GRID	560400	4205400	49.4	10
RECEPTOR	3536 GRID	560600	4205400	50.9	10

File: Cancer_MNTUG.SRC

RECEPTOR	3537 GRID	560800	4205400	41	10
RECEPTOR	3538 GRID	561000	4205400	58.9	10
RECEPTOR	3539 GRID	549000	4205600	0	10
RECEPTOR	3540 GRID	549200	4205600	0	10
RECEPTOR	3541 GRID	549400	4205600	0	10
RECEPTOR	3542 GRID	549600	4205600	0	10
RECEPTOR	3543 GRID	549800	4205600	0	10
RECEPTOR	3544 GRID	550000	4205600	0	10
RECEPTOR	3545 GRID	550200	4205600	0	10
RECEPTOR	3546 GRID	550400	4205600	0	10
RECEPTOR	3547 GRID	550600	4205600	0	10
RECEPTOR	3548 GRID	550800	4205600	0	10
RECEPTOR	3549 GRID	551000	4205600	0	10
RECEPTOR	3550 GRID	551200	4205600	0	10
RECEPTOR	3551 GRID	551400	4205600	0	10
RECEPTOR	3552 GRID	551600	4205600	0	10
RECEPTOR	3553 GRID	551800	4205600	0	10
RECEPTOR	3554 GRID	552000	4205600	0	10
RECEPTOR	3555 GRID	552200	4205600	0	10
RECEPTOR	3556 GRID	552400	4205600	0	10
RECEPTOR	3557 GRID	552600	4205600	0	10
RECEPTOR	3558 GRID	552800	4205600	0	10
RECEPTOR	3559 GRID	553000	4205600	0	10
RECEPTOR	3560 GRID	553200	4205600	0	10
RECEPTOR	3561 GRID	553400	4205600	0	10
RECEPTOR	3562 GRID	553600	4205600	0	10
RECEPTOR	3563 GRID	553800	4205600	0	10
RECEPTOR	3564 GRID	554000	4205600	0	10
RECEPTOR	3565 GRID	554200	4205600	0	10
RECEPTOR	3566 GRID	554400	4205600	0	10
RECEPTOR	3567 GRID	554600	4205600	0	10
RECEPTOR	3568 GRID	554800	4205600	0	10
RECEPTOR	3569 GRID	555000	4205600	0	10
RECEPTOR	3570 GRID	555200	4205600	0	10
RECEPTOR	3571 GRID	555400	4205600	0	10
RECEPTOR	3572 GRID	555600	4205600	0	10
RECEPTOR	3573 GRID	555800	4205600	1.6	10
RECEPTOR	3574 GRID	556000	4205600	2.6	10
RECEPTOR	3575 GRID	556200	4205600	20	10
RECEPTOR	3576 GRID	556400	4205600	19.6	10
RECEPTOR	3577 GRID	556600	4205600	20	10
RECEPTOR	3578 GRID	556800	4205600	19.9	10
RECEPTOR	3579 GRID	557000	4205600	19.4	10
RECEPTOR	3580 GRID	557200	4205600	18.4	10
RECEPTOR	3581 GRID	557400	4205600	14.7	10
RECEPTOR	3582 GRID	557600	4205600	14.7	10
RECEPTOR	3583 GRID	557800	4205600	14.7	10
RECEPTOR	3584 GRID	558000	4205600	13.8	10
RECEPTOR	3585 GRID	558200	4205600	19.9	10
RECEPTOR	3586 GRID	558400	4205600	15.8	10
RECEPTOR	3587 GRID	558600	4205600	17.4	10
RECEPTOR	3588 GRID	558800	4205600	20.3	10
RECEPTOR	3589 GRID	559000	4205600	29.5	10
RECEPTOR	3590 GRID	559200	4205600	34.6	10
RECEPTOR	3591 GRID	559400	4205600	19.7	10
RECEPTOR	3592 GRID	559600	4205600	11.6	10
RECEPTOR	3593 GRID	559800	4205600	31.7	10
RECEPTOR	3594 GRID	560000	4205600	20.7	10
RECEPTOR	3595 GRID	560200	4205600	30.7	10
RECEPTOR	3596 GRID	560400	4205600	39.2	10

File: Cancer_MNTUG.SRC

RECEPTOR	3597 GRID	560600	4205600	37.2	10
RECEPTOR	3598 GRID	560800	4205600	43.9	10
RECEPTOR	3599 GRID	561000	4205600	61.5	10
RECEPTOR	3600 GRID	549000	4205800	0	10
RECEPTOR	3601 GRID	549200	4205800	0	10
RECEPTOR	3602 GRID	549400	4205800	-0.3	10
RECEPTOR	3603 GRID	549600	4205800	0	10
RECEPTOR	3604 GRID	549800	4205800	0	10
RECEPTOR	3605 GRID	550000	4205800	0	10
RECEPTOR	3606 GRID	550200	4205800	0	10
RECEPTOR	3607 GRID	550400	4205800	0	10
RECEPTOR	3608 GRID	550600	4205800	0	10
RECEPTOR	3609 GRID	550800	4205800	0	10
RECEPTOR	3610 GRID	551000	4205800	-0.3	10
RECEPTOR	3611 GRID	551200	4205800	0	10
RECEPTOR	3612 GRID	551400	4205800	0	10
RECEPTOR	3613 GRID	551600	4205800	0	10
RECEPTOR	3614 GRID	551800	4205800	0	10
RECEPTOR	3615 GRID	552000	4205800	0	10
RECEPTOR	3616 GRID	552200	4205800	0	10
RECEPTOR	3617 GRID	552400	4205800	0	10
RECEPTOR	3618 GRID	552600	4205800	-0.1	10
RECEPTOR	3619 GRID	552800	4205800	0	10
RECEPTOR	3620 GRID	553000	4205800	0	10
RECEPTOR	3621 GRID	553200	4205800	0	10
RECEPTOR	3622 GRID	553400	4205800	0	10
RECEPTOR	3623 GRID	553600	4205800	0	10
RECEPTOR	3624 GRID	553800	4205800	0	10
RECEPTOR	3625 GRID	554000	4205800	0	10
RECEPTOR	3626 GRID	554200	4205800	0	10
RECEPTOR	3627 GRID	554400	4205800	0	10
RECEPTOR	3628 GRID	554600	4205800	0	10
RECEPTOR	3629 GRID	554800	4205800	0	10
RECEPTOR	3630 GRID	555000	4205800	0	10
RECEPTOR	3631 GRID	555200	4205800	0	10
RECEPTOR	3632 GRID	555400	4205800	0	10
RECEPTOR	3633 GRID	555600	4205800	0	10
RECEPTOR	3634 GRID	555800	4205800	9.6	10
RECEPTOR	3635 GRID	556000	4205800	29.6	10
RECEPTOR	3636 GRID	556200	4205800	25.2	10
RECEPTOR	3637 GRID	556400	4205800	18.8	10
RECEPTOR	3638 GRID	556600	4205800	9.1	10
RECEPTOR	3639 GRID	556800	4205800	16.5	10
RECEPTOR	3640 GRID	557000	4205800	18.5	10
RECEPTOR	3641 GRID	557200	4205800	17.2	10
RECEPTOR	3642 GRID	557400	4205800	14.1	10
RECEPTOR	3643 GRID	557600	4205800	13.4	10
RECEPTOR	3644 GRID	557800	4205800	14.6	10
RECEPTOR	3645 GRID	558000	4205800	11.5	10
RECEPTOR	3646 GRID	558200	4205800	11.1	10
RECEPTOR	3647 GRID	558400	4205800	8.3	10
RECEPTOR	3648 GRID	558600	4205800	14.1	10
RECEPTOR	3649 GRID	558800	4205800	12.2	10
RECEPTOR	3650 GRID	559000	4205800	22	10
RECEPTOR	3651 GRID	559200	4205800	25.2	10
RECEPTOR	3652 GRID	559400	4205800	8.7	10
RECEPTOR	3653 GRID	559600	4205800	12.2	10
RECEPTOR	3654 GRID	559800	4205800	22.2	10
RECEPTOR	3655 GRID	560000	4205800	14.5	10
RECEPTOR	3656 GRID	560200	4205800	28.6	10

File: Cancer_MNTUG.SRC

RECEPTOR	3657 GRID	560400	4205800	36.1	10
RECEPTOR	3658 GRID	560600	4205800	32.5	10
RECEPTOR	3659 GRID	560800	4205800	43.3	10
RECEPTOR	3660 GRID	561000	4205800	72.8	10
RECEPTOR	3661 GRID	549000	4206000	0	10
RECEPTOR	3662 GRID	549200	4206000	0	10
RECEPTOR	3663 GRID	549400	4206000	0.9	10
RECEPTOR	3664 GRID	549600	4206000	0	10
RECEPTOR	3665 GRID	549800	4206000	0	10
RECEPTOR	3666 GRID	550000	4206000	0	10
RECEPTOR	3667 GRID	550200	4206000	0	10
RECEPTOR	3668 GRID	550400	4206000	0	10
RECEPTOR	3669 GRID	550600	4206000	0	10
RECEPTOR	3670 GRID	550800	4206000	0	10
RECEPTOR	3671 GRID	551000	4206000	1.1	10
RECEPTOR	3672 GRID	551200	4206000	0	10
RECEPTOR	3673 GRID	551400	4206000	0	10
RECEPTOR	3674 GRID	551600	4206000	0	10
RECEPTOR	3675 GRID	551800	4206000	0	10
RECEPTOR	3676 GRID	552000	4206000	0	10
RECEPTOR	3677 GRID	552200	4206000	0	10
RECEPTOR	3678 GRID	552400	4206000	0	10
RECEPTOR	3679 GRID	552600	4206000	0.6	10
RECEPTOR	3680 GRID	552800	4206000	0	10
RECEPTOR	3681 GRID	553000	4206000	0	10
RECEPTOR	3682 GRID	553200	4206000	0	10
RECEPTOR	3683 GRID	553400	4206000	0	10
RECEPTOR	3684 GRID	553600	4206000	0	10
RECEPTOR	3685 GRID	553800	4206000	0	10
RECEPTOR	3686 GRID	554000	4206000	0	10
RECEPTOR	3687 GRID	554200	4206000	0	10
RECEPTOR	3688 GRID	554400	4206000	0	10
RECEPTOR	3689 GRID	554600	4206000	0	10
RECEPTOR	3690 GRID	554800	4206000	0	10
RECEPTOR	3691 GRID	555000	4206000	0	10
RECEPTOR	3692 GRID	555200	4206000	0	10
RECEPTOR	3693 GRID	555400	4206000	0	10
RECEPTOR	3694 GRID	555600	4206000	0.5	10
RECEPTOR	3695 GRID	555800	4206000	18.3	10
RECEPTOR	3696 GRID	556000	4206000	31.6	10
RECEPTOR	3697 GRID	556200	4206000	26	10
RECEPTOR	3698 GRID	556400	4206000	19.2	10
RECEPTOR	3699 GRID	556600	4206000	13.3	10
RECEPTOR	3700 GRID	556800	4206000	15.4	10
RECEPTOR	3701 GRID	557000	4206000	10.1	10
RECEPTOR	3702 GRID	557200	4206000	10.3	10
RECEPTOR	3703 GRID	557400	4206000	15.6	10
RECEPTOR	3704 GRID	557600	4206000	8.7	10
RECEPTOR	3705 GRID	557800	4206000	4	10
RECEPTOR	3706 GRID	558000	4206000	6.9	10
RECEPTOR	3707 GRID	558200	4206000	8.2	10
RECEPTOR	3708 GRID	558400	4206000	4.7	10
RECEPTOR	3709 GRID	558600	4206000	3.9	10
RECEPTOR	3710 GRID	558800	4206000	5.4	10
RECEPTOR	3711 GRID	559000	4206000	11.6	10
RECEPTOR	3712 GRID	559200	4206000	8.8	10
RECEPTOR	3713 GRID	559400	4206000	6.4	10
RECEPTOR	3714 GRID	559600	4206000	7.7	10
RECEPTOR	3715 GRID	559800	4206000	8.6	10
RECEPTOR	3716 GRID	560000	4206000	12.5	10

File: Cancer_MNTUG.SRC

RECEPTOR	3717 GRID	560200	4206000	17.2	10
RECEPTOR	3718 GRID	560400	4206000	31.4	10
RECEPTOR	3719 GRID	560600	4206000	31.5	10
RECEPTOR	3720 GRID	560800	4206000	50.9	10
RECEPTOR	3721 GRID	561000	4206000	79.8	10
RECEPTOR	3722 GRID	553800	4197250	1.2	10
RECEPTOR	3723 GRID	553850	4197250	7.76	10
RECEPTOR	3724 GRID	553900	4197250	7.52	10
RECEPTOR	3725 GRID	553950	4197250	14.48	10
RECEPTOR	3726 GRID	554000	4197250	13.22	10
RECEPTOR	3727 GRID	554050	4197250	38.54	10
RECEPTOR	3728 GRID	554100	4197250	67.1	10
RECEPTOR	3729 GRID	554150	4197250	74.36	10
RECEPTOR	3730 GRID	554200	4197250	80.55	10
RECEPTOR	3731 GRID	554250	4197250	74.15	10
RECEPTOR	3732 GRID	554300	4197250	77.64	10
RECEPTOR	3733 GRID	554350	4197250	92.05	10
RECEPTOR	3734 GRID	554400	4197250	80.35	10
RECEPTOR	3735 GRID	554450	4197250	54.76	10
RECEPTOR	3736 GRID	554500	4197250	13.66	10
RECEPTOR	3737 GRID	554550	4197250	9.67	10
RECEPTOR	3738 GRID	554600	4197250	7.91	10
RECEPTOR	3739 GRID	553800	4197300	1.18	10
RECEPTOR	3740 GRID	553850	4197300	18.96	10
RECEPTOR	3741 GRID	553900	4197300	30.97	10
RECEPTOR	3742 GRID	553950	4197300	25.99	10
RECEPTOR	3743 GRID	554000	4197300	35.32	10
RECEPTOR	3744 GRID	554050	4197300	52.71	10
RECEPTOR	3745 GRID	554100	4197300	65.84	10
RECEPTOR	3746 GRID	554150	4197300	48.85	10
RECEPTOR	3747 GRID	554200	4197300	54.07	10
RECEPTOR	3748 GRID	554250	4197300	54.35	10
RECEPTOR	3749 GRID	554300	4197300	64.01	10
RECEPTOR	3750 GRID	554350	4197300	66.48	10
RECEPTOR	3751 GRID	554400	4197300	59.88	10
RECEPTOR	3752 GRID	554450	4197300	66.68	10
RECEPTOR	3753 GRID	554500	4197300	16.29	10
RECEPTOR	3754 GRID	554550	4197300	9.62	10
RECEPTOR	3755 GRID	554600	4197300	8.08	10
RECEPTOR	3756 GRID	553750	4197350	1.15	10
RECEPTOR	3757 GRID	553800	4197350	3.36	10
RECEPTOR	3758 GRID	553850	4197350	19.73	10
RECEPTOR	3759 GRID	553900	4197350	38.01	10
RECEPTOR	3760 GRID	553950	4197350	44.83	10
RECEPTOR	3761 GRID	554000	4197350	55.77	10
RECEPTOR	3762 GRID	554050	4197350	61.64	10
RECEPTOR	3763 GRID	554100	4197350	56.79	10
RECEPTOR	3764 GRID	554150	4197350	32.21	10
RECEPTOR	3765 GRID	554200	4197350	32.62	10
RECEPTOR	3766 GRID	554250	4197350	38.04	10
RECEPTOR	3767 GRID	554300	4197350	53.98	10
RECEPTOR	3768 GRID	554350	4197350	51.86	10
RECEPTOR	3769 GRID	554400	4197350	41.81	10
RECEPTOR	3770 GRID	554450	4197350	52.71	10
RECEPTOR	3771 GRID	554500	4197350	29.66	10
RECEPTOR	3772 GRID	554550	4197350	6.92	10
RECEPTOR	3773 GRID	554600	4197350	6.24	10
RECEPTOR	3774 GRID	553550	4197400	2.63	10
RECEPTOR	3775 GRID	553600	4197400	1.12	10
RECEPTOR	3776 GRID	553650	4197400	1.14	10

File: Cancer_MNTUG.SRC

RECEPTOR	3777 GRID	553700	4197400	1.12	10
RECEPTOR	3778 GRID	553750	4197400	5.23	10
RECEPTOR	3779 GRID	553800	4197400	8.18	10
RECEPTOR	3780 GRID	553850	4197400	14.42	10
RECEPTOR	3781 GRID	553900	4197400	26.54	10
RECEPTOR	3782 GRID	553950	4197400	50.38	10
RECEPTOR	3783 GRID	554000	4197400	50.55	10
RECEPTOR	3784 GRID	554050	4197400	36.78	10
RECEPTOR	3785 GRID	554100	4197400	45.44	10
RECEPTOR	3786 GRID	554150	4197400	26.69	10
RECEPTOR	3787 GRID	554200	4197400	21.2	10
RECEPTOR	3788 GRID	554250	4197400	29.79	10
RECEPTOR	3789 GRID	554300	4197400	42.17	10
RECEPTOR	3790 GRID	554350	4197400	33.88	10
RECEPTOR	3791 GRID	554400	4197400	25.65	10
RECEPTOR	3792 GRID	554450	4197400	35.95	10
RECEPTOR	3793 GRID	554500	4197400	27.78	10
RECEPTOR	3794 GRID	554550	4197400	5.68	10
RECEPTOR	3795 GRID	554600	4197400	4.61	10
RECEPTOR	3796 GRID	553550	4197450	10.16	10
RECEPTOR	3797 GRID	553600	4197450	17.45	10
RECEPTOR	3798 GRID	553650	4197450	23	10
RECEPTOR	3799 GRID	553700	4197450	20.31	10
RECEPTOR	3800 GRID	553750	4197450	16.78	10
RECEPTOR	3801 GRID	553800	4197450	16.18	10
RECEPTOR	3802 GRID	553850	4197450	18.92	10
RECEPTOR	3803 GRID	553900	4197450	35.57	10
RECEPTOR	3804 GRID	553950	4197450	49.75	10
RECEPTOR	3805 GRID	554000	4197450	33.37	10
RECEPTOR	3806 GRID	554050	4197450	20.61	10
RECEPTOR	3807 GRID	554100	4197450	23.28	10
RECEPTOR	3808 GRID	554150	4197450	14.82	10
RECEPTOR	3809 GRID	554200	4197450	13.79	10
RECEPTOR	3810 GRID	554250	4197450	13.4	10
RECEPTOR	3811 GRID	554300	4197450	20.09	10
RECEPTOR	3812 GRID	554350	4197450	14.62	10
RECEPTOR	3813 GRID	554400	4197450	12.46	10
RECEPTOR	3814 GRID	554450	4197450	12.57	10
RECEPTOR	3815 GRID	554500	4197450	16.3	10
RECEPTOR	3816 GRID	554550	4197450	4.09	10
RECEPTOR	3817 GRID	554600	4197450	4.64	10
RECEPTOR	3818 GRID	556550	4197450	4.07	10
RECEPTOR	3819 GRID	556600	4197450	4.13	10
RECEPTOR	3820 GRID	553550	4197500	1.12	10
RECEPTOR	3821 GRID	553600	4197500	18.23	10
RECEPTOR	3822 GRID	553650	4197500	27.58	10
RECEPTOR	3823 GRID	553700	4197500	31.01	10
RECEPTOR	3824 GRID	553750	4197500	34.59	10
RECEPTOR	3825 GRID	553800	4197500	32.37	10
RECEPTOR	3826 GRID	553850	4197500	35.37	10
RECEPTOR	3827 GRID	553900	4197500	43.32	10
RECEPTOR	3828 GRID	553950	4197500	44.1	10
RECEPTOR	3829 GRID	554000	4197500	27.35	10
RECEPTOR	3830 GRID	554050	4197500	4.1	10
RECEPTOR	3831 GRID	554100	4197500	6.41	10
RECEPTOR	3832 GRID	554150	4197500	6.34	10
RECEPTOR	3833 GRID	554200	4197500	7.24	10
RECEPTOR	3834 GRID	554250	4197500	5.35	10
RECEPTOR	3835 GRID	554300	4197500	2.92	10
RECEPTOR	3836 GRID	554350	4197500	3.7	10

File: Cancer_MNTUG.SRC

RECEPTOR	3837 GRID	554400	4197500	4.48	10
RECEPTOR	3838 GRID	554450	4197500	3.43	10
RECEPTOR	3839 GRID	554500	4197500	3.3	10
RECEPTOR	3840 GRID	554550	4197500	3.5	10
RECEPTOR	3841 GRID	554600	4197500	3.77	10
RECEPTOR	3842 GRID	556400	4197500	3.15	10
RECEPTOR	3843 GRID	556450	4197500	3.13	10
RECEPTOR	3844 GRID	556500	4197500	3.43	10
RECEPTOR	3845 GRID	556550	4197500	3.68	10
RECEPTOR	3846 GRID	556600	4197500	3.64	10
RECEPTOR	3847 GRID	553550	4197550	1.11	10
RECEPTOR	3848 GRID	553600	4197550	17.66	10
RECEPTOR	3849 GRID	553650	4197550	23.7	10
RECEPTOR	3850 GRID	553700	4197550	34.6	10
RECEPTOR	3851 GRID	553750	4197550	40.31	10
RECEPTOR	3852 GRID	553800	4197550	45.01	10
RECEPTOR	3853 GRID	553850	4197550	49.18	10
RECEPTOR	3854 GRID	553900	4197550	51.62	10
RECEPTOR	3855 GRID	553950	4197550	38.55	10
RECEPTOR	3856 GRID	554000	4197550	21.68	10
RECEPTOR	3857 GRID	554050	4197550	12.71	10
RECEPTOR	3858 GRID	554100	4197550	6.17	10
RECEPTOR	3859 GRID	554150	4197550	4.48	10
RECEPTOR	3860 GRID	554200	4197550	3.84	10
RECEPTOR	3861 GRID	554250	4197550	3.33	10
RECEPTOR	3862 GRID	554300	4197550	3.06	10
RECEPTOR	3863 GRID	554350	4197550	3.02	10
RECEPTOR	3864 GRID	554400	4197550	2.8	10
RECEPTOR	3865 GRID	554450	4197550	3.24	10
RECEPTOR	3866 GRID	554500	4197550	3.57	10
RECEPTOR	3867 GRID	554550	4197550	3.68	10
RECEPTOR	3868 GRID	554600	4197550	3.92	10
RECEPTOR	3869 GRID	556350	4197550	3.41	10
RECEPTOR	3870 GRID	556400	4197550	3.35	10
RECEPTOR	3871 GRID	556450	4197550	3.35	10
RECEPTOR	3872 GRID	556500	4197550	3.51	10
RECEPTOR	3873 GRID	556550	4197550	3.86	10
RECEPTOR	3874 GRID	556600	4197550	3.66	10
RECEPTOR	3875 GRID	553550	4197600	1.77	10
RECEPTOR	3876 GRID	553600	4197600	19.94	10
RECEPTOR	3877 GRID	553650	4197600	26.94	10
RECEPTOR	3878 GRID	553700	4197600	40.24	10
RECEPTOR	3879 GRID	553750	4197600	46.91	10
RECEPTOR	3880 GRID	553800	4197600	40.18	10
RECEPTOR	3881 GRID	553850	4197600	40.75	10
RECEPTOR	3882 GRID	553900	4197600	35.86	10
RECEPTOR	3883 GRID	553950	4197600	33.5	10
RECEPTOR	3884 GRID	554000	4197600	13.8	10
RECEPTOR	3885 GRID	554050	4197600	6.99	10
RECEPTOR	3886 GRID	554100	4197600	5.03	10
RECEPTOR	3887 GRID	554150	4197600	4.04	10
RECEPTOR	3888 GRID	554200	4197600	3.72	10
RECEPTOR	3889 GRID	554250	4197600	3.57	10
RECEPTOR	3890 GRID	554300	4197600	2.89	10
RECEPTOR	3891 GRID	554350	4197600	2.79	10
RECEPTOR	3892 GRID	554400	4197600	2.82	10
RECEPTOR	3893 GRID	554450	4197600	2.99	10
RECEPTOR	3894 GRID	554500	4197600	3.73	10
RECEPTOR	3895 GRID	554550	4197600	3.8	10
RECEPTOR	3896 GRID	554600	4197600	3.68	10

File: Cancer_MNTUG.SRC

RECEPTOR	3897 GRID	556300	4197600	3.7	10
RECEPTOR	3898 GRID	556350	4197600	3.68	10
RECEPTOR	3899 GRID	556400	4197600	3.71	10
RECEPTOR	3900 GRID	556450	4197600	3.61	10
RECEPTOR	3901 GRID	556500	4197600	3.66	10
RECEPTOR	3902 GRID	556550	4197600	4.28	10
RECEPTOR	3903 GRID	556600	4197600	3.83	10
RECEPTOR	3904 GRID	553550	4197650	1.14	10
RECEPTOR	3905 GRID	553600	4197650	13.97	10
RECEPTOR	3906 GRID	553650	4197650	21.75	10
RECEPTOR	3907 GRID	553700	4197650	34.73	10
RECEPTOR	3908 GRID	553750	4197650	46.58	10
RECEPTOR	3909 GRID	553800	4197650	33.1	10
RECEPTOR	3910 GRID	553850	4197650	31.65	10
RECEPTOR	3911 GRID	553900	4197650	24.14	10
RECEPTOR	3912 GRID	553950	4197650	23.02	10
RECEPTOR	3913 GRID	554000	4197650	9.11	10
RECEPTOR	3914 GRID	554050	4197650	4.95	10
RECEPTOR	3915 GRID	554100	4197650	4.11	10
RECEPTOR	3916 GRID	554150	4197650	3.93	10
RECEPTOR	3917 GRID	554200	4197650	3.69	10
RECEPTOR	3918 GRID	554250	4197650	3.16	10
RECEPTOR	3919 GRID	554300	4197650	2.7	10
RECEPTOR	3920 GRID	554350	4197650	2.82	10
RECEPTOR	3921 GRID	554400	4197650	2.89	10
RECEPTOR	3922 GRID	554450	4197650	3.02	10
RECEPTOR	3923 GRID	554500	4197650	4.29	10
RECEPTOR	3924 GRID	554550	4197650	4.1	10
RECEPTOR	3925 GRID	554600	4197650	3.69	10
RECEPTOR	3926 GRID	556200	4197650	3.62	10
RECEPTOR	3927 GRID	556250	4197650	4.77	10
RECEPTOR	3928 GRID	556300	4197650	4	10
RECEPTOR	3929 GRID	556350	4197650	3.86	10
RECEPTOR	3930 GRID	556400	4197650	3.78	10
RECEPTOR	3931 GRID	556450	4197650	3.76	10
RECEPTOR	3932 GRID	556500	4197650	3.87	10
RECEPTOR	3933 GRID	556550	4197650	4.18	10
RECEPTOR	3934 GRID	556600	4197650	3.83	10
RECEPTOR	3935 GRID	553500	4197700	1.09	10
RECEPTOR	3936 GRID	553550	4197700	11.38	10
RECEPTOR	3937 GRID	553600	4197700	25.53	10
RECEPTOR	3938 GRID	553650	4197700	30.57	10
RECEPTOR	3939 GRID	553700	4197700	36.9	10
RECEPTOR	3940 GRID	553750	4197700	45.12	10
RECEPTOR	3941 GRID	553800	4197700	28.79	10
RECEPTOR	3942 GRID	553850	4197700	24.18	10
RECEPTOR	3943 GRID	553900	4197700	19.66	10
RECEPTOR	3944 GRID	553950	4197700	12.39	10
RECEPTOR	3945 GRID	554000	4197700	6.59	10
RECEPTOR	3946 GRID	554050	4197700	4.76	10
RECEPTOR	3947 GRID	554100	4197700	3.98	10
RECEPTOR	3948 GRID	554150	4197700	3.86	10
RECEPTOR	3949 GRID	554200	4197700	2.94	10
RECEPTOR	3950 GRID	554250	4197700	2.82	10
RECEPTOR	3951 GRID	554300	4197700	2.68	10
RECEPTOR	3952 GRID	554350	4197700	2.61	10
RECEPTOR	3953 GRID	554400	4197700	2.55	10
RECEPTOR	3954 GRID	554450	4197700	2.28	10
RECEPTOR	3955 GRID	554500	4197700	2.57	10
RECEPTOR	3956 GRID	554550	4197700	2.74	10

File: Cancer_MNTUG.SRC

RECEPTOR	3957 GRID	554600	4197700	2.48	10
RECEPTOR	3958 GRID	556200	4197700	3.72	10
RECEPTOR	3959 GRID	556250	4197700	3.86	10
RECEPTOR	3960 GRID	556300	4197700	3.83	10
RECEPTOR	3961 GRID	556350	4197700	3.77	10
RECEPTOR	3962 GRID	556400	4197700	3.61	10
RECEPTOR	3963 GRID	556450	4197700	3.64	10
RECEPTOR	3964 GRID	556500	4197700	3.75	10
RECEPTOR	3965 GRID	556550	4197700	3.95	10
RECEPTOR	3966 GRID	556600	4197700	4.09	10
RECEPTOR	3967 GRID	553450	4197750	1.09	10
RECEPTOR	3968 GRID	553500	4197750	13.47	10
RECEPTOR	3969 GRID	553550	4197750	16.09	10
RECEPTOR	3970 GRID	553600	4197750	31.57	10
RECEPTOR	3971 GRID	553650	4197750	44.22	10
RECEPTOR	3972 GRID	553700	4197750	55.71	10
RECEPTOR	3973 GRID	553750	4197750	48.27	10
RECEPTOR	3974 GRID	553800	4197750	25.44	10
RECEPTOR	3975 GRID	553850	4197750	19.74	10
RECEPTOR	3976 GRID	553900	4197750	15.76	10
RECEPTOR	3977 GRID	553950	4197750	10.31	10
RECEPTOR	3978 GRID	554000	4197750	5.91	10
RECEPTOR	3979 GRID	554050	4197750	4.78	10
RECEPTOR	3980 GRID	554100	4197750	3.83	10
RECEPTOR	3981 GRID	554150	4197750	3.77	10
RECEPTOR	3982 GRID	554200	4197750	3.22	10
RECEPTOR	3983 GRID	554250	4197750	2.7	10
RECEPTOR	3984 GRID	554300	4197750	2.83	10
RECEPTOR	3985 GRID	554350	4197750	2.84	10
RECEPTOR	3986 GRID	554400	4197750	2.87	10
RECEPTOR	3987 GRID	554450	4197750	2.82	10
RECEPTOR	3988 GRID	554500	4197750	2.67	10
RECEPTOR	3989 GRID	554550	4197750	2.47	10
RECEPTOR	3990 GRID	554600	4197750	2.75	10
RECEPTOR	3991 GRID	556050	4197750	3.58	10
RECEPTOR	3992 GRID	556100	4197750	4.11	10
RECEPTOR	3993 GRID	556150	4197750	3.91	10
RECEPTOR	3994 GRID	556200	4197750	4.42	10
RECEPTOR	3995 GRID	556250	4197750	3.86	10
RECEPTOR	3996 GRID	556300	4197750	4.44	10
RECEPTOR	3997 GRID	556350	4197750	4.34	10
RECEPTOR	3998 GRID	556400	4197750	4.26	10
RECEPTOR	3999 GRID	556450	4197750	4.33	10
RECEPTOR	4000 GRID	556500	4197750	4.39	10
RECEPTOR	4001 GRID	556550	4197750	4.59	10
RECEPTOR	4002 GRID	556600	4197750	4.57	10
RECEPTOR	4003 GRID	553400	4197800	1.13	10
RECEPTOR	4004 GRID	553450	4197800	11.37	10
RECEPTOR	4005 GRID	553500	4197800	20.06	10
RECEPTOR	4006 GRID	553550	4197800	30.45	10
RECEPTOR	4007 GRID	553600	4197800	39.3	10
RECEPTOR	4008 GRID	553650	4197800	59.79	10
RECEPTOR	4009 GRID	553700	4197800	62.66	10
RECEPTOR	4010 GRID	553750	4197800	43.34	10
RECEPTOR	4011 GRID	553800	4197800	25.61	10
RECEPTOR	4012 GRID	553850	4197800	17.85	10
RECEPTOR	4013 GRID	553900	4197800	12.45	10
RECEPTOR	4014 GRID	553950	4197800	8.61	10
RECEPTOR	4015 GRID	554000	4197800	6.03	10
RECEPTOR	4016 GRID	554050	4197800	4.87	10

File: Cancer_MNTUG.SRC

RECEPTOR	4017 GRID	554100	4197800	3.06	10
RECEPTOR	4018 GRID	554150	4197800	3.87	10
RECEPTOR	4019 GRID	554200	4197800	3.5	10
RECEPTOR	4020 GRID	554250	4197800	2.99	10
RECEPTOR	4021 GRID	554300	4197800	2.82	10
RECEPTOR	4022 GRID	554350	4197800	2.88	10
RECEPTOR	4023 GRID	554400	4197800	2.74	10
RECEPTOR	4024 GRID	554450	4197800	2.66	10
RECEPTOR	4025 GRID	554500	4197800	2.77	10
RECEPTOR	4026 GRID	554550	4197800	2.74	10
RECEPTOR	4027 GRID	554600	4197800	2.77	10
RECEPTOR	4028 GRID	555950	4197800	3.56	10
RECEPTOR	4029 GRID	556000	4197800	3.62	10
RECEPTOR	4030 GRID	556050	4197800	4.11	10
RECEPTOR	4031 GRID	556100	4197800	4.27	10
RECEPTOR	4032 GRID	556150	4197800	4	10
RECEPTOR	4033 GRID	556200	4197800	4.54	10
RECEPTOR	4034 GRID	556250	4197800	4.05	10
RECEPTOR	4035 GRID	556300	4197800	4.67	10
RECEPTOR	4036 GRID	556350	4197800	4.74	10
RECEPTOR	4037 GRID	556400	4197800	4.84	10
RECEPTOR	4038 GRID	556450	4197800	5.15	10
RECEPTOR	4039 GRID	556500	4197800	5.06	10
RECEPTOR	4040 GRID	556550	4197800	5.13	10
RECEPTOR	4041 GRID	556600	4197800	4.77	10
RECEPTOR	4042 GRID	553350	4197850	1.11	10
RECEPTOR	4043 GRID	553400	4197850	7.07	10
RECEPTOR	4044 GRID	553450	4197850	10.79	10
RECEPTOR	4045 GRID	553500	4197850	26.01	10
RECEPTOR	4046 GRID	553550	4197850	38.65	10
RECEPTOR	4047 GRID	553600	4197850	46.79	10
RECEPTOR	4048 GRID	553650	4197850	56.03	10
RECEPTOR	4049 GRID	553700	4197850	52	10
RECEPTOR	4050 GRID	553750	4197850	40.9	10
RECEPTOR	4051 GRID	553800	4197850	28.64	10
RECEPTOR	4052 GRID	553850	4197850	16.39	10
RECEPTOR	4053 GRID	553900	4197850	11.26	10
RECEPTOR	4054 GRID	553950	4197850	8.15	10
RECEPTOR	4055 GRID	554000	4197850	6.01	10
RECEPTOR	4056 GRID	554050	4197850	4.84	10
RECEPTOR	4057 GRID	554100	4197850	2.83	10
RECEPTOR	4058 GRID	554150	4197850	3.8	10
RECEPTOR	4059 GRID	554200	4197850	3.55	10
RECEPTOR	4060 GRID	554250	4197850	3.19	10
RECEPTOR	4061 GRID	554300	4197850	2.87	10
RECEPTOR	4062 GRID	554350	4197850	2.6	10
RECEPTOR	4063 GRID	554400	4197850	2.96	10
RECEPTOR	4064 GRID	554450	4197850	3.01	10
RECEPTOR	4065 GRID	554500	4197850	3.02	10
RECEPTOR	4066 GRID	554550	4197850	2.75	10
RECEPTOR	4067 GRID	554600	4197850	2.87	10
RECEPTOR	4068 GRID	555850	4197850	3.23	10
RECEPTOR	4069 GRID	555900	4197850	2.95	10
RECEPTOR	4070 GRID	555950	4197850	3.55	10
RECEPTOR	4071 GRID	556000	4197850	3.81	10
RECEPTOR	4072 GRID	556050	4197850	4.01	10
RECEPTOR	4073 GRID	556100	4197850	4.31	10
RECEPTOR	4074 GRID	556150	4197850	4.29	10
RECEPTOR	4075 GRID	556200	4197850	4.76	10
RECEPTOR	4076 GRID	556250	4197850	4.21	10

File: Cancer_MNTUG.SRC

RECEPTOR	4077 GRID	556300	4197850	4.88	10
RECEPTOR	4078 GRID	556350	4197850	5.44	10
RECEPTOR	4079 GRID	556400	4197850	5.4	10
RECEPTOR	4080 GRID	556450	4197850	5.22	10
RECEPTOR	4081 GRID	556500	4197850	5.12	10
RECEPTOR	4082 GRID	556550	4197850	5.11	10
RECEPTOR	4083 GRID	556600	4197850	4.99	10
RECEPTOR	4084 GRID	553300	4197900	1.07	10
RECEPTOR	4085 GRID	553350	4197900	17.54	10
RECEPTOR	4086 GRID	553400	4197900	16.82	10
RECEPTOR	4087 GRID	553450	4197900	12.37	10
RECEPTOR	4088 GRID	553500	4197900	15.85	10
RECEPTOR	4089 GRID	553550	4197900	21.27	10
RECEPTOR	4090 GRID	553600	4197900	32.8	10
RECEPTOR	4091 GRID	553650	4197900	45.89	10
RECEPTOR	4092 GRID	553700	4197900	44.8	10
RECEPTOR	4093 GRID	553750	4197900	39.66	10
RECEPTOR	4094 GRID	553800	4197900	24.33	10
RECEPTOR	4095 GRID	553850	4197900	18.69	10
RECEPTOR	4096 GRID	553900	4197900	14.53	10
RECEPTOR	4097 GRID	553950	4197900	11.73	10
RECEPTOR	4098 GRID	554000	4197900	8.8	10
RECEPTOR	4099 GRID	554050	4197900	5.06	10
RECEPTOR	4100 GRID	554100	4197900	4.49	10
RECEPTOR	4101 GRID	554150	4197900	3.87	10
RECEPTOR	4102 GRID	555750	4197900	3.08	10
RECEPTOR	4103 GRID	555800	4197900	3.11	10
RECEPTOR	4104 GRID	555850	4197900	3.7	10
RECEPTOR	4105 GRID	555900	4197900	3.27	10
RECEPTOR	4106 GRID	555950	4197900	3.91	10
RECEPTOR	4107 GRID	556000	4197900	3.91	10
RECEPTOR	4108 GRID	556050	4197900	4.07	10
RECEPTOR	4109 GRID	556100	4197900	4.64	10
RECEPTOR	4110 GRID	556150	4197900	4.35	10
RECEPTOR	4111 GRID	556200	4197900	4.99	10
RECEPTOR	4112 GRID	556250	4197900	4.33	10
RECEPTOR	4113 GRID	556300	4197900	5.51	10
RECEPTOR	4114 GRID	556350	4197900	5.12	10
RECEPTOR	4115 GRID	556400	4197900	5.42	10
RECEPTOR	4116 GRID	556450	4197900	5.28	10
RECEPTOR	4117 GRID	556500	4197900	5.09	10
RECEPTOR	4118 GRID	556550	4197900	5.23	10
RECEPTOR	4119 GRID	556600	4197900	5.16	10
RECEPTOR	4120 GRID	553300	4197950	11.69	10
RECEPTOR	4121 GRID	553350	4197950	28.43	10
RECEPTOR	4122 GRID	553400	4197950	29.39	10
RECEPTOR	4123 GRID	553450	4197950	20.81	10
RECEPTOR	4124 GRID	553500	4197950	21.15	10
RECEPTOR	4125 GRID	553550	4197950	23.83	10
RECEPTOR	4126 GRID	553600	4197950	38.27	10
RECEPTOR	4127 GRID	553650	4197950	42.22	10
RECEPTOR	4128 GRID	553700	4197950	32.1	10
RECEPTOR	4129 GRID	553750	4197950	35.08	10
RECEPTOR	4130 GRID	553800	4197950	21.01	10
RECEPTOR	4131 GRID	553850	4197950	16.86	10
RECEPTOR	4132 GRID	553900	4197950	22.16	10
RECEPTOR	4133 GRID	553950	4197950	17.14	10
RECEPTOR	4134 GRID	554000	4197950	11.91	10
RECEPTOR	4135 GRID	554050	4197950	8.09	10
RECEPTOR	4136 GRID	554100	4197950	4.27	10

File: Cancer_MNTUG.SRC

RECEPTOR	4137 GRID	554150	4197950	3.54	10
RECEPTOR	4138 GRID	555600	4197950	3.4	10
RECEPTOR	4139 GRID	555650	4197950	3.37	10
RECEPTOR	4140 GRID	555700	4197950	3.38	10
RECEPTOR	4141 GRID	555750	4197950	3.52	10
RECEPTOR	4142 GRID	555800	4197950	3.3	10
RECEPTOR	4143 GRID	555850	4197950	3.17	10
RECEPTOR	4144 GRID	555900	4197950	3.29	10
RECEPTOR	4145 GRID	555950	4197950	3.95	10
RECEPTOR	4146 GRID	556000	4197950	3.91	10
RECEPTOR	4147 GRID	556050	4197950	4.54	10
RECEPTOR	4148 GRID	556100	4197950	4.82	10
RECEPTOR	4149 GRID	556150	4197950	4.41	10
RECEPTOR	4150 GRID	556200	4197950	5.17	10
RECEPTOR	4151 GRID	556250	4197950	4.44	10
RECEPTOR	4152 GRID	556300	4197950	5.42	10
RECEPTOR	4153 GRID	556350	4197950	5.31	10
RECEPTOR	4154 GRID	556400	4197950	5.43	10
RECEPTOR	4155 GRID	556450	4197950	5.68	10
RECEPTOR	4156 GRID	556500	4197950	5.24	10
RECEPTOR	4157 GRID	556550	4197950	5.35	10
RECEPTOR	4158 GRID	556600	4197950	5.35	10
RECEPTOR	4159 GRID	553200	4198000	1.08	10
RECEPTOR	4160 GRID	553250	4198000	4.91	10
RECEPTOR	4161 GRID	553300	4198000	13.8	10
RECEPTOR	4162 GRID	553350	4198000	23.38	10
RECEPTOR	4163 GRID	553400	4198000	33	10
RECEPTOR	4164 GRID	553450	4198000	33.83	10
RECEPTOR	4165 GRID	553500	4198000	32.09	10
RECEPTOR	4166 GRID	553550	4198000	33.23	10
RECEPTOR	4167 GRID	553600	4198000	39.6	10
RECEPTOR	4168 GRID	553650	4198000	36.7	10
RECEPTOR	4169 GRID	553700	4198000	27.73	10
RECEPTOR	4170 GRID	553750	4198000	18.76	10
RECEPTOR	4171 GRID	553800	4198000	12.93	10
RECEPTOR	4172 GRID	553850	4198000	11.69	10
RECEPTOR	4173 GRID	553900	4198000	16.44	10
RECEPTOR	4174 GRID	553950	4198000	13.49	10
RECEPTOR	4175 GRID	554000	4198000	8.12	10
RECEPTOR	4176 GRID	554050	4198000	4.68	10
RECEPTOR	4177 GRID	554100	4198000	4.06	10
RECEPTOR	4178 GRID	555450	4198000	3.54	10
RECEPTOR	4179 GRID	555500	4198000	3.27	10
RECEPTOR	4180 GRID	555550	4198000	3.04	10
RECEPTOR	4181 GRID	555600	4198000	3.62	10
RECEPTOR	4182 GRID	555650	4198000	3.46	10
RECEPTOR	4183 GRID	555700	4198000	3.64	10
RECEPTOR	4184 GRID	555750	4198000	3.58	10
RECEPTOR	4185 GRID	555800	4198000	3.49	10
RECEPTOR	4186 GRID	555850	4198000	3.45	10
RECEPTOR	4187 GRID	555900	4198000	3.39	10
RECEPTOR	4188 GRID	555950	4198000	3.91	10
RECEPTOR	4189 GRID	556000	4198000	4.13	10
RECEPTOR	4190 GRID	556050	4198000	4.28	10
RECEPTOR	4191 GRID	556100	4198000	4.77	10
RECEPTOR	4192 GRID	556150	4198000	4.48	10
RECEPTOR	4193 GRID	556200	4198000	4.95	10
RECEPTOR	4194 GRID	556250	4198000	4.59	10
RECEPTOR	4195 GRID	556300	4198000	5.86	10
RECEPTOR	4196 GRID	556350	4198000	6.16	10

File: Cancer_MNTUG.SRC

RECEPTOR	4197 GRID	556400	4198000	6.03	10
RECEPTOR	4198 GRID	556450	4198000	5.64	10
RECEPTOR	4199 GRID	556500	4198000	5.46	10
RECEPTOR	4200 GRID	556550	4198000	5.78	10
RECEPTOR	4201 GRID	556600	4198000	5.62	10
RECEPTOR	4202 GRID	553150	4198050	1.02	10
RECEPTOR	4203 GRID	553200	4198050	7.62	10
RECEPTOR	4204 GRID	553250	4198050	11.97	10
RECEPTOR	4205 GRID	553300	4198050	16.78	10
RECEPTOR	4206 GRID	553350	4198050	24.67	10
RECEPTOR	4207 GRID	553400	4198050	36.44	10
RECEPTOR	4208 GRID	553450	4198050	44.99	10
RECEPTOR	4209 GRID	553500	4198050	45.92	10
RECEPTOR	4210 GRID	553550	4198050	41.11	10
RECEPTOR	4211 GRID	553600	4198050	42.33	10
RECEPTOR	4212 GRID	553650	4198050	41.42	10
RECEPTOR	4213 GRID	553700	4198050	29.65	10
RECEPTOR	4214 GRID	553750	4198050	18.19	10
RECEPTOR	4215 GRID	553800	4198050	9.95	10
RECEPTOR	4216 GRID	553850	4198050	8.1	10
RECEPTOR	4217 GRID	553900	4198050	5.42	10
RECEPTOR	4218 GRID	553950	4198050	4.37	10
RECEPTOR	4219 GRID	554000	4198050	3.91	10
RECEPTOR	4220 GRID	555450	4198050	3.69	10
RECEPTOR	4221 GRID	555500	4198050	3.61	10
RECEPTOR	4222 GRID	555550	4198050	3.16	10
RECEPTOR	4223 GRID	555600	4198050	3.59	10
RECEPTOR	4224 GRID	555650	4198050	3.6	10
RECEPTOR	4225 GRID	555700	4198050	3.76	10
RECEPTOR	4226 GRID	555750	4198050	3.8	10
RECEPTOR	4227 GRID	555800	4198050	3.76	10
RECEPTOR	4228 GRID	555850	4198050	3.76	10
RECEPTOR	4229 GRID	555900	4198050	3.57	10
RECEPTOR	4230 GRID	555950	4198050	4.03	10
RECEPTOR	4231 GRID	556000	4198050	4.29	10
RECEPTOR	4232 GRID	556050	4198050	4.44	10
RECEPTOR	4233 GRID	556100	4198050	4.67	10
RECEPTOR	4234 GRID	556150	4198050	4.68	10
RECEPTOR	4235 GRID	556200	4198050	5.04	10
RECEPTOR	4236 GRID	556250	4198050	4.74	10
RECEPTOR	4237 GRID	556300	4198050	5.5	10
RECEPTOR	4238 GRID	556350	4198050	5.91	10
RECEPTOR	4239 GRID	556400	4198050	6.08	10
RECEPTOR	4240 GRID	556450	4198050	5.88	10
RECEPTOR	4241 GRID	556500	4198050	5.7	10
RECEPTOR	4242 GRID	556550	4198050	5.83	10
RECEPTOR	4243 GRID	556600	4198050	5.79	10
RECEPTOR	4244 GRID	553100	4198100	1.26	10
RECEPTOR	4245 GRID	553150	4198100	10.82	10
RECEPTOR	4246 GRID	553200	4198100	11.47	10
RECEPTOR	4247 GRID	553250	4198100	16.26	10
RECEPTOR	4248 GRID	553300	4198100	23.5	10
RECEPTOR	4249 GRID	553350	4198100	31.7	10
RECEPTOR	4250 GRID	553400	4198100	43.03	10
RECEPTOR	4251 GRID	553450	4198100	40.59	10
RECEPTOR	4252 GRID	553500	4198100	37.02	10
RECEPTOR	4253 GRID	553550	4198100	28.06	10
RECEPTOR	4254 GRID	553600	4198100	30.82	10
RECEPTOR	4255 GRID	553650	4198100	38.33	10
RECEPTOR	4256 GRID	553700	4198100	27.66	10

File: Cancer_MNTUG.SRC

RECEPTOR	4257 GRID	553750	4198100	17.01	10
RECEPTOR	4258 GRID	555450	4198100	3.55	10
RECEPTOR	4259 GRID	555500	4198100	3.56	10
RECEPTOR	4260 GRID	555550	4198100	3.2	10
RECEPTOR	4261 GRID	555600	4198100	3.74	10
RECEPTOR	4262 GRID	555650	4198100	3.85	10
RECEPTOR	4263 GRID	555700	4198100	3.8	10
RECEPTOR	4264 GRID	555750	4198100	3.92	10
RECEPTOR	4265 GRID	555800	4198100	3.88	10
RECEPTOR	4266 GRID	555850	4198100	3.94	10
RECEPTOR	4267 GRID	555900	4198100	3.69	10
RECEPTOR	4268 GRID	555950	4198100	4.41	10
RECEPTOR	4269 GRID	556000	4198100	4.44	10
RECEPTOR	4270 GRID	556050	4198100	4.67	10
RECEPTOR	4271 GRID	556100	4198100	4.84	10
RECEPTOR	4272 GRID	556150	4198100	4.76	10
RECEPTOR	4273 GRID	556200	4198100	5.11	10
RECEPTOR	4274 GRID	556250	4198100	4.9	10
RECEPTOR	4275 GRID	556300	4198100	5.91	10
RECEPTOR	4276 GRID	556350	4198100	5.77	10
RECEPTOR	4277 GRID	556400	4198100	5.99	10
RECEPTOR	4278 GRID	556450	4198100	6.24	10
RECEPTOR	4279 GRID	556500	4198100	6.1	10
RECEPTOR	4280 GRID	556550	4198100	6.11	10
RECEPTOR	4281 GRID	556600	4198100	6.13	10
RECEPTOR	4282 GRID	553150	4198150	18.9	10
RECEPTOR	4283 GRID	553200	4198150	19.1	10
RECEPTOR	4284 GRID	553250	4198150	21.75	10
RECEPTOR	4285 GRID	553300	4198150	36.02	10
RECEPTOR	4286 GRID	553350	4198150	34.84	10
RECEPTOR	4287 GRID	553400	4198150	35.55	10
RECEPTOR	4288 GRID	553450	4198150	28.07	10
RECEPTOR	4289 GRID	553500	4198150	22.81	10
RECEPTOR	4290 GRID	553550	4198150	18.08	10
RECEPTOR	4291 GRID	553600	4198150	17.82	10
RECEPTOR	4292 GRID	553650	4198150	26.97	10
RECEPTOR	4293 GRID	553700	4198150	25.39	10
RECEPTOR	4294 GRID	553750	4198150	12.29	10
RECEPTOR	4295 GRID	555450	4198150	4.03	10
RECEPTOR	4296 GRID	555500	4198150	3.84	10
RECEPTOR	4297 GRID	555550	4198150	3.26	10
RECEPTOR	4298 GRID	555600	4198150	3.8	10
RECEPTOR	4299 GRID	555650	4198150	3.94	10
RECEPTOR	4300 GRID	555700	4198150	4.03	10
RECEPTOR	4301 GRID	555750	4198150	4.27	10
RECEPTOR	4302 GRID	555800	4198150	4.06	10
RECEPTOR	4303 GRID	555850	4198150	4.45	10
RECEPTOR	4304 GRID	555900	4198150	3.97	10
RECEPTOR	4305 GRID	555950	4198150	4.44	10
RECEPTOR	4306 GRID	556000	4198150	4.68	10
RECEPTOR	4307 GRID	556050	4198150	4.76	10
RECEPTOR	4308 GRID	556100	4198150	4.82	10
RECEPTOR	4309 GRID	556150	4198150	4.91	10
RECEPTOR	4310 GRID	556200	4198150	5.27	10
RECEPTOR	4311 GRID	556250	4198150	5.09	10
RECEPTOR	4312 GRID	556300	4198150	6.03	10
RECEPTOR	4313 GRID	556350	4198150	5.87	10
RECEPTOR	4314 GRID	556400	4198150	6.13	10
RECEPTOR	4315 GRID	556450	4198150	6.5	10
RECEPTOR	4316 GRID	556500	4198150	6.57	10

File: Cancer_MNTUG.SRC

RECEPTOR	4317 GRID	556550	4198150	6.62	10
RECEPTOR	4318 GRID	556600	4198150	6.44	10
RECEPTOR	4319 GRID	553150	4198200	26.51	10
RECEPTOR	4320 GRID	553200	4198200	28.55	10
RECEPTOR	4321 GRID	553250	4198200	32.25	10
RECEPTOR	4322 GRID	553300	4198200	41.7	10
RECEPTOR	4323 GRID	553350	4198200	38.28	10
RECEPTOR	4324 GRID	553400	4198200	27.13	10
RECEPTOR	4325 GRID	553450	4198200	24.76	10
RECEPTOR	4326 GRID	553500	4198200	15.23	10
RECEPTOR	4327 GRID	553900	4198200	3.21	10
RECEPTOR	4328 GRID	553950	4198200	2.92	10
RECEPTOR	4329 GRID	555450	4198200	3.9	10
RECEPTOR	4330 GRID	555500	4198200	3.89	10
RECEPTOR	4331 GRID	555550	4198200	3.47	10
RECEPTOR	4332 GRID	555600	4198200	4.05	10
RECEPTOR	4333 GRID	555650	4198200	4.14	10
RECEPTOR	4334 GRID	555700	4198200	4.14	10
RECEPTOR	4335 GRID	555750	4198200	4.34	10
RECEPTOR	4336 GRID	555800	4198200	4.26	10
RECEPTOR	4337 GRID	555850	4198200	4.51	10
RECEPTOR	4338 GRID	555900	4198200	4.13	10
RECEPTOR	4339 GRID	555950	4198200	4.6	10
RECEPTOR	4340 GRID	556000	4198200	4.74	10
RECEPTOR	4341 GRID	556050	4198200	4.91	10
RECEPTOR	4342 GRID	556100	4198200	5.28	10
RECEPTOR	4343 GRID	556150	4198200	5.07	10
RECEPTOR	4344 GRID	556200	4198200	5.41	10
RECEPTOR	4345 GRID	556250	4198200	5.28	10
RECEPTOR	4346 GRID	556300	4198200	5.97	10
RECEPTOR	4347 GRID	556350	4198200	6.06	10
RECEPTOR	4348 GRID	556400	4198200	6.64	10
RECEPTOR	4349 GRID	556450	4198200	6.54	10
RECEPTOR	4350 GRID	556500	4198200	6.74	10
RECEPTOR	4351 GRID	556550	4198200	6.73	10
RECEPTOR	4352 GRID	556600	4198200	6.73	10
RECEPTOR	4353 GRID	553250	4198250	42.29	10
RECEPTOR	4354 GRID	553300	4198250	46.94	10
RECEPTOR	4355 GRID	553350	4198250	35.34	10
RECEPTOR	4356 GRID	553800	4198250	4.89	10
RECEPTOR	4357 GRID	553850	4198250	4.28	10
RECEPTOR	4358 GRID	553900	4198250	3.58	10
RECEPTOR	4359 GRID	553950	4198250	2.78	10
RECEPTOR	4360 GRID	554000	4198250	3.12	10
RECEPTOR	4361 GRID	555450	4198250	3.94	10
RECEPTOR	4362 GRID	555500	4198250	4.08	10
RECEPTOR	4363 GRID	555550	4198250	3.77	10
RECEPTOR	4364 GRID	555600	4198250	4.24	10
RECEPTOR	4365 GRID	555650	4198250	4.3	10
RECEPTOR	4366 GRID	555700	4198250	4.29	10
RECEPTOR	4367 GRID	555750	4198250	4.42	10
RECEPTOR	4368 GRID	555800	4198250	4.34	10
RECEPTOR	4369 GRID	555850	4198250	4.62	10
RECEPTOR	4370 GRID	555900	4198250	4.39	10
RECEPTOR	4371 GRID	555950	4198250	4.8	10
RECEPTOR	4372 GRID	556000	4198250	5.04	10
RECEPTOR	4373 GRID	556050	4198250	5.06	10
RECEPTOR	4374 GRID	556100	4198250	5.35	10
RECEPTOR	4375 GRID	556150	4198250	5.27	10
RECEPTOR	4376 GRID	556200	4198250	5.67	10

File: Cancer_MNTUG.SRC

RECEPTOR	4377 GRID	556250	4198250	5.57	10
RECEPTOR	4378 GRID	556300	4198250	6.2	10
RECEPTOR	4379 GRID	556350	4198250	6.45	10
RECEPTOR	4380 GRID	556400	4198250	6.71	10
RECEPTOR	4381 GRID	556450	4198250	6.68	10
RECEPTOR	4382 GRID	556500	4198250	6.82	10
RECEPTOR	4383 GRID	556550	4198250	7.07	10
RECEPTOR	4384 GRID	556600	4198250	6.98	10
RECEPTOR	4385 GRID	553650	4198300	3.75	10
RECEPTOR	4386 GRID	553700	4198300	3.34	10
RECEPTOR	4387 GRID	553750	4198300	3.28	10
RECEPTOR	4388 GRID	553800	4198300	3.31	10
RECEPTOR	4389 GRID	553850	4198300	3.53	10
RECEPTOR	4390 GRID	553900	4198300	3.53	10
RECEPTOR	4391 GRID	553950	4198300	3.18	10
RECEPTOR	4392 GRID	555450	4198300	4.34	10
RECEPTOR	4393 GRID	555500	4198300	4.34	10
RECEPTOR	4394 GRID	555550	4198300	4.17	10
RECEPTOR	4395 GRID	555600	4198300	4.33	10
RECEPTOR	4396 GRID	555650	4198300	4.59	10
RECEPTOR	4397 GRID	555700	4198300	4.43	10
RECEPTOR	4398 GRID	555750	4198300	4.65	10
RECEPTOR	4399 GRID	555800	4198300	4.5	10
RECEPTOR	4400 GRID	555850	4198300	4.91	10
RECEPTOR	4401 GRID	555900	4198300	4.56	10
RECEPTOR	4402 GRID	555950	4198300	4.92	10
RECEPTOR	4403 GRID	556000	4198300	5.04	10
RECEPTOR	4404 GRID	556050	4198300	5.32	10
RECEPTOR	4405 GRID	556100	4198300	5.4	10
RECEPTOR	4406 GRID	556150	4198300	5.39	10
RECEPTOR	4407 GRID	556200	4198300	5.93	10
RECEPTOR	4408 GRID	556250	4198300	5.92	10
RECEPTOR	4409 GRID	556300	4198300	6.42	10
RECEPTOR	4410 GRID	556350	4198300	6.65	10
RECEPTOR	4411 GRID	556400	4198300	6.76	10
RECEPTOR	4412 GRID	556450	4198300	6.99	10
RECEPTOR	4413 GRID	556500	4198300	7.01	10
RECEPTOR	4414 GRID	556550	4198300	7.34	10
RECEPTOR	4415 GRID	556600	4198300	7.16	10
RECEPTOR	4416 GRID	553550	4198350	3.55	10
RECEPTOR	4417 GRID	553600	4198350	3.97	10
RECEPTOR	4418 GRID	553650	4198350	2.9	10
RECEPTOR	4419 GRID	553700	4198350	3.05	10
RECEPTOR	4420 GRID	553750	4198350	3.25	10
RECEPTOR	4421 GRID	553800	4198350	3.38	10
RECEPTOR	4422 GRID	553850	4198350	3.37	10
RECEPTOR	4423 GRID	553900	4198350	3.01	10
RECEPTOR	4424 GRID	555450	4198350	4.2	10
RECEPTOR	4425 GRID	555500	4198350	4.32	10
RECEPTOR	4426 GRID	555550	4198350	4.34	10
RECEPTOR	4427 GRID	555600	4198350	4.52	10
RECEPTOR	4428 GRID	555650	4198350	4.51	10
RECEPTOR	4429 GRID	555700	4198350	4.73	10
RECEPTOR	4430 GRID	555750	4198350	4.76	10
RECEPTOR	4431 GRID	555800	4198350	5.03	10
RECEPTOR	4432 GRID	555850	4198350	5.06	10
RECEPTOR	4433 GRID	555900	4198350	4.99	10
RECEPTOR	4434 GRID	555950	4198350	5.26	10
RECEPTOR	4435 GRID	556000	4198350	5.22	10
RECEPTOR	4436 GRID	556050	4198350	5.39	10

File: Cancer_MNTUG.SRC

RECEPTOR	4437 GRID	556100	4198350	5.56	10
RECEPTOR	4438 GRID	556150	4198350	5.82	10
RECEPTOR	4439 GRID	556200	4198350	6.04	10
RECEPTOR	4440 GRID	556250	4198350	6.37	10
RECEPTOR	4441 GRID	556300	4198350	6.85	10
RECEPTOR	4442 GRID	556350	4198350	6.67	10
RECEPTOR	4443 GRID	556400	4198350	6.93	10
RECEPTOR	4444 GRID	556450	4198350	7.15	10
RECEPTOR	4445 GRID	556500	4198350	7.25	10
RECEPTOR	4446 GRID	556550	4198350	7.37	10
RECEPTOR	4447 GRID	556600	4198350	7.3	10
RECEPTOR	4448 GRID	553500	4198400	3.81	10
RECEPTOR	4449 GRID	553550	4198400	3.65	10
RECEPTOR	4450 GRID	553600	4198400	2.94	10
RECEPTOR	4451 GRID	553650	4198400	2.76	10
RECEPTOR	4452 GRID	553700	4198400	3.08	10
RECEPTOR	4453 GRID	553750	4198400	3.42	10
RECEPTOR	4454 GRID	553800	4198400	3.15	10
RECEPTOR	4455 GRID	553850	4198400	2.92	10
RECEPTOR	4456 GRID	553900	4198400	4.31	10
RECEPTOR	4457 GRID	553950	4198400	2.97	10
RECEPTOR	4458 GRID	554950	4198400	2.39	10
RECEPTOR	4459 GRID	555000	4198400	3.63	10
RECEPTOR	4460 GRID	555050	4198400	3.71	10
RECEPTOR	4461 GRID	555100	4198400	3.61	10
RECEPTOR	4462 GRID	555150	4198400	3.59	10
RECEPTOR	4463 GRID	555200	4198400	3.79	10
RECEPTOR	4464 GRID	555250	4198400	3.72	10
RECEPTOR	4465 GRID	555300	4198400	4.08	10
RECEPTOR	4466 GRID	555350	4198400	4.26	10
RECEPTOR	4467 GRID	555400	4198400	4.25	10
RECEPTOR	4468 GRID	555450	4198400	4.56	10
RECEPTOR	4469 GRID	555500	4198400	4.61	10
RECEPTOR	4470 GRID	555550	4198400	4.69	10
RECEPTOR	4471 GRID	555600	4198400	4.81	10
RECEPTOR	4472 GRID	555650	4198400	5	10
RECEPTOR	4473 GRID	555700	4198400	5.09	10
RECEPTOR	4474 GRID	555750	4198400	5.01	10
RECEPTOR	4475 GRID	555800	4198400	5.02	10
RECEPTOR	4476 GRID	555850	4198400	5.4	10
RECEPTOR	4477 GRID	555900	4198400	5.43	10
RECEPTOR	4478 GRID	555950	4198400	5.72	10
RECEPTOR	4479 GRID	556000	4198400	5.37	10
RECEPTOR	4480 GRID	556050	4198400	5.67	10
RECEPTOR	4481 GRID	556100	4198400	5.93	10
RECEPTOR	4482 GRID	556150	4198400	5.67	10
RECEPTOR	4483 GRID	556200	4198400	6.17	10
RECEPTOR	4484 GRID	556250	4198400	6.76	10
RECEPTOR	4485 GRID	556300	4198400	6.97	10
RECEPTOR	4486 GRID	556350	4198400	7.08	10
RECEPTOR	4487 GRID	556400	4198400	6.9	10
RECEPTOR	4488 GRID	556450	4198400	7.06	10
RECEPTOR	4489 GRID	556500	4198400	7.32	10
RECEPTOR	4490 GRID	556550	4198400	7.69	10
RECEPTOR	4491 GRID	556600	4198400	9.21	10
RECEPTOR	4492 GRID	553650	4198450	2.94	10
RECEPTOR	4493 GRID	553700	4198450	3.03	10
RECEPTOR	4494 GRID	553750	4198450	3.04	10
RECEPTOR	4495 GRID	553800	4198450	3.11	10
RECEPTOR	4496 GRID	553850	4198450	3.28	10

File: Cancer_MNTUG.SRC

RECEPTOR	4497 GRID	553900	4198450	3.23	10
RECEPTOR	4498 GRID	553950	4198450	3.14	10
RECEPTOR	4499 GRID	554900	4198450	3.74	10
RECEPTOR	4500 GRID	554950	4198450	3.69	10
RECEPTOR	4501 GRID	555000	4198450	3.34	10
RECEPTOR	4502 GRID	555050	4198450	3.31	10
RECEPTOR	4503 GRID	555100	4198450	3.45	10
RECEPTOR	4504 GRID	555150	4198450	3.5	10
RECEPTOR	4505 GRID	555200	4198450	3.35	10
RECEPTOR	4506 GRID	555250	4198450	3.54	10
RECEPTOR	4507 GRID	555300	4198450	3.72	10
RECEPTOR	4508 GRID	555350	4198450	3.85	10
RECEPTOR	4509 GRID	555400	4198450	3.78	10
RECEPTOR	4510 GRID	555450	4198450	4.71	10
RECEPTOR	4511 GRID	555500	4198450	4.7	10
RECEPTOR	4512 GRID	555550	4198450	4.81	10
RECEPTOR	4513 GRID	555600	4198450	4.7	10
RECEPTOR	4514 GRID	555650	4198450	4.94	10
RECEPTOR	4515 GRID	555700	4198450	5.07	10
RECEPTOR	4516 GRID	555750	4198450	5	10
RECEPTOR	4517 GRID	555800	4198450	5.42	10
RECEPTOR	4518 GRID	555850	4198450	5.63	10
RECEPTOR	4519 GRID	555900	4198450	5.73	10
RECEPTOR	4520 GRID	555950	4198450	5.75	10
RECEPTOR	4521 GRID	556000	4198450	5.63	10
RECEPTOR	4522 GRID	556050	4198450	6.03	10
RECEPTOR	4523 GRID	556100	4198450	6.43	10
RECEPTOR	4524 GRID	556150	4198450	6.66	10
RECEPTOR	4525 GRID	556200	4198450	6.31	10
RECEPTOR	4526 GRID	556250	4198450	6.36	10
RECEPTOR	4527 GRID	556300	4198450	6.8	10
RECEPTOR	4528 GRID	556350	4198450	7.27	10
RECEPTOR	4529 GRID	556400	4198450	7.27	10
RECEPTOR	4530 GRID	556450	4198450	7.55	10
RECEPTOR	4531 GRID	556500	4198450	7.43	10
RECEPTOR	4532 GRID	556550	4198450	7.66	10
RECEPTOR	4533 GRID	556600	4198450	7.7	10
RECEPTOR	4534 GRID	553700	4198500	3.19	10
RECEPTOR	4535 GRID	553850	4198500	3.34	10
RECEPTOR	4536 GRID	553900	4198500	3.09	10
RECEPTOR	4537 GRID	554850	4198500	3.59	10
RECEPTOR	4538 GRID	554900	4198500	3.68	10
RECEPTOR	4539 GRID	554950	4198500	3.63	10
RECEPTOR	4540 GRID	555000	4198500	3.21	10
RECEPTOR	4541 GRID	555050	4198500	3.01	10
RECEPTOR	4542 GRID	555100	4198500	2.86	10
RECEPTOR	4543 GRID	555150	4198500	3.32	10
RECEPTOR	4544 GRID	555200	4198500	3.55	10
RECEPTOR	4545 GRID	555250	4198500	3.4	10
RECEPTOR	4546 GRID	555300	4198500	3.7	10
RECEPTOR	4547 GRID	555350	4198500	3.86	10
RECEPTOR	4548 GRID	555400	4198500	3.6	10
RECEPTOR	4549 GRID	555450	4198500	4.38	10
RECEPTOR	4550 GRID	555500	4198500	4.66	10
RECEPTOR	4551 GRID	555550	4198500	4.95	10
RECEPTOR	4552 GRID	555600	4198500	5.06	10
RECEPTOR	4553 GRID	555650	4198500	4.96	10
RECEPTOR	4554 GRID	555700	4198500	5.09	10
RECEPTOR	4555 GRID	555750	4198500	5.16	10
RECEPTOR	4556 GRID	555800	4198500	5.38	10

File: Cancer_MNTUG.SRC

RECEPTOR	4557 GRID	555850	4198500	5.66	10
RECEPTOR	4558 GRID	555900	4198500	5.76	10
RECEPTOR	4559 GRID	555950	4198500	5.84	10
RECEPTOR	4560 GRID	556000	4198500	5.94	10
RECEPTOR	4561 GRID	556050	4198500	6.07	10
RECEPTOR	4562 GRID	556100	4198500	6.23	10
RECEPTOR	4563 GRID	556150	4198500	6.29	10
RECEPTOR	4564 GRID	556200	4198500	6.57	10
RECEPTOR	4565 GRID	556250	4198500	6.48	10
RECEPTOR	4566 GRID	556300	4198500	6.89	10
RECEPTOR	4567 GRID	556350	4198500	7.33	10
RECEPTOR	4568 GRID	556400	4198500	7.53	10
RECEPTOR	4569 GRID	556450	4198500	7.73	10
RECEPTOR	4570 GRID	556500	4198500	7.84	10
RECEPTOR	4571 GRID	556550	4198500	7.83	10
RECEPTOR	4572 GRID	556600	4198500	7.94	10
RECEPTOR	4573 GRID	554850	4198550	3.47	10
RECEPTOR	4574 GRID	554900	4198550	3.69	10
RECEPTOR	4575 GRID	554950	4198550	3.43	10
RECEPTOR	4576 GRID	555000	4198550	2.98	10
RECEPTOR	4577 GRID	555050	4198550	3.04	10
RECEPTOR	4578 GRID	555100	4198550	3.28	10
RECEPTOR	4579 GRID	555150	4198550	3.59	10
RECEPTOR	4580 GRID	555200	4198550	3.78	10
RECEPTOR	4581 GRID	555250	4198550	3.5	10
RECEPTOR	4582 GRID	555300	4198550	3.94	10
RECEPTOR	4583 GRID	555350	4198550	4.13	10
RECEPTOR	4584 GRID	555400	4198550	3.74	10
RECEPTOR	4585 GRID	555450	4198550	4.73	10
RECEPTOR	4586 GRID	555500	4198550	4.89	10
RECEPTOR	4587 GRID	555550	4198550	5.32	10
RECEPTOR	4588 GRID	555600	4198550	5.37	10
RECEPTOR	4589 GRID	555650	4198550	5.12	10
RECEPTOR	4590 GRID	555700	4198550	5.27	10
RECEPTOR	4591 GRID	555750	4198550	5.37	10
RECEPTOR	4592 GRID	555800	4198550	5.51	10
RECEPTOR	4593 GRID	555850	4198550	5.91	10
RECEPTOR	4594 GRID	555900	4198550	5.96	10
RECEPTOR	4595 GRID	555950	4198550	6.18	10
RECEPTOR	4596 GRID	556000	4198550	6.12	10
RECEPTOR	4597 GRID	556050	4198550	6.59	10
RECEPTOR	4598 GRID	556100	4198550	6.5	10
RECEPTOR	4599 GRID	556150	4198550	6.46	10
RECEPTOR	4600 GRID	556200	4198550	6.5	10
RECEPTOR	4601 GRID	556250	4198550	6.44	10
RECEPTOR	4602 GRID	556300	4198550	7.08	10
RECEPTOR	4603 GRID	556350	4198550	7.34	10
RECEPTOR	4604 GRID	556400	4198550	7.6	10
RECEPTOR	4605 GRID	556450	4198550	7.93	10
RECEPTOR	4606 GRID	556500	4198550	7.89	10
RECEPTOR	4607 GRID	556550	4198550	8.11	10
RECEPTOR	4608 GRID	556600	4198550	8.26	10
RECEPTOR	4609 GRID	554900	4198600	3.73	10
RECEPTOR	4610 GRID	554950	4198600	3.64	10
RECEPTOR	4611 GRID	555000	4198600	3.39	10
RECEPTOR	4612 GRID	555050	4198600	3.27	10
RECEPTOR	4613 GRID	555100	4198600	3.43	10
RECEPTOR	4614 GRID	555150	4198600	3.74	10
RECEPTOR	4615 GRID	555200	4198600	3.91	10
RECEPTOR	4616 GRID	555250	4198600	3.69	10

File: Cancer_MNTUG.SRC

RECEPTOR	4617 GRID	555300	4198600	4.19	10
RECEPTOR	4618 GRID	555350	4198600	4.34	10
RECEPTOR	4619 GRID	555400	4198600	3.82	10
RECEPTOR	4620 GRID	555450	4198600	5.25	10
RECEPTOR	4621 GRID	555500	4198600	5.23	10
RECEPTOR	4622 GRID	555550	4198600	5.57	10
RECEPTOR	4623 GRID	555600	4198600	5.5	10
RECEPTOR	4624 GRID	555650	4198600	5.56	10
RECEPTOR	4625 GRID	555700	4198600	6.01	10
RECEPTOR	4626 GRID	555750	4198600	5.77	10
RECEPTOR	4627 GRID	555800	4198600	5.8	10
RECEPTOR	4628 GRID	555850	4198600	5.96	10
RECEPTOR	4629 GRID	555900	4198600	6.2	10
RECEPTOR	4630 GRID	555950	4198600	6.3	10
RECEPTOR	4631 GRID	556000	4198600	6.46	10
RECEPTOR	4632 GRID	556050	4198600	6.63	10
RECEPTOR	4633 GRID	556100	4198600	6.88	10
RECEPTOR	4634 GRID	556150	4198600	6.65	10
RECEPTOR	4635 GRID	556200	4198600	6.81	10
RECEPTOR	4636 GRID	556250	4198600	6.71	10
RECEPTOR	4637 GRID	556300	4198600	6.95	10
RECEPTOR	4638 GRID	556350	4198600	7.62	10
RECEPTOR	4639 GRID	556400	4198600	7.66	10
RECEPTOR	4640 GRID	556450	4198600	8.17	10
RECEPTOR	4641 GRID	556500	4198600	8.13	10
RECEPTOR	4642 GRID	556550	4198600	8.11	10
RECEPTOR	4643 GRID	556600	4198600	8.77	10
RECEPTOR	4644 GRID	554950	4198650	3.73	10
RECEPTOR	4645 GRID	555000	4198650	3.74	10
RECEPTOR	4646 GRID	555050	4198650	3.8	10
RECEPTOR	4647 GRID	555100	4198650	3.52	10
RECEPTOR	4648 GRID	555150	4198650	3.62	10
RECEPTOR	4649 GRID	555200	4198650	4.06	10
RECEPTOR	4650 GRID	555250	4198650	4.16	10
RECEPTOR	4651 GRID	555300	4198650	4.16	10
RECEPTOR	4652 GRID	555350	4198650	4.05	10
RECEPTOR	4653 GRID	555400	4198650	4.58	10
RECEPTOR	4654 GRID	555450	4198650	5.37	10
RECEPTOR	4655 GRID	555500	4198650	5.6	10
RECEPTOR	4656 GRID	555550	4198650	5.84	10
RECEPTOR	4657 GRID	555600	4198650	5.97	10
RECEPTOR	4658 GRID	555650	4198650	5.98	10
RECEPTOR	4659 GRID	555700	4198650	6.29	10
RECEPTOR	4660 GRID	555750	4198650	6.09	10
RECEPTOR	4661 GRID	555800	4198650	6.28	10
RECEPTOR	4662 GRID	555850	4198650	6.33	10
RECEPTOR	4663 GRID	555900	4198650	6.56	10
RECEPTOR	4664 GRID	555950	4198650	7.06	10
RECEPTOR	4665 GRID	556000	4198650	6.83	10
RECEPTOR	4666 GRID	556050	4198650	7.06	10
RECEPTOR	4667 GRID	556100	4198650	7.03	10
RECEPTOR	4668 GRID	556150	4198650	6.84	10
RECEPTOR	4669 GRID	556200	4198650	7.14	10
RECEPTOR	4670 GRID	556250	4198650	6.9	10
RECEPTOR	4671 GRID	556300	4198650	7.38	10
RECEPTOR	4672 GRID	556350	4198650	7.43	10
RECEPTOR	4673 GRID	556400	4198650	7.76	10
RECEPTOR	4674 GRID	556450	4198650	8.42	10
RECEPTOR	4675 GRID	556500	4198650	8.31	10
RECEPTOR	4676 GRID	556550	4198650	8.61	10

File: Cancer_MNTUG.SRC

RECEPTOR	4677 GRID	556600	4198650	8.83	10
RECEPTOR	4678 GRID	555000	4198700	4.23	10
RECEPTOR	4679 GRID	555050	4198700	4.15	10
RECEPTOR	4680 GRID	555100	4198700	3.69	10
RECEPTOR	4681 GRID	555150	4198700	3.95	10
RECEPTOR	4682 GRID	555200	4198700	4.35	10
RECEPTOR	4683 GRID	555250	4198700	4.34	10
RECEPTOR	4684 GRID	555300	4198700	4.34	10
RECEPTOR	4685 GRID	555350	4198700	4.77	10
RECEPTOR	4686 GRID	555400	4198700	4.98	10
RECEPTOR	4687 GRID	555450	4198700	5.35	10
RECEPTOR	4688 GRID	555500	4198700	5.7	10
RECEPTOR	4689 GRID	555550	4198700	5.87	10
RECEPTOR	4690 GRID	555600	4198700	6.06	10
RECEPTOR	4691 GRID	555650	4198700	6.25	10
RECEPTOR	4692 GRID	555700	4198700	6.35	10
RECEPTOR	4693 GRID	555750	4198700	6.44	10
RECEPTOR	4694 GRID	555800	4198700	6.53	10
RECEPTOR	4695 GRID	555850	4198700	6.6	10
RECEPTOR	4696 GRID	555900	4198700	6.72	10
RECEPTOR	4697 GRID	555950	4198700	6.91	10
RECEPTOR	4698 GRID	556000	4198700	6.89	10
RECEPTOR	4699 GRID	556050	4198700	7.13	10
RECEPTOR	4700 GRID	556100	4198700	7.05	10
RECEPTOR	4701 GRID	556150	4198700	6.89	10
RECEPTOR	4702 GRID	556200	4198700	6.88	10
RECEPTOR	4703 GRID	556250	4198700	7.07	10
RECEPTOR	4704 GRID	556300	4198700	7.15	10
RECEPTOR	4705 GRID	556350	4198700	7.34	10
RECEPTOR	4706 GRID	556400	4198700	7.65	10
RECEPTOR	4707 GRID	556450	4198700	8.01	10
RECEPTOR	4708 GRID	556500	4198700	8.28	10
RECEPTOR	4709 GRID	556550	4198700	8.55	10
RECEPTOR	4710 GRID	556600	4198700	8.81	10
RECEPTOR	4711 GRID	555050	4198750	4.07	10
RECEPTOR	4712 GRID	555100	4198750	4.26	10
RECEPTOR	4713 GRID	555150	4198750	4.45	10
RECEPTOR	4714 GRID	555200	4198750	4.1	10
RECEPTOR	4715 GRID	555250	4198750	4.72	10
RECEPTOR	4716 GRID	555300	4198750	4.32	10
RECEPTOR	4717 GRID	555350	4198750	4.78	10
RECEPTOR	4718 GRID	555400	4198750	5.29	10
RECEPTOR	4719 GRID	555450	4198750	5.17	10
RECEPTOR	4720 GRID	555500	4198750	5.69	10
RECEPTOR	4721 GRID	555550	4198750	5.84	10
RECEPTOR	4722 GRID	555600	4198750	5.95	10
RECEPTOR	4723 GRID	555650	4198750	6.18	10
RECEPTOR	4724 GRID	555700	4198750	6.31	10
RECEPTOR	4725 GRID	555750	4198750	6.54	10
RECEPTOR	4726 GRID	555800	4198750	6.72	10
RECEPTOR	4727 GRID	555850	4198750	6.95	10
RECEPTOR	4728 GRID	555900	4198750	6.96	10
RECEPTOR	4729 GRID	555950	4198750	7.51	10
RECEPTOR	4730 GRID	556000	4198750	7.16	10
RECEPTOR	4731 GRID	556050	4198750	7.91	10
RECEPTOR	4732 GRID	556100	4198750	7.64	10
RECEPTOR	4733 GRID	556150	4198750	7.4	10
RECEPTOR	4734 GRID	556200	4198750	7.5	10
RECEPTOR	4735 GRID	556250	4198750	7.3	10
RECEPTOR	4736 GRID	556300	4198750	8.13	10

File: Cancer_MNTUG.SRC

RECEPTOR	4737 GRID	556350	4198750	8.08	10
RECEPTOR	4738 GRID	556400	4198750	8.27	10
RECEPTOR	4739 GRID	556450	4198750	8.55	10
RECEPTOR	4740 GRID	556500	4198750	8.77	10
RECEPTOR	4741 GRID	556550	4198750	9.17	10
RECEPTOR	4742 GRID	556600	4198750	9.07	10
RECEPTOR	4743 GRID	555050	4198800	4.08	10
RECEPTOR	4744 GRID	555100	4198800	4.36	10
RECEPTOR	4745 GRID	555150	4198800	4.4	10
RECEPTOR	4746 GRID	555200	4198800	4.42	10
RECEPTOR	4747 GRID	555250	4198800	4.46	10
RECEPTOR	4748 GRID	555300	4198800	4.68	10
RECEPTOR	4749 GRID	555350	4198800	4.52	10
RECEPTOR	4750 GRID	555400	4198800	4.94	10
RECEPTOR	4751 GRID	555450	4198800	5.2	10
RECEPTOR	4752 GRID	555500	4198800	5.48	10
RECEPTOR	4753 GRID	555550	4198800	5.39	10
RECEPTOR	4754 GRID	555600	4198800	5.96	10
RECEPTOR	4755 GRID	555650	4198800	6.15	10
RECEPTOR	4756 GRID	555700	4198800	6.35	10
RECEPTOR	4757 GRID	555750	4198800	6.62	10
RECEPTOR	4758 GRID	555800	4198800	7.25	10
RECEPTOR	4759 GRID	555850	4198800	6.87	10
RECEPTOR	4760 GRID	555900	4198800	7.17	10
RECEPTOR	4761 GRID	555950	4198800	7.75	10
RECEPTOR	4762 GRID	556000	4198800	7.32	10
RECEPTOR	4763 GRID	556050	4198800	8.2	10
RECEPTOR	4764 GRID	556100	4198800	7.86	10
RECEPTOR	4765 GRID	556150	4198800	7.84	10
RECEPTOR	4766 GRID	556200	4198800	7.88	10
RECEPTOR	4767 GRID	556250	4198800	7.62	10
RECEPTOR	4768 GRID	556300	4198800	7.8	10
RECEPTOR	4769 GRID	556350	4198800	8.28	10
RECEPTOR	4770 GRID	556400	4198800	8.43	10
RECEPTOR	4771 GRID	556450	4198800	8.46	10
RECEPTOR	4772 GRID	556500	4198800	8.63	10
RECEPTOR	4773 GRID	556550	4198800	8.83	10
RECEPTOR	4774 GRID	556600	4198800	9.05	10
RECEPTOR	4775 GRID	555100	4198850	4.15	10
RECEPTOR	4776 GRID	555150	4198850	4.31	10
RECEPTOR	4777 GRID	555200	4198850	4.53	10
RECEPTOR	4778 GRID	555250	4198850	4.61	10
RECEPTOR	4779 GRID	555300	4198850	4.81	10
RECEPTOR	4780 GRID	555350	4198850	4.87	10
RECEPTOR	4781 GRID	555400	4198850	5.14	10
RECEPTOR	4782 GRID	555450	4198850	5.22	10
RECEPTOR	4783 GRID	555500	4198850	5.31	10
RECEPTOR	4784 GRID	555550	4198850	5.59	10
RECEPTOR	4785 GRID	555600	4198850	5.83	10
RECEPTOR	4786 GRID	555650	4198850	6.04	10
RECEPTOR	4787 GRID	555700	4198850	6.28	10
RECEPTOR	4788 GRID	555750	4198850	6.7	10
RECEPTOR	4789 GRID	555800	4198850	6.91	10
RECEPTOR	4790 GRID	555850	4198850	7.08	10
RECEPTOR	4791 GRID	555900	4198850	7.27	10
RECEPTOR	4792 GRID	555950	4198850	7.89	10
RECEPTOR	4793 GRID	556000	4198850	7.55	10
RECEPTOR	4794 GRID	556050	4198850	8.34	10
RECEPTOR	4795 GRID	556100	4198850	8.3	10
RECEPTOR	4796 GRID	556150	4198850	8.22	10

File: Cancer_MNTUG.SRC

RECEPTOR	4797 GRID	556200	4198850	8.39	10
RECEPTOR	4798 GRID	556250	4198850	7.88	10
RECEPTOR	4799 GRID	556300	4198850	8.06	10
RECEPTOR	4800 GRID	556350	4198850	8.17	10
RECEPTOR	4801 GRID	556400	4198850	8.29	10
RECEPTOR	4802 GRID	556450	4198850	8.6	10
RECEPTOR	4803 GRID	556500	4198850	8.59	10
RECEPTOR	4804 GRID	556550	4198850	8.65	10
RECEPTOR	4805 GRID	556600	4198850	9.26	10
RECEPTOR	4806 GRID	555150	4198900	4.49	10
RECEPTOR	4807 GRID	555200	4198900	4.67	10
RECEPTOR	4808 GRID	555250	4198900	4.67	10
RECEPTOR	4809 GRID	555300	4198900	4.86	10
RECEPTOR	4810 GRID	555350	4198900	4.55	10
RECEPTOR	4811 GRID	555400	4198900	5.1	10
RECEPTOR	4812 GRID	555450	4198900	5.76	10
RECEPTOR	4813 GRID	555500	4198900	5.45	10
RECEPTOR	4814 GRID	555550	4198900	5.43	10
RECEPTOR	4815 GRID	555600	4198900	5.93	10
RECEPTOR	4816 GRID	555650	4198900	5.99	10
RECEPTOR	4817 GRID	555700	4198900	6.58	10
RECEPTOR	4818 GRID	555750	4198900	6.4	10
RECEPTOR	4819 GRID	555800	4198900	6.98	10
RECEPTOR	4820 GRID	555850	4198900	7.15	10
RECEPTOR	4821 GRID	555900	4198900	7.17	10
RECEPTOR	4822 GRID	555950	4198900	7.9	10
RECEPTOR	4823 GRID	556000	4198900	7.61	10
RECEPTOR	4824 GRID	556050	4198900	7.94	10
RECEPTOR	4825 GRID	556100	4198900	8.4	10
RECEPTOR	4826 GRID	556150	4198900	8.47	10
RECEPTOR	4827 GRID	556200	4198900	8.46	10
RECEPTOR	4828 GRID	556250	4198900	8.33	10
RECEPTOR	4829 GRID	556300	4198900	8.29	10
RECEPTOR	4830 GRID	556350	4198900	8.4	10
RECEPTOR	4831 GRID	556400	4198900	8.32	10
RECEPTOR	4832 GRID	556450	4198900	8.41	10
RECEPTOR	4833 GRID	556500	4198900	8.7	10
RECEPTOR	4834 GRID	556550	4198900	8.8	10
RECEPTOR	4835 GRID	556600	4198900	9.21	10
RECEPTOR	4836 GRID	555200	4198950	4.49	10
RECEPTOR	4837 GRID	555250	4198950	4.61	10
RECEPTOR	4838 GRID	555300	4198950	4.47	10
RECEPTOR	4839 GRID	555350	4198950	4.75	10
RECEPTOR	4840 GRID	555400	4198950	4.92	10
RECEPTOR	4841 GRID	555450	4198950	4.96	10
RECEPTOR	4842 GRID	555500	4198950	5.34	10
RECEPTOR	4843 GRID	555550	4198950	5.96	10
RECEPTOR	4844 GRID	555600	4198950	5.7	10
RECEPTOR	4845 GRID	555650	4198950	5.91	10
RECEPTOR	4846 GRID	555700	4198950	6.41	10
RECEPTOR	4847 GRID	555750	4198950	6.26	10
RECEPTOR	4848 GRID	555800	4198950	6.77	10
RECEPTOR	4849 GRID	555850	4198950	6.83	10
RECEPTOR	4850 GRID	555900	4198950	6.86	10
RECEPTOR	4851 GRID	555950	4198950	7.62	10
RECEPTOR	4852 GRID	556000	4198950	7.5	10
RECEPTOR	4853 GRID	556050	4198950	8.11	10
RECEPTOR	4854 GRID	556100	4198950	8.19	10
RECEPTOR	4855 GRID	556150	4198950	8.45	10
RECEPTOR	4856 GRID	556200	4198950	8.83	10

File: Cancer_MNTUG.SRC

RECEPTOR	4857 GRID	556250	4198950	8.63	10
RECEPTOR	4858 GRID	556300	4198950	8.55	10
RECEPTOR	4859 GRID	556350	4198950	8.46	10
RECEPTOR	4860 GRID	556400	4198950	8.81	10
RECEPTOR	4861 GRID	556450	4198950	8.98	10
RECEPTOR	4862 GRID	556500	4198950	9.09	10
RECEPTOR	4863 GRID	556550	4198950	9.21	10
RECEPTOR	4864 GRID	556600	4198950	10.18	10
RECEPTOR	4865 GRID	555250	4199000	4.29	10
RECEPTOR	4866 GRID	555300	4199000	4.38	10
RECEPTOR	4867 GRID	555350	4199000	4.51	10
RECEPTOR	4868 GRID	555400	4199000	4.63	10
RECEPTOR	4869 GRID	555450	4199000	5	10
RECEPTOR	4870 GRID	555500	4199000	5.17	10
RECEPTOR	4871 GRID	555550	4199000	5.44	10
RECEPTOR	4872 GRID	555600	4199000	5.64	10
RECEPTOR	4873 GRID	555650	4199000	5.9	10
RECEPTOR	4874 GRID	555700	4199000	5.96	10
RECEPTOR	4875 GRID	555750	4199000	6.04	10
RECEPTOR	4876 GRID	555800	4199000	6.25	10
RECEPTOR	4877 GRID	555850	4199000	6.47	10
RECEPTOR	4878 GRID	555900	4199000	6.51	10
RECEPTOR	4879 GRID	555950	4199000	6.94	10
RECEPTOR	4880 GRID	556000	4199000	7.36	10
RECEPTOR	4881 GRID	556050	4199000	7.72	10
RECEPTOR	4882 GRID	556100	4199000	8.73	10
RECEPTOR	4883 GRID	556150	4199000	8.46	10
RECEPTOR	4884 GRID	556200	4199000	8.44	10
RECEPTOR	4885 GRID	556250	4199000	8.71	10
RECEPTOR	4886 GRID	556300	4199000	8.85	10
RECEPTOR	4887 GRID	556350	4199000	9	10
RECEPTOR	4888 GRID	556400	4199000	9.18	10
RECEPTOR	4889 GRID	556450	4199000	9.31	10
RECEPTOR	4890 GRID	556500	4199000	9.57	10
RECEPTOR	4891 GRID	556550	4199000	10.19	10
RECEPTOR	4892 GRID	556600	4199000	10.31	10
RECEPTOR	4893 GRID	555250	4199050	4.28	10
RECEPTOR	4894 GRID	555300	4199050	4.44	10
RECEPTOR	4895 GRID	555350	4199050	4.54	10
RECEPTOR	4896 GRID	555400	4199050	4.63	10
RECEPTOR	4897 GRID	555450	4199050	4.8	10
RECEPTOR	4898 GRID	555500	4199050	5.04	10
RECEPTOR	4899 GRID	555550	4199050	5.21	10
RECEPTOR	4900 GRID	555600	4199050	5.86	10
RECEPTOR	4901 GRID	555650	4199050	5.59	10
RECEPTOR	4902 GRID	555700	4199050	5.96	10
RECEPTOR	4903 GRID	555750	4199050	6.05	10
RECEPTOR	4904 GRID	555800	4199050	6.42	10
RECEPTOR	4905 GRID	555850	4199050	6.87	10
RECEPTOR	4906 GRID	555900	4199050	6.83	10
RECEPTOR	4907 GRID	555950	4199050	6.54	10
RECEPTOR	4908 GRID	556000	4199050	7.82	10
RECEPTOR	4909 GRID	556050	4199050	8.22	10
RECEPTOR	4910 GRID	556100	4199050	8.39	10
RECEPTOR	4911 GRID	556150	4199050	9.07	10
RECEPTOR	4912 GRID	556200	4199050	9.11	10
RECEPTOR	4913 GRID	556250	4199050	8.92	10
RECEPTOR	4914 GRID	556300	4199050	9.23	10
RECEPTOR	4915 GRID	556350	4199050	9.79	10
RECEPTOR	4916 GRID	556400	4199050	10.1	10

File: Cancer_MNTUG.SRC

RECEPTOR	4917 GRID	556450	4199050	10.77	10
RECEPTOR	4918 GRID	556500	4199050	10.89	10
RECEPTOR	4919 GRID	556550	4199050	10.84	10
RECEPTOR	4920 GRID	556600	4199050	10.88	10
RECEPTOR	4921 GRID	555250	4199100	3.99	10
RECEPTOR	4922 GRID	555300	4199100	4.3	10
RECEPTOR	4923 GRID	555350	4199100	4.18	10
RECEPTOR	4924 GRID	555400	4199100	4.34	10
RECEPTOR	4925 GRID	555450	4199100	4.69	10
RECEPTOR	4926 GRID	555500	4199100	5.13	10
RECEPTOR	4927 GRID	555550	4199100	5.04	10
RECEPTOR	4928 GRID	555600	4199100	5.25	10
RECEPTOR	4929 GRID	555650	4199100	5.38	10
RECEPTOR	4930 GRID	555700	4199100	5.5	10
RECEPTOR	4931 GRID	555750	4199100	5.84	10
RECEPTOR	4932 GRID	555800	4199100	6.32	10
RECEPTOR	4933 GRID	555850	4199100	6.74	10
RECEPTOR	4934 GRID	555900	4199100	6.68	10
RECEPTOR	4935 GRID	555950	4199100	6.91	10
RECEPTOR	4936 GRID	556000	4199100	7.26	10
RECEPTOR	4937 GRID	556050	4199100	8.37	10
RECEPTOR	4938 GRID	556100	4199100	8.71	10
RECEPTOR	4939 GRID	556150	4199100	8.91	10
RECEPTOR	4940 GRID	556200	4199100	9.12	10
RECEPTOR	4941 GRID	556250	4199100	9.1	10
RECEPTOR	4942 GRID	556300	4199100	9.41	10
RECEPTOR	4943 GRID	556350	4199100	9.68	10
RECEPTOR	4944 GRID	556400	4199100	10.04	10
RECEPTOR	4945 GRID	556450	4199100	10.82	10
RECEPTOR	4946 GRID	556500	4199100	10.96	10
RECEPTOR	4947 GRID	556550	4199100	10.79	10
RECEPTOR	4948 GRID	556600	4199100	10.92	10
RECEPTOR	4949 GRID	555250	4199150	3.92	10
RECEPTOR	4950 GRID	555300	4199150	4.04	10
RECEPTOR	4951 GRID	555350	4199150	4.15	10
RECEPTOR	4952 GRID	555400	4199150	4.25	10
RECEPTOR	4953 GRID	555450	4199150	4.45	10
RECEPTOR	4954 GRID	555500	4199150	4.75	10
RECEPTOR	4955 GRID	555550	4199150	4.98	10
RECEPTOR	4956 GRID	555600	4199150	4.94	10
RECEPTOR	4957 GRID	555650	4199150	5.11	10
RECEPTOR	4958 GRID	555700	4199150	5.35	10
RECEPTOR	4959 GRID	555750	4199150	5.74	10
RECEPTOR	4960 GRID	555800	4199150	6.05	10
RECEPTOR	4961 GRID	555850	4199150	6.45	10
RECEPTOR	4962 GRID	555900	4199150	6.67	10
RECEPTOR	4963 GRID	555950	4199150	6.86	10
RECEPTOR	4964 GRID	556000	4199150	7.41	10
RECEPTOR	4965 GRID	556050	4199150	7.72	10
RECEPTOR	4966 GRID	556100	4199150	8.03	10
RECEPTOR	4967 GRID	556150	4199150	8.66	10
RECEPTOR	4968 GRID	556200	4199150	9.09	10
RECEPTOR	4969 GRID	556250	4199150	8.96	10
RECEPTOR	4970 GRID	556300	4199150	9.21	10
RECEPTOR	4971 GRID	556350	4199150	9.51	10
RECEPTOR	4972 GRID	556400	4199150	9.69	10
RECEPTOR	4973 GRID	556450	4199150	10.77	10
RECEPTOR	4974 GRID	556500	4199150	10.9	10
RECEPTOR	4975 GRID	556550	4199150	10.97	10
RECEPTOR	4976 GRID	556600	4199150	10.91	10

File: Cancer_MNTUG.SRC

RECEPTOR	4977 GRID	555300	4199200	3.78	10
RECEPTOR	4978 GRID	555350	4199200	3.88	10
RECEPTOR	4979 GRID	555400	4199200	4.04	10
RECEPTOR	4980 GRID	555450	4199200	4.5	10
RECEPTOR	4981 GRID	555500	4199200	4.79	10
RECEPTOR	4982 GRID	555550	4199200	5.06	10
RECEPTOR	4983 GRID	555600	4199200	4.98	10
RECEPTOR	4984 GRID	555650	4199200	4.88	10
RECEPTOR	4985 GRID	555700	4199200	5.32	10
RECEPTOR	4986 GRID	555750	4199200	5.88	10
RECEPTOR	4987 GRID	555800	4199200	6.05	10
RECEPTOR	4988 GRID	555850	4199200	6.29	10
RECEPTOR	4989 GRID	555900	4199200	7.26	10
RECEPTOR	4990 GRID	555950	4199200	6.74	10
RECEPTOR	4991 GRID	556000	4199200	7.35	10
RECEPTOR	4992 GRID	556050	4199200	7.43	10
RECEPTOR	4993 GRID	556100	4199200	8.09	10
RECEPTOR	4994 GRID	556150	4199200	8.48	10
RECEPTOR	4995 GRID	556200	4199200	8.97	10
RECEPTOR	4996 GRID	556250	4199200	8.84	10
RECEPTOR	4997 GRID	556300	4199200	9.3	10
RECEPTOR	4998 GRID	556350	4199200	9.77	10
RECEPTOR	4999 GRID	556400	4199200	9.71	10
RECEPTOR	5000 GRID	556450	4199200	10.39	10
RECEPTOR	5001 GRID	556500	4199200	10.38	10
RECEPTOR	5002 GRID	556550	4199200	11.15	10
RECEPTOR	5003 GRID	556600	4199200	10.8	10
RECEPTOR	5004 GRID	555300	4199250	3.9	10
RECEPTOR	5005 GRID	555350	4199250	3.76	10
RECEPTOR	5006 GRID	555400	4199250	4.22	10
RECEPTOR	5007 GRID	555450	4199250	4.65	10
RECEPTOR	5008 GRID	555500	4199250	4.99	10
RECEPTOR	5009 GRID	555550	4199250	4.84	10
RECEPTOR	5010 GRID	555600	4199250	5.03	10
RECEPTOR	5011 GRID	555650	4199250	5.06	10
RECEPTOR	5012 GRID	555700	4199250	5.56	10
RECEPTOR	5013 GRID	555750	4199250	5.68	10
RECEPTOR	5014 GRID	555800	4199250	6.04	10
RECEPTOR	5015 GRID	555850	4199250	6.65	10
RECEPTOR	5016 GRID	555900	4199250	6.85	10
RECEPTOR	5017 GRID	555950	4199250	6.97	10
RECEPTOR	5018 GRID	556000	4199250	7.16	10
RECEPTOR	5019 GRID	556050	4199250	7.5	10
RECEPTOR	5020 GRID	556100	4199250	7.73	10
RECEPTOR	5021 GRID	556150	4199250	8.24	10
RECEPTOR	5022 GRID	556200	4199250	8.55	10
RECEPTOR	5023 GRID	556250	4199250	8.84	10
RECEPTOR	5024 GRID	556300	4199250	9.21	10
RECEPTOR	5025 GRID	556350	4199250	9.58	10
RECEPTOR	5026 GRID	556400	4199250	9.83	10
RECEPTOR	5027 GRID	556450	4199250	10.48	10
RECEPTOR	5028 GRID	556500	4199250	10.64	10
RECEPTOR	5029 GRID	556550	4199250	11.48	10
RECEPTOR	5030 GRID	556600	4199250	11.56	10
RECEPTOR	5031 GRID	555350	4199300	4.21	10
RECEPTOR	5032 GRID	555400	4199300	4.21	10
RECEPTOR	5033 GRID	555450	4199300	4.67	10
RECEPTOR	5034 GRID	555500	4199300	4.94	10
RECEPTOR	5035 GRID	555550	4199300	4.65	10
RECEPTOR	5036 GRID	555600	4199300	5.12	10

File: Cancer_MNTUG.SRC

RECEPTOR	5037 GRID	555650	4199300	5.06	10
RECEPTOR	5038 GRID	555700	4199300	5.48	10
RECEPTOR	5039 GRID	555750	4199300	5.86	10
RECEPTOR	5040 GRID	555800	4199300	6.02	10
RECEPTOR	5041 GRID	555850	4199300	6.29	10
RECEPTOR	5042 GRID	555900	4199300	6.38	10
RECEPTOR	5043 GRID	555950	4199300	6.69	10
RECEPTOR	5044 GRID	556000	4199300	6.97	10
RECEPTOR	5045 GRID	556050	4199300	7.37	10
RECEPTOR	5046 GRID	556100	4199300	7.78	10
RECEPTOR	5047 GRID	556150	4199300	8.13	10
RECEPTOR	5048 GRID	556200	4199300	8.53	10
RECEPTOR	5049 GRID	556250	4199300	8.75	10
RECEPTOR	5050 GRID	556300	4199300	9.33	10
RECEPTOR	5051 GRID	556350	4199300	9.42	10
RECEPTOR	5052 GRID	556400	4199300	9.77	10
RECEPTOR	5053 GRID	556450	4199300	10.26	10
RECEPTOR	5054 GRID	556500	4199300	10.63	10
RECEPTOR	5055 GRID	556550	4199300	11.32	10
RECEPTOR	5056 GRID	556600	4199300	12.12	10
RECEPTOR	5057 GRID	555400	4199350	4.06	10
RECEPTOR	5058 GRID	555450	4199350	4.31	10
RECEPTOR	5059 GRID	555500	4199350	4.62	10
RECEPTOR	5060 GRID	555550	4199350	4.52	10
RECEPTOR	5061 GRID	555600	4199350	4.96	10
RECEPTOR	5062 GRID	555650	4199350	5.05	10
RECEPTOR	5063 GRID	555700	4199350	5.69	10
RECEPTOR	5064 GRID	555750	4199350	5.77	10
RECEPTOR	5065 GRID	555800	4199350	5.9	10
RECEPTOR	5066 GRID	555850	4199350	6.13	10
RECEPTOR	5067 GRID	555900	4199350	6.46	10
RECEPTOR	5068 GRID	555950	4199350	6.5	10
RECEPTOR	5069 GRID	556000	4199350	6.87	10
RECEPTOR	5070 GRID	556050	4199350	7.46	10
RECEPTOR	5071 GRID	556100	4199350	7.57	10
RECEPTOR	5072 GRID	556150	4199350	8	10
RECEPTOR	5073 GRID	556200	4199350	8.39	10
RECEPTOR	5074 GRID	556250	4199350	8.55	10
RECEPTOR	5075 GRID	556300	4199350	9.06	10
RECEPTOR	5076 GRID	556350	4199350	9.34	10
RECEPTOR	5077 GRID	556400	4199350	9.83	10
RECEPTOR	5078 GRID	556450	4199350	10.25	10
RECEPTOR	5079 GRID	556500	4199350	10.63	10
RECEPTOR	5080 GRID	556550	4199350	11.45	10
RECEPTOR	5081 GRID	556600	4199350	11.24	10
RECEPTOR	5082 GRID	555450	4199400	3.94	10
RECEPTOR	5083 GRID	555500	4199400	4.02	10
RECEPTOR	5084 GRID	555550	4199400	4.53	10
RECEPTOR	5085 GRID	555600	4199400	4.86	10
RECEPTOR	5086 GRID	555650	4199400	4.93	10
RECEPTOR	5087 GRID	555700	4199400	5.47	10
RECEPTOR	5088 GRID	555750	4199400	5.64	10
RECEPTOR	5089 GRID	555800	4199400	5.96	10
RECEPTOR	5090 GRID	555850	4199400	6.15	10
RECEPTOR	5091 GRID	555900	4199400	6.35	10
RECEPTOR	5092 GRID	555950	4199400	6.59	10
RECEPTOR	5093 GRID	556000	4199400	6.87	10
RECEPTOR	5094 GRID	556050	4199400	7.45	10
RECEPTOR	5095 GRID	556100	4199400	7.6	10
RECEPTOR	5096 GRID	556150	4199400	7.99	10

File: Cancer_MNTUG.SRC

RECEPTOR	5097 GRID	556200	4199400	8.25	10
RECEPTOR	5098 GRID	556250	4199400	8.68	10
RECEPTOR	5099 GRID	556300	4199400	9.2	10
RECEPTOR	5100 GRID	556350	4199400	9.49	10
RECEPTOR	5101 GRID	556400	4199400	9.77	10
RECEPTOR	5102 GRID	556450	4199400	10.35	10
RECEPTOR	5103 GRID	556500	4199400	10.7	10
RECEPTOR	5104 GRID	556550	4199400	12.02	10
RECEPTOR	5105 GRID	556600	4199400	11.2	10
RECEPTOR	5106 GRID	555500	4199450	4.09	10
RECEPTOR	5107 GRID	555550	4199450	4.7	10
RECEPTOR	5108 GRID	555600	4199450	4.92	10
RECEPTOR	5109 GRID	555650	4199450	5.04	10
RECEPTOR	5110 GRID	555700	4199450	5.48	10
RECEPTOR	5111 GRID	555750	4199450	5.76	10
RECEPTOR	5112 GRID	555800	4199450	5.93	10
RECEPTOR	5113 GRID	555850	4199450	6.24	10
RECEPTOR	5114 GRID	555900	4199450	6.47	10
RECEPTOR	5115 GRID	555950	4199450	6.82	10
RECEPTOR	5116 GRID	556000	4199450	6.91	10
RECEPTOR	5117 GRID	556050	4199450	7.03	10
RECEPTOR	5118 GRID	556100	4199450	7.64	10
RECEPTOR	5119 GRID	556150	4199450	7.99	10
RECEPTOR	5120 GRID	556200	4199450	8.43	10
RECEPTOR	5121 GRID	556250	4199450	8.82	10
RECEPTOR	5122 GRID	556300	4199450	9.18	10
RECEPTOR	5123 GRID	556350	4199450	9.59	10
RECEPTOR	5124 GRID	556400	4199450	9.87	10
RECEPTOR	5125 GRID	556450	4199450	10.57	10
RECEPTOR	5126 GRID	556500	4199450	10.58	10
RECEPTOR	5127 GRID	556550	4199450	11.14	10
RECEPTOR	5128 GRID	556600	4199450	11.73	10
RECEPTOR	5129 GRID	555500	4199500	4.22	10
RECEPTOR	5130 GRID	555550	4199500	4.61	10
RECEPTOR	5131 GRID	555600	4199500	4.87	10
RECEPTOR	5132 GRID	555650	4199500	5.02	10
RECEPTOR	5133 GRID	555700	4199500	5.39	10
RECEPTOR	5134 GRID	555750	4199500	5.71	10
RECEPTOR	5135 GRID	555800	4199500	6.18	10
RECEPTOR	5136 GRID	555850	4199500	6.38	10
RECEPTOR	5137 GRID	555900	4199500	6.61	10
RECEPTOR	5138 GRID	555950	4199500	6.84	10
RECEPTOR	5139 GRID	556000	4199500	7.02	10
RECEPTOR	5140 GRID	556050	4199500	7.46	10
RECEPTOR	5141 GRID	556100	4199500	7.69	10
RECEPTOR	5142 GRID	556150	4199500	8.08	10
RECEPTOR	5143 GRID	556200	4199500	8.79	10
RECEPTOR	5144 GRID	556250	4199500	8.94	10
RECEPTOR	5145 GRID	556300	4199500	9.28	10
RECEPTOR	5146 GRID	556350	4199500	9.52	10
RECEPTOR	5147 GRID	556400	4199500	9.99	10
RECEPTOR	5148 GRID	556450	4199500	10.69	10
RECEPTOR	5149 GRID	556500	4199500	11.74	10
RECEPTOR	5150 GRID	556550	4199500	11.19	10
RECEPTOR	5151 GRID	556600	4199500	12.05	10
RECEPTOR	5152 GRID	555550	4199550	4.76	10
RECEPTOR	5153 GRID	555600	4199550	4.9	10
RECEPTOR	5154 GRID	555650	4199550	4.9	10
RECEPTOR	5155 GRID	555700	4199550	5.45	10
RECEPTOR	5156 GRID	555750	4199550	5.74	10

File: Cancer_MNTUG.SRC

RECEPTOR	5157 GRID	555800	4199550	6	10
RECEPTOR	5158 GRID	555850	4199550	6.34	10
RECEPTOR	5159 GRID	555900	4199550	6.73	10
RECEPTOR	5160 GRID	555950	4199550	6.92	10
RECEPTOR	5161 GRID	556000	4199550	7.17	10
RECEPTOR	5162 GRID	556050	4199550	7.65	10
RECEPTOR	5163 GRID	556100	4199550	7.93	10
RECEPTOR	5164 GRID	556150	4199550	8.17	10
RECEPTOR	5165 GRID	556200	4199550	8.77	10
RECEPTOR	5166 GRID	556250	4199550	8.97	10
RECEPTOR	5167 GRID	556300	4199550	9.5	10
RECEPTOR	5168 GRID	556350	4199550	9.56	10
RECEPTOR	5169 GRID	556400	4199550	10	10
RECEPTOR	5170 GRID	556450	4199550	11.29	10
RECEPTOR	5171 GRID	556500	4199550	11.31	10
RECEPTOR	5172 GRID	556550	4199550	11.37	10
RECEPTOR	5173 GRID	556600	4199550	12.16	10
RECEPTOR	5174 GRID	555600	4199600	4.8	10
RECEPTOR	5175 GRID	555650	4199600	4.76	10
RECEPTOR	5176 GRID	555700	4199600	5.18	10
RECEPTOR	5177 GRID	555750	4199600	5.62	10
RECEPTOR	5178 GRID	555800	4199600	6.19	10
RECEPTOR	5179 GRID	555850	4199600	6.17	10
RECEPTOR	5180 GRID	555900	4199600	6.68	10
RECEPTOR	5181 GRID	555950	4199600	6.96	10
RECEPTOR	5182 GRID	556000	4199600	7.24	10
RECEPTOR	5183 GRID	556050	4199600	7.97	10
RECEPTOR	5184 GRID	556100	4199600	7.94	10
RECEPTOR	5185 GRID	556150	4199600	8.27	10
RECEPTOR	5186 GRID	556200	4199600	8.94	10
RECEPTOR	5187 GRID	556250	4199600	8.97	10
RECEPTOR	5188 GRID	556300	4199600	9.25	10
RECEPTOR	5189 GRID	556350	4199600	9.63	10
RECEPTOR	5190 GRID	556400	4199600	9.94	10
RECEPTOR	5191 GRID	556450	4199600	11.52	10
RECEPTOR	5192 GRID	556500	4199600	11.38	10
RECEPTOR	5193 GRID	556550	4199600	11.34	10
RECEPTOR	5194 GRID	556600	4199600	11.94	10
RECEPTOR	5195 GRID	555650	4199650	5.05	10
RECEPTOR	5196 GRID	555700	4199650	5.34	10
RECEPTOR	5197 GRID	555750	4199650	5.86	10
RECEPTOR	5198 GRID	555800	4199650	6.08	10
RECEPTOR	5199 GRID	555850	4199650	6	10
RECEPTOR	5200 GRID	555900	4199650	6.69	10
RECEPTOR	5201 GRID	555950	4199650	6.92	10
RECEPTOR	5202 GRID	556000	4199650	7.16	10
RECEPTOR	5203 GRID	556050	4199650	7.68	10
RECEPTOR	5204 GRID	556100	4199650	8	10
RECEPTOR	5205 GRID	556150	4199650	8.34	10
RECEPTOR	5206 GRID	556200	4199650	8.53	10
RECEPTOR	5207 GRID	556250	4199650	9.21	10
RECEPTOR	5208 GRID	556300	4199650	11.36	10
RECEPTOR	5209 GRID	556350	4199650	9.78	10
RECEPTOR	5210 GRID	556400	4199650	10.13	10
RECEPTOR	5211 GRID	556450	4199650	10.97	10
RECEPTOR	5212 GRID	556500	4199650	10.85	10
RECEPTOR	5213 GRID	556550	4199650	11.51	10
RECEPTOR	5214 GRID	556600	4199650	12.09	10
RECEPTOR	5215 GRID	555700	4199700	5.41	10
RECEPTOR	5216 GRID	555750	4199700	5.9	10

File: Cancer_MNTUG.SRC

RECEPTOR	5217 GRID	555800	4199700	6.27	10
RECEPTOR	5218 GRID	555850	4199700	6.23	10
RECEPTOR	5219 GRID	555900	4199700	6.61	10
RECEPTOR	5220 GRID	555950	4199700	6.9	10
RECEPTOR	5221 GRID	556000	4199700	7.34	10
RECEPTOR	5222 GRID	556050	4199700	7.82	10
RECEPTOR	5223 GRID	556100	4199700	8.19	10
RECEPTOR	5224 GRID	556150	4199700	8.37	10
RECEPTOR	5225 GRID	556200	4199700	8.73	10
RECEPTOR	5226 GRID	556250	4199700	9.72	10
RECEPTOR	5227 GRID	556300	4199700	9.71	10
RECEPTOR	5228 GRID	556350	4199700	10.36	10
RECEPTOR	5229 GRID	556400	4199700	10.64	10
RECEPTOR	5230 GRID	556450	4199700	11.37	10
RECEPTOR	5231 GRID	556500	4199700	11.3	10
RECEPTOR	5232 GRID	556550	4199700	11.69	10
RECEPTOR	5233 GRID	556600	4199700	12.37	10
RECEPTOR	5234 GRID	555700	4199750	5.5	10
RECEPTOR	5235 GRID	555750	4199750	5.96	10
RECEPTOR	5236 GRID	555800	4199750	6.48	10
RECEPTOR	5237 GRID	555850	4199750	6.27	10
RECEPTOR	5238 GRID	555900	4199750	6.77	10
RECEPTOR	5239 GRID	555950	4199750	7.05	10
RECEPTOR	5240 GRID	556000	4199750	7.52	10
RECEPTOR	5241 GRID	556050	4199750	7.76	10
RECEPTOR	5242 GRID	556100	4199750	8.19	10
RECEPTOR	5243 GRID	556150	4199750	8.58	10
RECEPTOR	5244 GRID	556200	4199750	8.87	10
RECEPTOR	5245 GRID	556250	4199750	9.49	10
RECEPTOR	5246 GRID	556300	4199750	9.56	10
RECEPTOR	5247 GRID	556350	4199750	10.3	10
RECEPTOR	5248 GRID	556400	4199750	10.84	10
RECEPTOR	5249 GRID	556450	4199750	11	10
RECEPTOR	5250 GRID	556500	4199750	11.36	10
RECEPTOR	5251 GRID	556550	4199750	12.35	10
RECEPTOR	5252 GRID	556600	4199750	12.81	10
RECEPTOR	5253 GRID	555750	4199800	6.01	10
RECEPTOR	5254 GRID	555800	4199800	6.24	10
RECEPTOR	5255 GRID	555850	4199800	6.35	10
RECEPTOR	5256 GRID	555900	4199800	6.99	10
RECEPTOR	5257 GRID	555950	4199800	7.1	10
RECEPTOR	5258 GRID	556000	4199800	7.44	10
RECEPTOR	5259 GRID	556050	4199800	7.53	10
RECEPTOR	5260 GRID	556100	4199800	7.99	10
RECEPTOR	5261 GRID	556150	4199800	8.52	10
RECEPTOR	5262 GRID	556200	4199800	9.94	10
RECEPTOR	5263 GRID	556250	4199800	9.51	10
RECEPTOR	5264 GRID	556300	4199800	10.08	10
RECEPTOR	5265 GRID	556350	4199800	10.73	10
RECEPTOR	5266 GRID	556400	4199800	11.23	10
RECEPTOR	5267 GRID	556450	4199800	10.74	10
RECEPTOR	5268 GRID	556500	4199800	11.53	10
RECEPTOR	5269 GRID	556550	4199800	12.09	10
RECEPTOR	5270 GRID	556600	4199800	12.56	10
RECEPTOR	5271 GRID	555800	4199850	6.09	10
RECEPTOR	5272 GRID	555850	4199850	6.5	10
RECEPTOR	5273 GRID	555900	4199850	6.79	10
RECEPTOR	5274 GRID	555950	4199850	6.95	10
RECEPTOR	5275 GRID	556000	4199850	7.34	10
RECEPTOR	5276 GRID	556050	4199850	7.6	10

File: Cancer_MNTUG.SRC

RECEPTOR	5277 GRID	556100	4199850	7.94	10
RECEPTOR	5278 GRID	556150	4199850	8.58	10
RECEPTOR	5279 GRID	556200	4199850	8.94	10
RECEPTOR	5280 GRID	556250	4199850	9.44	10
RECEPTOR	5281 GRID	556300	4199850	10.12	10
RECEPTOR	5282 GRID	556350	4199850	10.97	10
RECEPTOR	5283 GRID	556400	4199850	11.13	10
RECEPTOR	5284 GRID	556450	4199850	11.06	10
RECEPTOR	5285 GRID	556500	4199850	11.13	10
RECEPTOR	5286 GRID	556550	4199850	11.61	10
RECEPTOR	5287 GRID	556600	4199850	12.02	10
RECEPTOR	5288 GRID	555800	4199900	6.48	10
RECEPTOR	5289 GRID	555850	4199900	6	10
RECEPTOR	5290 GRID	555900	4199900	7.01	10
RECEPTOR	5291 GRID	555950	4199900	7.11	10
RECEPTOR	5292 GRID	556000	4199900	7.33	10
RECEPTOR	5293 GRID	556050	4199900	8.06	10
RECEPTOR	5294 GRID	556100	4199900	8.35	10
RECEPTOR	5295 GRID	556150	4199900	8.74	10
RECEPTOR	5296 GRID	556200	4199900	9.1	10
RECEPTOR	5297 GRID	556250	4199900	9.4	10
RECEPTOR	5298 GRID	556300	4199900	9.94	10
RECEPTOR	5299 GRID	556350	4199900	10.53	10
RECEPTOR	5300 GRID	556400	4199900	11.36	10
RECEPTOR	5301 GRID	556450	4199900	12.01	10
RECEPTOR	5302 GRID	556500	4199900	11.59	10
RECEPTOR	5303 GRID	556550	4199900	11.83	10
RECEPTOR	5304 GRID	556600	4199900	12.67	10
RECEPTOR	5305 GRID	555800	4199950	8.6	10
RECEPTOR	5306 GRID	555850	4199950	6.6	10
RECEPTOR	5307 GRID	555900	4199950	7.17	10
RECEPTOR	5308 GRID	555950	4199950	7.48	10
RECEPTOR	5309 GRID	556000	4199950	7.55	10
RECEPTOR	5310 GRID	556050	4199950	7.91	10
RECEPTOR	5311 GRID	556100	4199950	8.32	10
RECEPTOR	5312 GRID	556150	4199950	8.8	10
RECEPTOR	5313 GRID	556200	4199950	8.99	10
RECEPTOR	5314 GRID	556250	4199950	9.09	10
RECEPTOR	5315 GRID	556300	4199950	10.1	10
RECEPTOR	5316 GRID	556350	4199950	10.26	10
RECEPTOR	5317 GRID	556400	4199950	11.12	10
RECEPTOR	5318 GRID	556450	4199950	11.73	10
RECEPTOR	5319 GRID	556500	4199950	12.36	10
RECEPTOR	5320 GRID	556550	4199950	12.2	10
RECEPTOR	5321 GRID	556600	4199950	12.41	10
RECEPTOR	5322 GRID	555800	4200000	9.71	10
RECEPTOR	5323 GRID	555850	4200000	4.9	10
RECEPTOR	5324 GRID	555900	4200000	7.25	10
RECEPTOR	5325 GRID	555950	4200000	7.45	10
RECEPTOR	5326 GRID	556000	4200000	7.61	10
RECEPTOR	5327 GRID	556050	4200000	7.99	10
RECEPTOR	5328 GRID	556100	4200000	8.25	10
RECEPTOR	5329 GRID	556150	4200000	8.81	10
RECEPTOR	5330 GRID	556200	4200000	8.84	10
RECEPTOR	5331 GRID	556250	4200000	9.36	10
RECEPTOR	5332 GRID	556300	4200000	10.15	10
RECEPTOR	5333 GRID	556350	4200000	11.15	10
RECEPTOR	5334 GRID	556400	4200000	11.42	10
RECEPTOR	5335 GRID	556450	4200000	11.45	10
RECEPTOR	5336 GRID	556500	4200000	11.93	10

File: Cancer_MNTUG.SRC

RECEPTOR	5337 GRID	556550	4200000	12.45	10
RECEPTOR	5338 GRID	556600	4200000	12.69	10
RECEPTOR	5339 GRID	555750	4200050	6.49	10
RECEPTOR	5340 GRID	555800	4200050	6.48	10
RECEPTOR	5341 GRID	555850	4200050	12.12	10
RECEPTOR	5342 GRID	555900	4200050	6.96	10
RECEPTOR	5343 GRID	555950	4200050	7.63	10
RECEPTOR	5344 GRID	556000	4200050	7.87	10
RECEPTOR	5345 GRID	556050	4200050	8.32	10
RECEPTOR	5346 GRID	556100	4200050	8.94	10
RECEPTOR	5347 GRID	556150	4200050	8.92	10
RECEPTOR	5348 GRID	556200	4200050	9.56	10
RECEPTOR	5349 GRID	556250	4200050	9.8	10
RECEPTOR	5350 GRID	556300	4200050	11.13	10
RECEPTOR	5351 GRID	556350	4200050	11.44	10
RECEPTOR	5352 GRID	556400	4200050	11.36	10
RECEPTOR	5353 GRID	556450	4200050	11.41	10
RECEPTOR	5354 GRID	556500	4200050	12.06	10
RECEPTOR	5355 GRID	556550	4200050	12.06	10
RECEPTOR	5356 GRID	556600	4200050	12.75	10
RECEPTOR	5357 GRID	555700	4200100	5.9	10
RECEPTOR	5358 GRID	555750	4200100	6.15	10
RECEPTOR	5359 GRID	555800	4200100	6.72	10
RECEPTOR	5360 GRID	555850	4200100	7.04	10
RECEPTOR	5361 GRID	555900	4200100	12.87	10
RECEPTOR	5362 GRID	555950	4200100	7.81	10
RECEPTOR	5363 GRID	556000	4200100	8.27	10
RECEPTOR	5364 GRID	556050	4200100	8.55	10
RECEPTOR	5365 GRID	556100	4200100	9.59	10
RECEPTOR	5366 GRID	556150	4200100	9.65	10
RECEPTOR	5367 GRID	556200	4200100	9.94	10
RECEPTOR	5368 GRID	556250	4200100	10.76	10
RECEPTOR	5369 GRID	556300	4200100	10.27	10
RECEPTOR	5370 GRID	556350	4200100	11.5	10
RECEPTOR	5371 GRID	556400	4200100	11.69	10
RECEPTOR	5372 GRID	556450	4200100	11.45	10
RECEPTOR	5373 GRID	556500	4200100	11.65	10
RECEPTOR	5374 GRID	556550	4200100	12.13	10
RECEPTOR	5375 GRID	556600	4200100	12.53	10
RECEPTOR	5376 GRID	555650	4200150	5.88	10
RECEPTOR	5377 GRID	555700	4200150	6.49	10
RECEPTOR	5378 GRID	555750	4200150	6.06	10
RECEPTOR	5379 GRID	555800	4200150	6.7	10
RECEPTOR	5380 GRID	555850	4200150	6.76	10
RECEPTOR	5381 GRID	555900	4200150	8.36	10
RECEPTOR	5382 GRID	555950	4200150	13.83	10
RECEPTOR	5383 GRID	556000	4200150	8.62	10
RECEPTOR	5384 GRID	556050	4200150	8.66	10
RECEPTOR	5385 GRID	556100	4200150	9.88	10
RECEPTOR	5386 GRID	556150	4200150	10.26	10
RECEPTOR	5387 GRID	556200	4200150	10.11	10
RECEPTOR	5388 GRID	556250	4200150	10.25	10
RECEPTOR	5389 GRID	556300	4200150	11.1	10
RECEPTOR	5390 GRID	556350	4200150	11.42	10
RECEPTOR	5391 GRID	556400	4200150	11.57	10
RECEPTOR	5392 GRID	556450	4200150	11.41	10
RECEPTOR	5393 GRID	556500	4200150	12.35	10
RECEPTOR	5394 GRID	556550	4200150	13.22	10
RECEPTOR	5395 GRID	556600	4200150	13.63	10
RECEPTOR	5396 GRID	555600	4200200	4.76	10

File: Cancer_MNTUG.SRC

RECEPTOR	5397 GRID	555650	4200200	4.44	10
RECEPTOR	5398 GRID	555700	4200200	5.76	10
RECEPTOR	5399 GRID	555750	4200200	6.32	10
RECEPTOR	5400 GRID	555800	4200200	6.28	10
RECEPTOR	5401 GRID	555850	4200200	7.17	10
RECEPTOR	5402 GRID	555900	4200200	7.63	10
RECEPTOR	5403 GRID	555950	4200200	8.24	10
RECEPTOR	5404 GRID	556000	4200200	10.43	10
RECEPTOR	5405 GRID	556050	4200200	9.79	10
RECEPTOR	5406 GRID	556100	4200200	10.16	10
RECEPTOR	5407 GRID	556150	4200200	10.31	10
RECEPTOR	5408 GRID	556200	4200200	10.27	10
RECEPTOR	5409 GRID	556250	4200200	10.11	10
RECEPTOR	5410 GRID	556300	4200200	11.5	10
RECEPTOR	5411 GRID	556350	4200200	11.19	10
RECEPTOR	5412 GRID	556400	4200200	11.56	10
RECEPTOR	5413 GRID	556450	4200200	11.7	10
RECEPTOR	5414 GRID	556500	4200200	12.19	10
RECEPTOR	5415 GRID	556550	4200200	12.63	10
RECEPTOR	5416 GRID	556600	4200200	12.81	10
RECEPTOR	5417 GRID	555500	4200250	10.36	10
RECEPTOR	5418 GRID	555550	4200250	4.64	10
RECEPTOR	5419 GRID	555600	4200250	4.85	10
RECEPTOR	5420 GRID	555650	4200250	4.74	10
RECEPTOR	5421 GRID	555700	4200250	5.07	10
RECEPTOR	5422 GRID	555750	4200250	6.19	10
RECEPTOR	5423 GRID	555800	4200250	6.24	10
RECEPTOR	5424 GRID	555850	4200250	6.24	10
RECEPTOR	5425 GRID	555900	4200250	7.71	10
RECEPTOR	5426 GRID	555950	4200250	8.26	10
RECEPTOR	5427 GRID	556000	4200250	7.37	10
RECEPTOR	5428 GRID	556050	4200250	9.27	10
RECEPTOR	5429 GRID	556100	4200250	9.79	10
RECEPTOR	5430 GRID	556150	4200250	9.97	10
RECEPTOR	5431 GRID	556200	4200250	10.43	10
RECEPTOR	5432 GRID	556250	4200250	10.46	10
RECEPTOR	5433 GRID	556300	4200250	11.5	10
RECEPTOR	5434 GRID	556350	4200250	11.14	10
RECEPTOR	5435 GRID	556400	4200250	11.28	10
RECEPTOR	5436 GRID	556450	4200250	11.35	10
RECEPTOR	5437 GRID	556500	4200250	11.72	10
RECEPTOR	5438 GRID	556550	4200250	12.12	10
RECEPTOR	5439 GRID	556600	4200250	12.48	10
RECEPTOR	5440 GRID	555450	4200300	8.55	10
RECEPTOR	5441 GRID	555500	4200300	4	10
RECEPTOR	5442 GRID	555550	4200300	4.54	10
RECEPTOR	5443 GRID	555600	4200300	4.36	10
RECEPTOR	5444 GRID	555650	4200300	4.7	10
RECEPTOR	5445 GRID	555700	4200300	5.47	10
RECEPTOR	5446 GRID	555750	4200300	6.03	10
RECEPTOR	5447 GRID	555800	4200300	5.68	10
RECEPTOR	5448 GRID	555850	4200300	6.26	10
RECEPTOR	5449 GRID	555900	4200300	6.38	10
RECEPTOR	5450 GRID	555950	4200300	7.83	10
RECEPTOR	5451 GRID	556000	4200300	8.66	10
RECEPTOR	5452 GRID	556050	4200300	10.27	10
RECEPTOR	5453 GRID	556100	4200300	9.42	10
RECEPTOR	5454 GRID	556150	4200300	10.47	10
RECEPTOR	5455 GRID	556200	4200300	10.91	10
RECEPTOR	5456 GRID	556250	4200300	10.84	10

File: Cancer_MNTUG.SRC

RECEPTOR	5457 GRID	556300	4200300	11.49	10
RECEPTOR	5458 GRID	556350	4200300	11.26	10
RECEPTOR	5459 GRID	556400	4200300	11.1	10
RECEPTOR	5460 GRID	556450	4200300	11.54	10
RECEPTOR	5461 GRID	556500	4200300	11.84	10
RECEPTOR	5462 GRID	556550	4200300	12.2	10
RECEPTOR	5463 GRID	556600	4200300	13.03	10
RECEPTOR	5464 GRID	555400	4200350	4.43	10
RECEPTOR	5465 GRID	555450	4200350	4.64	10
RECEPTOR	5466 GRID	555500	4200350	4.53	10
RECEPTOR	5467 GRID	555550	4200350	4.23	10
RECEPTOR	5468 GRID	555600	4200350	3.88	10
RECEPTOR	5469 GRID	555650	4200350	4.95	10
RECEPTOR	5470 GRID	555700	4200350	5.28	10
RECEPTOR	5471 GRID	555750	4200350	5.42	10
RECEPTOR	5472 GRID	555800	4200350	6.44	10
RECEPTOR	5473 GRID	555850	4200350	7.07	10
RECEPTOR	5474 GRID	555900	4200350	7.17	10
RECEPTOR	5475 GRID	555950	4200350	7.76	10
RECEPTOR	5476 GRID	556000	4200350	7.44	10
RECEPTOR	5477 GRID	556050	4200350	8.36	10
RECEPTOR	5478 GRID	556100	4200350	15	10
RECEPTOR	5479 GRID	556150	4200350	9.79	10
RECEPTOR	5480 GRID	556200	4200350	9.96	10
RECEPTOR	5481 GRID	556250	4200350	10.57	10
RECEPTOR	5482 GRID	556300	4200350	11.5	10
RECEPTOR	5483 GRID	556350	4200350	11.74	10
RECEPTOR	5484 GRID	556400	4200350	11.09	10
RECEPTOR	5485 GRID	556450	4200350	11.97	10
RECEPTOR	5486 GRID	556500	4200350	12.33	10
RECEPTOR	5487 GRID	556550	4200350	12.43	10
RECEPTOR	5488 GRID	556600	4200350	12.98	10
RECEPTOR	5489 GRID	555400	4200400	3.56	10
RECEPTOR	5490 GRID	555450	4200400	3.81	10
RECEPTOR	5491 GRID	555500	4200400	4.12	10
RECEPTOR	5492 GRID	555550	4200400	4.31	10
RECEPTOR	5493 GRID	555600	4200400	4.54	10
RECEPTOR	5494 GRID	555650	4200400	5.26	10
RECEPTOR	5495 GRID	555700	4200400	5.05	10
RECEPTOR	5496 GRID	555750	4200400	5.74	10
RECEPTOR	5497 GRID	555800	4200400	5.79	10
RECEPTOR	5498 GRID	555850	4200400	6.31	10
RECEPTOR	5499 GRID	555900	4200400	7.35	10
RECEPTOR	5500 GRID	555950	4200400	7.2	10
RECEPTOR	5501 GRID	556000	4200400	7.29	10
RECEPTOR	5502 GRID	556050	4200400	8.4	10
RECEPTOR	5503 GRID	556100	4200400	8.78	10
RECEPTOR	5504 GRID	556150	4200400	16.05	10
RECEPTOR	5505 GRID	556200	4200400	9.52	10
RECEPTOR	5506 GRID	556250	4200400	10.89	10
RECEPTOR	5507 GRID	556300	4200400	11.46	10
RECEPTOR	5508 GRID	556350	4200400	11.8	10
RECEPTOR	5509 GRID	556400	4200400	11.05	10
RECEPTOR	5510 GRID	556450	4200400	12.42	10
RECEPTOR	5511 GRID	556500	4200400	12.24	10
RECEPTOR	5512 GRID	556550	4200400	12.55	10
RECEPTOR	5513 GRID	556600	4200400	12.97	10
RECEPTOR	5514 GRID	555400	4200450	2.32	10
RECEPTOR	5515 GRID	555450	4200450	4.34	10
RECEPTOR	5516 GRID	555500	4200450	4.58	10

File: Cancer_MNTUG.SRC

RECEPTOR	5517 GRID	555550	4200450	4.3	10
RECEPTOR	5518 GRID	555600	4200450	4.8	10
RECEPTOR	5519 GRID	555650	4200450	5.62	10
RECEPTOR	5520 GRID	555700	4200450	5.72	10
RECEPTOR	5521 GRID	555750	4200450	5.97	10
RECEPTOR	5522 GRID	555800	4200450	5.86	10
RECEPTOR	5523 GRID	555850	4200450	6.43	10
RECEPTOR	5524 GRID	555900	4200450	7.05	10
RECEPTOR	5525 GRID	555950	4200450	7.82	10
RECEPTOR	5526 GRID	556000	4200450	7.46	10
RECEPTOR	5527 GRID	556050	4200450	8.09	10
RECEPTOR	5528 GRID	556100	4200450	9.81	10
RECEPTOR	5529 GRID	556150	4200450	9.41	10
RECEPTOR	5530 GRID	556200	4200450	12.25	10
RECEPTOR	5531 GRID	556250	4200450	10.63	10
RECEPTOR	5532 GRID	556300	4200450	11.53	10
RECEPTOR	5533 GRID	556350	4200450	11.68	10
RECEPTOR	5534 GRID	556400	4200450	11.14	10
RECEPTOR	5535 GRID	556450	4200450	12.8	10
RECEPTOR	5536 GRID	556500	4200450	12.76	10
RECEPTOR	5537 GRID	556550	4200450	12.85	10
RECEPTOR	5538 GRID	556600	4200450	13.28	10
RECEPTOR	5539 GRID	555300	4200500	5.38	10
RECEPTOR	5540 GRID	555350	4200500	2.19	10
RECEPTOR	5541 GRID	555400	4200500	3.14	10
RECEPTOR	5542 GRID	555450	4200500	4.13	10
RECEPTOR	5543 GRID	555500	4200500	4.7	10
RECEPTOR	5544 GRID	555550	4200500	5.12	10
RECEPTOR	5545 GRID	555600	4200500	4.63	10
RECEPTOR	5546 GRID	555650	4200500	5.04	10
RECEPTOR	5547 GRID	555700	4200500	6.33	10
RECEPTOR	5548 GRID	555750	4200500	6.81	10
RECEPTOR	5549 GRID	555800	4200500	6.32	10
RECEPTOR	5550 GRID	555850	4200500	7.12	10
RECEPTOR	5551 GRID	555900	4200500	7.25	10
RECEPTOR	5552 GRID	555950	4200500	7.58	10
RECEPTOR	5553 GRID	556000	4200500	8.22	10
RECEPTOR	5554 GRID	556050	4200500	8.84	10
RECEPTOR	5555 GRID	556100	4200500	9.72	10
RECEPTOR	5556 GRID	556150	4200500	9.26	10
RECEPTOR	5557 GRID	556200	4200500	9.82	10
RECEPTOR	5558 GRID	556250	4200500	11.84	10
RECEPTOR	5559 GRID	556300	4200500	11.45	10
RECEPTOR	5560 GRID	556350	4200500	11.4	10
RECEPTOR	5561 GRID	556400	4200500	11.38	10
RECEPTOR	5562 GRID	556450	4200500	13.23	10
RECEPTOR	5563 GRID	556500	4200500	12.84	10
RECEPTOR	5564 GRID	556550	4200500	13.12	10
RECEPTOR	5565 GRID	556600	4200500	13.34	10
RECEPTOR	5566 GRID	555250	4200550	2.8	10
RECEPTOR	5567 GRID	555300	4200550	2.48	10
RECEPTOR	5568 GRID	555350	4200550	2.8	10
RECEPTOR	5569 GRID	555400	4200550	3.22	10
RECEPTOR	5570 GRID	555450	4200550	3.52	10
RECEPTOR	5571 GRID	555500	4200550	4.28	10
RECEPTOR	5572 GRID	555550	4200550	4.17	10
RECEPTOR	5573 GRID	555600	4200550	4.67	10
RECEPTOR	5574 GRID	555650	4200550	5.31	10
RECEPTOR	5575 GRID	555700	4200550	5.77	10
RECEPTOR	5576 GRID	555750	4200550	6.43	10

File: Cancer_MNTUG.SRC

RECEPTOR	5577 GRID	555800	4200550	6.71	10
RECEPTOR	5578 GRID	555850	4200550	7.22	10
RECEPTOR	5579 GRID	555900	4200550	7.57	10
RECEPTOR	5580 GRID	555950	4200550	8.18	10
RECEPTOR	5581 GRID	556000	4200550	9	10
RECEPTOR	5582 GRID	556050	4200550	8.64	10
RECEPTOR	5583 GRID	556100	4200550	9.23	10
RECEPTOR	5584 GRID	556150	4200550	9.06	10
RECEPTOR	5585 GRID	556200	4200550	10.06	10
RECEPTOR	5586 GRID	556250	4200550	12.37	10
RECEPTOR	5587 GRID	556300	4200550	11.3	10
RECEPTOR	5588 GRID	556350	4200550	11.75	10
RECEPTOR	5589 GRID	556400	4200550	12.29	10
RECEPTOR	5590 GRID	556450	4200550	12.89	10
RECEPTOR	5591 GRID	556500	4200550	13.33	10
RECEPTOR	5592 GRID	556550	4200550	13.87	10
RECEPTOR	5593 GRID	556600	4200550	14.28	10
RECEPTOR	5594 GRID	555250	4200600	2.47	10
RECEPTOR	5595 GRID	555300	4200600	2.4	10
RECEPTOR	5596 GRID	555350	4200600	2.85	10
RECEPTOR	5597 GRID	555400	4200600	3.47	10
RECEPTOR	5598 GRID	555450	4200600	3.76	10
RECEPTOR	5599 GRID	555500	4200600	4.2	10
RECEPTOR	5600 GRID	555550	4200600	4.54	10
RECEPTOR	5601 GRID	555600	4200600	4.74	10
RECEPTOR	5602 GRID	555650	4200600	5.18	10
RECEPTOR	5603 GRID	555700	4200600	5.61	10
RECEPTOR	5604 GRID	555750	4200600	6.23	10
RECEPTOR	5605 GRID	555800	4200600	6.7	10
RECEPTOR	5606 GRID	555850	4200600	7.29	10
RECEPTOR	5607 GRID	555900	4200600	8.11	10
RECEPTOR	5608 GRID	555950	4200600	8.73	10
RECEPTOR	5609 GRID	556000	4200600	8.78	10
RECEPTOR	5610 GRID	556050	4200600	8.63	10
RECEPTOR	5611 GRID	556100	4200600	9.27	10
RECEPTOR	5612 GRID	556150	4200600	9.51	10
RECEPTOR	5613 GRID	556200	4200600	9.88	10
RECEPTOR	5614 GRID	556250	4200600	10.67	10
RECEPTOR	5615 GRID	556300	4200600	17.07	10
RECEPTOR	5616 GRID	556350	4200600	11.49	10
RECEPTOR	5617 GRID	556400	4200600	11.98	10
RECEPTOR	5618 GRID	556450	4200600	12.43	10
RECEPTOR	5619 GRID	556500	4200600	13.08	10
RECEPTOR	5620 GRID	556550	4200600	13.92	10
RECEPTOR	5621 GRID	556600	4200600	14.52	10
RECEPTOR	5622 GRID	555250	4200650	2.69	10
RECEPTOR	5623 GRID	555300	4200650	2.59	10
RECEPTOR	5624 GRID	555350	4200650	2.92	10
RECEPTOR	5625 GRID	555400	4200650	3.37	10
RECEPTOR	5626 GRID	555450	4200650	3.55	10
RECEPTOR	5627 GRID	555500	4200650	4.15	10
RECEPTOR	5628 GRID	555550	4200650	5.07	10
RECEPTOR	5629 GRID	555600	4200650	5.24	10
RECEPTOR	5630 GRID	555650	4200650	5.84	10
RECEPTOR	5631 GRID	555700	4200650	5.94	10
RECEPTOR	5632 GRID	555750	4200650	6.42	10
RECEPTOR	5633 GRID	555800	4200650	7.26	10
RECEPTOR	5634 GRID	555850	4200650	7.87	10
RECEPTOR	5635 GRID	555900	4200650	7.84	10
RECEPTOR	5636 GRID	555950	4200650	8.07	10

File: Cancer_MNTUG.SRC

RECEPTOR	5637 GRID	556000	4200650	8.83	10
RECEPTOR	5638 GRID	556050	4200650	8.9	10
RECEPTOR	5639 GRID	556100	4200650	8.73	10
RECEPTOR	5640 GRID	556150	4200650	9.64	10
RECEPTOR	5641 GRID	556200	4200650	10.25	10
RECEPTOR	5642 GRID	556250	4200650	10.38	10
RECEPTOR	5643 GRID	556300	4200650	10.97	10
RECEPTOR	5644 GRID	556350	4200650	11.14	10
RECEPTOR	5645 GRID	556400	4200650	11.94	10
RECEPTOR	5646 GRID	556450	4200650	12.36	10
RECEPTOR	5647 GRID	556500	4200650	13.07	10
RECEPTOR	5648 GRID	556550	4200650	13.33	10
RECEPTOR	5649 GRID	556600	4200650	13.7	10
RECEPTOR	5650 GRID	555250	4200700	2.69	10
RECEPTOR	5651 GRID	555300	4200700	2.74	10
RECEPTOR	5652 GRID	555350	4200700	2.69	10
RECEPTOR	5653 GRID	555400	4200700	3.19	10
RECEPTOR	5654 GRID	555450	4200700	3.35	10
RECEPTOR	5655 GRID	555500	4200700	3.98	10
RECEPTOR	5656 GRID	555550	4200700	4.68	10
RECEPTOR	5657 GRID	555600	4200700	5.14	10
RECEPTOR	5658 GRID	555650	4200700	5.53	10
RECEPTOR	5659 GRID	555700	4200700	5.78	10
RECEPTOR	5660 GRID	555750	4200700	6.31	10
RECEPTOR	5661 GRID	555800	4200700	7.36	10
RECEPTOR	5662 GRID	555850	4200700	7.38	10
RECEPTOR	5663 GRID	555900	4200700	8.08	10
RECEPTOR	5664 GRID	555950	4200700	8.08	10
RECEPTOR	5665 GRID	556000	4200700	8.52	10
RECEPTOR	5666 GRID	556050	4200700	8.51	10
RECEPTOR	5667 GRID	556100	4200700	9.56	10
RECEPTOR	5668 GRID	556150	4200700	9.7	10
RECEPTOR	5669 GRID	556200	4200700	10.05	10
RECEPTOR	5670 GRID	556250	4200700	11.1	10
RECEPTOR	5671 GRID	556300	4200700	12.02	10
RECEPTOR	5672 GRID	556350	4200700	15.93	10
RECEPTOR	5673 GRID	556400	4200700	12.06	10
RECEPTOR	5674 GRID	556450	4200700	12.47	10
RECEPTOR	5675 GRID	556500	4200700	13.45	10
RECEPTOR	5676 GRID	556550	4200700	13.86	10
RECEPTOR	5677 GRID	556600	4200700	13.93	10
RECEPTOR	5678 GRID	555250	4200750	3.3	10
RECEPTOR	5679 GRID	555300	4200750	2.39	10
RECEPTOR	5680 GRID	555350	4200750	2.63	10
RECEPTOR	5681 GRID	555400	4200750	2.91	10
RECEPTOR	5682 GRID	555450	4200750	3.41	10
RECEPTOR	5683 GRID	555500	4200750	3.82	10
RECEPTOR	5684 GRID	555550	4200750	4.23	10
RECEPTOR	5685 GRID	555600	4200750	4.65	10
RECEPTOR	5686 GRID	555650	4200750	5	10
RECEPTOR	5687 GRID	555700	4200750	5.5	10
RECEPTOR	5688 GRID	555750	4200750	6.21	10
RECEPTOR	5689 GRID	555800	4200750	6.8	10
RECEPTOR	5690 GRID	555850	4200750	6.98	10
RECEPTOR	5691 GRID	555900	4200750	7.24	10
RECEPTOR	5692 GRID	555950	4200750	7.48	10
RECEPTOR	5693 GRID	556000	4200750	7.97	10
RECEPTOR	5694 GRID	556050	4200750	8.44	10
RECEPTOR	5695 GRID	556100	4200750	8.92	10
RECEPTOR	5696 GRID	556150	4200750	9.73	10

File: Cancer_MNTUG.SRC

RECEPTOR	5697 GRID	556200	4200750	9.97	10
RECEPTOR	5698 GRID	556250	4200750	9.98	10
RECEPTOR	5699 GRID	556300	4200750	12.64	10
RECEPTOR	5700 GRID	556350	4200750	12.39	10
RECEPTOR	5701 GRID	556400	4200750	12.5	10
RECEPTOR	5702 GRID	556450	4200750	13.23	10
RECEPTOR	5703 GRID	556500	4200750	13.52	10
RECEPTOR	5704 GRID	556550	4200750	14.13	10
RECEPTOR	5705 GRID	556600	4200750	14.08	10
RECEPTOR	5706 GRID	555250	4200800	3.38	10
RECEPTOR	5707 GRID	555300	4200800	2.76	10
RECEPTOR	5708 GRID	555350	4200800	3.08	10
RECEPTOR	5709 GRID	555400	4200800	3.26	10
RECEPTOR	5710 GRID	555450	4200800	3.45	10
RECEPTOR	5711 GRID	555500	4200800	3.87	10
RECEPTOR	5712 GRID	555550	4200800	4.29	10
RECEPTOR	5713 GRID	555600	4200800	4.79	10
RECEPTOR	5714 GRID	555650	4200800	5.29	10
RECEPTOR	5715 GRID	555700	4200800	5.77	10
RECEPTOR	5716 GRID	555750	4200800	6.33	10
RECEPTOR	5717 GRID	555800	4200800	6.48	10
RECEPTOR	5718 GRID	555850	4200800	6.5	10
RECEPTOR	5719 GRID	555900	4200800	7.03	10
RECEPTOR	5720 GRID	555950	4200800	7.66	10
RECEPTOR	5721 GRID	556000	4200800	7.89	10
RECEPTOR	5722 GRID	556050	4200800	8.71	10
RECEPTOR	5723 GRID	556100	4200800	8.94	10
RECEPTOR	5724 GRID	556150	4200800	9.68	10
RECEPTOR	5725 GRID	556200	4200800	10.08	10
RECEPTOR	5726 GRID	556250	4200800	11.01	10
RECEPTOR	5727 GRID	556300	4200800	11.26	10
RECEPTOR	5728 GRID	556350	4200800	11.86	10
RECEPTOR	5729 GRID	556400	4200800	12.35	10
RECEPTOR	5730 GRID	556450	4200800	12.79	10
RECEPTOR	5731 GRID	556500	4200800	13.04	10
RECEPTOR	5732 GRID	556550	4200800	13.49	10
RECEPTOR	5733 GRID	556600	4200800	13.87	10
RECEPTOR	5734 GRID	555250	4200850	3.39	10
RECEPTOR	5735 GRID	555300	4200850	3.5	10
RECEPTOR	5736 GRID	555350	4200850	3.13	10
RECEPTOR	5737 GRID	555400	4200850	3.15	10
RECEPTOR	5738 GRID	555450	4200850	3.22	10
RECEPTOR	5739 GRID	555500	4200850	3.78	10
RECEPTOR	5740 GRID	555550	4200850	3.99	10
RECEPTOR	5741 GRID	555600	4200850	4.62	10
RECEPTOR	5742 GRID	555650	4200850	5.17	10
RECEPTOR	5743 GRID	555700	4200850	5.48	10
RECEPTOR	5744 GRID	555750	4200850	6.12	10
RECEPTOR	5745 GRID	555800	4200850	6.3	10
RECEPTOR	5746 GRID	555850	4200850	6.37	10
RECEPTOR	5747 GRID	555900	4200850	6.82	10
RECEPTOR	5748 GRID	555950	4200850	7.21	10
RECEPTOR	5749 GRID	556000	4200850	7.91	10
RECEPTOR	5750 GRID	556050	4200850	8.33	10
RECEPTOR	5751 GRID	556100	4200850	8.99	10
RECEPTOR	5752 GRID	556150	4200850	9.64	10
RECEPTOR	5753 GRID	556200	4200850	9.93	10
RECEPTOR	5754 GRID	556250	4200850	10.84	10
RECEPTOR	5755 GRID	556300	4200850	12.3	10
RECEPTOR	5756 GRID	556350	4200850	11.35	10

File: Cancer_MNTUG.SRC

RECEPTOR	5757 GRID	556400	4200850	11.8	10
RECEPTOR	5758 GRID	556450	4200850	12.08	10
RECEPTOR	5759 GRID	556500	4200850	12.6	10
RECEPTOR	5760 GRID	556550	4200850	13.13	10
RECEPTOR	5761 GRID	556600	4200850	13.38	10
RECEPTOR	5762 GRID	555250	4200900	2.66	10
RECEPTOR	5763 GRID	555300	4200900	2.97	10
RECEPTOR	5764 GRID	555350	4200900	3.14	10
RECEPTOR	5765 GRID	555400	4200900	3.24	10
RECEPTOR	5766 GRID	555450	4200900	3.07	10
RECEPTOR	5767 GRID	555500	4200900	3.33	10
RECEPTOR	5768 GRID	555550	4200900	3.68	10
RECEPTOR	5769 GRID	555600	4200900	4.09	10
RECEPTOR	5770 GRID	555650	4200900	4.6	10
RECEPTOR	5771 GRID	555700	4200900	5.06	10
RECEPTOR	5772 GRID	555750	4200900	5.56	10
RECEPTOR	5773 GRID	555800	4200900	6.04	10
RECEPTOR	5774 GRID	555850	4200900	6.14	10
RECEPTOR	5775 GRID	555900	4200900	6.85	10
RECEPTOR	5776 GRID	555950	4200900	7.31	10
RECEPTOR	5777 GRID	556000	4200900	7.84	10
RECEPTOR	5778 GRID	556050	4200900	8.41	10
RECEPTOR	5779 GRID	556100	4200900	8.64	10
RECEPTOR	5780 GRID	556150	4200900	9.36	10
RECEPTOR	5781 GRID	556200	4200900	10.16	10
RECEPTOR	5782 GRID	556250	4200900	10.73	10
RECEPTOR	5783 GRID	556300	4200900	11.36	10
RECEPTOR	5784 GRID	556350	4200900	11.03	10
RECEPTOR	5785 GRID	556400	4200900	11.44	10
RECEPTOR	5786 GRID	556450	4200900	11.57	10
RECEPTOR	5787 GRID	556500	4200900	12.23	10
RECEPTOR	5788 GRID	556550	4200900	12.75	10
RECEPTOR	5789 GRID	556600	4200900	12.56	10
RECEPTOR	5790 GRID	555100	4200950	3.89	10
RECEPTOR	5791 GRID	555150	4200950	3.56	10
RECEPTOR	5792 GRID	555200	4200950	3.96	10
RECEPTOR	5793 GRID	555250	4200950	3.63	10
RECEPTOR	5794 GRID	555300	4200950	3.77	10
RECEPTOR	5795 GRID	555350	4200950	3.26	10
RECEPTOR	5796 GRID	555400	4200950	3.47	10
RECEPTOR	5797 GRID	555450	4200950	3.05	10
RECEPTOR	5798 GRID	555500	4200950	3.47	10
RECEPTOR	5799 GRID	555550	4200950	3.85	10
RECEPTOR	5800 GRID	555600	4200950	4.24	10
RECEPTOR	5801 GRID	555650	4200950	4.59	10
RECEPTOR	5802 GRID	555700	4200950	5.3	10
RECEPTOR	5803 GRID	555750	4200950	5.71	10
RECEPTOR	5804 GRID	555800	4200950	6.03	10
RECEPTOR	5805 GRID	555850	4200950	6.17	10
RECEPTOR	5806 GRID	555900	4200950	6.63	10
RECEPTOR	5807 GRID	555950	4200950	7.06	10
RECEPTOR	5808 GRID	556000	4200950	7.54	10
RECEPTOR	5809 GRID	556050	4200950	8.07	10
RECEPTOR	5810 GRID	556100	4200950	8.52	10
RECEPTOR	5811 GRID	556150	4200950	9.16	10
RECEPTOR	5812 GRID	556200	4200950	9.51	10
RECEPTOR	5813 GRID	556250	4200950	10.37	10
RECEPTOR	5814 GRID	556300	4200950	10.4	10
RECEPTOR	5815 GRID	556350	4200950	10.27	10
RECEPTOR	5816 GRID	556400	4200950	10.95	10

File: Cancer_MNTUG.SRC

RECEPTOR	5817 GRID	556450	4200950	11.26	10
RECEPTOR	5818 GRID	556500	4200950	11.89	10
RECEPTOR	5819 GRID	556550	4200950	12.21	10
RECEPTOR	5820 GRID	556600	4200950	12.64	10
RECEPTOR	5821 GRID	555100	4201000	3.95	10
RECEPTOR	5822 GRID	555150	4201000	4.01	10
RECEPTOR	5823 GRID	555200	4201000	4.51	10
RECEPTOR	5824 GRID	555250	4201000	3.93	10
RECEPTOR	5825 GRID	555300	4201000	3.76	10
RECEPTOR	5826 GRID	555350	4201000	3.56	10
RECEPTOR	5827 GRID	555400	4201000	3.48	10
RECEPTOR	5828 GRID	555450	4201000	3.41	10
RECEPTOR	5829 GRID	555500	4201000	3.66	10
RECEPTOR	5830 GRID	555550	4201000	3.82	10
RECEPTOR	5831 GRID	555600	4201000	4.09	10
RECEPTOR	5832 GRID	555650	4201000	4.91	10
RECEPTOR	5833 GRID	555700	4201000	4.77	10
RECEPTOR	5834 GRID	555750	4201000	5.74	10
RECEPTOR	5835 GRID	555800	4201000	5.6	10
RECEPTOR	5836 GRID	555850	4201000	5.84	10
RECEPTOR	5837 GRID	555900	4201000	6.7	10
RECEPTOR	5838 GRID	555950	4201000	7.1	10
RECEPTOR	5839 GRID	556000	4201000	7.61	10
RECEPTOR	5840 GRID	556050	4201000	7.95	10
RECEPTOR	5841 GRID	556100	4201000	8.58	10
RECEPTOR	5842 GRID	556150	4201000	9.07	10
RECEPTOR	5843 GRID	556200	4201000	9.62	10
RECEPTOR	5844 GRID	556250	4201000	9.65	10
RECEPTOR	5845 GRID	556300	4201000	9.96	10
RECEPTOR	5846 GRID	556350	4201000	10.5	10
RECEPTOR	5847 GRID	556400	4201000	11.54	10
RECEPTOR	5848 GRID	556450	4201000	11.2	10
RECEPTOR	5849 GRID	556500	4201000	11.59	10
RECEPTOR	5850 GRID	556550	4201000	11.85	10
RECEPTOR	5851 GRID	556600	4201000	11.65	10
RECEPTOR	5852 GRID	555100	4201050	4.35	10
RECEPTOR	5853 GRID	555150	4201050	4.05	10
RECEPTOR	5854 GRID	555200	4201050	4.28	10
RECEPTOR	5855 GRID	555250	4201050	4.56	10
RECEPTOR	5856 GRID	555300	4201050	4.38	10
RECEPTOR	5857 GRID	555350	4201050	3.05	10
RECEPTOR	5858 GRID	555400	4201050	3.48	10
RECEPTOR	5859 GRID	555450	4201050	3.52	10
RECEPTOR	5860 GRID	555500	4201050	3.96	10
RECEPTOR	5861 GRID	555550	4201050	3.94	10
RECEPTOR	5862 GRID	555600	4201050	4.07	10
RECEPTOR	5863 GRID	555650	4201050	4.52	10
RECEPTOR	5864 GRID	555700	4201050	4.37	10
RECEPTOR	5865 GRID	555750	4201050	5.09	10
RECEPTOR	5866 GRID	555800	4201050	5.47	10
RECEPTOR	5867 GRID	555850	4201050	5.74	10
RECEPTOR	5868 GRID	555900	4201050	6.81	10
RECEPTOR	5869 GRID	555950	4201050	6.96	10
RECEPTOR	5870 GRID	556000	4201050	7.6	10
RECEPTOR	5871 GRID	556050	4201050	8.05	10
RECEPTOR	5872 GRID	556100	4201050	8.28	10
RECEPTOR	5873 GRID	556150	4201050	9.08	10
RECEPTOR	5874 GRID	556200	4201050	9.18	10
RECEPTOR	5875 GRID	556250	4201050	9.27	10
RECEPTOR	5876 GRID	556300	4201050	9.69	10

File: Cancer_MNTUG.SRC

RECEPTOR	5877 GRID	556350	4201050	9.93	10
RECEPTOR	5878 GRID	556400	4201050	11.13	10
RECEPTOR	5879 GRID	556450	4201050	10.79	10
RECEPTOR	5880 GRID	556500	4201050	11.22	10
RECEPTOR	5881 GRID	556550	4201050	11.44	10
RECEPTOR	5882 GRID	556600	4201050	11.15	10
RECEPTOR	5883 GRID	555100	4201100	4.21	10
RECEPTOR	5884 GRID	555150	4201100	4.1	10
RECEPTOR	5885 GRID	555200	4201100	4	10
RECEPTOR	5886 GRID	555250	4201100	3.94	10
RECEPTOR	5887 GRID	555300	4201100	3.03	10
RECEPTOR	5888 GRID	555350	4201100	3.34	10
RECEPTOR	5889 GRID	555400	4201100	3.45	10
RECEPTOR	5890 GRID	555450	4201100	3.65	10
RECEPTOR	5891 GRID	555500	4201100	3.94	10
RECEPTOR	5892 GRID	555550	4201100	4.05	10
RECEPTOR	5893 GRID	555600	4201100	4.08	10
RECEPTOR	5894 GRID	555650	4201100	4.39	10
RECEPTOR	5895 GRID	555700	4201100	4.19	10
RECEPTOR	5896 GRID	555750	4201100	5.06	10
RECEPTOR	5897 GRID	555800	4201100	5.31	10
RECEPTOR	5898 GRID	555850	4201100	5.47	10
RECEPTOR	5899 GRID	555900	4201100	6.37	10
RECEPTOR	5900 GRID	555950	4201100	6.72	10
RECEPTOR	5901 GRID	556000	4201100	7.5	10
RECEPTOR	5902 GRID	556050	4201100	8.02	10
RECEPTOR	5903 GRID	556100	4201100	8.06	10
RECEPTOR	5904 GRID	556150	4201100	9.07	10
RECEPTOR	5905 GRID	556200	4201100	9.12	10
RECEPTOR	5906 GRID	556250	4201100	9.08	10
RECEPTOR	5907 GRID	556300	4201100	9.61	10
RECEPTOR	5908 GRID	556350	4201100	12.73	10
RECEPTOR	5909 GRID	556400	4201100	10.79	10
RECEPTOR	5910 GRID	556450	4201100	10.5	10
RECEPTOR	5911 GRID	556500	4201100	10.88	10
RECEPTOR	5912 GRID	556550	4201100	10.92	10
RECEPTOR	5913 GRID	556600	4201100	11	10
RECEPTOR	5914 GRID	555100	4201150	4.01	10
RECEPTOR	5915 GRID	555150	4201150	3.88	10
RECEPTOR	5916 GRID	555200	4201150	3.92	10
RECEPTOR	5917 GRID	555250	4201150	3.91	10
RECEPTOR	5918 GRID	555300	4201150	3.1	10
RECEPTOR	5919 GRID	555350	4201150	3.5	10
RECEPTOR	5920 GRID	555400	4201150	3.65	10
RECEPTOR	5921 GRID	555450	4201150	3.65	10
RECEPTOR	5922 GRID	555500	4201150	4.15	10
RECEPTOR	5923 GRID	555550	4201150	4.05	10
RECEPTOR	5924 GRID	555600	4201150	4.05	10
RECEPTOR	5925 GRID	555650	4201150	4.22	10
RECEPTOR	5926 GRID	555700	4201150	4.04	10
RECEPTOR	5927 GRID	555750	4201150	4.43	10
RECEPTOR	5928 GRID	555800	4201150	5.09	10
RECEPTOR	5929 GRID	555850	4201150	5.32	10
RECEPTOR	5930 GRID	555900	4201150	5.83	10
RECEPTOR	5931 GRID	555950	4201150	6.44	10
RECEPTOR	5932 GRID	556000	4201150	7.09	10
RECEPTOR	5933 GRID	556050	4201150	7.54	10
RECEPTOR	5934 GRID	556100	4201150	7.85	10
RECEPTOR	5935 GRID	556150	4201150	8.55	10
RECEPTOR	5936 GRID	556200	4201150	9.11	10

File: Cancer_MNTUG.SRC

RECEPTOR	5937 GRID	556250	4201150	8.55	10
RECEPTOR	5938 GRID	556300	4201150	8.79	10
RECEPTOR	5939 GRID	556350	4201150	9.62	10
RECEPTOR	5940 GRID	556400	4201150	10.08	10
RECEPTOR	5941 GRID	556450	4201150	10.74	10
RECEPTOR	5942 GRID	556500	4201150	10.65	10
RECEPTOR	5943 GRID	556550	4201150	10.43	10
RECEPTOR	5944 GRID	556600	4201150	10.48	10
RECEPTOR	5945 GRID	555100	4201200	3.79	10
RECEPTOR	5946 GRID	555150	4201200	3.95	10
RECEPTOR	5947 GRID	555200	4201200	3.89	10
RECEPTOR	5948 GRID	555250	4201200	4.04	10
RECEPTOR	5949 GRID	555300	4201200	3.19	10
RECEPTOR	5950 GRID	555350	4201200	3.68	10
RECEPTOR	5951 GRID	555400	4201200	3.65	10
RECEPTOR	5952 GRID	555450	4201200	3.83	10
RECEPTOR	5953 GRID	555500	4201200	4.06	10
RECEPTOR	5954 GRID	555550	4201200	4.12	10
RECEPTOR	5955 GRID	555600	4201200	4.21	10
RECEPTOR	5956 GRID	555650	4201200	4.27	10
RECEPTOR	5957 GRID	555700	4201200	4.12	10
RECEPTOR	5958 GRID	555750	4201200	4.72	10
RECEPTOR	5959 GRID	555800	4201200	5.08	10
RECEPTOR	5960 GRID	555850	4201200	5.57	10
RECEPTOR	5961 GRID	555900	4201200	6.58	10
RECEPTOR	5962 GRID	555950	4201200	6.95	10
RECEPTOR	5963 GRID	556000	4201200	7.19	10
RECEPTOR	5964 GRID	556050	4201200	7.53	10
RECEPTOR	5965 GRID	556100	4201200	7.72	10
RECEPTOR	5966 GRID	556150	4201200	8.2	10
RECEPTOR	5967 GRID	556200	4201200	8.99	10
RECEPTOR	5968 GRID	556250	4201200	8.61	10
RECEPTOR	5969 GRID	556300	4201200	8.52	10
RECEPTOR	5970 GRID	556350	4201200	8.89	10
RECEPTOR	5971 GRID	556400	4201200	10.76	10
RECEPTOR	5972 GRID	556450	4201200	10.32	10
RECEPTOR	5973 GRID	556500	4201200	10.54	10
RECEPTOR	5974 GRID	556550	4201200	10.61	10
RECEPTOR	5975 GRID	556600	4201200	10.18	10
RECEPTOR	5976 GRID	555100	4201250	4.06	10
RECEPTOR	5977 GRID	555150	4201250	3.95	10
RECEPTOR	5978 GRID	555200	4201250	3.85	10
RECEPTOR	5979 GRID	555250	4201250	4.24	10
RECEPTOR	5980 GRID	555300	4201250	3.26	10
RECEPTOR	5981 GRID	555350	4201250	3.74	10
RECEPTOR	5982 GRID	555400	4201250	3.74	10
RECEPTOR	5983 GRID	555450	4201250	3.78	10
RECEPTOR	5984 GRID	555500	4201250	4.16	10
RECEPTOR	5985 GRID	555550	4201250	4.39	10
RECEPTOR	5986 GRID	555600	4201250	4.42	10
RECEPTOR	5987 GRID	555650	4201250	4.49	10
RECEPTOR	5988 GRID	555700	4201250	4.29	10
RECEPTOR	5989 GRID	555750	4201250	4.72	10
RECEPTOR	5990 GRID	555800	4201250	5.6	10
RECEPTOR	5991 GRID	555850	4201250	5.72	10
RECEPTOR	5992 GRID	555900	4201250	6.26	10
RECEPTOR	5993 GRID	555950	4201250	7.17	10
RECEPTOR	5994 GRID	556000	4201250	6.86	10
RECEPTOR	5995 GRID	556050	4201250	7.34	10
RECEPTOR	5996 GRID	556100	4201250	7.92	10

File: Cancer_MNTUG.SRC

RECEPTOR	5997 GRID	556150	4201250	7.93	10
RECEPTOR	5998 GRID	556200	4201250	9.24	10
RECEPTOR	5999 GRID	556250	4201250	8.97	10
RECEPTOR	6000 GRID	556300	4201250	8.81	10
RECEPTOR	6001 GRID	556350	4201250	9.48	10
RECEPTOR	6002 GRID	556400	4201250	11.1	10
RECEPTOR	6003 GRID	556450	4201250	10.07	10
RECEPTOR	6004 GRID	556500	4201250	10.34	10
RECEPTOR	6005 GRID	556550	4201250	10.34	10
RECEPTOR	6006 GRID	556600	4201250	9.83	10
RECEPTOR	6007 GRID	555100	4201300	3.71	10
RECEPTOR	6008 GRID	555150	4201300	3.9	10
RECEPTOR	6009 GRID	555200	4201300	3.93	10
RECEPTOR	6010 GRID	555250	4201300	4.45	10
RECEPTOR	6011 GRID	555300	4201300	3.84	10
RECEPTOR	6012 GRID	555350	4201300	3.8	10
RECEPTOR	6013 GRID	555400	4201300	4.03	10
RECEPTOR	6014 GRID	555450	4201300	3.94	10
RECEPTOR	6015 GRID	555500	4201300	4.16	10
RECEPTOR	6016 GRID	555550	4201300	4.39	10
RECEPTOR	6017 GRID	555600	4201300	4.46	10
RECEPTOR	6018 GRID	555650	4201300	4.76	10
RECEPTOR	6019 GRID	555700	4201300	4.44	10
RECEPTOR	6020 GRID	555750	4201300	5.2	10
RECEPTOR	6021 GRID	555800	4201300	5.51	10
RECEPTOR	6022 GRID	555850	4201300	5.71	10
RECEPTOR	6023 GRID	555900	4201300	6.47	10
RECEPTOR	6024 GRID	555950	4201300	7.03	10
RECEPTOR	6025 GRID	556000	4201300	6.94	10
RECEPTOR	6026 GRID	556050	4201300	7.25	10
RECEPTOR	6027 GRID	556100	4201300	7.74	10
RECEPTOR	6028 GRID	556150	4201300	8.01	10
RECEPTOR	6029 GRID	556200	4201300	9.27	10
RECEPTOR	6030 GRID	556250	4201300	9.09	10
RECEPTOR	6031 GRID	556300	4201300	9.21	10
RECEPTOR	6032 GRID	556350	4201300	9.76	10
RECEPTOR	6033 GRID	556400	4201300	10.82	10
RECEPTOR	6034 GRID	556450	4201300	10.05	10
RECEPTOR	6035 GRID	556500	4201300	10.17	10
RECEPTOR	6036 GRID	556550	4201300	10.29	10
RECEPTOR	6037 GRID	556600	4201300	9.97	10
RECEPTOR	6038 GRID	555100	4201350	4.47	10
RECEPTOR	6039 GRID	555150	4201350	3.85	10
RECEPTOR	6040 GRID	555200	4201350	4.39	10
RECEPTOR	6041 GRID	555250	4201350	4.17	10
RECEPTOR	6042 GRID	555300	4201350	4.06	10
RECEPTOR	6043 GRID	555350	4201350	4.15	10
RECEPTOR	6044 GRID	555400	4201350	4.23	10
RECEPTOR	6045 GRID	555450	4201350	4.03	10
RECEPTOR	6046 GRID	555500	4201350	4.26	10
RECEPTOR	6047 GRID	555550	4201350	4.37	10
RECEPTOR	6048 GRID	555600	4201350	4.64	10
RECEPTOR	6049 GRID	555650	4201350	4.81	10
RECEPTOR	6050 GRID	555700	4201350	4.59	10
RECEPTOR	6051 GRID	555750	4201350	5.19	10
RECEPTOR	6052 GRID	555800	4201350	5.43	10
RECEPTOR	6053 GRID	555850	4201350	5.89	10
RECEPTOR	6054 GRID	555900	4201350	6.7	10
RECEPTOR	6055 GRID	555950	4201350	6.84	10
RECEPTOR	6056 GRID	556000	4201350	6.78	10

File: Cancer_MNTUG.SRC

RECEPTOR	6057 GRID	556050	4201350	7.16	10
RECEPTOR	6058 GRID	556100	4201350	7.44	10
RECEPTOR	6059 GRID	556150	4201350	7.87	10
RECEPTOR	6060 GRID	556200	4201350	8.42	10
RECEPTOR	6061 GRID	556250	4201350	9.14	10
RECEPTOR	6062 GRID	556300	4201350	9.82	10
RECEPTOR	6063 GRID	556350	4201350	10.94	10
RECEPTOR	6064 GRID	556400	4201350	10.39	10
RECEPTOR	6065 GRID	556450	4201350	10.65	10
RECEPTOR	6066 GRID	556500	4201350	10.02	10
RECEPTOR	6067 GRID	556550	4201350	10.09	10
RECEPTOR	6068 GRID	556600	4201350	10.17	10
RECEPTOR	6069 GRID	555100	4201400	3.03	10
RECEPTOR	6070 GRID	555150	4201400	4.82	10
RECEPTOR	6071 GRID	555200	4201400	4.32	10
RECEPTOR	6072 GRID	555250	4201400	4.11	10
RECEPTOR	6073 GRID	555300	4201400	4.32	10
RECEPTOR	6074 GRID	555350	4201400	4.46	10
RECEPTOR	6075 GRID	555400	4201400	4.58	10
RECEPTOR	6076 GRID	555450	4201400	4.11	10
RECEPTOR	6077 GRID	555500	4201400	4.46	10
RECEPTOR	6078 GRID	555550	4201400	4.79	10
RECEPTOR	6079 GRID	555600	4201400	4.74	10
RECEPTOR	6080 GRID	555650	4201400	4.94	10
RECEPTOR	6081 GRID	555700	4201400	4.77	10
RECEPTOR	6082 GRID	555750	4201400	5.56	10
RECEPTOR	6083 GRID	555800	4201400	5.95	10
RECEPTOR	6084 GRID	555850	4201400	6.03	10
RECEPTOR	6085 GRID	555900	4201400	6.46	10
RECEPTOR	6086 GRID	555950	4201400	6.69	10
RECEPTOR	6087 GRID	556000	4201400	6.79	10
RECEPTOR	6088 GRID	556050	4201400	6.89	10
RECEPTOR	6089 GRID	556100	4201400	7.18	10
RECEPTOR	6090 GRID	556150	4201400	7.62	10
RECEPTOR	6091 GRID	556200	4201400	8.34	10
RECEPTOR	6092 GRID	556250	4201400	9.31	10
RECEPTOR	6093 GRID	556300	4201400	9.46	10
RECEPTOR	6094 GRID	556350	4201400	9.92	10
RECEPTOR	6095 GRID	556400	4201400	10.06	10
RECEPTOR	6096 GRID	556450	4201400	10.68	10
RECEPTOR	6097 GRID	556500	4201400	10.21	10
RECEPTOR	6098 GRID	556550	4201400	10.25	10
RECEPTOR	6099 GRID	556600	4201400	10.38	10
RECEPTOR	6100 GRID	555100	4201450	5.36	10
RECEPTOR	6101 GRID	555150	4201450	3.6	10
RECEPTOR	6102 GRID	555200	4201450	2.74	10
RECEPTOR	6103 GRID	555250	4201450	4.93	10
RECEPTOR	6104 GRID	555300	4201450	4.5	10
RECEPTOR	6105 GRID	555350	4201450	4.62	10
RECEPTOR	6106 GRID	555400	4201450	4.69	10
RECEPTOR	6107 GRID	555450	4201450	4.25	10
RECEPTOR	6108 GRID	555500	4201450	4.48	10
RECEPTOR	6109 GRID	555550	4201450	4.55	10
RECEPTOR	6110 GRID	555600	4201450	4.76	10
RECEPTOR	6111 GRID	555650	4201450	5	10
RECEPTOR	6112 GRID	555700	4201450	5.02	10
RECEPTOR	6113 GRID	555750	4201450	5.47	10
RECEPTOR	6114 GRID	555800	4201450	6.09	10
RECEPTOR	6115 GRID	555850	4201450	5.87	10
RECEPTOR	6116 GRID	555900	4201450	6.38	10

File: Cancer_MNTUG.SRC

RECEPTOR	6117 GRID	555950	4201450	6.36	10
RECEPTOR	6118 GRID	556000	4201450	6.49	10
RECEPTOR	6119 GRID	556050	4201450	6.72	10
RECEPTOR	6120 GRID	556100	4201450	7.12	10
RECEPTOR	6121 GRID	556150	4201450	7.53	10
RECEPTOR	6122 GRID	556200	4201450	7.8	10
RECEPTOR	6123 GRID	556250	4201450	9.28	10
RECEPTOR	6124 GRID	556300	4201450	9.29	10
RECEPTOR	6125 GRID	556350	4201450	9.49	10
RECEPTOR	6126 GRID	556400	4201450	9.15	10
RECEPTOR	6127 GRID	556450	4201450	10.36	10
RECEPTOR	6128 GRID	556500	4201450	10.07	10
RECEPTOR	6129 GRID	556550	4201450	10.23	10
RECEPTOR	6130 GRID	556600	4201450	10.42	10
RECEPTOR	6131 GRID	551150	4201500	47.29	10
RECEPTOR	6132 GRID	555100	4201500	7.07	10
RECEPTOR	6133 GRID	555150	4201500	7.25	10
RECEPTOR	6134 GRID	555200	4201500	6.04	10
RECEPTOR	6135 GRID	555250	4201500	3.09	10
RECEPTOR	6136 GRID	555300	4201500	3.74	10
RECEPTOR	6137 GRID	555350	4201500	4.89	10
RECEPTOR	6138 GRID	555400	4201500	4.95	10
RECEPTOR	6139 GRID	555450	4201500	4.35	10
RECEPTOR	6140 GRID	555500	4201500	4.9	10
RECEPTOR	6141 GRID	555550	4201500	4.77	10
RECEPTOR	6142 GRID	555600	4201500	4.88	10
RECEPTOR	6143 GRID	555650	4201500	5.15	10
RECEPTOR	6144 GRID	555700	4201500	5.23	10
RECEPTOR	6145 GRID	555750	4201500	5.48	10
RECEPTOR	6146 GRID	555800	4201500	5.99	10
RECEPTOR	6147 GRID	555850	4201500	5.63	10
RECEPTOR	6148 GRID	555900	4201500	6.18	10
RECEPTOR	6149 GRID	555950	4201500	6.26	10
RECEPTOR	6150 GRID	556000	4201500	6.16	10
RECEPTOR	6151 GRID	556050	4201500	7	10
RECEPTOR	6152 GRID	556100	4201500	6.85	10
RECEPTOR	6153 GRID	556150	4201500	7.48	10
RECEPTOR	6154 GRID	556200	4201500	8.06	10
RECEPTOR	6155 GRID	556250	4201500	9.24	10
RECEPTOR	6156 GRID	556300	4201500	9.2	10
RECEPTOR	6157 GRID	556350	4201500	9.2	10
RECEPTOR	6158 GRID	556400	4201500	9.28	10
RECEPTOR	6159 GRID	556450	4201500	9.66	10
RECEPTOR	6160 GRID	556500	4201500	10.08	10
RECEPTOR	6161 GRID	556550	4201500	10.18	10
RECEPTOR	6162 GRID	556600	4201500	10.35	10
RECEPTOR	6163 GRID	551000	4201550	27.84	10
RECEPTOR	6164 GRID	551050	4201550	31.13	10
RECEPTOR	6165 GRID	551100	4201550	22.51	10
RECEPTOR	6166 GRID	551150	4201550	31.17	10
RECEPTOR	6167 GRID	555100	4201550	6.98	10
RECEPTOR	6168 GRID	555150	4201550	7.18	10
RECEPTOR	6169 GRID	555200	4201550	7.64	10
RECEPTOR	6170 GRID	555250	4201550	8.04	10
RECEPTOR	6171 GRID	555300	4201550	4.22	10
RECEPTOR	6172 GRID	555350	4201550	3.03	10
RECEPTOR	6173 GRID	555400	4201550	5.1	10
RECEPTOR	6174 GRID	555450	4201550	4.71	10
RECEPTOR	6175 GRID	555500	4201550	4.91	10
RECEPTOR	6176 GRID	555550	4201550	5.08	10

File: Cancer_MNTUG.SRC

RECEPTOR	6177 GRID	555600	4201550	5.03	10
RECEPTOR	6178 GRID	555650	4201550	5.54	10
RECEPTOR	6179 GRID	555700	4201550	5.47	10
RECEPTOR	6180 GRID	555750	4201550	5.81	10
RECEPTOR	6181 GRID	555800	4201550	5.72	10
RECEPTOR	6182 GRID	555850	4201550	5.66	10
RECEPTOR	6183 GRID	555900	4201550	5.78	10
RECEPTOR	6184 GRID	555950	4201550	6.29	10
RECEPTOR	6185 GRID	556000	4201550	6.29	10
RECEPTOR	6186 GRID	556050	4201550	6.73	10
RECEPTOR	6187 GRID	556100	4201550	6.95	10
RECEPTOR	6188 GRID	556150	4201550	7.44	10
RECEPTOR	6189 GRID	556200	4201550	7.94	10
RECEPTOR	6190 GRID	556250	4201550	8.98	10
RECEPTOR	6191 GRID	556300	4201550	9.23	10
RECEPTOR	6192 GRID	556350	4201550	9.55	10
RECEPTOR	6193 GRID	556400	4201550	9.43	10
RECEPTOR	6194 GRID	556450	4201550	9.75	10
RECEPTOR	6195 GRID	556500	4201550	10.06	10
RECEPTOR	6196 GRID	556550	4201550	10.36	10
RECEPTOR	6197 GRID	556600	4201550	10.5	10
RECEPTOR	6198 GRID	550950	4201600	55.3	10
RECEPTOR	6199 GRID	551000	4201600	34.45	10
RECEPTOR	6200 GRID	551050	4201600	17.83	10
RECEPTOR	6201 GRID	551100	4201600	14.05	10
RECEPTOR	6202 GRID	551150	4201600	30.09	10
RECEPTOR	6203 GRID	555100	4201600	3.38	10
RECEPTOR	6204 GRID	555150	4201600	7.57	10
RECEPTOR	6205 GRID	555200	4201600	7.23	10
RECEPTOR	6206 GRID	555250	4201600	7.38	10
RECEPTOR	6207 GRID	555300	4201600	7.15	10
RECEPTOR	6208 GRID	555350	4201600	4.48	10
RECEPTOR	6209 GRID	555400	4201600	3.22	10
RECEPTOR	6210 GRID	555450	4201600	3.62	10
RECEPTOR	6211 GRID	555500	4201600	3.42	10
RECEPTOR	6212 GRID	555550	4201600	3.03	10
RECEPTOR	6213 GRID	555600	4201600	2.95	10
RECEPTOR	6214 GRID	555650	4201600	4.71	10
RECEPTOR	6215 GRID	555700	4201600	6.31	10
RECEPTOR	6216 GRID	555750	4201600	5.76	10
RECEPTOR	6217 GRID	555800	4201600	5.98	10
RECEPTOR	6218 GRID	555850	4201600	5.74	10
RECEPTOR	6219 GRID	555900	4201600	6.45	10
RECEPTOR	6220 GRID	555950	4201600	6.48	10
RECEPTOR	6221 GRID	556000	4201600	6.4	10
RECEPTOR	6222 GRID	556050	4201600	7.01	10
RECEPTOR	6223 GRID	556100	4201600	7.18	10
RECEPTOR	6224 GRID	556150	4201600	7.75	10
RECEPTOR	6225 GRID	556200	4201600	8.12	10
RECEPTOR	6226 GRID	556250	4201600	8.87	10
RECEPTOR	6227 GRID	556300	4201600	8.95	10
RECEPTOR	6228 GRID	556350	4201600	9.41	10
RECEPTOR	6229 GRID	556400	4201600	9.83	10
RECEPTOR	6230 GRID	556450	4201600	10.78	10
RECEPTOR	6231 GRID	556500	4201600	10.91	10
RECEPTOR	6232 GRID	556550	4201600	10.42	10
RECEPTOR	6233 GRID	556600	4201600	10.67	10
RECEPTOR	6234 GRID	551000	4201650	33.65	10
RECEPTOR	6235 GRID	551050	4201650	12.92	10
RECEPTOR	6236 GRID	551100	4201650	8.69	10

File: Cancer_MNTUG.SRC

RECEPTOR	6237 GRID	551150	4201650	29.47	10
RECEPTOR	6238 GRID	551200	4201650	47.81	10
RECEPTOR	6239 GRID	555100	4201650	3.36	10
RECEPTOR	6240 GRID	555150	4201650	7.33	10
RECEPTOR	6241 GRID	555200	4201650	7.17	10
RECEPTOR	6242 GRID	555250	4201650	6.35	10
RECEPTOR	6243 GRID	555300	4201650	4.94	10
RECEPTOR	6244 GRID	555350	4201650	4.42	10
RECEPTOR	6245 GRID	555400	4201650	4.86	10
RECEPTOR	6246 GRID	555450	4201650	7.83	10
RECEPTOR	6247 GRID	555500	4201650	8.46	10
RECEPTOR	6248 GRID	555550	4201650	7.3	10
RECEPTOR	6249 GRID	555600	4201650	5.75	10
RECEPTOR	6250 GRID	555650	4201650	5.63	10
RECEPTOR	6251 GRID	555700	4201650	4.41	10
RECEPTOR	6252 GRID	555750	4201650	3.71	10
RECEPTOR	6253 GRID	555800	4201650	4.33	10
RECEPTOR	6254 GRID	555850	4201650	3.98	10
RECEPTOR	6255 GRID	555900	4201650	3.47	10
RECEPTOR	6256 GRID	555950	4201650	5.66	10
RECEPTOR	6257 GRID	556000	4201650	6.64	10
RECEPTOR	6258 GRID	556050	4201650	7.04	10
RECEPTOR	6259 GRID	556100	4201650	7.24	10
RECEPTOR	6260 GRID	556150	4201650	7.61	10
RECEPTOR	6261 GRID	556200	4201650	8.16	10
RECEPTOR	6262 GRID	556250	4201650	8.81	10
RECEPTOR	6263 GRID	556300	4201650	9.17	10
RECEPTOR	6264 GRID	556350	4201650	9.15	10
RECEPTOR	6265 GRID	556400	4201650	9.58	10
RECEPTOR	6266 GRID	556450	4201650	10.8	10
RECEPTOR	6267 GRID	556500	4201650	10.51	10
RECEPTOR	6268 GRID	556550	4201650	11.04	10
RECEPTOR	6269 GRID	556600	4201650	11.19	10
RECEPTOR	6270 GRID	551000	4201700	20.71	10
RECEPTOR	6271 GRID	551050	4201700	6.32	10
RECEPTOR	6272 GRID	551100	4201700	4.98	10
RECEPTOR	6273 GRID	551150	4201700	20.92	10
RECEPTOR	6274 GRID	551200	4201700	38.92	10
RECEPTOR	6275 GRID	555100	4201700	3.34	10
RECEPTOR	6276 GRID	555150	4201700	3.11	10
RECEPTOR	6277 GRID	555200	4201700	3.47	10
RECEPTOR	6278 GRID	555250	4201700	3.77	10
RECEPTOR	6279 GRID	555300	4201700	4.74	10
RECEPTOR	6280 GRID	555350	4201700	4.49	10
RECEPTOR	6281 GRID	555400	4201700	4.97	10
RECEPTOR	6282 GRID	555450	4201700	5.08	10
RECEPTOR	6283 GRID	555500	4201700	5.66	10
RECEPTOR	6284 GRID	555550	4201700	5.75	10
RECEPTOR	6285 GRID	555600	4201700	5.57	10
RECEPTOR	6286 GRID	555650	4201700	5.18	10
RECEPTOR	6287 GRID	555700	4201700	5.47	10
RECEPTOR	6288 GRID	555750	4201700	5.28	10
RECEPTOR	6289 GRID	555800	4201700	5.88	10
RECEPTOR	6290 GRID	555850	4201700	6.13	10
RECEPTOR	6291 GRID	555900	4201700	6.99	10
RECEPTOR	6292 GRID	555950	4201700	6.85	10
RECEPTOR	6293 GRID	556000	4201700	6.85	10
RECEPTOR	6294 GRID	556050	4201700	4.25	10
RECEPTOR	6295 GRID	556100	4201700	6.58	10
RECEPTOR	6296 GRID	556150	4201700	8.02	10

File: Cancer_MNTUG.SRC

RECEPTOR	6297 GRID	556200	4201700	7.61	10
RECEPTOR	6298 GRID	556250	4201700	5.76	10
RECEPTOR	6299 GRID	556300	4201700	6.55	10
RECEPTOR	6300 GRID	556350	4201700	8.23	10
RECEPTOR	6301 GRID	556400	4201700	10.17	10
RECEPTOR	6302 GRID	556450	4201700	7.77	10
RECEPTOR	6303 GRID	556500	4201700	10.52	10
RECEPTOR	6304 GRID	556550	4201700	11.25	10
RECEPTOR	6305 GRID	556600	4201700	11.3	10
RECEPTOR	6306 GRID	551000	4201750	7.8	10
RECEPTOR	6307 GRID	551050	4201750	3.56	10
RECEPTOR	6308 GRID	551100	4201750	3.45	10
RECEPTOR	6309 GRID	551150	4201750	10.43	10
RECEPTOR	6310 GRID	551200	4201750	29.23	10
RECEPTOR	6311 GRID	555100	4201750	3.29	10
RECEPTOR	6312 GRID	555150	4201750	3.4	10
RECEPTOR	6313 GRID	555200	4201750	3.39	10
RECEPTOR	6314 GRID	555250	4201750	3.55	10
RECEPTOR	6315 GRID	555300	4201750	4.57	10
RECEPTOR	6316 GRID	555350	4201750	4.48	10
RECEPTOR	6317 GRID	555400	4201750	4.78	10
RECEPTOR	6318 GRID	555450	4201750	4.95	10
RECEPTOR	6319 GRID	555500	4201750	6.35	10
RECEPTOR	6320 GRID	555550	4201750	6.85	10
RECEPTOR	6321 GRID	555600	4201750	5.44	10
RECEPTOR	6322 GRID	555650	4201750	4.98	10
RECEPTOR	6323 GRID	555700	4201750	5.03	10
RECEPTOR	6324 GRID	555750	4201750	5.63	10
RECEPTOR	6325 GRID	555800	4201750	5.82	10
RECEPTOR	6326 GRID	555850	4201750	6.26	10
RECEPTOR	6327 GRID	555900	4201750	6.29	10
RECEPTOR	6328 GRID	555950	4201750	6.97	10
RECEPTOR	6329 GRID	556000	4201750	6.94	10
RECEPTOR	6330 GRID	556050	4201750	5.16	10
RECEPTOR	6331 GRID	556100	4201750	3.75	10
RECEPTOR	6332 GRID	556150	4201750	4.65	10
RECEPTOR	6333 GRID	556200	4201750	4.82	10
RECEPTOR	6334 GRID	556250	4201750	8.81	10
RECEPTOR	6335 GRID	556300	4201750	8.95	10
RECEPTOR	6336 GRID	556350	4201750	9.19	10
RECEPTOR	6337 GRID	556400	4201750	9.78	10
RECEPTOR	6338 GRID	556450	4201750	10.57	10
RECEPTOR	6339 GRID	556500	4201750	7.93	10
RECEPTOR	6340 GRID	556550	4201750	11.29	10
RECEPTOR	6341 GRID	556600	4201750	11.25	10
RECEPTOR	6342 GRID	551000	4201800	2.89	10
RECEPTOR	6343 GRID	551050	4201800	0.63	10
RECEPTOR	6344 GRID	551100	4201800	1.1	10
RECEPTOR	6345 GRID	551150	4201800	4.54	10
RECEPTOR	6346 GRID	551200	4201800	9.82	10
RECEPTOR	6347 GRID	555100	4201800	3.05	10
RECEPTOR	6348 GRID	555150	4201800	3.17	10
RECEPTOR	6349 GRID	555200	4201800	3.3	10
RECEPTOR	6350 GRID	555250	4201800	3.45	10
RECEPTOR	6351 GRID	555300	4201800	4.85	10
RECEPTOR	6352 GRID	555350	4201800	4.3	10
RECEPTOR	6353 GRID	555400	4201800	4.68	10
RECEPTOR	6354 GRID	555450	4201800	5.31	10
RECEPTOR	6355 GRID	555500	4201800	7.47	10
RECEPTOR	6356 GRID	555550	4201800	7.02	10

File: Cancer_MNTUG.SRC

RECEPTOR	6357 GRID	555600	4201800	5.21	10
RECEPTOR	6358 GRID	555650	4201800	5.68	10
RECEPTOR	6359 GRID	555700	4201800	5.93	10
RECEPTOR	6360 GRID	555750	4201800	6.18	10
RECEPTOR	6361 GRID	555800	4201800	6.18	10
RECEPTOR	6362 GRID	555850	4201800	6.17	10
RECEPTOR	6363 GRID	555900	4201800	6.23	10
RECEPTOR	6364 GRID	555950	4201800	6.54	10
RECEPTOR	6365 GRID	556000	4201800	6.54	10
RECEPTOR	6366 GRID	556050	4201800	7.46	10
RECEPTOR	6367 GRID	556100	4201800	7.23	10
RECEPTOR	6368 GRID	556150	4201800	6.77	10
RECEPTOR	6369 GRID	556200	4201800	7.84	10
RECEPTOR	6370 GRID	556250	4201800	7.92	10
RECEPTOR	6371 GRID	556300	4201800	8.87	10
RECEPTOR	6372 GRID	556350	4201800	8.95	10
RECEPTOR	6373 GRID	556400	4201800	9.64	10
RECEPTOR	6374 GRID	556450	4201800	10.28	10
RECEPTOR	6375 GRID	556500	4201800	11.15	10
RECEPTOR	6376 GRID	556550	4201800	9.45	10
RECEPTOR	6377 GRID	556600	4201800	11.3	10
RECEPTOR	6378 GRID	551000	4201850	2.67	10
RECEPTOR	6379 GRID	551050	4201850	0.55	10
RECEPTOR	6380 GRID	551100	4201850	0.54	10
RECEPTOR	6381 GRID	551150	4201850	0.52	10
RECEPTOR	6382 GRID	551200	4201850	0.85	10
RECEPTOR	6383 GRID	551250	4201850	2.28	10
RECEPTOR	6384 GRID	555100	4201850	3.13	10
RECEPTOR	6385 GRID	555150	4201850	3.19	10
RECEPTOR	6386 GRID	555200	4201850	3.38	10
RECEPTOR	6387 GRID	555250	4201850	3.86	10
RECEPTOR	6388 GRID	555300	4201850	4.65	10
RECEPTOR	6389 GRID	555350	4201850	4.47	10
RECEPTOR	6390 GRID	555400	4201850	4.57	10
RECEPTOR	6391 GRID	555450	4201850	4.98	10
RECEPTOR	6392 GRID	555500	4201850	5.02	10
RECEPTOR	6393 GRID	555550	4201850	6.47	10
RECEPTOR	6394 GRID	555600	4201850	5.36	10
RECEPTOR	6395 GRID	555650	4201850	5.56	10
RECEPTOR	6396 GRID	555700	4201850	5.47	10
RECEPTOR	6397 GRID	555750	4201850	5.52	10
RECEPTOR	6398 GRID	555800	4201850	5.89	10
RECEPTOR	6399 GRID	555850	4201850	5.95	10
RECEPTOR	6400 GRID	555900	4201850	6.21	10
RECEPTOR	6401 GRID	555950	4201850	6.3	10
RECEPTOR	6402 GRID	556000	4201850	6.57	10
RECEPTOR	6403 GRID	556050	4201850	6.89	10
RECEPTOR	6404 GRID	556100	4201850	9.24	10
RECEPTOR	6405 GRID	556150	4201850	8.59	10
RECEPTOR	6406 GRID	556200	4201850	7.59	10
RECEPTOR	6407 GRID	556250	4201850	8.41	10
RECEPTOR	6408 GRID	556300	4201850	8.84	10
RECEPTOR	6409 GRID	556350	4201850	8.97	10
RECEPTOR	6410 GRID	556400	4201850	9.08	10
RECEPTOR	6411 GRID	556450	4201850	10.39	10
RECEPTOR	6412 GRID	556500	4201850	11.24	10
RECEPTOR	6413 GRID	556550	4201850	11.17	10
RECEPTOR	6414 GRID	556600	4201850	10.54	10
RECEPTOR	6415 GRID	551000	4201900	2.64	10
RECEPTOR	6416 GRID	551050	4201900	0.52	10

File: Cancer_MNTUG.SRC

RECEPTOR	6417 GRID	551100	4201900	0.72	10
RECEPTOR	6418 GRID	551150	4201900	0.49	10
RECEPTOR	6419 GRID	551200	4201900	0.62	10
RECEPTOR	6420 GRID	551250	4201900	1.14	10
RECEPTOR	6421 GRID	551300	4201900	0.44	10
RECEPTOR	6422 GRID	555100	4201900	3.05	10
RECEPTOR	6423 GRID	555150	4201900	3.52	10
RECEPTOR	6424 GRID	555200	4201900	4.03	10
RECEPTOR	6425 GRID	555250	4201900	4.13	10
RECEPTOR	6426 GRID	555300	4201900	4.45	10
RECEPTOR	6427 GRID	555350	4201900	4.75	10
RECEPTOR	6428 GRID	555400	4201900	4.63	10
RECEPTOR	6429 GRID	555450	4201900	4.48	10
RECEPTOR	6430 GRID	555500	4201900	4.39	10
RECEPTOR	6431 GRID	555550	4201900	4.67	10
RECEPTOR	6432 GRID	555600	4201900	5.7	10
RECEPTOR	6433 GRID	555650	4201900	5.38	10
RECEPTOR	6434 GRID	555700	4201900	5.33	10
RECEPTOR	6435 GRID	555750	4201900	5.43	10
RECEPTOR	6436 GRID	555800	4201900	5.89	10
RECEPTOR	6437 GRID	555850	4201900	5.87	10
RECEPTOR	6438 GRID	555900	4201900	6.1	10
RECEPTOR	6439 GRID	555950	4201900	6.07	10
RECEPTOR	6440 GRID	556000	4201900	6.54	10
RECEPTOR	6441 GRID	556050	4201900	6.78	10
RECEPTOR	6442 GRID	556100	4201900	8.44	10
RECEPTOR	6443 GRID	556150	4201900	7.41	10
RECEPTOR	6444 GRID	556200	4201900	10.62	10
RECEPTOR	6445 GRID	556250	4201900	8.23	10
RECEPTOR	6446 GRID	556300	4201900	7.55	10
RECEPTOR	6447 GRID	556350	4201900	8.77	10
RECEPTOR	6448 GRID	556400	4201900	8.96	10
RECEPTOR	6449 GRID	556450	4201900	9.13	10
RECEPTOR	6450 GRID	556500	4201900	10.57	10
RECEPTOR	6451 GRID	556550	4201900	10.67	10
RECEPTOR	6452 GRID	556600	4201900	10.89	10
RECEPTOR	6453 GRID	551000	4201950	2.45	10
RECEPTOR	6454 GRID	551050	4201950	0.48	10
RECEPTOR	6455 GRID	551100	4201950	0.53	10
RECEPTOR	6456 GRID	551150	4201950	0.49	10
RECEPTOR	6457 GRID	551200	4201950	1.97	10
RECEPTOR	6458 GRID	555100	4201950	3.85	10
RECEPTOR	6459 GRID	555150	4201950	4.16	10
RECEPTOR	6460 GRID	555200	4201950	4.35	10
RECEPTOR	6461 GRID	555250	4201950	4.44	10
RECEPTOR	6462 GRID	555300	4201950	4.39	10
RECEPTOR	6463 GRID	555350	4201950	4.38	10
RECEPTOR	6464 GRID	555400	4201950	4.35	10
RECEPTOR	6465 GRID	555450	4201950	4.89	10
RECEPTOR	6466 GRID	555500	4201950	5.04	10
RECEPTOR	6467 GRID	555550	4201950	5.42	10
RECEPTOR	6468 GRID	555600	4201950	5.36	10
RECEPTOR	6469 GRID	555650	4201950	5.58	10
RECEPTOR	6470 GRID	555700	4201950	5.65	10
RECEPTOR	6471 GRID	555750	4201950	5.43	10
RECEPTOR	6472 GRID	555800	4201950	5.65	10
RECEPTOR	6473 GRID	555850	4201950	5.81	10
RECEPTOR	6474 GRID	555900	4201950	5.83	10
RECEPTOR	6475 GRID	555950	4201950	6.12	10
RECEPTOR	6476 GRID	556000	4201950	6.15	10

File: Cancer_MNTUG.SRC

RECEPTOR	6477 GRID	556050	4201950	6.8	10
RECEPTOR	6478 GRID	556100	4201950	7.01	10
RECEPTOR	6479 GRID	556150	4201950	7.26	10
RECEPTOR	6480 GRID	556200	4201950	7.32	10
RECEPTOR	6481 GRID	556250	4201950	8.2	10
RECEPTOR	6482 GRID	556300	4201950	8.72	10
RECEPTOR	6483 GRID	556350	4201950	8.29	10
RECEPTOR	6484 GRID	556400	4201950	8.79	10
RECEPTOR	6485 GRID	556450	4201950	8.91	10
RECEPTOR	6486 GRID	556500	4201950	10.84	10
RECEPTOR	6487 GRID	556550	4201950	10.81	10
RECEPTOR	6488 GRID	556600	4201950	11.3	10
RECEPTOR	6489 GRID	551000	4202000	2.57	10
RECEPTOR	6490 GRID	551050	4202000	0.85	10
RECEPTOR	6491 GRID	551100	4202000	0.84	10
RECEPTOR	6492 GRID	551150	4202000	0.42	10
RECEPTOR	6493 GRID	551200	4202000	2.01	10
RECEPTOR	6494 GRID	555100	4202000	4.18	10
RECEPTOR	6495 GRID	555150	4202000	4.25	10
RECEPTOR	6496 GRID	555200	4202000	4.6	10
RECEPTOR	6497 GRID	555250	4202000	4.61	10
RECEPTOR	6498 GRID	555300	4202000	4.76	10
RECEPTOR	6499 GRID	555350	4202000	4.58	10
RECEPTOR	6500 GRID	555400	4202000	4.53	10
RECEPTOR	6501 GRID	555450	4202000	4.61	10
RECEPTOR	6502 GRID	555500	4202000	5.06	10
RECEPTOR	6503 GRID	555550	4202000	5.42	10
RECEPTOR	6504 GRID	555600	4202000	5.27	10
RECEPTOR	6505 GRID	555650	4202000	5.42	10
RECEPTOR	6506 GRID	555700	4202000	5.51	10
RECEPTOR	6507 GRID	555750	4202000	5.43	10
RECEPTOR	6508 GRID	555800	4202000	5.52	10
RECEPTOR	6509 GRID	555850	4202000	5.57	10
RECEPTOR	6510 GRID	555900	4202000	5.61	10
RECEPTOR	6511 GRID	555950	4202000	5.8	10
RECEPTOR	6512 GRID	556000	4202000	6	10
RECEPTOR	6513 GRID	556050	4202000	6.36	10
RECEPTOR	6514 GRID	556100	4202000	6.71	10
RECEPTOR	6515 GRID	556150	4202000	6.84	10
RECEPTOR	6516 GRID	556200	4202000	7.16	10
RECEPTOR	6517 GRID	556250	4202000	7.23	10
RECEPTOR	6518 GRID	556300	4202000	7.79	10
RECEPTOR	6519 GRID	556350	4202000	8.12	10
RECEPTOR	6520 GRID	556400	4202000	8.4	10
RECEPTOR	6521 GRID	556450	4202000	10.44	10
RECEPTOR	6522 GRID	556500	4202000	11.18	10
RECEPTOR	6523 GRID	556550	4202000	10.02	10
RECEPTOR	6524 GRID	556600	4202000	11.17	10
RECEPTOR	6525 GRID	551050	4202050	2.42	10
RECEPTOR	6526 GRID	551100	4202050	0.45	10
RECEPTOR	6527 GRID	551150	4202050	0.45	10
RECEPTOR	6528 GRID	551200	4202050	0.52	10
RECEPTOR	6529 GRID	555100	4202050	4.33	10
RECEPTOR	6530 GRID	555150	4202050	4.45	10
RECEPTOR	6531 GRID	555200	4202050	4.81	10
RECEPTOR	6532 GRID	555250	4202050	4.69	10
RECEPTOR	6533 GRID	555300	4202050	4.81	10
RECEPTOR	6534 GRID	555350	4202050	4.48	10
RECEPTOR	6535 GRID	555400	4202050	4.52	10
RECEPTOR	6536 GRID	555450	4202050	4.67	10

File: Cancer_MNTUG.SRC

RECEPTOR	6537 GRID	555500	4202050	5.03	10
RECEPTOR	6538 GRID	555550	4202050	5.48	10
RECEPTOR	6539 GRID	555600	4202050	5.25	10
RECEPTOR	6540 GRID	555650	4202050	5.48	10
RECEPTOR	6541 GRID	555700	4202050	5.58	10
RECEPTOR	6542 GRID	555750	4202050	5.26	10
RECEPTOR	6543 GRID	555800	4202050	5.44	10
RECEPTOR	6544 GRID	555850	4202050	5.56	10
RECEPTOR	6545 GRID	555900	4202050	5.32	10
RECEPTOR	6546 GRID	555950	4202050	5.53	10
RECEPTOR	6547 GRID	556000	4202050	6.07	10
RECEPTOR	6548 GRID	556050	4202050	6.16	10
RECEPTOR	6549 GRID	556100	4202050	6.6	10
RECEPTOR	6550 GRID	556150	4202050	6.95	10
RECEPTOR	6551 GRID	556200	4202050	7.38	10
RECEPTOR	6552 GRID	556250	4202050	7.8	10
RECEPTOR	6553 GRID	556300	4202050	8.09	10
RECEPTOR	6554 GRID	556350	4202050	8.2	10
RECEPTOR	6555 GRID	556400	4202050	8.46	10
RECEPTOR	6556 GRID	556450	4202050	9.15	10
RECEPTOR	6557 GRID	556500	4202050	10.95	10
RECEPTOR	6558 GRID	556550	4202050	9.92	10
RECEPTOR	6559 GRID	556600	4202050	8.07	10
RECEPTOR	6560 GRID	551100	4202100	0.44	10
RECEPTOR	6561 GRID	551150	4202100	0.41	10
RECEPTOR	6562 GRID	551200	4202100	0.52	10
RECEPTOR	6563 GRID	555100	4202100	4.75	10
RECEPTOR	6564 GRID	555150	4202100	4.68	10
RECEPTOR	6565 GRID	555200	4202100	4.78	10
RECEPTOR	6566 GRID	555250	4202100	4.59	10
RECEPTOR	6567 GRID	555300	4202100	4.92	10
RECEPTOR	6568 GRID	555350	4202100	4.5	10
RECEPTOR	6569 GRID	555400	4202100	4.8	10
RECEPTOR	6570 GRID	555450	4202100	4.76	10
RECEPTOR	6571 GRID	555500	4202100	4.98	10
RECEPTOR	6572 GRID	555550	4202100	5.37	10
RECEPTOR	6573 GRID	555600	4202100	5.15	10
RECEPTOR	6574 GRID	555650	4202100	5.4	10
RECEPTOR	6575 GRID	555700	4202100	5.48	10
RECEPTOR	6576 GRID	555750	4202100	5.23	10
RECEPTOR	6577 GRID	555800	4202100	5.39	10
RECEPTOR	6578 GRID	555850	4202100	5.21	10
RECEPTOR	6579 GRID	555900	4202100	5.4	10
RECEPTOR	6580 GRID	555950	4202100	5.59	10
RECEPTOR	6581 GRID	556000	4202100	5.82	10
RECEPTOR	6582 GRID	556050	4202100	6.07	10
RECEPTOR	6583 GRID	556100	4202100	6.56	10
RECEPTOR	6584 GRID	556150	4202100	6.72	10
RECEPTOR	6585 GRID	556200	4202100	7.3	10
RECEPTOR	6586 GRID	556250	4202100	7.27	10
RECEPTOR	6587 GRID	556300	4202100	7.78	10
RECEPTOR	6588 GRID	556350	4202100	8	10
RECEPTOR	6589 GRID	556400	4202100	8.37	10
RECEPTOR	6590 GRID	556450	4202100	9.92	10
RECEPTOR	6591 GRID	556500	4202100	9.25	10
RECEPTOR	6592 GRID	556550	4202100	10.03	10
RECEPTOR	6593 GRID	556600	4202100	10.09	10
RECEPTOR	6594 GRID	555100	4202150	4.09	10
RECEPTOR	6595 GRID	555150	4202150	4.15	10
RECEPTOR	6596 GRID	555200	4202150	4.24	10

File: Cancer_MNTUG.SRC

RECEPTOR	6597 GRID	555250	4202150	4.11	10
RECEPTOR	6598 GRID	555300	4202150	5.01	10
RECEPTOR	6599 GRID	555350	4202150	4.83	10
RECEPTOR	6600 GRID	555400	4202150	5.67	10
RECEPTOR	6601 GRID	555450	4202150	5.26	10
RECEPTOR	6602 GRID	555500	4202150	5.27	10
RECEPTOR	6603 GRID	555550	4202150	5.16	10
RECEPTOR	6604 GRID	555600	4202150	5.52	10
RECEPTOR	6605 GRID	555650	4202150	5.49	10
RECEPTOR	6606 GRID	555700	4202150	5.76	10
RECEPTOR	6607 GRID	555750	4202150	5.26	10
RECEPTOR	6608 GRID	555800	4202150	5.55	10
RECEPTOR	6609 GRID	555850	4202150	5.63	10
RECEPTOR	6610 GRID	555900	4202150	5.35	10
RECEPTOR	6611 GRID	555950	4202150	5.6	10
RECEPTOR	6612 GRID	556000	4202150	5.59	10
RECEPTOR	6613 GRID	556050	4202150	6.18	10
RECEPTOR	6614 GRID	556100	4202150	6.54	10
RECEPTOR	6615 GRID	556150	4202150	6.53	10
RECEPTOR	6616 GRID	556200	4202150	7.29	10
RECEPTOR	6617 GRID	556250	4202150	7.25	10
RECEPTOR	6618 GRID	556300	4202150	8.73	10
RECEPTOR	6619 GRID	556350	4202150	8.03	10
RECEPTOR	6620 GRID	556400	4202150	8.27	10
RECEPTOR	6621 GRID	556450	4202150	7.96	10
RECEPTOR	6622 GRID	556500	4202150	8.84	10
RECEPTOR	6623 GRID	556550	4202150	9.48	10
RECEPTOR	6624 GRID	556600	4202150	11.84	10
RECEPTOR	6625 GRID	555100	4202200	4.17	10
RECEPTOR	6626 GRID	555150	4202200	4.22	10
RECEPTOR	6627 GRID	555200	4202200	4.09	10
RECEPTOR	6628 GRID	555250	4202200	4.22	10
RECEPTOR	6629 GRID	555300	4202200	4.8	10
RECEPTOR	6630 GRID	555350	4202200	4.97	10
RECEPTOR	6631 GRID	555400	4202200	6.31	10
RECEPTOR	6632 GRID	555450	4202200	5.69	10
RECEPTOR	6633 GRID	555500	4202200	5.43	10
RECEPTOR	6634 GRID	555550	4202200	5.39	10
RECEPTOR	6635 GRID	555600	4202200	5.42	10
RECEPTOR	6636 GRID	555650	4202200	5.71	10
RECEPTOR	6637 GRID	555700	4202200	5.66	10
RECEPTOR	6638 GRID	555750	4202200	5.05	10
RECEPTOR	6639 GRID	555800	4202200	4.86	10
RECEPTOR	6640 GRID	555850	4202200	5.05	10
RECEPTOR	6641 GRID	555900	4202200	5.19	10
RECEPTOR	6642 GRID	555950	4202200	5.76	10
RECEPTOR	6643 GRID	556000	4202200	5.94	10
RECEPTOR	6644 GRID	556050	4202200	6.53	10
RECEPTOR	6645 GRID	556100	4202200	6.62	10
RECEPTOR	6646 GRID	556150	4202200	6.44	10
RECEPTOR	6647 GRID	556200	4202200	6.91	10
RECEPTOR	6648 GRID	556250	4202200	8.01	10
RECEPTOR	6649 GRID	556300	4202200	8.86	10
RECEPTOR	6650 GRID	556350	4202200	8.18	10
RECEPTOR	6651 GRID	556400	4202200	8.44	10
RECEPTOR	6652 GRID	556450	4202200	8.65	10
RECEPTOR	6653 GRID	556500	4202200	9	10
RECEPTOR	6654 GRID	556550	4202200	9.3	10
RECEPTOR	6655 GRID	556600	4202200	10.3	10
RECEPTOR	6656 GRID	555100	4202250	4.37	10

File: Cancer_MNTUG.SRC

RECEPTOR	6657 GRID	555150	4202250	4.53	10
RECEPTOR	6658 GRID	555200	4202250	4.58	10
RECEPTOR	6659 GRID	555250	4202250	4.66	10
RECEPTOR	6660 GRID	555300	4202250	4.85	10
RECEPTOR	6661 GRID	555350	4202250	4.71	10
RECEPTOR	6662 GRID	555400	4202250	6.05	10
RECEPTOR	6663 GRID	555450	4202250	6.11	10
RECEPTOR	6664 GRID	555500	4202250	5.51	10
RECEPTOR	6665 GRID	555550	4202250	5.61	10
RECEPTOR	6666 GRID	555600	4202250	5.65	10
RECEPTOR	6667 GRID	555650	4202250	5.76	10
RECEPTOR	6668 GRID	555700	4202250	5.59	10
RECEPTOR	6669 GRID	555750	4202250	4.95	10
RECEPTOR	6670 GRID	555800	4202250	4.92	10
RECEPTOR	6671 GRID	555850	4202250	5.15	10
RECEPTOR	6672 GRID	555900	4202250	5.28	10
RECEPTOR	6673 GRID	555950	4202250	6.02	10
RECEPTOR	6674 GRID	556000	4202250	5.69	10
RECEPTOR	6675 GRID	556050	4202250	6.51	10
RECEPTOR	6676 GRID	556100	4202250	6.27	10
RECEPTOR	6677 GRID	556150	4202250	6.56	10
RECEPTOR	6678 GRID	556200	4202250	8.27	10
RECEPTOR	6679 GRID	556250	4202250	8.03	10
RECEPTOR	6680 GRID	556300	4202250	8.82	10
RECEPTOR	6681 GRID	556350	4202250	8.05	10
RECEPTOR	6682 GRID	556400	4202250	8.46	10
RECEPTOR	6683 GRID	556450	4202250	9.44	10
RECEPTOR	6684 GRID	556500	4202250	9.64	10
RECEPTOR	6685 GRID	556550	4202250	10.11	10
RECEPTOR	6686 GRID	556600	4202250	10.01	10
RECEPTOR	6687 GRID	555100	4202300	2.18	10
RECEPTOR	6688 GRID	555150	4202300	1.96	10
RECEPTOR	6689 GRID	555200	4202300	2.08	10
RECEPTOR	6690 GRID	555250	4202300	2.21	10
RECEPTOR	6691 GRID	555300	4202300	2.45	10
RECEPTOR	6692 GRID	555350	4202300	2.18	10
RECEPTOR	6693 GRID	555400	4202300	2.89	10
RECEPTOR	6694 GRID	555450	4202300	5.44	10
RECEPTOR	6695 GRID	555500	4202300	5.72	10
RECEPTOR	6696 GRID	555550	4202300	5.18	10
RECEPTOR	6697 GRID	555600	4202300	6.01	10
RECEPTOR	6698 GRID	555650	4202300	5.95	10
RECEPTOR	6699 GRID	555700	4202300	5.97	10
RECEPTOR	6700 GRID	555750	4202300	5.1	10
RECEPTOR	6701 GRID	555800	4202300	5.17	10
RECEPTOR	6702 GRID	555850	4202300	5.41	10
RECEPTOR	6703 GRID	555900	4202300	5.54	10
RECEPTOR	6704 GRID	555950	4202300	5.94	10
RECEPTOR	6705 GRID	556000	4202300	6.29	10
RECEPTOR	6706 GRID	556050	4202300	6.78	10
RECEPTOR	6707 GRID	556100	4202300	6.59	10
RECEPTOR	6708 GRID	556150	4202300	6.88	10
RECEPTOR	6709 GRID	556200	4202300	7.75	10
RECEPTOR	6710 GRID	556250	4202300	7.9	10
RECEPTOR	6711 GRID	556300	4202300	8.63	10
RECEPTOR	6712 GRID	556350	4202300	3.79	10
RECEPTOR	6713 GRID	556400	4202300	8.87	10
RECEPTOR	6714 GRID	556450	4202300	9.13	10
RECEPTOR	6715 GRID	556500	4202300	10.04	10
RECEPTOR	6716 GRID	556550	4202300	6.42	10

File: Cancer_MNTUG.SRC

RECEPTOR	6717 GRID	556600	4202300	9.82	10
RECEPTOR	6718 GRID	555100	4202350	3.42	10
RECEPTOR	6719 GRID	555150	4202350	3.75	10
RECEPTOR	6720 GRID	555200	4202350	4.12	10
RECEPTOR	6721 GRID	555250	4202350	4.31	10
RECEPTOR	6722 GRID	555300	4202350	4.66	10
RECEPTOR	6723 GRID	555350	4202350	5.39	10
RECEPTOR	6724 GRID	555400	4202350	3.75	10
RECEPTOR	6725 GRID	555450	4202350	2.01	10
RECEPTOR	6726 GRID	555500	4202350	3.36	10
RECEPTOR	6727 GRID	555550	4202350	3.21	10
RECEPTOR	6728 GRID	555600	4202350	5.68	10
RECEPTOR	6729 GRID	555650	4202350	5.83	10
RECEPTOR	6730 GRID	555700	4202350	6.16	10
RECEPTOR	6731 GRID	555750	4202350	5.5	10
RECEPTOR	6732 GRID	555800	4202350	5.76	10
RECEPTOR	6733 GRID	555850	4202350	5.82	10
RECEPTOR	6734 GRID	555900	4202350	6.37	10
RECEPTOR	6735 GRID	555950	4202350	6.58	10
RECEPTOR	6736 GRID	556000	4202350	6.43	10
RECEPTOR	6737 GRID	556050	4202350	7	10
RECEPTOR	6738 GRID	556100	4202350	6.95	10
RECEPTOR	6739 GRID	556150	4202350	7.51	10
RECEPTOR	6740 GRID	556200	4202350	10.01	10
RECEPTOR	6741 GRID	556250	4202350	6.9	10
RECEPTOR	6742 GRID	556300	4202350	8.52	10
RECEPTOR	6743 GRID	556350	4202350	8.89	10
RECEPTOR	6744 GRID	556400	4202350	9.15	10
RECEPTOR	6745 GRID	556450	4202350	3.69	10
RECEPTOR	6746 GRID	556500	4202350	6.28	10
RECEPTOR	6747 GRID	556550	4202350	10.19	10
RECEPTOR	6748 GRID	556600	4202350	8.79	10
RECEPTOR	6749 GRID	555100	4202400	3.21	10
RECEPTOR	6750 GRID	555150	4202400	3.34	10
RECEPTOR	6751 GRID	555200	4202400	3.63	10
RECEPTOR	6752 GRID	555250	4202400	4.27	10
RECEPTOR	6753 GRID	555300	4202400	4.05	10
RECEPTOR	6754 GRID	555350	4202400	4.37	10
RECEPTOR	6755 GRID	555400	4202400	4.21	10
RECEPTOR	6756 GRID	555450	4202400	4.86	10
RECEPTOR	6757 GRID	555500	4202400	5.45	10
RECEPTOR	6758 GRID	555550	4202400	4.06	10
RECEPTOR	6759 GRID	555600	4202400	5.26	10
RECEPTOR	6760 GRID	555650	4202400	4.25	10
RECEPTOR	6761 GRID	555700	4202400	2.32	10
RECEPTOR	6762 GRID	555750	4202400	2.67	10
RECEPTOR	6763 GRID	555800	4202400	2.47	10
RECEPTOR	6764 GRID	555850	4202400	3.31	10
RECEPTOR	6765 GRID	555900	4202400	5.3	10
RECEPTOR	6766 GRID	555950	4202400	6.91	10
RECEPTOR	6767 GRID	556000	4202400	7.31	10
RECEPTOR	6768 GRID	556050	4202400	7.16	10
RECEPTOR	6769 GRID	556100	4202400	7.41	10
RECEPTOR	6770 GRID	556150	4202400	4.1	10
RECEPTOR	6771 GRID	556200	4202400	3.6	10
RECEPTOR	6772 GRID	556250	4202400	6.39	10
RECEPTOR	6773 GRID	556300	4202400	8.77	10
RECEPTOR	6774 GRID	556350	4202400	8.84	10
RECEPTOR	6775 GRID	556400	4202400	8.77	10
RECEPTOR	6776 GRID	556450	4202400	8.97	10

File: Cancer_MNTUG.SRC

RECEPTOR	6777 GRID	556500	4202400	9.16	10
RECEPTOR	6778 GRID	556550	4202400	9.69	10
RECEPTOR	6779 GRID	556600	4202400	8.07	10
RECEPTOR	6780 GRID	554439	4197648	2.67	10
RECEPTOR	6781 GRID	554439	4197648	2.67	10
RECEPTOR	6782 GRID	554439	4197648	2.67	10
RECEPTOR	6783 GRID	554961	4196985	4.53	10
RECEPTOR	6784 GRID	555373	4201175	3.62	10
RECEPTOR	6785 GRID	555373	4201175	3.62	10
RECEPTOR	6786 GRID	555752	4198581	5.68	10
RECEPTOR	6787 GRID	555839	4199848	6.42	10
RECEPTOR	6788 GRID	555839	4199848	6.42	10
RECEPTOR	6789 GRID	555848	4199677	6.16	10
RECEPTOR	6790 GRID	555848	4199677	6.16	10
RECEPTOR	6791 GRID	555864	4200773	6.9	10
RECEPTOR	6792 GRID	555864	4200773	6.9	10
RECEPTOR	6793 GRID	555909	4198423	5.4	10
RECEPTOR	6794 GRID	555909	4198423	5.4	10
RECEPTOR	6795 GRID	555936	4201656	3.57	10
RECEPTOR	6796 GRID	555936	4201656	3.57	10
RECEPTOR	6797 GRID	555936	4201656	3.57	10
RECEPTOR	6798 GRID	556012	4198519	5.9	10
RECEPTOR	6799 GRID	556012	4198519	5.9	10
RECEPTOR	6800 GRID	556039	4198685	7.05	10
RECEPTOR	6801 GRID	556071	4199075	7.82	10
RECEPTOR	6802 GRID	556071	4199075	7.82	10
RECEPTOR	6803 GRID	556073	4199832	7.77	10
RECEPTOR	6804 GRID	556139	4198868	8.19	10
RECEPTOR	6805 GRID	556157	4198615	6.59	10
RECEPTOR	6806 GRID	556157	4198615	6.59	10
RECEPTOR	6807 GRID	556168	4198587	6.47	10
RECEPTOR	6808 GRID	556201	4199005	8.63	10
RECEPTOR	6809 GRID	556201	4199005	8.63	10
RECEPTOR	6810 GRID	556232	4199726	8.94	10
RECEPTOR	6811 GRID	556248	4198749	7.34	10
RECEPTOR	6812 GRID	556253	4199006	8.81	10
RECEPTOR	6813 GRID	556267	4198993	8.73	10
RECEPTOR	6814 GRID	556323	4198606	7.01	10
RECEPTOR	6815 GRID	556329	4199445	9.27	10
RECEPTOR	6816 GRID	556401	4199005	9.21	10
RECEPTOR	6817 GRID	556846	4200082	14.68	10
RECEPTOR	6818 GRID	556289	4198041	5.47	10
RECEPTOR	6819 GRID	556279	4197900	5.39	10
RECEPTOR	6820 GRID	555894	4198971	6.94	10
RECEPTOR	6821 GRID	554032	4197846	5.21	10
RECEPTOR	6822 GRID	555890	4200868	6.89	10
RECEPTOR	6823 GRID	555937	4200908	6.92	10
RECEPTOR	6824 GRID	556302	4199802	10.15	10
RECEPTOR	6825 GRID	555714	4201694	5.36	10
RECEPTOR	6826 GRID	554273	4196633	20.54	10
RECEPTOR	6827 GRID	556457	4198803	8.37	10
RECEPTOR	6828 GRID	555826	4198935	6.75	10
RECEPTOR	6829 GRID	556054	4199440	7.36	10
RECEPTOR	6830 GRID	555692	4199207	5.36	10
RECEPTOR	6831 GRID	554235	4197643	3.38	10
RECEPTOR	6832 GRID	556413	4197826	4.93	10
RECEPTOR	6833 GRID	555243	4198689	4.27	10
RECEPTOR	6834 GRID	551749	4199663	4.92	10
RECEPTOR	6835 GRID	556699	4200136	13.76	10
RECEPTOR	6836 GRID	556367	4198914	8.35	10

File: Cancer_MNTUG.SRC

RECEPTOR	6837 GRID	556371	4198729	7.89	10
RECEPTOR	6838 GRID	554018	4197818	5.55	10
RECEPTOR	6839 GRID	553876	4197753	17.36	10
RECEPTOR	6840 GRID	555846	4197900	3.69	10
RECEPTOR	6841 GRID	555873	4197850	3.64	10
RECEPTOR	6842 GRID	554907	4198399	2.61	10
RECEPTOR	6843 GRID	555109	4198399	3.55	10
RECEPTOR	6844 GRID	555297	4198399	4.07	10
RECEPTOR	6845 GRID	555502	4198395	4.35	10
RECEPTOR	6846 GRID	555691	4198392	5.26	10
RECEPTOR	6847 GRID	555906	4198389	5.95	10
RECEPTOR	6848 GRID	556104	4198392	6.44	10
RECEPTOR	6849 GRID	556299	4198392	7.3	10
RECEPTOR	6850 GRID	556501	4198395	7.42	10
RECEPTOR	6851 GRID	556928	4199151	12.53	10
RECEPTOR	6852 GRID	556925	4199611	13.77	10
RECEPTOR	6853 GRID	555240	4198745	4.56	10
RECEPTOR	6854 GRID	555248	4198745	4.69	10
RECEPTOR	6855 GRID	555891	4200852	6.88	10
RECEPTOR	6856 GRID	552150	4198870	33.14	10
RECEPTOR	6857 GRID	552200	4198870	33.22	10
RECEPTOR	6858 GRID	552250	4198870	33.44	10
RECEPTOR	6859 GRID	552150	4198920	33.96	10
RECEPTOR	6860 GRID	552200	4198920	33.94	10
RECEPTOR	6861 GRID	552250	4198920	37.75	10
RECEPTOR	6862 GRID	552300	4198920	38.15	10
RECEPTOR	6863 GRID	552350	4198920	34.49	10
RECEPTOR	6864 GRID	552050	4198970	30.82	10
RECEPTOR	6865 GRID	552100	4198970	31.52	10
RECEPTOR	6866 GRID	552150	4198970	33.79	10
RECEPTOR	6867 GRID	552200	4198970	34.37	10
RECEPTOR	6868 GRID	552250	4198970	34.75	10
RECEPTOR	6869 GRID	552300	4198970	34.02	10
RECEPTOR	6870 GRID	552350	4198970	34.65	10
RECEPTOR	6871 GRID	552400	4198970	34.47	10
RECEPTOR	6872 GRID	552050	4199020	32.47	10
RECEPTOR	6873 GRID	552100	4199020	34.58	10
RECEPTOR	6874 GRID	552150	4199020	34.16	10
RECEPTOR	6875 GRID	552200	4199020	34.71	10
RECEPTOR	6876 GRID	552250	4199020	34.77	10
RECEPTOR	6877 GRID	552300	4199020	39.01	10
RECEPTOR	6878 GRID	552350	4199020	34.99	10
RECEPTOR	6879 GRID	552400	4199020	35.22	10
RECEPTOR	6880 GRID	552450	4199020	41.35	10
RECEPTOR	6881 GRID	552500	4199020	104.47	10
RECEPTOR	6882 GRID	552050	4199070	33.01	10
RECEPTOR	6883 GRID	552100	4199070	34.57	10
RECEPTOR	6884 GRID	552150	4199070	34.43	10
RECEPTOR	6885 GRID	552200	4199070	35.54	10
RECEPTOR	6886 GRID	552250	4199070	35.81	10
RECEPTOR	6887 GRID	552300	4199070	35.78	10
RECEPTOR	6888 GRID	552350	4199070	35.54	10
RECEPTOR	6889 GRID	552400	4199070	38.78	10
RECEPTOR	6890 GRID	552450	4199070	55.78	10
RECEPTOR	6891 GRID	552500	4199070	102.95	10
RECEPTOR	6892 GRID	551950	4199120	34.48	10
RECEPTOR	6893 GRID	552000	4199120	37.26	10
RECEPTOR	6894 GRID	552050	4199120	36.26	10
RECEPTOR	6895 GRID	552100	4199120	40.66	10
RECEPTOR	6896 GRID	552150	4199120	44.73	10

File: Cancer_MNTUG.SRC

RECEPTOR	6897 GRID	552200	4199120	44.46	10
RECEPTOR	6898 GRID	552250	4199120	41.94	10
RECEPTOR	6899 GRID	552300	4199120	36.55	10
RECEPTOR	6900 GRID	552350	4199120	36.07	10
RECEPTOR	6901 GRID	552400	4199120	62.14	10
RECEPTOR	6902 GRID	552450	4199120	88.3	10
RECEPTOR	6903 GRID	552500	4199120	110.19	10
RECEPTOR	6904 GRID	551950	4199170	41.91	10
RECEPTOR	6905 GRID	552000	4199170	39.14	10
RECEPTOR	6906 GRID	552050	4199170	48.85	10
RECEPTOR	6907 GRID	552100	4199170	48.75	10
RECEPTOR	6908 GRID	552150	4199170	52.82	10
RECEPTOR	6909 GRID	552200	4199170	61.07	10
RECEPTOR	6910 GRID	552250	4199170	58.29	10
RECEPTOR	6911 GRID	552300	4199170	40.43	10
RECEPTOR	6912 GRID	552350	4199170	43.98	10
RECEPTOR	6913 GRID	552400	4199170	76.89	10
RECEPTOR	6914 GRID	552450	4199170	109.26	10
RECEPTOR	6915 GRID	551950	4199220	36.45	10
RECEPTOR	6916 GRID	552000	4199220	41.21	10
RECEPTOR	6917 GRID	552050	4199220	53.37	10
RECEPTOR	6918 GRID	552100	4199220	50.34	10
RECEPTOR	6919 GRID	552150	4199220	60.73	10
RECEPTOR	6920 GRID	552200	4199220	60.02	10
RECEPTOR	6921 GRID	552250	4199220	48.17	10
RECEPTOR	6922 GRID	552300	4199220	37.78	10
RECEPTOR	6923 GRID	552350	4199220	59.68	10
RECEPTOR	6924 GRID	552400	4199220	91.35	10
RECEPTOR	6925 GRID	552450	4199220	122.07	10
RECEPTOR	6926 GRID	552000	4199270	38.42	10
RECEPTOR	6927 GRID	552050	4199270	45.8	10
RECEPTOR	6928 GRID	552100	4199270	51.95	10
RECEPTOR	6929 GRID	552150	4199270	50.55	10
RECEPTOR	6930 GRID	552200	4199270	46.96	10
RECEPTOR	6931 GRID	552250	4199270	37.93	10
RECEPTOR	6932 GRID	552300	4199270	53.59	10
RECEPTOR	6933 GRID	552350	4199270	76.35	10
RECEPTOR	6934 GRID	552400	4199270	104.87	10
RECEPTOR	6935 GRID	552450	4199270	135.6	10
RECEPTOR	6936 GRID	552100	4199320	45.9	10
RECEPTOR	6937 GRID	552150	4199320	41.61	10
RECEPTOR	6938 GRID	552200	4199320	41.55	10
RECEPTOR	6939 GRID	552250	4199320	56.58	10
RECEPTOR	6940 GRID	552300	4199320	79.6	10
RECEPTOR	6941 GRID	552350	4199320	102.85	10
RECEPTOR	6942 GRID	552400	4199320	125.29	10
RECEPTOR	6943 GRID	554952	4199839	3.58	10
RECEPTOR	6944 GRID	555002	4199839	3.76	10
RECEPTOR	6945 GRID	554702	4199789	2.8	10
RECEPTOR	6946 GRID	554752	4199789	2.62	10
RECEPTOR	6947 GRID	554802	4199789	1.52	10
RECEPTOR	6948 GRID	554852	4199789	3.05	10
RECEPTOR	6949 GRID	554902	4199789	1.44	10
RECEPTOR	6950 GRID	554952	4199789	1.51	10
RECEPTOR	6951 GRID	555002	4199789	3.13	10
RECEPTOR	6952 GRID	554652	4199739	3.34	10
RECEPTOR	6953 GRID	554702	4199739	3.32	10
RECEPTOR	6954 GRID	554752	4199739	3.46	10
RECEPTOR	6955 GRID	554802	4199739	3.28	10
RECEPTOR	6956 GRID	554852	4199739	3.5	10

File: Cancer_MNTUG.SRC

RECEPTOR	6957 GRID	554902	4199739	3.42	10
RECEPTOR	6958 GRID	554952	4199739	1.62	10
RECEPTOR	6959 GRID	554652	4199689	3.27	10
RECEPTOR	6960 GRID	554702	4199689	3.33	10
RECEPTOR	6961 GRID	554752	4199689	3.45	10
RECEPTOR	6962 GRID	554802	4199689	3.51	10
RECEPTOR	6963 GRID	554852	4199689	3.37	10
RECEPTOR	6964 GRID	554902	4199689	3.35	10
RECEPTOR	6965 GRID	554602	4199639	3.13	10
RECEPTOR	6966 GRID	554652	4199639	3.16	10
RECEPTOR	6967 GRID	554702	4199639	3.27	10
RECEPTOR	6968 GRID	554752	4199639	3.34	10
RECEPTOR	6969 GRID	554802	4199639	3.44	10
RECEPTOR	6970 GRID	554852	4199639	2.95	10
RECEPTOR	6971 GRID	554902	4199639	3.41	10
RECEPTOR	6972 GRID	554602	4199589	3.22	10
RECEPTOR	6973 GRID	554652	4199589	3.23	10
RECEPTOR	6974 GRID	554702	4199589	3.22	10
RECEPTOR	6975 GRID	554752	4199589	3.54	10
RECEPTOR	6976 GRID	554802	4199589	3.14	10
RECEPTOR	6977 GRID	554852	4199589	2.84	10
RECEPTOR	6978 GRID	554552	4199539	3.46	10
RECEPTOR	6979 GRID	554602	4199539	3.36	10
RECEPTOR	6980 GRID	554652	4199539	3.3	10
RECEPTOR	6981 GRID	554702	4199539	3.35	10
RECEPTOR	6982 GRID	554752	4199539	3.39	10
RECEPTOR	6983 GRID	554802	4199539	3.3	10
RECEPTOR	6984 GRID	554852	4199539	3.31	10
RECEPTOR	6985 GRID	554552	4199489	2.59	10
RECEPTOR	6986 GRID	554602	4199489	3.18	10
RECEPTOR	6987 GRID	554652	4199489	3.15	10
RECEPTOR	6988 GRID	554702	4199489	3.23	10
RECEPTOR	6989 GRID	554752	4199489	3	10
RECEPTOR	6990 GRID	554802	4199489	2.92	10
RECEPTOR	6991 GRID	554552	4199439	2.97	10
RECEPTOR	6992 GRID	554602	4199439	3.06	10
RECEPTOR	6993 GRID	554652	4199439	3.18	10
RECEPTOR	6994 GRID	554702	4199439	3.19	10
RECEPTOR	6995 GRID	554752	4199439	2.8	10
RECEPTOR	6996 GRID	554802	4199439	2.69	10
RECEPTOR	6997 GRID	554552	4199389	2.79	10
RECEPTOR	6998 GRID	554602	4199389	3.02	10
RECEPTOR	6999 GRID	554652	4199389	3.22	10
RECEPTOR	7000 GRID	554702	4199389	3.45	10
RECEPTOR	7001 GRID	554752	4199389	3.38	10
RECEPTOR	7002 GRID	554552	4199339	2.96	10
RECEPTOR	7003 GRID	554602	4199339	2.99	10
RECEPTOR	7004 GRID	554652	4199339	3.41	10
RECEPTOR	7005 GRID	554702	4199339	3.64	10
RECEPTOR	7006 GRID	554752	4199339	2.99	10
RECEPTOR	7007 GRID	554552	4199289	3.12	10
RECEPTOR	7008 GRID	554602	4199289	3.6	10
RECEPTOR	7009 GRID	554652	4199289	3.52	10
RECEPTOR	7010 GRID	554702	4199289	3.36	10
RECEPTOR	7011 GRID	553050	4198150	7.47	10
RECEPTOR	7012 GRID	553100	4198150	14.39	10
RECEPTOR	7013 GRID	552950	4198200	3.5	10
RECEPTOR	7014 GRID	553000	4198200	6.13	10
RECEPTOR	7015 GRID	553050	4198200	10.52	10
RECEPTOR	7016 GRID	553100	4198200	20.51	10

File: Cancer_MNTUG.SRC

RECEPTOR	7017 GRID	552950	4198250	19.6	10
RECEPTOR	7018 GRID	553000	4198250	13.54	10
RECEPTOR	7019 GRID	553050	4198250	16.96	10
RECEPTOR	7020 GRID	553100	4198250	24.08	10
RECEPTOR	7021 GRID	552589.3	4200717	1.87	10
RECEPTOR	7022 GRID	552598.1	4200679	2.44	10
RECEPTOR	7023 GRID	552614.3	4200668	1.7	10
RECEPTOR	7024 GRID	552637.5	4200674	2.97	10
RECEPTOR	7025 GRID	552647.8	4200688	2.93	10
RECEPTOR	7026 GRID	552658.4	4200703	2.74	10
RECEPTOR	7027 GRID	552683.2	4200734	2.8	10
RECEPTOR	7028 GRID	552704.8	4200763	2.77	10
RECEPTOR	7029 GRID	552709	4200767	2.89	10
RECEPTOR	7030 GRID	552735.8	4200796	2.96	10
RECEPTOR	7031 GRID	552793.6	4200816	3.18	10
RECEPTOR	7032 GRID	552831	4200829	2.55	10
RECEPTOR	7033 GRID	552887.7	4200850	2.31	10
RECEPTOR	7034 GRID	552951.7	4200873	2.21	10
RECEPTOR	7035 GRID	552982	4200883	2.63	10
RECEPTOR	7036 GRID	553077.2	4200913	2.89	10
RECEPTOR	7037 GRID	553172.4	4200944	2.78	10
RECEPTOR	7038 GRID	553267.6	4200975	2.56	10
RECEPTOR	7039 GRID	553362.8	4201005	2.44	10
RECEPTOR	7040 GRID	553404.3	4201019	3.17	10
RECEPTOR	7041 GRID	553460.1	4201011	1.24	10
RECEPTOR	7042 GRID	553546.7	4200998	0.42	10
RECEPTOR	7043 GRID	553556.6	4200990	0.42	10
RECEPTOR	7044 GRID	553635.6	4200929	1.16	10
RECEPTOR	7045 GRID	553714.7	4200868	1.61	10
RECEPTOR	7046 GRID	553793.7	4200807	1.21	10
RECEPTOR	7047 GRID	553872.8	4200745	1.6	10
RECEPTOR	7048 GRID	553951.9	4200684	1.69	10
RECEPTOR	7049 GRID	553963.2	4200675	1.65	10
RECEPTOR	7050 GRID	554048.8	4200677	1.18	10
RECEPTOR	7051 GRID	554148.8	4200679	1.68	10
RECEPTOR	7052 GRID	554198.2	4200680	1.57	10
RECEPTOR	7053 GRID	554198.2	4200730	1.97	10
RECEPTOR	7054 GRID	554198.2	4200752	1.89	10
RECEPTOR	7055 GRID	554119.5	4200750	0.73	10
RECEPTOR	7056 GRID	554019.5	4200749	1.46	10
RECEPTOR	7057 GRID	553952.6	4200747	0.48	10
RECEPTOR	7058 GRID	553983.3	4200760	0.38	10
RECEPTOR	7059 GRID	554075.9	4200797	1.75	10
RECEPTOR	7060 GRID	554088.1	4200802	1.82	10
RECEPTOR	7061 GRID	554174.9	4200806	1.7	10
RECEPTOR	7062 GRID	554200.3	4200807	1.47	10
RECEPTOR	7063 GRID	554196.1	4200836	2.12	10
RECEPTOR	7064 GRID	554151.4	4200837	1.94	10
RECEPTOR	7065 GRID	554051.4	4200838	1.69	10
RECEPTOR	7066 GRID	554020.4	4200838	1.68	10
RECEPTOR	7067 GRID	553973.2	4200889	1.99	10
RECEPTOR	7068 GRID	553904.9	4200962	1.91	10
RECEPTOR	7069 GRID	553895.5	4200972	1.91	10
RECEPTOR	7070 GRID	553823.5	4201019	1.89	10
RECEPTOR	7071 GRID	553740.1	4201074	1.84	10
RECEPTOR	7072 GRID	553656.7	4201130	1.86	10
RECEPTOR	7073 GRID	553573.3	4201185	1.79	10
RECEPTOR	7074 GRID	553508.1	4201228	1.85	10
RECEPTOR	7075 GRID	553490.8	4201241	1.85	10
RECEPTOR	7076 GRID	553411.6	4201302	1.71	10

File: Cancer_MNTUG.SRC

RECEPTOR	7077 GRID	553332.5	4201363	1.44	10
RECEPTOR	7078 GRID	553332.4	4201363	1.44	10
RECEPTOR	7079 GRID	553265.5	4201438	1.5	10
RECEPTOR	7080 GRID	553199.1	4201511	1.91	10
RECEPTOR	7081 GRID	553198.8	4201512	1.91	10
RECEPTOR	7082 GRID	553150.9	4201600	2.8	10
RECEPTOR	7083 GRID	553148.2	4201605	2.65	10
RECEPTOR	7084 GRID	553241.4	4201619	2.24	10
RECEPTOR	7085 GRID	553288.2	4201626	2.42	10
RECEPTOR	7086 GRID	553340.9	4201626	2.35	10
RECEPTOR	7087 GRID	553440.9	4201626	2.24	10
RECEPTOR	7088 GRID	553471.3	4201626	1.92	10
RECEPTOR	7089 GRID	553506.7	4201686	2.4	10
RECEPTOR	7090 GRID	553542.8	4201747	2.58	10
RECEPTOR	7091 GRID	553570.8	4201739	2.24	10
RECEPTOR	7092 GRID	553603.9	4201729	1.86	10
RECEPTOR	7093 GRID	553668	4201742	2.08	10
RECEPTOR	7094 GRID	553765.9	4201762	2.63	10
RECEPTOR	7095 GRID	553833	4201776	2.6	10
RECEPTOR	7096 GRID	553856.5	4201797	2.66	10
RECEPTOR	7097 GRID	553931.3	4201863	2.52	10
RECEPTOR	7098 GRID	554006	4201930	2.34	10
RECEPTOR	7099 GRID	554080.7	4201996	2.68	10
RECEPTOR	7100 GRID	554094.6	4202008	2.7	10
RECEPTOR	7101 GRID	554139.4	4202076	3.03	10
RECEPTOR	7102 GRID	554194.4	4202160	3.01	10
RECEPTOR	7103 GRID	554225.1	4202206	2.58	10
RECEPTOR	7104 GRID	554269.3	4202207	1.74	10
RECEPTOR	7105 GRID	554369.3	4202209	1.6	10
RECEPTOR	7106 GRID	554433.7	4202210	3.07	10
RECEPTOR	7107 GRID	554434	4202186	1.89	10
RECEPTOR	7108 GRID	554434.1	4202174	1.72	10
RECEPTOR	7109 GRID	554434.4	4202137	1.77	10
RECEPTOR	7110 GRID	554434.6	4202112	1.67	10
RECEPTOR	7111 GRID	554434.9	4202087	1.79	10
RECEPTOR	7112 GRID	554435	4202074	1.83	10
RECEPTOR	7113 GRID	554435.3	4202038	1.96	10
RECEPTOR	7114 GRID	554435.6	4202014	1.9	10
RECEPTOR	7115 GRID	554435.9	4201974	1.94	10
RECEPTOR	7116 GRID	554436.2	4201940	1.92	10
RECEPTOR	7117 GRID	554436.5	4201916	1.94	10
RECEPTOR	7118 GRID	554436.8	4201874	1.84	10
RECEPTOR	7119 GRID	554437.1	4201842	1.93	10
RECEPTOR	7120 GRID	554437.4	4201818	1.92	10
RECEPTOR	7121 GRID	554437.7	4201774	1.93	10
RECEPTOR	7122 GRID	554437.8	4201769	1.93	10
RECEPTOR	7123 GRID	554438.1	4201744	1.92	10
RECEPTOR	7124 GRID	554438.3	4201720	1.94	10
RECEPTOR	7125 GRID	554438.5	4201695	1.95	10
RECEPTOR	7126 GRID	554438.7	4201674	1.94	10
RECEPTOR	7127 GRID	554438.7	4201671	1.93	10
RECEPTOR	7128 GRID	554439	4201646	1.89	10
RECEPTOR	7129 GRID	554439.4	4201597	2.14	10
RECEPTOR	7130 GRID	554439.7	4201574	2.3	10
RECEPTOR	7131 GRID	554439.7	4201573	2.28	10
RECEPTOR	7132 GRID	554440.3	4201499	2.33	10
RECEPTOR	7133 GRID	554440.6	4201475	2.44	10
RECEPTOR	7134 GRID	554440.6	4201474	2.44	10
RECEPTOR	7135 GRID	554441.2	4201401	2.34	10
RECEPTOR	7136 GRID	554441.5	4201377	2.33	10

File: Cancer_MNTUG.SRC

RECEPTOR	7137 GRID	554441.5	4201374	2.26	10
RECEPTOR	7138 GRID	554441.9	4201328	3.05	10
RECEPTOR	7139 GRID	554442.2	4201303	1.98	10
RECEPTOR	7140 GRID	554442.4	4201279	1.95	10
RECEPTOR	7141 GRID	554442.4	4201274	1.85	10
RECEPTOR	7142 GRID	554442.6	4201254	2.28	10
RECEPTOR	7143 GRID	554435.3	4201238	3.23	10
RECEPTOR	7144 GRID	554409.4	4201204	2.21	10
RECEPTOR	7145 GRID	554412.4	4201185	2.72	10
RECEPTOR	7146 GRID	554417.9	4201150	2.85	10
RECEPTOR	7147 GRID	554451.6	4201143	2.98	10
RECEPTOR	7148 GRID	554482	4201146	2.98	10
RECEPTOR	7149 GRID	554486.5	4201147	2.92	10
RECEPTOR	7150 GRID	554530.5	4201150	3.01	10
RECEPTOR	7151 GRID	554558.8	4201158	3.12	10
RECEPTOR	7152 GRID	554580.8	4201158	3.08	10
RECEPTOR	7153 GRID	554598	4201159	3.09	10
RECEPTOR	7154 GRID	554671.6	4201167	3.64	10
RECEPTOR	7155 GRID	554671.6	4201159	3.52	10
RECEPTOR	7156 GRID	554672.1	4201059	3.65	10
RECEPTOR	7157 GRID	554672.5	4200959	3.49	10
RECEPTOR	7158 GRID	554672.8	4200908	2.35	10
RECEPTOR	7159 GRID	554623.2	4200908	1.83	10
RECEPTOR	7160 GRID	554610.9	4200908	1.81	10
RECEPTOR	7161 GRID	554523.2	4200907	1.86	10
RECEPTOR	7162 GRID	554427.2	4200907	1.69	10
RECEPTOR	7163 GRID	554423.2	4200907	1.62	10
RECEPTOR	7164 GRID	554323.2	4200904	1.55	10
RECEPTOR	7165 GRID	554323.1	4200904	1.55	10
RECEPTOR	7166 GRID	554322.3	4200887	2.32	10
RECEPTOR	7167 GRID	554405	4200887	2.36	10
RECEPTOR	7168 GRID	554505	4200888	2.79	10
RECEPTOR	7169 GRID	554605	4200888	3.24	10
RECEPTOR	7170 GRID	554699.1	4200889	3.06	10
RECEPTOR	7171 GRID	554699.2	4200883	3.53	10
RECEPTOR	7172 GRID	554700.5	4200783	3.99	10
RECEPTOR	7173 GRID	554701	4200744	3.99	10
RECEPTOR	7174 GRID	554640.5	4200734	3.84	10
RECEPTOR	7175 GRID	554601.7	4200728	3.75	10
RECEPTOR	7176 GRID	554599.8	4200667	3.89	10
RECEPTOR	7177 GRID	554598.1	4200614	3.89	10
RECEPTOR	7178 GRID	554551.3	4200613	3.04	10
RECEPTOR	7179 GRID	554482.9	4200611	2.3	10
RECEPTOR	7180 GRID	554482.6	4200642	2.97	10
RECEPTOR	7181 GRID	554482.3	4200675	2.98	10
RECEPTOR	7182 GRID	554415.1	4200672	2.61	10
RECEPTOR	7183 GRID	554382.5	4200670	2.29	10
RECEPTOR	7184 GRID	554383.4	4200603	2.89	10
RECEPTOR	7185 GRID	554383.7	4200585	2.73	10
RECEPTOR	7186 GRID	554465.7	4200586	0.93	10
RECEPTOR	7187 GRID	554478.3	4200586	1.9	10
RECEPTOR	7188 GRID	554482.7	4200541	2.21	10
RECEPTOR	7189 GRID	554478.2	4200499	2.1	10
RECEPTOR	7190 GRID	554476.9	4200487	2.14	10
RECEPTOR	7191 GRID	554459.9	4200447	1.71	10
RECEPTOR	7192 GRID	554457.4	4200412	1.76	10
RECEPTOR	7193 GRID	554456.9	4200403	1.66	10
RECEPTOR	7194 GRID	554455	4200370	1.65	10
RECEPTOR	7195 GRID	554454	4200331	1.7	10
RECEPTOR	7196 GRID	554456.8	4200303	1.76	10

File: Cancer_MNTUG.SRC

RECEPTOR	7197 GRID	554457.9	4200292	1.71	10
RECEPTOR	7198 GRID	554465.7	4200267	1.81	10
RECEPTOR	7199 GRID	554471.1	4200240	2.08	10
RECEPTOR	7200 GRID	554478.7	4200206	2.43	10
RECEPTOR	7201 GRID	554480	4200200	2.56	10
RECEPTOR	7202 GRID	554504.5	4200199	3.02	10
RECEPTOR	7203 GRID	554529.1	4200197	2.92	10
RECEPTOR	7204 GRID	554574.2	4200195	2.43	10
RECEPTOR	7205 GRID	554578.1	4200195	2.49	10
RECEPTOR	7206 GRID	554615.9	4200168	2.86	10
RECEPTOR	7207 GRID	554640.2	4200168	2.96	10
RECEPTOR	7208 GRID	554664.5	4200168	2.88	10
RECEPTOR	7209 GRID	554665.7	4200168	2.88	10
RECEPTOR	7210 GRID	554688.8	4200169	3.17	10
RECEPTOR	7211 GRID	554713.1	4200169	3.26	10
RECEPTOR	7212 GRID	554737.5	4200169	3.33	10
RECEPTOR	7213 GRID	554765.7	4200169	3.08	10
RECEPTOR	7214 GRID	554834.7	4200170	3.85	10
RECEPTOR	7215 GRID	554835.5	4200145	2.83	10
RECEPTOR	7216 GRID	554835.7	4200139	2.69	10
RECEPTOR	7217 GRID	554837.6	4200071	2.51	10
RECEPTOR	7218 GRID	554838.4	4200046	2.57	10
RECEPTOR	7219 GRID	554838.6	4200039	2.57	10
RECEPTOR	7220 GRID	554840.5	4199972	2.57	10
RECEPTOR	7221 GRID	554841.3	4199948	2.57	10
RECEPTOR	7222 GRID	554841.5	4199939	2.66	10
RECEPTOR	7223 GRID	554843.4	4199874	2.67	10
RECEPTOR	7224 GRID	554844.2	4199849	3.13	10
RECEPTOR	7225 GRID	554843.2	4199839	2.43	10
RECEPTOR	7226 GRID	554840.4	4199811	1.31	10
RECEPTOR	7227 GRID	554822.6	4199806	1.62	10
RECEPTOR	7228 GRID	554804.9	4199801	1.52	10
RECEPTOR	7229 GRID	554787.1	4199796	1.61	10
RECEPTOR	7230 GRID	554770.5	4199795	2	10
RECEPTOR	7231 GRID	554745.1	4199795	2.05	10
RECEPTOR	7232 GRID	554724.2	4199794	2.12	10
RECEPTOR	7233 GRID	554703.2	4199794	2.88	10
RECEPTOR	7234 GRID	554682.2	4199794	2.79	10
RECEPTOR	7235 GRID	554676.4	4199783	2.59	10
RECEPTOR	7236 GRID	554670.6	4199773	2.83	10
RECEPTOR	7237 GRID	554658.9	4199753	3.22	10
RECEPTOR	7238 GRID	554647.3	4199732	3.13	10
RECEPTOR	7239 GRID	554635.7	4199712	2.71	10
RECEPTOR	7240 GRID	554626.7	4199697	2.98	10
RECEPTOR	7241 GRID	554624	4199692	2.87	10
RECEPTOR	7242 GRID	554612.4	4199671	2.8	10
RECEPTOR	7243 GRID	554600.7	4199651	2.92	10
RECEPTOR	7244 GRID	554589.1	4199631	2.9	10
RECEPTOR	7245 GRID	554577.5	4199610	3.02	10
RECEPTOR	7246 GRID	554577.2	4199610	3.01	10
RECEPTOR	7247 GRID	554565.8	4199590	3.11	10
RECEPTOR	7248 GRID	554532.3	4199553	2.72	10
RECEPTOR	7249 GRID	554534.1	4199526	2.63	10
RECEPTOR	7250 GRID	554537.6	4199472	2.58	10
RECEPTOR	7251 GRID	554542.4	4199426	2.72	10
RECEPTOR	7252 GRID	554544	4199411	2.55	10
RECEPTOR	7253 GRID	554546.9	4199346	2.61	10
RECEPTOR	7254 GRID	554548.3	4199326	2.56	10
RECEPTOR	7255 GRID	554548.8	4199319	2.76	10
RECEPTOR	7256 GRID	554548.3	4199287	3.09	10

File: Cancer_MNTUG.SRC

RECEPTOR	7257 GRID	554552.5	4199248	2.87	10
RECEPTOR	7258 GRID	554573.4	4199249	2.83	10
RECEPTOR	7259 GRID	554673.2	4199255	3.19	10
RECEPTOR	7260 GRID	554701.6	4199256	3.29	10
RECEPTOR	7261 GRID	554690	4199227	4.07	10
RECEPTOR	7262 GRID	554669.9	4199192	5.14	10
RECEPTOR	7263 GRID	554652.6	4199163	6.62	10
RECEPTOR	7264 GRID	554620.2	4199105	8.31	10
RECEPTOR	7265 GRID	554607.7	4199083	7.49	10
RECEPTOR	7266 GRID	554586.5	4199043	2.66	10
RECEPTOR	7267 GRID	554557.9	4199040	2.69	10
RECEPTOR	7268 GRID	554483.2	4199033	2.83	10
RECEPTOR	7269 GRID	554484.2	4199008	1.98	10
RECEPTOR	7270 GRID	554485.2	4198983	2.17	10
RECEPTOR	7271 GRID	554473.9	4198938	1.91	10
RECEPTOR	7272 GRID	554460.3	4198913	1.9	10
RECEPTOR	7273 GRID	554445	4198884	2.29	10
RECEPTOR	7274 GRID	554413.4	4198824	2.55	10
RECEPTOR	7275 GRID	554401.2	4198801	2.58	10
RECEPTOR	7276 GRID	554370.7	4198738	2.61	10
RECEPTOR	7277 GRID	554369.5	4198735	2.63	10
RECEPTOR	7278 GRID	554358	4198705	2.69	10
RECEPTOR	7279 GRID	554367.5	4198693	2.85	10
RECEPTOR	7280 GRID	554384.8	4198688	3.18	10
RECEPTOR	7281 GRID	554366.9	4198658	3.26	10
RECEPTOR	7282 GRID	554362.3	4198651	3.34	10
RECEPTOR	7283 GRID	554308.8	4198577	3.18	10
RECEPTOR	7284 GRID	554254.5	4198502	3.13	10
RECEPTOR	7285 GRID	554250.1	4198496	3.08	10
RECEPTOR	7286 GRID	554192	4198415	3.17	10
RECEPTOR	7287 GRID	554166.6	4198379	3.11	10
RECEPTOR	7288 GRID	554125.1	4198341	3.57	10
RECEPTOR	7289 GRID	554051.6	4198273	3.07	10
RECEPTOR	7290 GRID	554043.5	4198266	2.76	10
RECEPTOR	7291 GRID	553961.9	4198301	2.91	10
RECEPTOR	7292 GRID	553961	4198301	2.91	10
RECEPTOR	7293 GRID	553910.4	4198350	2.98	10
RECEPTOR	7294 GRID	553928.9	4198372	3	10
RECEPTOR	7295 GRID	553985.8	4198440	3.19	10
RECEPTOR	7296 GRID	553976.9	4198447	3.03	10
RECEPTOR	7297 GRID	553901.9	4198514	3.36	10
RECEPTOR	7298 GRID	553861.1	4198550	3.19	10
RECEPTOR	7299 GRID	553830.3	4198516	3.14	10
RECEPTOR	7300 GRID	553775.6	4198457	3.01	10
RECEPTOR	7301 GRID	553761.4	4198470	2.7	10
RECEPTOR	7302 GRID	553692.5	4198532	2.98	10
RECEPTOR	7303 GRID	553687.9	4198527	3.08	10
RECEPTOR	7304 GRID	553639.1	4198472	3.03	10
RECEPTOR	7305 GRID	553627.5	4198482	3.05	10
RECEPTOR	7306 GRID	553620.5	4198474	2.99	10
RECEPTOR	7307 GRID	553569.5	4198411	3	10
RECEPTOR	7308 GRID	553554.7	4198424	3.23	10
RECEPTOR	7309 GRID	553523.6	4198451	3.83	10
RECEPTOR	7310 GRID	553489.8	4198418	3.59	10
RECEPTOR	7311 GRID	553478.5	4198418	3.65	10
RECEPTOR	7312 GRID	553472.4	4198418	3.72	10
RECEPTOR	7313 GRID	553470.1	4198381	5.71	10
RECEPTOR	7314 GRID	553463.3	4198399	8.48	10
RECEPTOR	7315 GRID	553448.9	4198409	10.28	10
RECEPTOR	7316 GRID	553429.2	4198410	10.74	10

File: Cancer_MNTUG.SRC

RECEPTOR	7317 GRID	553422.3	4198410	11.11	10
RECEPTOR	7318 GRID	553340.5	4198453	18.97	10
RECEPTOR	7319 GRID	553339.9	4198453	18.95	10
RECEPTOR	7320 GRID	553288.5	4198484	20.69	10
RECEPTOR	7321 GRID	553251.6	4198500	21.64	10
RECEPTOR	7322 GRID	553239.2	4198505	22.97	10
RECEPTOR	7323 GRID	553154.9	4198524	19.8	10
RECEPTOR	7324 GRID	553151.6	4198525	19.08	10
RECEPTOR	7325 GRID	553090.6	4198532	20.7	10
RECEPTOR	7326 GRID	553055.5	4198530	24.83	10
RECEPTOR	7327 GRID	552976.6	4198524	23.55	10
RECEPTOR	7328 GRID	552956.5	4198518	21.14	10
RECEPTOR	7329 GRID	552860.7	4198489	16.28	10
RECEPTOR	7330 GRID	552800.8	4198472	12.89	10
RECEPTOR	7331 GRID	552764.3	4198463	16.72	10
RECEPTOR	7332 GRID	552757.8	4198462	16.89	10
RECEPTOR	7333 GRID	552684.4	4198462	15.3	10
RECEPTOR	7334 GRID	552665	4198467	14.14	10
RECEPTOR	7335 GRID	552583.7	4198486	11.65	10
RECEPTOR	7336 GRID	552571.9	4198498	12.5	10
RECEPTOR	7337 GRID	552535.9	4198532	11.49	10
RECEPTOR	7338 GRID	552500	4198567	13.07	10
RECEPTOR	7339 GRID	552464	4198602	15.56	10
RECEPTOR	7340 GRID	552450.8	4198610	15.46	10
RECEPTOR	7341 GRID	552428.4	4198584	13.49	10
RECEPTOR	7342 GRID	552421.4	4198576	12.44	10
RECEPTOR	7343 GRID	552404.8	4198519	11.37	10
RECEPTOR	7344 GRID	552375	4198516	11.4	10
RECEPTOR	7345 GRID	552362.6	4198514	11.51	10
RECEPTOR	7346 GRID	552275.1	4198510	12.74	10
RECEPTOR	7347 GRID	552259.7	4198510	10.4	10
RECEPTOR	7348 GRID	552203.9	4198505	4.44	10
RECEPTOR	7349 GRID	552175.4	4198507	5.97	10
RECEPTOR	7350 GRID	552075.6	4198513	5.78	10
RECEPTOR	7351 GRID	551975.8	4198520	5.69	10
RECEPTOR	7352 GRID	551876	4198526	1.38	10
RECEPTOR	7353 GRID	551870.3	4198526	1.03	10
RECEPTOR	7354 GRID	551859.9	4198548	1.12	10
RECEPTOR	7355 GRID	551844.5	4198564	1.08	10
RECEPTOR	7356 GRID	551819.8	4198576	0.87	10
RECEPTOR	7357 GRID	551814.5	4198592	0.57	10
RECEPTOR	7358 GRID	551813.2	4198596	0.62	10
RECEPTOR	7359 GRID	551808.5	4198610	0.93	10
RECEPTOR	7360 GRID	551803.5	4198636	1.06	10
RECEPTOR	7361 GRID	551796.7	4198659	1.07	10
RECEPTOR	7362 GRID	551787.4	4198670	0.53	10
RECEPTOR	7363 GRID	551778	4198681	0.36	10
RECEPTOR	7364 GRID	551774.3	4198685	0.46	10
RECEPTOR	7365 GRID	551748.6	4198719	1.08	10
RECEPTOR	7366 GRID	551698.8	4198744	1.04	10
RECEPTOR	7367 GRID	551696.7	4198743	0.89	10
RECEPTOR	7368 GRID	551684.8	4198738	0.72	10
RECEPTOR	7369 GRID	551653.9	4198750	0.9	10
RECEPTOR	7370 GRID	551637.4	4198772	0.93	10
RECEPTOR	7371 GRID	551621.3	4198794	1.14	10
RECEPTOR	7372 GRID	551612.1	4198806	0.97	10
RECEPTOR	7373 GRID	551585.6	4198836	0.66	10
RECEPTOR	7374 GRID	551566.9	4198876	1.95	10
RECEPTOR	7375 GRID	551566.7	4198876	1.95	10
RECEPTOR	7376 GRID	551540.5	4198924	0.47	10

File: Cancer_MNTUG.SRC

RECEPTOR	7377 GRID	551565.8	4198956	0.53	10
RECEPTOR	7378 GRID	551565.3	4198961	0.36	10
RECEPTOR	7379 GRID	551554.6	4199060	1.13	10
RECEPTOR	7380 GRID	551553.4	4199071	1.18	10
RECEPTOR	7381 GRID	551544.8	4199102	0.28	10
RECEPTOR	7382 GRID	551552.8	4199126	0.99	10
RECEPTOR	7383 GRID	551570	4199134	1.15	10
RECEPTOR	7384 GRID	551582.1	4199138	1.1	10
RECEPTOR	7385 GRID	551590.5	4199141	0.94	10
RECEPTOR	7386 GRID	551613	4199140	1.28	10
RECEPTOR	7387 GRID	551630.2	4199139	1.6	10
RECEPTOR	7388 GRID	551638.1	4199131	1.61	10
RECEPTOR	7389 GRID	551638.8	4199106	1.6	10
RECEPTOR	7390 GRID	551638.4	4199090	1.84	10
RECEPTOR	7391 GRID	551638.1	4199074	1.61	10
RECEPTOR	7392 GRID	551635.4	4199046	1.74	10
RECEPTOR	7393 GRID	551638.1	4199031	1.95	10
RECEPTOR	7394 GRID	551648	4199031	1.7	10
RECEPTOR	7395 GRID	551661.9	4199038	1.66	10
RECEPTOR	7396 GRID	551673.6	4199046	1.64	10
RECEPTOR	7397 GRID	551673.8	4199047	1.66	10
RECEPTOR	7398 GRID	551691.7	4199069	1.73	10
RECEPTOR	7399 GRID	551702.4	4199083	1.55	10
RECEPTOR	7400 GRID	551703.6	4199099	1.02	10
RECEPTOR	7401 GRID	551715.5	4199106	1.01	10
RECEPTOR	7402 GRID	551732.4	4199117	1.1	10
RECEPTOR	7403 GRID	551735.6	4199119	1.24	10
RECEPTOR	7404 GRID	551749.3	4199128	3.15	10
RECEPTOR	7405 GRID	551757.7	4199143	4.92	10
RECEPTOR	7406 GRID	551766.2	4199158	6.62	10
RECEPTOR	7407 GRID	551767.5	4199177	2.13	10
RECEPTOR	7408 GRID	551768.7	4199197	1.79	10
RECEPTOR	7409 GRID	551760.7	4199203	1.23	10
RECEPTOR	7410 GRID	551756.7	4199206	0.85	10
RECEPTOR	7411 GRID	551743.9	4199240	0.42	10
RECEPTOR	7412 GRID	551791.2	4199255	3.32	10
RECEPTOR	7413 GRID	551797.7	4199261	3	10
RECEPTOR	7414 GRID	551800.6	4199264	3.14	10
RECEPTOR	7415 GRID	551815.3	4199279	4.16	10
RECEPTOR	7416 GRID	551814.7	4199302	2.77	10
RECEPTOR	7417 GRID	551814.2	4199326	2.32	10
RECEPTOR	7418 GRID	551813.6	4199350	2.54	10
RECEPTOR	7419 GRID	551816.3	4199353	2.58	10
RECEPTOR	7420 GRID	551818.4	4199356	2.58	10
RECEPTOR	7421 GRID	551839.1	4199358	7.09	10
RECEPTOR	7422 GRID	551859.8	4199360	11.51	10
RECEPTOR	7423 GRID	551880.5	4199363	15.15	10
RECEPTOR	7424 GRID	551907.7	4199383	19.77	10
RECEPTOR	7425 GRID	551939	4199407	24.77	10
RECEPTOR	7426 GRID	551958.5	4199422	30.85	10
RECEPTOR	7427 GRID	551987.4	4199444	43.72	10
RECEPTOR	7428 GRID	551997.5	4199451	46.78	10
RECEPTOR	7429 GRID	552017.1	4199466	49.88	10
RECEPTOR	7430 GRID	552036.6	4199481	49.62	10
RECEPTOR	7431 GRID	552067	4199504	42.76	10
RECEPTOR	7432 GRID	552075.6	4199511	39.18	10
RECEPTOR	7433 GRID	552095.1	4199525	31.86	10
RECEPTOR	7434 GRID	552134.1	4199555	29.26	10
RECEPTOR	7435 GRID	552146.7	4199565	30.69	10
RECEPTOR	7436 GRID	552153.6	4199570	31.29	10

File: Cancer_MNTUG.SRC

RECEPTOR	7437 GRID	552173.1	4199585	33.2	10
RECEPTOR	7438 GRID	552192.6	4199599	36.02	10
RECEPTOR	7439 GRID	552212.1	4199614	39.88	10
RECEPTOR	7440 GRID	552226.4	4199625	42.75	10
RECEPTOR	7441 GRID	552231.6	4199629	44.2	10
RECEPTOR	7442 GRID	552251.1	4199644	48.41	10
RECEPTOR	7443 GRID	552270.7	4199659	55	10
RECEPTOR	7444 GRID	552290.2	4199674	65.24	10
RECEPTOR	7445 GRID	552306	4199686	74	10
RECEPTOR	7446 GRID	552309.7	4199688	76.43	10
RECEPTOR	7447 GRID	552348.7	4199718	97.31	10
RECEPTOR	7448 GRID	552368.2	4199733	106.52	10
RECEPTOR	7449 GRID	552385.7	4199746	115.8	10
RECEPTOR	7450 GRID	552387.7	4199748	117.03	10
RECEPTOR	7451 GRID	552374	4199768	112.23	10
RECEPTOR	7452 GRID	552360.2	4199788	114.46	10
RECEPTOR	7453 GRID	552346.5	4199808	114.07	10
RECEPTOR	7454 GRID	552332.7	4199828	115.91	10
RECEPTOR	7455 GRID	552332.4	4199828	115.9	10
RECEPTOR	7456 GRID	552319	4199848	116.34	10
RECEPTOR	7457 GRID	552305.2	4199868	116.76	10
RECEPTOR	7458 GRID	552291.5	4199888	114.7	10
RECEPTOR	7459 GRID	552277.7	4199908	112.5	10
RECEPTOR	7460 GRID	552275.8	4199910	111.67	10
RECEPTOR	7461 GRID	552264	4199928	104.97	10
RECEPTOR	7462 GRID	552250.2	4199948	106.3	10
RECEPTOR	7463 GRID	552236.5	4199968	112.65	10
RECEPTOR	7464 GRID	552222.7	4199988	118.82	10
RECEPTOR	7465 GRID	552219.2	4199993	119.47	10
RECEPTOR	7466 GRID	552209	4200008	117.15	10
RECEPTOR	7467 GRID	552195.2	4200028	110.91	10
RECEPTOR	7468 GRID	552181.5	4200048	100.38	10
RECEPTOR	7469 GRID	552167.7	4200068	106.66	10
RECEPTOR	7470 GRID	552162.5	4200075	109.3	10
RECEPTOR	7471 GRID	552154	4200088	112.66	10
RECEPTOR	7472 GRID	552140.2	4200108	113.88	10
RECEPTOR	7473 GRID	552126.5	4200128	113.27	10
RECEPTOR	7474 GRID	552112.7	4200148	111.82	10
RECEPTOR	7475 GRID	552105.9	4200158	111.1	10
RECEPTOR	7476 GRID	552099	4200168	110.55	10
RECEPTOR	7477 GRID	552085.2	4200188	110.43	10
RECEPTOR	7478 GRID	552071.5	4200208	109.91	10
RECEPTOR	7479 GRID	552057.7	4200228	110.08	10
RECEPTOR	7480 GRID	552049.2	4200240	108.64	10
RECEPTOR	7481 GRID	552044	4200248	107.52	10
RECEPTOR	7482 GRID	552030.2	4200268	104.18	10
RECEPTOR	7483 GRID	552016.5	4200288	107.98	10
RECEPTOR	7484 GRID	552002.7	4200308	112.14	10
RECEPTOR	7485 GRID	551992.6	4200322	117.74	10
RECEPTOR	7486 GRID	551989	4200328	119.3	10
RECEPTOR	7487 GRID	551969.1	4200341	120.05	10
RECEPTOR	7488 GRID	551949.3	4200355	119.14	10
RECEPTOR	7489 GRID	551929.4	4200368	118.7	10
RECEPTOR	7490 GRID	551911.5	4200380	121.46	10
RECEPTOR	7491 GRID	551909.5	4200382	121.71	10
RECEPTOR	7492 GRID	551889.7	4200395	123.22	10
RECEPTOR	7493 GRID	551849.9	4200422	118.33	10
RECEPTOR	7494 GRID	551830	4200436	113.31	10
RECEPTOR	7495 GRID	551828.8	4200436	112.86	10
RECEPTOR	7496 GRID	551810.2	4200449	114.71	10

File: Cancer_MNTUG.SRC

RECEPTOR	7497 GRID	551790.3	4200463	116.63	10
RECEPTOR	7498 GRID	551774	4200481	119.97	10
RECEPTOR	7499 GRID	551757.8	4200500	123.7	10
RECEPTOR	7500 GRID	551755.2	4200503	124.11	10
RECEPTOR	7501 GRID	551741.5	4200519	126.25	10
RECEPTOR	7502 GRID	551725.3	4200537	127.19	10
RECEPTOR	7503 GRID	551709	4200556	125.42	10
RECEPTOR	7504 GRID	551692.8	4200575	122.04	10
RECEPTOR	7505 GRID	551689.5	4200578	121.11	10
RECEPTOR	7506 GRID	551676.5	4200593	117.8	10
RECEPTOR	7507 GRID	551660.2	4200612	111.6	10
RECEPTOR	7508 GRID	551644	4200631	103.55	10
RECEPTOR	7509 GRID	551627.7	4200649	105.67	10
RECEPTOR	7510 GRID	551623.8	4200654	105.74	10
RECEPTOR	7511 GRID	551611.5	4200668	106.73	10
RECEPTOR	7512 GRID	551595.2	4200687	103.99	10
RECEPTOR	7513 GRID	551579	4200705	104.76	10
RECEPTOR	7514 GRID	551562.7	4200724	98.69	10
RECEPTOR	7515 GRID	551558.1	4200729	97.09	10
RECEPTOR	7516 GRID	551546.4	4200743	95.08	10
RECEPTOR	7517 GRID	551530.2	4200761	91.56	10
RECEPTOR	7518 GRID	551513.9	4200780	87.25	10
RECEPTOR	7519 GRID	551497.7	4200799	91.94	10
RECEPTOR	7520 GRID	551492.5	4200805	93.37	10
RECEPTOR	7521 GRID	551481.4	4200817	95.72	10
RECEPTOR	7522 GRID	551465.2	4200836	93.99	10
RECEPTOR	7523 GRID	551448.9	4200855	92.96	10
RECEPTOR	7524 GRID	551432.7	4200873	91.59	10
RECEPTOR	7525 GRID	551426.8	4200880	91.08	10
RECEPTOR	7526 GRID	551416.4	4200892	89.88	10
RECEPTOR	7527 GRID	551400.1	4200911	86.75	10
RECEPTOR	7528 GRID	551383.9	4200929	85.75	10
RECEPTOR	7529 GRID	551367.6	4200948	87.33	10
RECEPTOR	7530 GRID	551361.1	4200955	87.03	10
RECEPTOR	7531 GRID	551351.4	4200967	85.86	10
RECEPTOR	7532 GRID	551335.1	4200985	82.43	10
RECEPTOR	7533 GRID	551318.9	4201004	80.09	10
RECEPTOR	7534 GRID	551302.6	4201023	80.79	10
RECEPTOR	7535 GRID	551297.8	4201013	75.92	10
RECEPTOR	7536 GRID	551291.6	4201000	68.71	10
RECEPTOR	7537 GRID	551280.7	4200978	56.55	10
RECEPTOR	7538 GRID	551258.7	4200933	52.86	10
RECEPTOR	7539 GRID	551253.7	4200923	55.28	10
RECEPTOR	7540 GRID	551247.8	4200911	56.58	10
RECEPTOR	7541 GRID	551236.8	4200889	51.79	10
RECEPTOR	7542 GRID	551215.4	4200882	43.17	10
RECEPTOR	7543 GRID	551194.1	4200876	35.99	10
RECEPTOR	7544 GRID	551177.9	4200871	31.49	10
RECEPTOR	7545 GRID	551172.7	4200869	30.25	10
RECEPTOR	7546 GRID	551151.4	4200863	23.42	10
RECEPTOR	7547 GRID	551130	4200856	18.05	10
RECEPTOR	7548 GRID	551108.7	4200850	14.82	10
RECEPTOR	7549 GRID	551092.3	4200856	12	10
RECEPTOR	7550 GRID	551082.7	4200859	10.96	10
RECEPTOR	7551 GRID	551075.9	4200862	10.42	10
RECEPTOR	7552 GRID	551053.5	4200853	9.91	10
RECEPTOR	7553 GRID	551031.2	4200844	8.93	10
RECEPTOR	7554 GRID	551008.8	4200836	5	10
RECEPTOR	7555 GRID	550995.7	4200825	1.46	10
RECEPTOR	7556 GRID	550992.9	4200822	1.14	10

File: Cancer_MNTUG.SRC

RECEPTOR	7557 GRID	550982.7	4200814	0.72	10
RECEPTOR	7558 GRID	550980.4	4200833	0.49	10
RECEPTOR	7559 GRID	550978.2	4200853	0.52	10
RECEPTOR	7560 GRID	550975.9	4200873	0.52	10
RECEPTOR	7561 GRID	550965.7	4200888	0.49	10
RECEPTOR	7562 GRID	550962.3	4200896	0.44	10
RECEPTOR	7563 GRID	550948.9	4200930	1.32	10
RECEPTOR	7564 GRID	550938.7	4200939	1.11	10
RECEPTOR	7565 GRID	550928.5	4200949	0.9	10
RECEPTOR	7566 GRID	550907.6	4200953	0.53	10
RECEPTOR	7567 GRID	550893.1	4200955	0.55	10
RECEPTOR	7568 GRID	550886.8	4200957	0.56	10
RECEPTOR	7569 GRID	550865.9	4200961	1.59	10
RECEPTOR	7570 GRID	550825.3	4200968	8.87	10
RECEPTOR	7571 GRID	550800.3	4200986	1.02	10
RECEPTOR	7572 GRID	550791.5	4200993	0.47	10
RECEPTOR	7573 GRID	550776.3	4201010	0.53	10
RECEPTOR	7574 GRID	550761	4201028	0.55	10
RECEPTOR	7575 GRID	550732.8	4201060	0.57	10
RECEPTOR	7576 GRID	550732.8	4201060	0.57	10
RECEPTOR	7577 GRID	550718.7	4201076	0.9	10
RECEPTOR	7578 GRID	550698.7	4201080	0.61	10
RECEPTOR	7579 GRID	550678.8	4201084	0.59	10
RECEPTOR	7580 GRID	550658.8	4201089	0.6	10
RECEPTOR	7581 GRID	550641.9	4201093	0.86	10
RECEPTOR	7582 GRID	550638.9	4201093	0.95	10
RECEPTOR	7583 GRID	550618.9	4201098	1.25	10
RECEPTOR	7584 GRID	550576.5	4201118	0.61	10
RECEPTOR	7585 GRID	550568.6	4201137	0.61	10
RECEPTOR	7586 GRID	550565.3	4201145	0.62	10
RECEPTOR	7587 GRID	550560.8	4201156	0.64	10
RECEPTOR	7588 GRID	550552.9	4201176	0.64	10
RECEPTOR	7589 GRID	550542.3	4201197	0.62	10
RECEPTOR	7590 GRID	550522.7	4201235	0.62	10
RECEPTOR	7591 GRID	550521.1	4201239	0.62	10
RECEPTOR	7592 GRID	550510.5	4201260	0.62	10
RECEPTOR	7593 GRID	550504.7	4201281	0.61	10
RECEPTOR	7594 GRID	550499	4201302	0.6	10
RECEPTOR	7595 GRID	550493.2	4201324	0.6	10
RECEPTOR	7596 GRID	550491.6	4201330	0.56	10
RECEPTOR	7597 GRID	550487.5	4201345	0.63	10
RECEPTOR	7598 GRID	550481.7	4201367	0.6	10
RECEPTOR	7599 GRID	550473.3	4201387	0.61	10
RECEPTOR	7600 GRID	550464.8	4201408	0.49	10
RECEPTOR	7601 GRID	550458.3	4201424	0.53	10
RECEPTOR	7602 GRID	550456.4	4201429	0.4	10
RECEPTOR	7603 GRID	550447.9	4201450	0.42	10
RECEPTOR	7604 GRID	550443.2	4201472	0.34	10
RECEPTOR	7605 GRID	550438.4	4201495	0.37	10
RECEPTOR	7606 GRID	550433.7	4201517	0.4	10
RECEPTOR	7607 GRID	550433	4201520	0.35	10
RECEPTOR	7608 GRID	550428.9	4201540	0.43	10
RECEPTOR	7609 GRID	550424.2	4201563	0.59	10
RECEPTOR	7610 GRID	550428.2	4201580	1.48	10
RECEPTOR	7611 GRID	550432.1	4201598	3.98	10
RECEPTOR	7612 GRID	550436.5	4201602	4.71	10
RECEPTOR	7613 GRID	550431.9	4201616	4.94	10
RECEPTOR	7614 GRID	550423.7	4201641	4.96	10
RECEPTOR	7615 GRID	550400.4	4201692	4.17	10
RECEPTOR	7616 GRID	550414.4	4201703	11.49	10

File: Cancer_MNTUG.SRC

RECEPTOR	7617 GRID	550429.4	4201714	26.46	10
RECEPTOR	7618 GRID	550463.9	4201667	15.67	10
RECEPTOR	7619 GRID	550463.9	4201650	11.61	10
RECEPTOR	7620 GRID	550469.2	4201652	12.55	10
RECEPTOR	7621 GRID	550472.4	4201653	13.14	10
RECEPTOR	7622 GRID	550496.6	4201652	15.59	10
RECEPTOR	7623 GRID	550513.9	4201664	20.84	10
RECEPTOR	7624 GRID	550541.5	4201671	26.46	10
RECEPTOR	7625 GRID	550563.9	4201673	30.4	10
RECEPTOR	7626 GRID	550564.2	4201673	30.47	10
RECEPTOR	7627 GRID	550579.4	4201676	33.78	10
RECEPTOR	7628 GRID	550562.2	4201716	39.75	10
RECEPTOR	7629 GRID	550560.4	4201750	42.83	10
RECEPTOR	7630 GRID	550560.4	4201757	42.27	10
RECEPTOR	7631 GRID	550560.4	4201857	47.13	10
RECEPTOR	7632 GRID	550560.4	4201857	47.15	10
RECEPTOR	7633 GRID	550577.7	4201866	45.94	10
RECEPTOR	7634 GRID	550595.3	4201877	43.43	10
RECEPTOR	7635 GRID	550610.1	4201891	40.2	10
RECEPTOR	7636 GRID	550627.9	4201901	38.41	10
RECEPTOR	7637 GRID	550642.9	4201911	36.04	10
RECEPTOR	7638 GRID	550643.8	4201911	35.79	10
RECEPTOR	7639 GRID	550657.7	4201921	32.87	10
RECEPTOR	7640 GRID	550673.3	4201936	30.88	10
RECEPTOR	7641 GRID	550689.4	4201951	31.66	10
RECEPTOR	7642 GRID	550705.9	4201955	31.48	10
RECEPTOR	7643 GRID	550719.3	4201964	29	10
RECEPTOR	7644 GRID	550724.8	4201968	29.43	10
RECEPTOR	7645 GRID	550732.7	4201973	20.25	10
RECEPTOR	7646 GRID	550746.7	4201987	6.03	10
RECEPTOR	7647 GRID	550764.2	4201992	4.41	10
RECEPTOR	7648 GRID	550781.8	4201998	0.49	10
RECEPTOR	7649 GRID	550791.2	4201984	0.49	10
RECEPTOR	7650 GRID	550800.6	4201970	0.62	10
RECEPTOR	7651 GRID	550800.9	4201969	0.63	10
RECEPTOR	7652 GRID	550810.1	4201956	0.85	10
RECEPTOR	7653 GRID	550822.6	4201944	0.94	10
RECEPTOR	7654 GRID	550835.2	4201932	1.22	10
RECEPTOR	7655 GRID	550847.8	4201920	1.34	10
RECEPTOR	7656 GRID	550861.6	4201906	2.06	10
RECEPTOR	7657 GRID	550869.7	4201897	1.78	10
RECEPTOR	7658 GRID	550875.5	4201891	3	10
RECEPTOR	7659 GRID	550889.3	4201877	5.15	10
RECEPTOR	7660 GRID	550906.3	4201882	2.21	10
RECEPTOR	7661 GRID	550923.3	4201886	1.85	10
RECEPTOR	7662 GRID	550944.7	4201897	1.12	10
RECEPTOR	7663 GRID	550955.9	4201902	0.95	10
RECEPTOR	7664 GRID	550986.4	4201916	1.07	10
RECEPTOR	7665 GRID	550984.2	4201849	1.99	10
RECEPTOR	7666 GRID	550983	4201814	2.23	10
RECEPTOR	7667 GRID	550983	4201749	8.69	10
RECEPTOR	7668 GRID	550983	4201742	11.05	10
RECEPTOR	7669 GRID	550977.7	4201720	18.09	10
RECEPTOR	7670 GRID	550967.1	4201675	32.75	10
RECEPTOR	7671 GRID	550961.8	4201653	41.45	10
RECEPTOR	7672 GRID	550961.5	4201652	41.95	10
RECEPTOR	7673 GRID	550956.4	4201631	49.07	10
RECEPTOR	7674 GRID	550951.1	4201608	54.16	10
RECEPTOR	7675 GRID	550945.8	4201586	57.08	10
RECEPTOR	7676 GRID	550940.5	4201564	57.82	10

File: Cancer_MNTUG.SRC

RECEPTOR	7677 GRID	550949.5	4201561	53.14	10
RECEPTOR	7678 GRID	550985.1	4201550	32.04	10
RECEPTOR	7679 GRID	551007.4	4201543	29.76	10
RECEPTOR	7680 GRID	551029.7	4201536	37.57	10
RECEPTOR	7681 GRID	551045.1	4201532	40.37	10
RECEPTOR	7682 GRID	551052	4201530	40.88	10
RECEPTOR	7683 GRID	551074.4	4201523	37.49	10
RECEPTOR	7684 GRID	551096.7	4201516	31.02	10
RECEPTOR	7685 GRID	551119	4201509	35.95	10
RECEPTOR	7686 GRID	551140.8	4201503	43.67	10
RECEPTOR	7687 GRID	551141.3	4201502	43.81	10
RECEPTOR	7688 GRID	551163.6	4201496	53	10
RECEPTOR	7689 GRID	551169.5	4201519	47.81	10
RECEPTOR	7690 GRID	551175.5	4201543	41.44	10
RECEPTOR	7691 GRID	551181.4	4201566	38.58	10
RECEPTOR	7692 GRID	551182.1	4201569	38.69	10
RECEPTOR	7693 GRID	551187.4	4201590	43.89	10
RECEPTOR	7694 GRID	551193.3	4201614	48.13	10
RECEPTOR	7695 GRID	551199.3	4201637	49.26	10
RECEPTOR	7696 GRID	551205.2	4201661	46.74	10
RECEPTOR	7697 GRID	551206.6	4201666	45.74	10
RECEPTOR	7698 GRID	551211.2	4201685	42.05	10
RECEPTOR	7699 GRID	551223	4201732	28.39	10
RECEPTOR	7700 GRID	551229	4201755	17.19	10
RECEPTOR	7701 GRID	551231	4201763	14.75	10
RECEPTOR	7702 GRID	551234.9	4201779	9.87	10
RECEPTOR	7703 GRID	551240.9	4201803	5.29	10
RECEPTOR	7704 GRID	551246.8	4201826	4.17	10
RECEPTOR	7705 GRID	551252.8	4201850	2.63	10
RECEPTOR	7706 GRID	551262.8	4201854	2.69	10
RECEPTOR	7707 GRID	551281.3	4201861	3.88	10
RECEPTOR	7708 GRID	551312.3	4201875	4.75	10
RECEPTOR	7709 GRID	551341.7	4201890	3.05	10
RECEPTOR	7710 GRID	551354.2	4201894	3.07	10
RECEPTOR	7711 GRID	551377.9	4201900	4.52	10
RECEPTOR	7712 GRID	551408.9	4201906	2.82	10
RECEPTOR	7713 GRID	551440	4201906	4.82	10
RECEPTOR	7714 GRID	551452.5	4201903	4.73	10
RECEPTOR	7715 GRID	551498.6	4201892	2.87	10
RECEPTOR	7716 GRID	551541.1	4201861	4.31	10
RECEPTOR	7717 GRID	551550.3	4201854	5.63	10
RECEPTOR	7718 GRID	551572.8	4201862	4.98	10
RECEPTOR	7719 GRID	551602.9	4201805	1.66	10
RECEPTOR	7720 GRID	551611.4	4201789	1.65	10
RECEPTOR	7721 GRID	551623.6	4201769	1.55	10
RECEPTOR	7722 GRID	551635.9	4201748	1.59	10
RECEPTOR	7723 GRID	551651.9	4201729	1.58	10
RECEPTOR	7724 GRID	551658	4201723	1.6	10
RECEPTOR	7725 GRID	551668	4201711	1.74	10
RECEPTOR	7726 GRID	551684	4201693	1.7	10
RECEPTOR	7727 GRID	551700	4201674	1.71	10
RECEPTOR	7728 GRID	551711.4	4201659	0.73	10
RECEPTOR	7729 GRID	551721.2	4201645	0.62	10
RECEPTOR	7730 GRID	551734	4201628	0.73	10
RECEPTOR	7731 GRID	551745.3	4201612	0.52	10
RECEPTOR	7732 GRID	551752.2	4201596	0.72	10
RECEPTOR	7733 GRID	551759.2	4201579	0.83	10
RECEPTOR	7734 GRID	551766.1	4201563	0.79	10
RECEPTOR	7735 GRID	551765.8	4201557	0.77	10
RECEPTOR	7736 GRID	551765.1	4201540	0.7	10

File: Cancer_MNTUG.SRC

RECEPTOR	7737 GRID	551764.2	4201518	0.73	10
RECEPTOR	7738 GRID	551756.6	4201500	0.48	10
RECEPTOR	7739 GRID	551749.1	4201482	0.5	10
RECEPTOR	7740 GRID	551741.5	4201465	0.42	10
RECEPTOR	7741 GRID	551740.4	4201462	0.42	10
RECEPTOR	7742 GRID	551734	4201445	0.47	10
RECEPTOR	7743 GRID	551726.5	4201426	0.45	10
RECEPTOR	7744 GRID	551718.9	4201407	0.76	10
RECEPTOR	7745 GRID	551734.9	4201400	0.59	10
RECEPTOR	7746 GRID	551755.1	4201389	0.47	10
RECEPTOR	7747 GRID	551755.6	4201388	0.47	10
RECEPTOR	7748 GRID	551781.4	4201380	0.45	10
RECEPTOR	7749 GRID	551817.3	4201382	0.43	10
RECEPTOR	7750 GRID	551818.6	4201399	0.45	10
RECEPTOR	7751 GRID	551819.8	4201416	0.35	10
RECEPTOR	7752 GRID	551819.9	4201418	0.36	10
RECEPTOR	7753 GRID	551822.4	4201454	0.33	10
RECEPTOR	7754 GRID	551823.6	4201472	0.4	10
RECEPTOR	7755 GRID	551825.5	4201493	0.46	10
RECEPTOR	7756 GRID	551827.4	4201514	0.43	10
RECEPTOR	7757 GRID	551827.1	4201518	0.42	10
RECEPTOR	7758 GRID	551826.1	4201532	0.5	10
RECEPTOR	7759 GRID	551824.9	4201549	0.36	10
RECEPTOR	7760 GRID	551823.6	4201567	0.31	10
RECEPTOR	7761 GRID	551819.8	4201579	0.47	10
RECEPTOR	7762 GRID	551816.1	4201591	0.54	10
RECEPTOR	7763 GRID	551806.2	4201610	0.48	10
RECEPTOR	7764 GRID	551804.3	4201614	0.46	10
RECEPTOR	7765 GRID	551796.4	4201629	0.38	10
RECEPTOR	7766 GRID	551786.5	4201648	1.26	10
RECEPTOR	7767 GRID	551772.5	4201666	1.65	10
RECEPTOR	7768 GRID	551758.4	4201684	1.39	10
RECEPTOR	7769 GRID	551749.1	4201697	1.62	10
RECEPTOR	7770 GRID	551709.4	4201749	1.56	10
RECEPTOR	7771 GRID	551694.3	4201780	1.59	10
RECEPTOR	7772 GRID	551684.3	4201800	1.82	10
RECEPTOR	7773 GRID	551665.7	4201840	1.6	10
RECEPTOR	7774 GRID	551667.7	4201854	0	10
RECEPTOR	7775 GRID	551683.6	4201853	0	10
RECEPTOR	7776 GRID	551684.9	4201850	0	10
RECEPTOR	7777 GRID	551694.8	4201824	1.56	10
RECEPTOR	7778 GRID	551717.3	4201778	1.45	10
RECEPTOR	7779 GRID	551729.9	4201770	1.43	10
RECEPTOR	7780 GRID	551733.3	4201765	1.41	10
RECEPTOR	7781 GRID	551743.1	4201748	1.65	10
RECEPTOR	7782 GRID	551756.4	4201731	1.59	10
RECEPTOR	7783 GRID	551765	4201719	1.67	10
RECEPTOR	7784 GRID	551778.1	4201713	1.3	10
RECEPTOR	7785 GRID	551784.1	4201697	1.53	10
RECEPTOR	7786 GRID	551793.8	4201688	1.4	10
RECEPTOR	7787 GRID	551797.5	4201685	1.33	10
RECEPTOR	7788 GRID	551801.8	4201660	1.66	10
RECEPTOR	7789 GRID	551818.1	4201642	1.42	10
RECEPTOR	7790 GRID	551830.4	4201621	0.63	10
RECEPTOR	7791 GRID	551842.4	4201604	0.53	10
RECEPTOR	7792 GRID	551846.8	4201597	0.57	10
RECEPTOR	7793 GRID	551852.2	4201574	1.02	10
RECEPTOR	7794 GRID	551853.6	4201547	0.38	10
RECEPTOR	7795 GRID	551850.8	4201520	0.65	10
RECEPTOR	7796 GRID	551852.3	4201506	0.43	10

File: Cancer_MNTUG.SRC

RECEPTOR	7797 GRID	551853.6	4201494	0.48	10
RECEPTOR	7798 GRID	551846.8	4201469	1.3	10
RECEPTOR	7799 GRID	551842.7	4201441	0.75	10
RECEPTOR	7800 GRID	551841.2	4201410	0.46	10
RECEPTOR	7801 GRID	551841	4201407	0.44	10
RECEPTOR	7802 GRID	551839.8	4201390	0.47	10
RECEPTOR	7803 GRID	551838.7	4201365	0.45	10
RECEPTOR	7804 GRID	551840.9	4201350	0.47	10
RECEPTOR	7805 GRID	551842.6	4201332	0.65	10
RECEPTOR	7806 GRID	551853.8	4201310	0.7	10
RECEPTOR	7807 GRID	551854.5	4201309	0.7	10
RECEPTOR	7808 GRID	551862.3	4201291	0.66	10
RECEPTOR	7809 GRID	551881.3	4201268	0.77	10
RECEPTOR	7810 GRID	551894.4	4201255	1.45	10
RECEPTOR	7811 GRID	551911.4	4201241	1.3	10
RECEPTOR	7812 GRID	551918.3	4201236	1.08	10
RECEPTOR	7813 GRID	551928.4	4201228	1.02	10
RECEPTOR	7814 GRID	551944.5	4201211	1.72	10
RECEPTOR	7815 GRID	551962.2	4201201	0.83	10
RECEPTOR	7816 GRID	551974.4	4201194	0.57	10
RECEPTOR	7817 GRID	551986	4201178	1.67	10
RECEPTOR	7818 GRID	551993.6	4201172	1.47	10
RECEPTOR	7819 GRID	552005.8	4201163	0.79	10
RECEPTOR	7820 GRID	552069.6	4201107	1.89	10
RECEPTOR	7821 GRID	552126	4201058	2.39	10
RECEPTOR	7822 GRID	552144.8	4201041	2.37	10
RECEPTOR	7823 GRID	552170.1	4201019	3.23	10
RECEPTOR	7824 GRID	552173.4	4200997	3.24	10
RECEPTOR	7825 GRID	552211	4200974	7.89	10
RECEPTOR	7826 GRID	552254.1	4200948	3.32	10
RECEPTOR	7827 GRID	552277	4200904	3.4	10
RECEPTOR	7828 GRID	552281.6	4200895	3.31	10
RECEPTOR	7829 GRID	552355.9	4200883	2.63	10
RECEPTOR	7830 GRID	552368	4200875	3.47	10
RECEPTOR	7831 GRID	552450.1	4200817	2.31	10
RECEPTOR	7832 GRID	552460.3	4200810	2.54	10
RECEPTOR	7833 GRID	552531.2	4200759	2.8	10
RECEPTOR	7834 GRID	554621.5	4199049	2.64	10
RECEPTOR	7835 GRID	554682.2	4199050	2.58	10
RECEPTOR	7836 GRID	554649.2	4199029	2.51	10
RECEPTOR	7837 GRID	554636.8	4199021	2.51	10
RECEPTOR	7838 GRID	554619.7	4199003	2.46	10
RECEPTOR	7839 GRID	554599.9	4198969	2.37	10
RECEPTOR	7840 GRID	554595	4198950	2.43	10
RECEPTOR	7841 GRID	554594.9	4198948	2.44	10
RECEPTOR	7842 GRID	554590.8	4198886	2.52	10
RECEPTOR	7843 GRID	554589.6	4198848	2.72	10
RECEPTOR	7844 GRID	554587.7	4198789	2.86	10
RECEPTOR	7845 GRID	554566.7	4198754	2.64	10
RECEPTOR	7846 GRID	554514.9	4198669	2.54	10
RECEPTOR	7847 GRID	554463.1	4198583	3.1	10
RECEPTOR	7848 GRID	554459.2	4198577	3.4	10
RECEPTOR	7849 GRID	554430.3	4198529	3.75	10
RECEPTOR	7850 GRID	554400	4198521	2.95	10
RECEPTOR	7851 GRID	554397.3	4198516	3.03	10
RECEPTOR	7852 GRID	554344.7	4198431	2.15	10
RECEPTOR	7853 GRID	554326.5	4198402	2.15	10
RECEPTOR	7854 GRID	554293.9	4198345	2.35	10
RECEPTOR	7855 GRID	554265.6	4198296	2.38	10
RECEPTOR	7856 GRID	554244.6	4198258	2.34	10

File: Cancer_MNTUG.SRC

RECEPTOR	7857 GRID	554195.9	4198171	2.35	10
RECEPTOR	7858 GRID	554168.1	4198121	2.26	10
RECEPTOR	7859 GRID	554184.7	4198101	3.01	10
RECEPTOR	7860 GRID	554180.7	4198089	3.28	10
RECEPTOR	7861 GRID	554176.7	4198092	5.16	10
RECEPTOR	7862 GRID	554146.8	4198114	8.29	10
RECEPTOR	7863 GRID	554134.5	4198134	7.07	10
RECEPTOR	7864 GRID	554127.4	4198164	6.31	10
RECEPTOR	7865 GRID	554125.4	4198173	6.13	10
RECEPTOR	7866 GRID	554122	4198188	5.96	10
RECEPTOR	7867 GRID	554113.6	4198210	5.22	10
RECEPTOR	7868 GRID	554092.2	4198233	4.17	10
RECEPTOR	7869 GRID	554079.3	4198257	3.37	10
RECEPTOR	7870 GRID	554080.6	4198259	3.37	10
RECEPTOR	7871 GRID	554149.7	4198320	3.38	10
RECEPTOR	7872 GRID	554154.6	4198326	3.35	10
RECEPTOR	7873 GRID	554192.3	4198367	3.42	10
RECEPTOR	7874 GRID	554217.5	4198403	3.22	10
RECEPTOR	7875 GRID	554275	4198485	2.73	10
RECEPTOR	7876 GRID	554275.6	4198486	2.74	10
RECEPTOR	7877 GRID	554333.5	4198566	3.01	10
RECEPTOR	7878 GRID	554387.3	4198641	3.22	10
RECEPTOR	7879 GRID	554391.3	4198648	3.19	10
RECEPTOR	7880 GRID	554416.3	4198690	3.48	10
RECEPTOR	7881 GRID	554444.4	4198732	3.66	10
RECEPTOR	7882 GRID	554500	4198816	4.7	10
RECEPTOR	7883 GRID	554503.7	4198821	4.81	10
RECEPTOR	7884 GRID	554546.6	4198904	9.11	10
RECEPTOR	7885 GRID	554592.6	4198993	11.08	10
RECEPTOR	7886 GRID	552026.4	4198485	1.46	10
RECEPTOR	7887 GRID	552017	4198473	1.18	10
RECEPTOR	7888 GRID	552012.3	4198460	1.05	10
RECEPTOR	7889 GRID	551998.7	4198452	1.41	10
RECEPTOR	7890 GRID	551980	4198448	1.36	10
RECEPTOR	7891 GRID	551959.5	4198445	1.18	10
RECEPTOR	7892 GRID	551944.9	4198440	1.07	10
RECEPTOR	7893 GRID	551944.6	4198440	1.07	10
RECEPTOR	7894 GRID	551935.2	4198435	1.09	10
RECEPTOR	7895 GRID	551928.2	4198423	1.14	10
RECEPTOR	7896 GRID	551916.5	4198421	1.1	10
RECEPTOR	7897 GRID	551905.1	4198415	1.1	10
RECEPTOR	7898 GRID	551895.2	4198416	1.1	10
RECEPTOR	7899 GRID	551890.4	4198423	1.07	10
RECEPTOR	7900 GRID	551890.4	4198431	1.09	10
RECEPTOR	7901 GRID	551895.5	4198438	1.12	10
RECEPTOR	7902 GRID	551906.3	4198450	1.15	10
RECEPTOR	7903 GRID	551907.7	4198452	1.14	10
RECEPTOR	7904 GRID	551907.7	4198459	1.08	10
RECEPTOR	7905 GRID	551904	4198476	1.11	10
RECEPTOR	7906 GRID	551890.7	4198494	2.17	10
RECEPTOR	7907 GRID	551878.5	4198506	1.04	10
RECEPTOR	7908 GRID	551910.2	4198506	5.26	10
RECEPTOR	7909 GRID	551912.2	4198506	5.29	10
RECEPTOR	7910 GRID	552011.9	4198498	4.83	10
RECEPTOR	7911 GRID	552026.1	4198497	4.51	10
RECEPTOR	7912 GRID	552096.3	4198482	2.11	10
RECEPTOR	7913 GRID	552110.2	4198480	2.18	10
RECEPTOR	7914 GRID	552196.3	4198467	0.47	10
RECEPTOR	7915 GRID	552209.1	4198466	0.77	10
RECEPTOR	7916 GRID	552249.4	4198462	7.64	10

File: Cancer_MNTUG.SRC

RECEPTOR	7917 GRID	552307.1	4198447	11.18	10
RECEPTOR	7918 GRID	552320.3	4198444	10.88	10
RECEPTOR	7919 GRID	552389.1	4198424	11.06	10
RECEPTOR	7920 GRID	552403.6	4198422	11.54	10
RECEPTOR	7921 GRID	552471.6	4198410	11.22	10
RECEPTOR	7922 GRID	552502.6	4198412	10.95	10
RECEPTOR	7923 GRID	552518.4	4198413	11.21	10
RECEPTOR	7924 GRID	552548	4198414	11.52	10
RECEPTOR	7925 GRID	552579.2	4198415	11.84	10
RECEPTOR	7926 GRID	552602.5	4198416	12.45	10
RECEPTOR	7927 GRID	552634.3	4198418	12.93	10
RECEPTOR	7928 GRID	552685.1	4198417	13.88	10
RECEPTOR	7929 GRID	552702.5	4198418	14.7	10
RECEPTOR	7930 GRID	552717.8	4198419	13.45	10
RECEPTOR	7931 GRID	552768.6	4198419	10.36	10
RECEPTOR	7932 GRID	552801.3	4198428	11.78	10
RECEPTOR	7933 GRID	552880.8	4198449	25.61	10
RECEPTOR	7934 GRID	552896.8	4198457	25.98	10
RECEPTOR	7935 GRID	552912.4	4198464	27.32	10
RECEPTOR	7936 GRID	552978.7	4198488	24.42	10
RECEPTOR	7937 GRID	552990.7	4198490	25.7	10
RECEPTOR	7938 GRID	553058.6	4198498	24.46	10
RECEPTOR	7939 GRID	553089.8	4198494	26.3	10
RECEPTOR	7940 GRID	553151.4	4198484	21.89	10
RECEPTOR	7941 GRID	553187.8	4198475	20.82	10
RECEPTOR	7942 GRID	553231.9	4198463	19.53	10
RECEPTOR	7943 GRID	553281.6	4198441	18.09	10
RECEPTOR	7944 GRID	553294.4	4198435	17.79	10
RECEPTOR	7945 GRID	553342.7	4198406	16.27	10
RECEPTOR	7946 GRID	553369.1	4198393	15.69	10
RECEPTOR	7947 GRID	553377.5	4198388	15.54	10
RECEPTOR	7948 GRID	553414.2	4198368	14.59	10
RECEPTOR	7949 GRID	553455.5	4198342	8.72	10
RECEPTOR	7950 GRID	553463.8	4198337	6.49	10
RECEPTOR	7951 GRID	553446.4	4198305	9.33	10
RECEPTOR	7952 GRID	553433.5	4198275	11.2	10
RECEPTOR	7953 GRID	553425.5	4198256	12.14	10
RECEPTOR	7954 GRID	553423.9	4198252	12.51	10
RECEPTOR	7955 GRID	553405.8	4198247	21.74	10
RECEPTOR	7956 GRID	553388.4	4198237	23.45	10
RECEPTOR	7957 GRID	553370.5	4198239	26.88	10
RECEPTOR	7958 GRID	553338.3	4198260	40.53	10
RECEPTOR	7959 GRID	553334.8	4198263	42.01	10
RECEPTOR	7960 GRID	553325.9	4198269	43.66	10
RECEPTOR	7961 GRID	553314.5	4198265	46.19	10
RECEPTOR	7962 GRID	553295.1	4198292	43.6	10
RECEPTOR	7963 GRID	553263.5	4198268	46.95	10
RECEPTOR	7964 GRID	553231.8	4198244	38.8	10
RECEPTOR	7965 GRID	553217.6	4198262	42.19	10
RECEPTOR	7966 GRID	553213.6	4198254	40.36	10
RECEPTOR	7967 GRID	553194.5	4198234	34.32	10
RECEPTOR	7968 GRID	553194.2	4198233	34.1	10
RECEPTOR	7969 GRID	553180.9	4198216	30.35	10
RECEPTOR	7970 GRID	553169.1	4198227	31.15	10
RECEPTOR	7971 GRID	553154.2	4198211	28.43	10
RECEPTOR	7972 GRID	553140.1	4198223	28.87	10
RECEPTOR	7973 GRID	553126.4	4198208	24.66	10
RECEPTOR	7974 GRID	553116.9	4198198	22.32	10
RECEPTOR	7975 GRID	553068.8	4198243	17.57	10
RECEPTOR	7976 GRID	553053.2	4198255	17.04	10

File: Cancer_MNTUG.SRC

RECEPTOR	7977 GRID	553049.1	4198258	16.85	10
RECEPTOR	7978 GRID	553026.9	4198266	16.51	10
RECEPTOR	7979 GRID	553002.9	4198267	16.36	10
RECEPTOR	7980 GRID	552984.7	4198266	16.12	10
RECEPTOR	7981 GRID	552956.8	4198258	18.72	10
RECEPTOR	7982 GRID	552953.5	4198258	19.25	10
RECEPTOR	7983 GRID	552936.8	4198198	3.03	10
RECEPTOR	7984 GRID	552902.8	4198207	2.76	10
RECEPTOR	7985 GRID	552869.5	4198215	2.9	10
RECEPTOR	7986 GRID	552834.7	4198213	3.99	10
RECEPTOR	7987 GRID	552836.2	4198195	3.39	10
RECEPTOR	7988 GRID	552833.1	4198183	3.64	10
RECEPTOR	7989 GRID	552829.8	4198171	3.51	10
RECEPTOR	7990 GRID	552823.5	4198164	3.08	10
RECEPTOR	7991 GRID	552788.3	4198152	3.36	10
RECEPTOR	7992 GRID	552778.3	4198139	2.93	10
RECEPTOR	7993 GRID	552774	4198127	2.08	10
RECEPTOR	7994 GRID	552762.6	4198129	1.23	10
RECEPTOR	7995 GRID	552757.5	4198130	1.09	10
RECEPTOR	7996 GRID	552750.3	4198145	2.4	10
RECEPTOR	7997 GRID	552742.1	4198148	1.98	10
RECEPTOR	7998 GRID	552726.1	4198138	1.15	10
RECEPTOR	7999 GRID	552690.7	4198147	1.12	10
RECEPTOR	8000 GRID	552694.8	4198162	1.04	10
RECEPTOR	8001 GRID	552697.9	4198173	0.46	10
RECEPTOR	8002 GRID	552690.2	4198180	0.99	10
RECEPTOR	8003 GRID	552692.7	4198201	0.61	10
RECEPTOR	8004 GRID	552703.2	4198223	1.01	10
RECEPTOR	8005 GRID	552714.5	4198233	0.67	10
RECEPTOR	8006 GRID	552719.9	4198249	1.06	10
RECEPTOR	8007 GRID	552723.6	4198260	0.62	10
RECEPTOR	8008 GRID	552704.1	4198284	0.58	10
RECEPTOR	8009 GRID	552653.2	4198311	0.63	10
RECEPTOR	8010 GRID	552652.5	4198311	0.6	10
RECEPTOR	8011 GRID	552641.3	4198314	0.45	10
RECEPTOR	8012 GRID	552630.6	4198310	0.53	10
RECEPTOR	8013 GRID	552628.2	4198314	0.45	10
RECEPTOR	8014 GRID	552628.2	4198328	0.43	10
RECEPTOR	8015 GRID	552621.6	4198343	0.7	10
RECEPTOR	8016 GRID	552616.7	4198360	0.82	10
RECEPTOR	8017 GRID	552610.2	4198371	0.41	10
RECEPTOR	8018 GRID	552603.7	4198379	0.61	10
RECEPTOR	8019 GRID	552602	4198381	0.66	10
RECEPTOR	8020 GRID	552589.4	4198390	0.86	10
RECEPTOR	8021 GRID	552507.6	4198395	2.63	10
RECEPTOR	8022 GRID	552501.9	4198396	2.52	10
RECEPTOR	8023 GRID	552449.6	4198390	0.86	10
RECEPTOR	8024 GRID	552409	4198399	1.76	10
RECEPTOR	8025 GRID	552362.8	4198410	1.25	10
RECEPTOR	8026 GRID	552328.5	4198415	0.6	10
RECEPTOR	8027 GRID	552314.8	4198413	0.53	10
RECEPTOR	8028 GRID	552310.9	4198415	0.61	10
RECEPTOR	8029 GRID	552300	4198419	0.39	10
RECEPTOR	8030 GRID	552273.5	4198429	0.8	10
RECEPTOR	8031 GRID	552249.7	4198442	2.18	10
RECEPTOR	8032 GRID	552232.7	4198458	1.04	10
RECEPTOR	8033 GRID	552223.2	4198459	1.07	10
RECEPTOR	8034 GRID	552152.1	4198466	0.77	10
RECEPTOR	8035 GRID	552123.8	4198470	0.66	10
RECEPTOR	8036 GRID	552078.5	4198477	1.05	10

File: Cancer_MNTUG.SRC

RECEPTOR	8037 GRID	552992.6	4198243	12.1	10
RECEPTOR	8038 GRID	552984.6	4198255	15.28	10
RECEPTOR	8039 GRID	553002.9	4198259	15.99	10
RECEPTOR	8040 GRID	553026.7	4198256	15.82	10
RECEPTOR	8041 GRID	553052.9	4198244	16.81	10
RECEPTOR	8042 GRID	553063.4	4198235	16.88	10
RECEPTOR	8043 GRID	553137	4198167	21.51	10
RECEPTOR	8044 GRID	553136.9	4198167	21.47	10
RECEPTOR	8045 GRID	553110.8	4198139	13.82	10
RECEPTOR	8046 GRID	553064.3	4198180	11.79	10

SRC	REC	UNUSED	AVERAGE	1HR_MAX	4HR_MAX	6HR_MAX	7HR_MAX	30DAY_MAX
1	1	0.0000000E+00	4.0415000E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	2	0.0000000E+00	4.2467000E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	3	0.0000000E+00	4.6059800E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	4	0.0000000E+00	4.8497900E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	5	0.0000000E+00	4.8884000E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	6	0.0000000E+00	4.8485200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	7	0.0000000E+00	5.0282500E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	8	0.0000000E+00	5.6356400E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	9	0.0000000E+00	6.5920100E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	10	0.0000000E+00	7.4924900E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	11	0.0000000E+00	8.2704100E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	12	0.0000000E+00	9.0902200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	13	0.0000000E+00	9.9973700E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	14	0.0000000E+00	1.0755400E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	15	0.0000000E+00	1.1233800E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	16	0.0000000E+00	1.1597000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	17	0.0000000E+00	1.2173700E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	18	0.0000000E+00	1.2662500E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	19	0.0000000E+00	1.2948300E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	20	0.0000000E+00	1.3102300E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	21	0.0000000E+00	1.3186100E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	22	0.0000000E+00	1.3110700E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	23	0.0000000E+00	1.2734400E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	24	0.0000000E+00	1.2144700E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	25	0.0000000E+00	1.1357900E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	26	0.0000000E+00	1.0603500E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	27	0.0000000E+00	1.0019900E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	28	0.0000000E+00	9.4309700E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	29	0.0000000E+00	8.8390500E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	30	0.0000000E+00	8.2746200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	31	0.0000000E+00	7.7379200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	32	0.0000000E+00	7.2742800E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	33	0.0000000E+00	6.9132700E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	34	0.0000000E+00	6.6558300E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	35	0.0000000E+00	6.4765200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	36	0.0000000E+00	6.3337600E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	37	0.0000000E+00	6.1932400E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	38	0.0000000E+00	6.0355500E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	39	0.0000000E+00	5.8519500E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	40	0.0000000E+00	5.6391800E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	41	0.0000000E+00	5.4003200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	42	0.0000000E+00	5.1476200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	43	0.0000000E+00	4.8991700E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	44	0.0000000E+00	4.6696400E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00

SRC	REC	UNUSED	AVERAGE	1HR_MAX	4HR_MAX	6HR_MAX	7HR_MAX	30DAY_MAX
1	45	0.000000E+00	4.4645200E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	46	0.000000E+00	4.281100E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	47	0.000000E+00	4.112770E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	48	0.000000E+00	3.953020E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	49	0.000000E+00	3.798100E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	50	0.000000E+00	3.648110E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	51	0.000000E+00	3.506190E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	52	0.000000E+00	3.376290E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	53	0.000000E+00	3.141030E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	54	0.000000E+00	3.160810E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	55	0.000000E+00	3.057350E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	56	0.000000E+00	2.974330E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	57	0.000000E+00	2.430690E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	58	0.000000E+00	2.831830E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	59	0.000000E+00	2.761450E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	60	0.000000E+00	2.517630E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	61	0.000000E+00	7.956580E-02	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	62	0.000000E+00	4.255970E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	63	0.000000E+00	4.393130E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	64	0.000000E+00	4.729200E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	65	0.000000E+00	5.067610E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	66	0.000000E+00	5.185910E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	67	0.000000E+00	5.171170E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	68	0.000000E+00	5.302200E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	69	0.000000E+00	5.906700E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	70	0.000000E+00	6.982240E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	71	0.000000E+00	7.967870E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	72	0.000000E+00	8.803160E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	73	0.000000E+00	9.729820E-01	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	74	0.000000E+00	1.074790E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	75	0.000000E+00	1.161400E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	76	0.000000E+00	1.216710E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	77	0.000000E+00	1.265570E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	78	0.000000E+00	1.325980E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	79	0.000000E+00	1.370660E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	80	0.000000E+00	1.395760E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	81	0.000000E+00	1.404080E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	82	0.000000E+00	1.403770E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	83	0.000000E+00	1.376480E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	84	0.000000E+00	1.318900E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	85	0.000000E+00	1.240180E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	86	0.000000E+00	1.151550E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	87	0.000000E+00	1.081690E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00
1	88	0.000000E+00	1.017320E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.00

This file: U:\Chevron Renewal\ENVIRON Files\Air Quality\Risk\Shipping\HARP Analysis\Source-Specific\Cancer_70Res_MNTUG.xls

Created by HARP Version 1.4f Build 23.11.01

Uses ISC Version 99155

Uses BPIP (Dated: 04112)

Creation date: 2/20/2014 5:11:27 PM

EXCEPTION REPORT

(there have been no changes or exceptions)

INPUT FILES:

Source-Receptor file: U:\Chevron Renewal\ENVIRON Files\Air Quality\Risk\Shipping\HARP Analysis\Source-Specific\MNTUG.SRC

Averaging period adjustment factors file: not applicable

Emission rates file: MNTUG.EMS

Site parameters file: none

Coordinate system: UTM NAD83

Screening mode is OFF

Exposure duration: 70 year (adult resident)

Analysis method: Derived (Adjusted) Method

Health effect: Cancer Risk

Receptor(s): 7013

Sources(s): All

Chemicals(s): All

SITE PARAMETERS

DEPOSITION

Deposition rate (m/s) 0.02

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

*** Pathway disabled ***

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway disabled ***

SOIL INGESTION

*** Pathway disabled ***

MOTHER'S MILK

*** Pathway disabled ***

CHEMICAL CROSS-REFERENCE TABLE AND BACKGROUND CONCENTRATIONS

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m ³)
0001	9901	DieselExhPM	Diesel engine exhaust, particulate matter (Diesel PM)	0.000E+00

CHEMICAL HEALTH VALUES

CHEM	CAS	ABBREVIATION	CancerPF(Inh) (mg/kg-d) ⁻¹	CancerPF(Oral) (mg/kg-d) ⁻¹	ChronicREL(Inh) ug/m ³	ChronicREL(Oral) ug/m ³	AcuteREL
0001	9901	DieselExhPM	1.10E+00	*	5.00E+00	*	*

EMISSIONS DATA SOURCE: Emission rates loaded from file: U:\Chevron Renewal\ENVIRON Files\Air Quality\Risk\Shipping\HARP Analysis\Source-Specific\MNTUG.EMS
CHEMICALS ADDED OR DELETED: none

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=MNTUG EMS (lbs/yr)

SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m ³)	AVRG (lbs/yr)	MAX (lbs/hr)
-----	--------	------------	-------------------------	---------------	--------------

CANCER RISK REPORT

SOURCE 1 DOSE BY PATHWAY (mg/(kg-d) FOR CANCER CALCULATIONS, RECEPTOR 7013)

SOURCE 1 RISK BY PATHWAY

TOTAL DOSE BY PATHWAY (mg/(kg-d) FOR CANCER CALCULATIONS, RECEPTOR 7013)

Total risk of all sources

[illegible]

File: Chronic HI_MNTUG_EmissionsReport.txt

Average Emissions (lbs/yr)							
Src	CAS	fac	dev	pro	stk	Mult	
	Abbrev.						
	Backgrou						
	Multipli						
1	MNTUG	E1	*	*	1	1	9901 DieselExhPM 0 1 2.12E+03

Maximum Emission Rate (lbs/hr)							
Src	CAS	fac	dev	pro	stk	Mult	
	Abbrev.						
	Backgrou						
	Multipli						
1	MNTUG	E1	*	*	1	1	Chem 9901 DieselExhPM 0 1 2.42E-01

File: MNTUG_HI.SRC

SCREENINGMODE OFF C:\TRINITY\CVRN\PIER.PFL

COORDINATES UTMNAD83

UTMZONE 10

SOURCE 1 MNTUG "CHEVRON" 0 7 SF BA 0 550500 4196600 0 10

RECEPTOR 1 GRID 549000 4194000 0 10

RECEPTOR 2 GRID 549200 4194000 0 10

RECEPTOR 3 GRID 549400 4194000 0 10

RECEPTOR 4 GRID 549600 4194000 0 10

RECEPTOR 5 GRID 549800 4194000 0 10

RECEPTOR 6 GRID 550000 4194000 0 10

RECEPTOR 7 GRID 550200 4194000 0 10

RECEPTOR 8 GRID 550400 4194000 0 10

RECEPTOR 9 GRID 550600 4194000 0 10

RECEPTOR 10 GRID 550800 4194000 0 10

RECEPTOR 11 GRID 551000 4194000 0 10

RECEPTOR 12 GRID 551200 4194000 0 10

RECEPTOR 13 GRID 551400 4194000 0 10

RECEPTOR 14 GRID 551600 4194000 0 10

RECEPTOR 15 GRID 551800 4194000 0 10

RECEPTOR 16 GRID 552000 4194000 0 10

RECEPTOR 17 GRID 552200 4194000 0 10

RECEPTOR 18 GRID 552400 4194000 0 10

RECEPTOR 19 GRID 552600 4194000 0 10

RECEPTOR 20 GRID 552800 4194000 0 10

RECEPTOR 21 GRID 553000 4194000 0 10

RECEPTOR 22 GRID 553200 4194000 0 10

RECEPTOR 23 GRID 553400 4194000 0 10

RECEPTOR 24 GRID 553600 4194000 0 10

RECEPTOR 25 GRID 553800 4194000 0 10

RECEPTOR 26 GRID 554000 4194000 0 10

RECEPTOR 27 GRID 554200 4194000 0 10

RECEPTOR 28 GRID 554400 4194000 0 10

RECEPTOR 29 GRID 554600 4194000 0 10

RECEPTOR 30 GRID 554800 4194000 0 10

RECEPTOR 31 GRID 555000 4194000 0 10

RECEPTOR 32 GRID 555200 4194000 0 10

RECEPTOR 33 GRID 555400 4194000 0 10

RECEPTOR 34 GRID 555600 4194000 0 10

RECEPTOR 35 GRID 555800 4194000 0 10

RECEPTOR 36 GRID 556000 4194000 0 10

RECEPTOR 37 GRID 556200 4194000 0 10

RECEPTOR 38 GRID 556400 4194000 0 10

RECEPTOR 39 GRID 556600 4194000 0 10

RECEPTOR 40 GRID 556800 4194000 0 10

RECEPTOR 41 GRID 557000 4194000 0 10

RECEPTOR 42 GRID	557200	4194000	0	10
RECEPTOR 43 GRID	557400	4194000	0	10
RECEPTOR 44 GRID	557600	4194000	0	10
RECEPTOR 45 GRID	557800	4194000	0	10
RECEPTOR 46 GRID	558000	4194000	0	10
RECEPTOR 47 GRID	558200	4194000	0	10
RECEPTOR 48 GRID	558400	4194000	0	10
RECEPTOR 49 GRID	558600	4194000	0	10
RECEPTOR 50 GRID	558800	4194000	0	10
RECEPTOR 51 GRID	559000	4194000	0	10
RECEPTOR 52 GRID	559200	4194000	0	10
RECEPTOR 53 GRID	559400	4194000	1.7	10
RECEPTOR 54 GRID	559600	4194000	0	10
RECEPTOR 55 GRID	559800	4194000	0.2	10
RECEPTOR 56 GRID	560000	4194000	0.3	10
RECEPTOR 57 GRID	560200	4194000	8.7	10
RECEPTOR 58 GRID	560400	4194000	0.5	10
RECEPTOR 59 GRID	560600	4194000	0.7	10
RECEPTOR 60 GRID	560800	4194000	5.4	10
RECEPTOR 61 GRID	561000	4194000	21.7	10
RECEPTOR 62 GRID	549000	4194200	0	10
RECEPTOR 63 GRID	549200	4194200	0	10
RECEPTOR 64 GRID	549400	4194200	0	10
RECEPTOR 65 GRID	549600	4194200	0	10
RECEPTOR 66 GRID	549800	4194200	0	10
RECEPTOR 67 GRID	550000	4194200	0	10
RECEPTOR 68 GRID	550200	4194200	0	10
RECEPTOR 69 GRID	550400	4194200	0	10
RECEPTOR 70 GRID	550600	4194200	0	10
RECEPTOR 71 GRID	550800	4194200	0	10
RECEPTOR 72 GRID	551000	4194200	0	10
RECEPTOR 73 GRID	551200	4194200	0	10
RECEPTOR 74 GRID	551400	4194200	0	10
RECEPTOR 75 GRID	551600	4194200	0	10
RECEPTOR 76 GRID	551800	4194200	0	10
RECEPTOR 77 GRID	552000	4194200	0	10
RECEPTOR 78 GRID	552200	4194200	0	10
RECEPTOR 79 GRID	552400	4194200	0	10
RECEPTOR 80 GRID	552600	4194200	0	10
RECEPTOR 81 GRID	552800	4194200	0	10
RECEPTOR 82 GRID	553000	4194200	0	10
RECEPTOR 83 GRID	553200	4194200	0	10
RECEPTOR 84 GRID	553400	4194200	0	10
RECEPTOR 85 GRID	553600	4194200	0	10
RECEPTOR 86 GRID	553800	4194200	0	10

RECEPTOR 87 GRID	554000	4194200	0	10
RECEPTOR 88 GRID	554200	4194200	0	10
RECEPTOR 89 GRID	554400	4194200	0	10
RECEPTOR 90 GRID	554600	4194200	0	10
RECEPTOR 91 GRID	554800	4194200	0	10
RECEPTOR 92 GRID	555000	4194200	0	10
RECEPTOR 93 GRID	555200	4194200	0	10
RECEPTOR 94 GRID	555400	4194200	0	10
RECEPTOR 95 GRID	555600	4194200	0	10
RECEPTOR 96 GRID	555800	4194200	0	10
RECEPTOR 97 GRID	556000	4194200	0	10
RECEPTOR 98 GRID	556200	4194200	0	10
RECEPTOR 99 GRID	556400	4194200	0	10
RECEPTOR 100 GRID	556600	4194200	0	10
RECEPTOR 101 GRID	556800	4194200	0	10
RECEPTOR 102 GRID	557000	4194200	0	10
RECEPTOR 103 GRID	557200	4194200	0	10
RECEPTOR 104 GRID	557400	4194200	0	10
RECEPTOR 105 GRID	557600	4194200	0	10
RECEPTOR 106 GRID	557800	4194200	0	10
RECEPTOR 107 GRID	558000	4194200	0	10
RECEPTOR 108 GRID	558200	4194200	0	10
RECEPTOR 109 GRID	558400	4194200	0	10
RECEPTOR 110 GRID	558600	4194200	0	10
RECEPTOR 111 GRID	558800	4194200	0	10
RECEPTOR 112 GRID	559000	4194200	0	10
RECEPTOR 113 GRID	559200	4194200	0	10
RECEPTOR 114 GRID	559400	4194200	0	10
RECEPTOR 115 GRID	559600	4194200	0	10
RECEPTOR 116 GRID	559800	4194200	0.2	10
RECEPTOR 117 GRID	560000	4194200	0.2	10
RECEPTOR 118 GRID	560200	4194200	0.4	10
RECEPTOR 119 GRID	560400	4194200	0.6	10
RECEPTOR 120 GRID	560600	4194200	1.7	10
RECEPTOR 121 GRID	560800	4194200	7	10
RECEPTOR 122 GRID	561000	4194200	32	10
RECEPTOR 123 GRID	549000	4194400	0	10
RECEPTOR 124 GRID	549200	4194400	0	10
RECEPTOR 125 GRID	549400	4194400	0	10
RECEPTOR 126 GRID	549600	4194400	0	10
RECEPTOR 127 GRID	549800	4194400	0	10
RECEPTOR 128 GRID	550000	4194400	0	10
RECEPTOR 129 GRID	550200	4194400	0	10
RECEPTOR 130 GRID	550400	4194400	0	10
RECEPTOR 131 GRID	550600	4194400	0	10

RECEPTOR 132 GRID	550800	4194400	0	10
RECEPTOR 133 GRID	551000	4194400	0	10
RECEPTOR 134 GRID	551200	4194400	0	10
RECEPTOR 135 GRID	551400	4194400	0	10
RECEPTOR 136 GRID	551600	4194400	0	10
RECEPTOR 137 GRID	551800	4194400	0	10
RECEPTOR 138 GRID	552000	4194400	0	10
RECEPTOR 139 GRID	552200	4194400	0	10
RECEPTOR 140 GRID	552400	4194400	0	10
RECEPTOR 141 GRID	552600	4194400	0	10
RECEPTOR 142 GRID	552800	4194400	0	10
RECEPTOR 143 GRID	553000	4194400	0	10
RECEPTOR 144 GRID	553200	4194400	0	10
RECEPTOR 145 GRID	553400	4194400	0	10
RECEPTOR 146 GRID	553600	4194400	0	10
RECEPTOR 147 GRID	553800	4194400	0	10
RECEPTOR 148 GRID	554000	4194400	0	10
RECEPTOR 149 GRID	554200	4194400	0	10
RECEPTOR 150 GRID	554400	4194400	0	10
RECEPTOR 151 GRID	554600	4194400	0	10
RECEPTOR 152 GRID	554800	4194400	0	10
RECEPTOR 153 GRID	555000	4194400	0	10
RECEPTOR 154 GRID	555200	4194400	0	10
RECEPTOR 155 GRID	555400	4194400	0	10
RECEPTOR 156 GRID	555600	4194400	0	10
RECEPTOR 157 GRID	555800	4194400	0	10
RECEPTOR 158 GRID	556000	4194400	0	10
RECEPTOR 159 GRID	556200	4194400	0	10
RECEPTOR 160 GRID	556400	4194400	0	10
RECEPTOR 161 GRID	556600	4194400	16.1	10
RECEPTOR 162 GRID	556800	4194400	10.4	10
RECEPTOR 163 GRID	557000	4194400	0	10
RECEPTOR 164 GRID	557200	4194400	0	10
RECEPTOR 165 GRID	557400	4194400	0	10
RECEPTOR 166 GRID	557600	4194400	0	10
RECEPTOR 167 GRID	557800	4194400	0	10
RECEPTOR 168 GRID	558000	4194400	0	10
RECEPTOR 169 GRID	558200	4194400	0	10
RECEPTOR 170 GRID	558400	4194400	0	10
RECEPTOR 171 GRID	558600	4194400	0	10
RECEPTOR 172 GRID	558800	4194400	0	10
RECEPTOR 173 GRID	559000	4194400	0	10
RECEPTOR 174 GRID	559200	4194400	0	10
RECEPTOR 175 GRID	559400	4194400	-0.1	10
RECEPTOR 176 GRID	559600	4194400	-0.1	10

RECEPTOR 177 GRID	559800	4194400	0.2	10
RECEPTOR 178 GRID	560000	4194400	0.2	10
RECEPTOR 179 GRID	560200	4194400	0.3	10
RECEPTOR 180 GRID	560400	4194400	0.8	10
RECEPTOR 181 GRID	560600	4194400	1.8	10
RECEPTOR 182 GRID	560800	4194400	6.2	10
RECEPTOR 183 GRID	561000	4194400	39.1	10
RECEPTOR 184 GRID	549000	4194600	0	10
RECEPTOR 185 GRID	549200	4194600	0	10
RECEPTOR 186 GRID	549400	4194600	0	10
RECEPTOR 187 GRID	549600	4194600	0	10
RECEPTOR 188 GRID	549800	4194600	0	10
RECEPTOR 189 GRID	550000	4194600	0	10
RECEPTOR 190 GRID	550200	4194600	0	10
RECEPTOR 191 GRID	550400	4194600	0	10
RECEPTOR 192 GRID	550600	4194600	0	10
RECEPTOR 193 GRID	550800	4194600	0	10
RECEPTOR 194 GRID	551000	4194600	0	10
RECEPTOR 195 GRID	551200	4194600	0	10
RECEPTOR 196 GRID	551400	4194600	0	10
RECEPTOR 197 GRID	551600	4194600	0	10
RECEPTOR 198 GRID	551800	4194600	0	10
RECEPTOR 199 GRID	552000	4194600	0	10
RECEPTOR 200 GRID	552200	4194600	0	10
RECEPTOR 201 GRID	552400	4194600	0	10
RECEPTOR 202 GRID	552600	4194600	0	10
RECEPTOR 203 GRID	552800	4194600	0	10
RECEPTOR 204 GRID	553000	4194600	0	10
RECEPTOR 205 GRID	553200	4194600	0	10
RECEPTOR 206 GRID	553400	4194600	0	10
RECEPTOR 207 GRID	553600	4194600	0	10
RECEPTOR 208 GRID	553800	4194600	0	10
RECEPTOR 209 GRID	554000	4194600	0	10
RECEPTOR 210 GRID	554200	4194600	0	10
RECEPTOR 211 GRID	554400	4194600	0	10
RECEPTOR 212 GRID	554600	4194600	0	10
RECEPTOR 213 GRID	554800	4194600	0	10
RECEPTOR 214 GRID	555000	4194600	0	10
RECEPTOR 215 GRID	555200	4194600	0	10
RECEPTOR 216 GRID	555400	4194600	0	10
RECEPTOR 217 GRID	555600	4194600	0	10
RECEPTOR 218 GRID	555800	4194600	0	10
RECEPTOR 219 GRID	556000	4194600	0	10
RECEPTOR 220 GRID	556200	4194600	0	10
RECEPTOR 221 GRID	556400	4194600	0	10

RECEPTOR 222 GRID	556600	4194600	31.8	10
RECEPTOR 223 GRID	556800	4194600	17.3	10
RECEPTOR 224 GRID	557000	4194600	0	10
RECEPTOR 225 GRID	557200	4194600	0	10
RECEPTOR 226 GRID	557400	4194600	0	10
RECEPTOR 227 GRID	557600	4194600	0	10
RECEPTOR 228 GRID	557800	4194600	0	10
RECEPTOR 229 GRID	558000	4194600	0	10
RECEPTOR 230 GRID	558200	4194600	0	10
RECEPTOR 231 GRID	558400	4194600	0	10
RECEPTOR 232 GRID	558600	4194600	0	10
RECEPTOR 233 GRID	558800	4194600	0	10
RECEPTOR 234 GRID	559000	4194600	0	10
RECEPTOR 235 GRID	559200	4194600	0	10
RECEPTOR 236 GRID	559400	4194600	3.9	10
RECEPTOR 237 GRID	559600	4194600	3.7	10
RECEPTOR 238 GRID	559800	4194600	0.3	10
RECEPTOR 239 GRID	560000	4194600	0.3	10
RECEPTOR 240 GRID	560200	4194600	0.6	10
RECEPTOR 241 GRID	560400	4194600	1	10
RECEPTOR 242 GRID	560600	4194600	3	10
RECEPTOR 243 GRID	560800	4194600	6.4	10
RECEPTOR 244 GRID	561000	4194600	51.2	10
RECEPTOR 245 GRID	549000	4194800	0	10
RECEPTOR 246 GRID	549200	4194800	0	10
RECEPTOR 247 GRID	549400	4194800	0	10
RECEPTOR 248 GRID	549600	4194800	0	10
RECEPTOR 249 GRID	549800	4194800	0	10
RECEPTOR 250 GRID	550000	4194800	0	10
RECEPTOR 251 GRID	550200	4194800	0	10
RECEPTOR 252 GRID	550400	4194800	0	10
RECEPTOR 253 GRID	550600	4194800	0	10
RECEPTOR 254 GRID	550800	4194800	0	10
RECEPTOR 255 GRID	551000	4194800	0	10
RECEPTOR 256 GRID	551200	4194800	0	10
RECEPTOR 257 GRID	551400	4194800	0	10
RECEPTOR 258 GRID	551600	4194800	0	10
RECEPTOR 259 GRID	551800	4194800	0	10
RECEPTOR 260 GRID	552000	4194800	0	10
RECEPTOR 261 GRID	552200	4194800	0	10
RECEPTOR 262 GRID	552400	4194800	0	10
RECEPTOR 263 GRID	552600	4194800	0	10
RECEPTOR 264 GRID	552800	4194800	0	10
RECEPTOR 265 GRID	553000	4194800	0	10
RECEPTOR 266 GRID	553200	4194800	0	10

RECEPTOR 267 GRID	553400	4194800	0	10
RECEPTOR 268 GRID	553600	4194800	0	10
RECEPTOR 269 GRID	553800	4194800	0	10
RECEPTOR 270 GRID	554000	4194800	0	10
RECEPTOR 271 GRID	554200	4194800	0	10
RECEPTOR 272 GRID	554400	4194800	0	10
RECEPTOR 273 GRID	554600	4194800	0	10
RECEPTOR 274 GRID	554800	4194800	-0.2	10
RECEPTOR 275 GRID	555000	4194800	0	10
RECEPTOR 276 GRID	555200	4194800	0	10
RECEPTOR 277 GRID	555400	4194800	0	10
RECEPTOR 278 GRID	555600	4194800	-0.3	10
RECEPTOR 279 GRID	555800	4194800	-0.2	10
RECEPTOR 280 GRID	556000	4194800	0	10
RECEPTOR 281 GRID	556200	4194800	0.2	10
RECEPTOR 282 GRID	556400	4194800	1.9	10
RECEPTOR 283 GRID	556600	4194800	17.9	10
RECEPTOR 284 GRID	556800	4194800	0	10
RECEPTOR 285 GRID	557000	4194800	0	10
RECEPTOR 286 GRID	557200	4194800	0	10
RECEPTOR 287 GRID	557400	4194800	0	10
RECEPTOR 288 GRID	557600	4194800	0	10
RECEPTOR 289 GRID	557800	4194800	0	10
RECEPTOR 290 GRID	558000	4194800	0	10
RECEPTOR 291 GRID	558200	4194800	0	10
RECEPTOR 292 GRID	558400	4194800	0	10
RECEPTOR 293 GRID	558600	4194800	0	10
RECEPTOR 294 GRID	558800	4194800	0	10
RECEPTOR 295 GRID	559000	4194800	0	10
RECEPTOR 296 GRID	559200	4194800	0	10
RECEPTOR 297 GRID	559400	4194800	3.9	10
RECEPTOR 298 GRID	559600	4194800	4	10
RECEPTOR 299 GRID	559800	4194800	4.6	10
RECEPTOR 300 GRID	560000	4194800	6.6	10
RECEPTOR 301 GRID	560200	4194800	2.1	10
RECEPTOR 302 GRID	560400	4194800	4.3	10
RECEPTOR 303 GRID	560600	4194800	3	10
RECEPTOR 304 GRID	560800	4194800	4.1	10
RECEPTOR 305 GRID	561000	4194800	3.6	10
RECEPTOR 306 GRID	549000	4195000	0	10
RECEPTOR 307 GRID	549200	4195000	0	10
RECEPTOR 308 GRID	549400	4195000	0	10
RECEPTOR 309 GRID	549600	4195000	0	10
RECEPTOR 310 GRID	549800	4195000	0	10
RECEPTOR 311 GRID	550000	4195000	0	10

RECEPTOR 312 GRID	550200	4195000	0	10
RECEPTOR 313 GRID	550400	4195000	0	10
RECEPTOR 314 GRID	550600	4195000	0	10
RECEPTOR 315 GRID	550800	4195000	0	10
RECEPTOR 316 GRID	551000	4195000	0	10
RECEPTOR 317 GRID	551200	4195000	0	10
RECEPTOR 318 GRID	551400	4195000	0	10
RECEPTOR 319 GRID	551600	4195000	0	10
RECEPTOR 320 GRID	551800	4195000	0	10
RECEPTOR 321 GRID	552000	4195000	0	10
RECEPTOR 322 GRID	552200	4195000	0	10
RECEPTOR 323 GRID	552400	4195000	0	10
RECEPTOR 324 GRID	552600	4195000	0	10
RECEPTOR 325 GRID	552800	4195000	0	10
RECEPTOR 326 GRID	553000	4195000	0	10
RECEPTOR 327 GRID	553200	4195000	0	10
RECEPTOR 328 GRID	553400	4195000	0	10
RECEPTOR 329 GRID	553600	4195000	0	10
RECEPTOR 330 GRID	553800	4195000	0	10
RECEPTOR 331 GRID	554000	4195000	0	10
RECEPTOR 332 GRID	554200	4195000	0	10
RECEPTOR 333 GRID	554400	4195000	0	10
RECEPTOR 334 GRID	554600	4195000	0	10
RECEPTOR 335 GRID	554800	4195000	0	10
RECEPTOR 336 GRID	555000	4195000	0	10
RECEPTOR 337 GRID	555200	4195000	2	10
RECEPTOR 338 GRID	555400	4195000	0.4	10
RECEPTOR 339 GRID	555600	4195000	1.6	10
RECEPTOR 340 GRID	555800	4195000	0	10
RECEPTOR 341 GRID	556000	4195000	-0.3	10
RECEPTOR 342 GRID	556200	4195000	-0.1	10
RECEPTOR 343 GRID	556400	4195000	0.1	10
RECEPTOR 344 GRID	556600	4195000	-0.1	10
RECEPTOR 345 GRID	556800	4195000	0	10
RECEPTOR 346 GRID	557000	4195000	0	10
RECEPTOR 347 GRID	557200	4195000	0	10
RECEPTOR 348 GRID	557400	4195000	0	10
RECEPTOR 349 GRID	557600	4195000	0	10
RECEPTOR 350 GRID	557800	4195000	0	10
RECEPTOR 351 GRID	558000	4195000	0	10
RECEPTOR 352 GRID	558200	4195000	0	10
RECEPTOR 353 GRID	558400	4195000	0	10
RECEPTOR 354 GRID	558600	4195000	0	10
RECEPTOR 355 GRID	558800	4195000	0	10
RECEPTOR 356 GRID	559000	4195000	0	10

RECEPTOR 357 GRID	559200	4195000	0	10
RECEPTOR 358 GRID	559400	4195000	3.8	10
RECEPTOR 359 GRID	559600	4195000	3.7	10
RECEPTOR 360 GRID	559800	4195000	5.2	10
RECEPTOR 361 GRID	560000	4195000	3.9	10
RECEPTOR 362 GRID	560200	4195000	1.6	10
RECEPTOR 363 GRID	560400	4195000	2.6	10
RECEPTOR 364 GRID	560600	4195000	8.8	10
RECEPTOR 365 GRID	560800	4195000	3.7	10
RECEPTOR 366 GRID	561000	4195000	4.1	10
RECEPTOR 367 GRID	549000	4195200	0	10
RECEPTOR 368 GRID	549200	4195200	0	10
RECEPTOR 369 GRID	549400	4195200	0	10
RECEPTOR 370 GRID	549600	4195200	0	10
RECEPTOR 371 GRID	549800	4195200	0	10
RECEPTOR 372 GRID	550000	4195200	0	10
RECEPTOR 373 GRID	550200	4195200	0	10
RECEPTOR 374 GRID	550400	4195200	0	10
RECEPTOR 375 GRID	550600	4195200	0	10
RECEPTOR 376 GRID	550800	4195200	0	10
RECEPTOR 377 GRID	551000	4195200	0	10
RECEPTOR 378 GRID	551200	4195200	0	10
RECEPTOR 379 GRID	551400	4195200	0	10
RECEPTOR 380 GRID	551600	4195200	0	10
RECEPTOR 381 GRID	551800	4195200	0	10
RECEPTOR 382 GRID	552000	4195200	0	10
RECEPTOR 383 GRID	552200	4195200	0	10
RECEPTOR 384 GRID	552400	4195200	0	10
RECEPTOR 385 GRID	552600	4195200	0	10
RECEPTOR 386 GRID	552800	4195200	0	10
RECEPTOR 387 GRID	553000	4195200	0	10
RECEPTOR 388 GRID	553200	4195200	0	10
RECEPTOR 389 GRID	553400	4195200	0	10
RECEPTOR 390 GRID	553600	4195200	0	10
RECEPTOR 391 GRID	553800	4195200	0	10
RECEPTOR 392 GRID	554000	4195200	0	10
RECEPTOR 393 GRID	554200	4195200	0	10
RECEPTOR 394 GRID	554400	4195200	0	10
RECEPTOR 395 GRID	554600	4195200	0	10
RECEPTOR 396 GRID	554800	4195200	0	10
RECEPTOR 397 GRID	555000	4195200	-0.2	10
RECEPTOR 398 GRID	555200	4195200	0	10
RECEPTOR 399 GRID	555400	4195200	0.2	10
RECEPTOR 400 GRID	555600	4195200	0.3	10
RECEPTOR 401 GRID	555800	4195200	0.3	10

RECEPTOR 402 GRID	556000	4195200	0.1	10
RECEPTOR 403 GRID	556200	4195200	0.1	10
RECEPTOR 404 GRID	556400	4195200	-0.1	10
RECEPTOR 405 GRID	556600	4195200	-0.3	10
RECEPTOR 406 GRID	556800	4195200	0	10
RECEPTOR 407 GRID	557000	4195200	0	10
RECEPTOR 408 GRID	557200	4195200	0	10
RECEPTOR 409 GRID	557400	4195200	0	10
RECEPTOR 410 GRID	557600	4195200	0	10
RECEPTOR 411 GRID	557800	4195200	0	10
RECEPTOR 412 GRID	558000	4195200	0	10
RECEPTOR 413 GRID	558200	4195200	0	10
RECEPTOR 414 GRID	558400	4195200	0	10
RECEPTOR 415 GRID	558600	4195200	0	10
RECEPTOR 416 GRID	558800	4195200	0	10
RECEPTOR 417 GRID	559000	4195200	0	10
RECEPTOR 418 GRID	559200	4195200	0	10
RECEPTOR 419 GRID	559400	4195200	4	10
RECEPTOR 420 GRID	559600	4195200	5.5	10
RECEPTOR 421 GRID	559800	4195200	3.9	10
RECEPTOR 422 GRID	560000	4195200	1.4	10
RECEPTOR 423 GRID	560200	4195200	3.6	10
RECEPTOR 424 GRID	560400	4195200	3.8	10
RECEPTOR 425 GRID	560600	4195200	20	10
RECEPTOR 426 GRID	560800	4195200	13.9	10
RECEPTOR 427 GRID	561000	4195200	5.8	10
RECEPTOR 428 GRID	549000	4195400	0	10
RECEPTOR 429 GRID	549200	4195400	0	10
RECEPTOR 430 GRID	549400	4195400	0	10
RECEPTOR 431 GRID	549600	4195400	0	10
RECEPTOR 432 GRID	549800	4195400	0	10
RECEPTOR 433 GRID	550000	4195400	0	10
RECEPTOR 434 GRID	550200	4195400	0	10
RECEPTOR 435 GRID	550400	4195400	0	10
RECEPTOR 436 GRID	550600	4195400	0	10
RECEPTOR 437 GRID	550800	4195400	0	10
RECEPTOR 438 GRID	551000	4195400	0	10
RECEPTOR 439 GRID	551200	4195400	0	10
RECEPTOR 440 GRID	551400	4195400	0	10
RECEPTOR 441 GRID	551600	4195400	0	10
RECEPTOR 442 GRID	551800	4195400	0	10
RECEPTOR 443 GRID	552000	4195400	0	10
RECEPTOR 444 GRID	552200	4195400	0	10
RECEPTOR 445 GRID	552400	4195400	0	10
RECEPTOR 446 GRID	552600	4195400	0	10

RECEPTOR 447 GRID	552800	4195400	0	10
RECEPTOR 448 GRID	553000	4195400	0	10
RECEPTOR 449 GRID	553200	4195400	0	10
RECEPTOR 450 GRID	553400	4195400	0	10
RECEPTOR 451 GRID	553600	4195400	0	10
RECEPTOR 452 GRID	553800	4195400	0	10
RECEPTOR 453 GRID	554000	4195400	0	10
RECEPTOR 454 GRID	554200	4195400	0	10
RECEPTOR 455 GRID	554400	4195400	0	10
RECEPTOR 456 GRID	554600	4195400	0	10
RECEPTOR 457 GRID	554800	4195400	0.4	10
RECEPTOR 458 GRID	555000	4195400	0.4	10
RECEPTOR 459 GRID	555200	4195400	0.5	10
RECEPTOR 460 GRID	555400	4195400	0.9	10
RECEPTOR 461 GRID	555600	4195400	1.1	10
RECEPTOR 462 GRID	555800	4195400	0.9	10
RECEPTOR 463 GRID	556000	4195400	0.8	10
RECEPTOR 464 GRID	556200	4195400	0.5	10
RECEPTOR 465 GRID	556400	4195400	0.3	10
RECEPTOR 466 GRID	556600	4195400	-0.2	10
RECEPTOR 467 GRID	556800	4195400	0	10
RECEPTOR 468 GRID	557000	4195400	0	10
RECEPTOR 469 GRID	557200	4195400	0	10
RECEPTOR 470 GRID	557400	4195400	0	10
RECEPTOR 471 GRID	557600	4195400	0	10
RECEPTOR 472 GRID	557800	4195400	0	10
RECEPTOR 473 GRID	558000	4195400	0	10
RECEPTOR 474 GRID	558200	4195400	0	10
RECEPTOR 475 GRID	558400	4195400	0	10
RECEPTOR 476 GRID	558600	4195400	0	10
RECEPTOR 477 GRID	558800	4195400	0	10
RECEPTOR 478 GRID	559000	4195400	0	10
RECEPTOR 479 GRID	559200	4195400	0	10
RECEPTOR 480 GRID	559400	4195400	1.1	10
RECEPTOR 481 GRID	559600	4195400	6.2	10
RECEPTOR 482 GRID	559800	4195400	2.8	10
RECEPTOR 483 GRID	560000	4195400	3.6	10
RECEPTOR 484 GRID	560200	4195400	16.7	10
RECEPTOR 485 GRID	560400	4195400	10.6	10
RECEPTOR 486 GRID	560600	4195400	15.8	10
RECEPTOR 487 GRID	560800	4195400	11.2	10
RECEPTOR 488 GRID	561000	4195400	7.5	10
RECEPTOR 489 GRID	549000	4195600	0	10
RECEPTOR 490 GRID	549200	4195600	0	10
RECEPTOR 491 GRID	549400	4195600	0	10

RECEPTOR 492 GRID	549600	4195600	0	10
RECEPTOR 493 GRID	549800	4195600	0	10
RECEPTOR 494 GRID	550000	4195600	0	10
RECEPTOR 495 GRID	550200	4195600	0	10
RECEPTOR 496 GRID	550400	4195600	0	10
RECEPTOR 497 GRID	550600	4195600	0	10
RECEPTOR 498 GRID	550800	4195600	0	10
RECEPTOR 499 GRID	551000	4195600	0	10
RECEPTOR 500 GRID	551200	4195600	0	10
RECEPTOR 501 GRID	551400	4195600	0	10
RECEPTOR 502 GRID	551600	4195600	0	10
RECEPTOR 503 GRID	551800	4195600	0	10
RECEPTOR 504 GRID	552000	4195600	0	10
RECEPTOR 505 GRID	552200	4195600	0	10
RECEPTOR 506 GRID	552400	4195600	0	10
RECEPTOR 507 GRID	552600	4195600	0	10
RECEPTOR 508 GRID	552800	4195600	0	10
RECEPTOR 509 GRID	553000	4195600	0	10
RECEPTOR 510 GRID	553200	4195600	0	10
RECEPTOR 511 GRID	553400	4195600	0	10
RECEPTOR 512 GRID	553600	4195600	0	10
RECEPTOR 513 GRID	553800	4195600	0	10
RECEPTOR 514 GRID	554000	4195600	0	10
RECEPTOR 515 GRID	554200	4195600	0	10
RECEPTOR 516 GRID	554400	4195600	0	10
RECEPTOR 517 GRID	554600	4195600	0	10
RECEPTOR 518 GRID	554800	4195600	0.8	10
RECEPTOR 519 GRID	555000	4195600	0.9	10
RECEPTOR 520 GRID	555200	4195600	1.1	10
RECEPTOR 521 GRID	555400	4195600	5.3	10
RECEPTOR 522 GRID	555600	4195600	5.3	10
RECEPTOR 523 GRID	555800	4195600	4.9	10
RECEPTOR 524 GRID	556000	4195600	1.1	10
RECEPTOR 525 GRID	556200	4195600	0.9	10
RECEPTOR 526 GRID	556400	4195600	0.6	10
RECEPTOR 527 GRID	556600	4195600	0	10
RECEPTOR 528 GRID	556800	4195600	0	10
RECEPTOR 529 GRID	557000	4195600	0	10
RECEPTOR 530 GRID	557200	4195600	0	10
RECEPTOR 531 GRID	557400	4195600	0	10
RECEPTOR 532 GRID	557600	4195600	0	10
RECEPTOR 533 GRID	557800	4195600	0	10
RECEPTOR 534 GRID	558000	4195600	0	10
RECEPTOR 535 GRID	558200	4195600	0	10
RECEPTOR 536 GRID	558400	4195600	0	10

RECEPTOR 537 GRID	558600	4195600	0	10
RECEPTOR 538 GRID	558800	4195600	0	10
RECEPTOR 539 GRID	559000	4195600	0	10
RECEPTOR 540 GRID	559200	4195600	0	10
RECEPTOR 541 GRID	559400	4195600	1.1	10
RECEPTOR 542 GRID	559600	4195600	4.1	10
RECEPTOR 543 GRID	559800	4195600	1.7	10
RECEPTOR 544 GRID	560000	4195600	3.9	10
RECEPTOR 545 GRID	560200	4195600	4.1	10
RECEPTOR 546 GRID	560400	4195600	10.5	10
RECEPTOR 547 GRID	560600	4195600	20.7	10
RECEPTOR 548 GRID	560800	4195600	10.6	10
RECEPTOR 549 GRID	561000	4195600	10.3	10
RECEPTOR 550 GRID	549000	4195800	0	10
RECEPTOR 551 GRID	549200	4195800	0	10
RECEPTOR 552 GRID	549400	4195800	0	10
RECEPTOR 553 GRID	549600	4195800	0	10
RECEPTOR 554 GRID	549800	4195800	0	10
RECEPTOR 555 GRID	550000	4195800	0	10
RECEPTOR 556 GRID	550200	4195800	0	10
RECEPTOR 557 GRID	550400	4195800	0	10
RECEPTOR 558 GRID	550600	4195800	0	10
RECEPTOR 559 GRID	550800	4195800	0	10
RECEPTOR 560 GRID	551000	4195800	0	10
RECEPTOR 561 GRID	551200	4195800	0	10
RECEPTOR 562 GRID	551400	4195800	0	10
RECEPTOR 563 GRID	551600	4195800	0	10
RECEPTOR 564 GRID	551800	4195800	0	10
RECEPTOR 565 GRID	552000	4195800	0	10
RECEPTOR 566 GRID	552200	4195800	0	10
RECEPTOR 567 GRID	552400	4195800	0	10
RECEPTOR 568 GRID	552600	4195800	0	10
RECEPTOR 569 GRID	552800	4195800	0	10
RECEPTOR 570 GRID	553000	4195800	0	10
RECEPTOR 571 GRID	553200	4195800	0	10
RECEPTOR 572 GRID	553400	4195800	2.3	10
RECEPTOR 573 GRID	553600	4195800	1	10
RECEPTOR 574 GRID	553800	4195800	1.1	10
RECEPTOR 575 GRID	554000	4195800	1.1	10
RECEPTOR 576 GRID	554200	4195800	1.5	10
RECEPTOR 577 GRID	554400	4195800	1	10
RECEPTOR 578 GRID	554600	4195800	1.1	10
RECEPTOR 579 GRID	554800	4195800	1.1	10
RECEPTOR 580 GRID	555000	4195800	4.5	10
RECEPTOR 581 GRID	555200	4195800	6.9	10

RECEPTOR 582 GRID	555400	4195800	7.4	10
RECEPTOR 583 GRID	555600	4195800	5.5	10
RECEPTOR 584 GRID	555800	4195800	4.7	10
RECEPTOR 585 GRID	556000	4195800	1.2	10
RECEPTOR 586 GRID	556200	4195800	1.1	10
RECEPTOR 587 GRID	556400	4195800	1	10
RECEPTOR 588 GRID	556600	4195800	0.4	10
RECEPTOR 589 GRID	556800	4195800	-0.2	10
RECEPTOR 590 GRID	557000	4195800	3.6	10
RECEPTOR 591 GRID	557200	4195800	4	10
RECEPTOR 592 GRID	557400	4195800	4.3	10
RECEPTOR 593 GRID	557600	4195800	4.2	10
RECEPTOR 594 GRID	557800	4195800	3.4	10
RECEPTOR 595 GRID	558000	4195800	1.1	10
RECEPTOR 596 GRID	558200	4195800	1.1	10
RECEPTOR 597 GRID	558400	4195800	1.5	10
RECEPTOR 598 GRID	558600	4195800	1.1	10
RECEPTOR 599 GRID	558800	4195800	1.5	10
RECEPTOR 600 GRID	559000	4195800	1.5	10
RECEPTOR 601 GRID	559200	4195800	1.1	10
RECEPTOR 602 GRID	559400	4195800	1.9	10
RECEPTOR 603 GRID	559600	4195800	1.6	10
RECEPTOR 604 GRID	559800	4195800	4.9	10
RECEPTOR 605 GRID	560000	4195800	2.7	10
RECEPTOR 606 GRID	560200	4195800	3.7	10
RECEPTOR 607 GRID	560400	4195800	18.3	10
RECEPTOR 608 GRID	560600	4195800	20.4	10
RECEPTOR 609 GRID	560800	4195800	11.9	10
RECEPTOR 610 GRID	561000	4195800	12.8	10
RECEPTOR 611 GRID	549000	4196000	0	10
RECEPTOR 612 GRID	549200	4196000	0	10
RECEPTOR 613 GRID	549400	4196000	0	10
RECEPTOR 614 GRID	549600	4196000	0	10
RECEPTOR 615 GRID	549800	4196000	0	10
RECEPTOR 616 GRID	550000	4196000	0	10
RECEPTOR 617 GRID	550200	4196000	0	10
RECEPTOR 618 GRID	550400	4196000	0	10
RECEPTOR 619 GRID	550600	4196000	0	10
RECEPTOR 620 GRID	550800	4196000	0	10
RECEPTOR 621 GRID	551000	4196000	0	10
RECEPTOR 622 GRID	551200	4196000	0	10
RECEPTOR 623 GRID	551400	4196000	0	10
RECEPTOR 624 GRID	551600	4196000	0	10
RECEPTOR 625 GRID	551800	4196000	0	10
RECEPTOR 626 GRID	552000	4196000	0	10

RECEPTOR 627 GRID	552200	4196000	0	10
RECEPTOR 628 GRID	552400	4196000	0	10
RECEPTOR 629 GRID	552600	4196000	0	10
RECEPTOR 630 GRID	552800	4196000	0	10
RECEPTOR 631 GRID	553000	4196000	0	10
RECEPTOR 632 GRID	553200	4196000	0	10
RECEPTOR 633 GRID	553400	4196000	0	10
RECEPTOR 634 GRID	553600	4196000	1.8	10
RECEPTOR 635 GRID	553800	4196000	4.4	10
RECEPTOR 636 GRID	554000	4196000	4.6	10
RECEPTOR 637 GRID	554200	4196000	2.9	10
RECEPTOR 638 GRID	554400	4196000	2.1	10
RECEPTOR 639 GRID	554600	4196000	1.5	10
RECEPTOR 640 GRID	554800	4196000	3.9	10
RECEPTOR 641 GRID	555000	4196000	16.4	10
RECEPTOR 642 GRID	555200	4196000	8.4	10
RECEPTOR 643 GRID	555400	4196000	7.8	10
RECEPTOR 644 GRID	555600	4196000	5.1	10
RECEPTOR 645 GRID	555800	4196000	4.3	10
RECEPTOR 646 GRID	556000	4196000	1.1	10
RECEPTOR 647 GRID	556200	4196000	1.5	10
RECEPTOR 648 GRID	556400	4196000	4.5	10
RECEPTOR 649 GRID	556600	4196000	4.4	10
RECEPTOR 650 GRID	556800	4196000	0.9	10
RECEPTOR 651 GRID	557000	4196000	0	10
RECEPTOR 652 GRID	557200	4196000	1.1	10
RECEPTOR 653 GRID	557400	4196000	1.3	10
RECEPTOR 654 GRID	557600	4196000	5.2	10
RECEPTOR 655 GRID	557800	4196000	4.6	10
RECEPTOR 656 GRID	558000	4196000	4.4	10
RECEPTOR 657 GRID	558200	4196000	1.5	10
RECEPTOR 658 GRID	558400	4196000	1.5	10
RECEPTOR 659 GRID	558600	4196000	0.6	10
RECEPTOR 660 GRID	558800	4196000	1.2	10
RECEPTOR 661 GRID	559000	4196000	2	10
RECEPTOR 662 GRID	559200	4196000	3.4	10
RECEPTOR 663 GRID	559400	4196000	2.1	10
RECEPTOR 664 GRID	559600	4196000	4.2	10
RECEPTOR 665 GRID	559800	4196000	2.7	10
RECEPTOR 666 GRID	560000	4196000	3.4	10
RECEPTOR 667 GRID	560200	4196000	4.9	10
RECEPTOR 668 GRID	560400	4196000	7.5	10
RECEPTOR 669 GRID	560600	4196000	10.2	10
RECEPTOR 670 GRID	560800	4196000	12.4	10
RECEPTOR 671 GRID	561000	4196000	15	10

RECEPTOR 672 GRID	549000	4196200	0	10
RECEPTOR 673 GRID	549200	4196200	0	10
RECEPTOR 674 GRID	549400	4196200	0	10
RECEPTOR 675 GRID	549600	4196200	0	10
RECEPTOR 676 GRID	549800	4196200	0	10
RECEPTOR 677 GRID	550000	4196200	0	10
RECEPTOR 678 GRID	550200	4196200	0	10
RECEPTOR 679 GRID	550400	4196200	0	10
RECEPTOR 680 GRID	550600	4196200	0	10
RECEPTOR 681 GRID	550800	4196200	0	10
RECEPTOR 682 GRID	551000	4196200	0	10
RECEPTOR 683 GRID	551200	4196200	0	10
RECEPTOR 684 GRID	551400	4196200	0	10
RECEPTOR 685 GRID	551600	4196200	0	10
RECEPTOR 686 GRID	551800	4196200	0	10
RECEPTOR 687 GRID	552000	4196200	0	10
RECEPTOR 688 GRID	552200	4196200	0	10
RECEPTOR 689 GRID	552400	4196200	0	10
RECEPTOR 690 GRID	552600	4196200	0	10
RECEPTOR 691 GRID	552800	4196200	0	10
RECEPTOR 692 GRID	553000	4196200	0	10
RECEPTOR 693 GRID	553200	4196200	0	10
RECEPTOR 694 GRID	553400	4196200	0	10
RECEPTOR 695 GRID	553600	4196200	1	10
RECEPTOR 696 GRID	553800	4196200	3.8	10
RECEPTOR 697 GRID	554000	4196200	25.8	10
RECEPTOR 698 GRID	554200	4196200	28.8	10
RECEPTOR 699 GRID	554400	4196200	3.6	10
RECEPTOR 700 GRID	554600	4196200	4.2	10
RECEPTOR 701 GRID	554800	4196200	15.5	10
RECEPTOR 702 GRID	555000	4196200	49.7	10
RECEPTOR 703 GRID	555200	4196200	34.4	10
RECEPTOR 704 GRID	555400	4196200	40.6	10
RECEPTOR 705 GRID	555600	4196200	3.8	10
RECEPTOR 706 GRID	555800	4196200	3.6	10
RECEPTOR 707 GRID	556000	4196200	1.2	10
RECEPTOR 708 GRID	556200	4196200	3.8	10
RECEPTOR 709 GRID	556400	4196200	4.6	10
RECEPTOR 710 GRID	556600	4196200	4.5	10
RECEPTOR 711 GRID	556800	4196200	1.1	10
RECEPTOR 712 GRID	557000	4196200	0.8	10
RECEPTOR 713 GRID	557200	4196200	1.1	10
RECEPTOR 714 GRID	557400	4196200	1.5	10
RECEPTOR 715 GRID	557600	4196200	5	10
RECEPTOR 716 GRID	557800	4196200	5	10

RECEPTOR 717 GRID	558000	4196200	3.8	10
RECEPTOR 718 GRID	558200	4196200	4.5	10
RECEPTOR 719 GRID	558400	4196200	1.2	10
RECEPTOR 720 GRID	558600	4196200	5.3	10
RECEPTOR 721 GRID	558800	4196200	5.4	10
RECEPTOR 722 GRID	559000	4196200	3.8	10
RECEPTOR 723 GRID	559200	4196200	3.6	10
RECEPTOR 724 GRID	559400	4196200	1.7	10
RECEPTOR 725 GRID	559600	4196200	3.1	10
RECEPTOR 726 GRID	559800	4196200	4.1	10
RECEPTOR 727 GRID	560000	4196200	12.5	10
RECEPTOR 728 GRID	560200	4196200	12.9	10
RECEPTOR 729 GRID	560400	4196200	28.9	10
RECEPTOR 730 GRID	560600	4196200	34.1	10
RECEPTOR 731 GRID	560800	4196200	15.8	10
RECEPTOR 732 GRID	561000	4196200	17.3	10
RECEPTOR 733 GRID	549000	4196400	0	10
RECEPTOR 734 GRID	549200	4196400	0	10
RECEPTOR 735 GRID	549400	4196400	0	10
RECEPTOR 736 GRID	549600	4196400	0	10
RECEPTOR 737 GRID	549800	4196400	0	10
RECEPTOR 738 GRID	550000	4196400	0	10
RECEPTOR 739 GRID	550200	4196400	0	10
RECEPTOR 740 GRID	550400	4196400	0	10
RECEPTOR 741 GRID	550600	4196400	0	10
RECEPTOR 742 GRID	550800	4196400	0	10
RECEPTOR 743 GRID	551000	4196400	0	10
RECEPTOR 744 GRID	551200	4196400	0	10
RECEPTOR 745 GRID	551400	4196400	0	10
RECEPTOR 746 GRID	551600	4196400	0	10
RECEPTOR 747 GRID	551800	4196400	0	10
RECEPTOR 748 GRID	552000	4196400	0	10
RECEPTOR 749 GRID	552200	4196400	0	10
RECEPTOR 750 GRID	552400	4196400	0	10
RECEPTOR 751 GRID	552600	4196400	0	10
RECEPTOR 752 GRID	552800	4196400	0	10
RECEPTOR 753 GRID	553000	4196400	0	10
RECEPTOR 754 GRID	553200	4196400	0	10
RECEPTOR 755 GRID	553400	4196400	0	10
RECEPTOR 756 GRID	553600	4196400	0	10
RECEPTOR 757 GRID	553800	4196400	2.7	10
RECEPTOR 758 GRID	554000	4196400	5.3	10
RECEPTOR 759 GRID	554200	4196400	19.5	10
RECEPTOR 760 GRID	554400	4196400	27	10
RECEPTOR 761 GRID	554600	4196400	28	10

RECEPTOR 762 GRID	554800	4196400	67.5	10
RECEPTOR 763 GRID	555000	4196400	80	10
RECEPTOR 764 GRID	555200	4196400	14.7	10
RECEPTOR 765 GRID	555400	4196400	4.1	10
RECEPTOR 766 GRID	555600	4196400	3.9	10
RECEPTOR 767 GRID	555800	4196400	1.3	10
RECEPTOR 768 GRID	556000	4196400	1.2	10
RECEPTOR 769 GRID	556200	4196400	3.7	10
RECEPTOR 770 GRID	556400	4196400	4.3	10
RECEPTOR 771 GRID	556600	4196400	4.3	10
RECEPTOR 772 GRID	556800	4196400	1.1	10
RECEPTOR 773 GRID	557000	4196400	1.3	10
RECEPTOR 774 GRID	557200	4196400	1.4	10
RECEPTOR 775 GRID	557400	4196400	5.1	10
RECEPTOR 776 GRID	557600	4196400	4	10
RECEPTOR 777 GRID	557800	4196400	4.9	10
RECEPTOR 778 GRID	558000	4196400	4.3	10
RECEPTOR 779 GRID	558200	4196400	4	10
RECEPTOR 780 GRID	558400	4196400	4.4	10
RECEPTOR 781 GRID	558600	4196400	4.3	10
RECEPTOR 782 GRID	558800	4196400	6.6	10
RECEPTOR 783 GRID	559000	4196400	4.9	10
RECEPTOR 784 GRID	559200	4196400	4.9	10
RECEPTOR 785 GRID	559400	4196400	5.1	10
RECEPTOR 786 GRID	559600	4196400	6.5	10
RECEPTOR 787 GRID	559800	4196400	6.7	10
RECEPTOR 788 GRID	560000	4196400	13.4	10
RECEPTOR 789 GRID	560200	4196400	39.6	10
RECEPTOR 790 GRID	560400	4196400	36.1	10
RECEPTOR 791 GRID	560600	4196400	22.1	10
RECEPTOR 792 GRID	560800	4196400	20	10
RECEPTOR 793 GRID	561000	4196400	23.8	10
RECEPTOR 794 GRID	549000	4196600	0	10
RECEPTOR 795 GRID	549200	4196600	0	10
RECEPTOR 796 GRID	549400	4196600	0	10
RECEPTOR 797 GRID	549600	4196600	0	10
RECEPTOR 798 GRID	549800	4196600	0	10
RECEPTOR 799 GRID	550000	4196600	0	10
RECEPTOR 800 GRID	550200	4196600	0	10
RECEPTOR 801 GRID	550400	4196600	0	10
RECEPTOR 802 GRID	550600	4196600	0	10
RECEPTOR 803 GRID	550800	4196600	0	10
RECEPTOR 804 GRID	551000	4196600	0	10
RECEPTOR 805 GRID	551200	4196600	0	10
RECEPTOR 806 GRID	551400	4196600	0	10

RECEPTOR 807 GRID	551600	4196600	0	10
RECEPTOR 808 GRID	551800	4196600	0	10
RECEPTOR 809 GRID	552000	4196600	0	10
RECEPTOR 810 GRID	552200	4196600	0	10
RECEPTOR 811 GRID	552400	4196600	0	10
RECEPTOR 812 GRID	552600	4196600	0	10
RECEPTOR 813 GRID	552800	4196600	0	10
RECEPTOR 814 GRID	553000	4196600	0	10
RECEPTOR 815 GRID	553200	4196600	0	10
RECEPTOR 816 GRID	553400	4196600	0	10
RECEPTOR 817 GRID	553600	4196600	0	10
RECEPTOR 818 GRID	553800	4196600	1.2	10
RECEPTOR 819 GRID	554000	4196600	2.6	10
RECEPTOR 820 GRID	554200	4196600	4	10
RECEPTOR 821 GRID	554400	4196600	69.3	10
RECEPTOR 822 GRID	554600	4196600	96.1	10
RECEPTOR 823 GRID	554800	4196600	82	10
RECEPTOR 824 GRID	555000	4196600	67.9	10
RECEPTOR 825 GRID	555200	4196600	10.4	10
RECEPTOR 826 GRID	555400	4196600	4.1	10
RECEPTOR 827 GRID	555600	4196600	3.9	10
RECEPTOR 828 GRID	555800	4196600	4	10
RECEPTOR 829 GRID	556000	4196600	1.1	10
RECEPTOR 830 GRID	556200	4196600	3.7	10
RECEPTOR 831 GRID	556400	4196600	3.9	10
RECEPTOR 832 GRID	556600	4196600	4.1	10
RECEPTOR 833 GRID	556800	4196600	3.6	10
RECEPTOR 834 GRID	557000	4196600	3.4	10
RECEPTOR 835 GRID	557200	4196600	4	10
RECEPTOR 836 GRID	557400	4196600	3.2	10
RECEPTOR 837 GRID	557600	4196600	4	10
RECEPTOR 838 GRID	557800	4196600	3.3	10
RECEPTOR 839 GRID	558000	4196600	3.7	10
RECEPTOR 840 GRID	558200	4196600	5.1	10
RECEPTOR 841 GRID	558400	4196600	5.4	10
RECEPTOR 842 GRID	558600	4196600	5.8	10
RECEPTOR 843 GRID	558800	4196600	6.9	10
RECEPTOR 844 GRID	559000	4196600	6.4	10
RECEPTOR 845 GRID	559200	4196600	7.4	10
RECEPTOR 846 GRID	559400	4196600	5.2	10
RECEPTOR 847 GRID	559600	4196600	9.2	10
RECEPTOR 848 GRID	559800	4196600	27.7	10
RECEPTOR 849 GRID	560000	4196600	14.8	10
RECEPTOR 850 GRID	560200	4196600	20.6	10
RECEPTOR 851 GRID	560400	4196600	29.2	10

RECEPTOR 852 GRID	560600	4196600	20.5	10
RECEPTOR 853 GRID	560800	4196600	24.2	10
RECEPTOR 854 GRID	561000	4196600	27.5	10
RECEPTOR 855 GRID	549000	4196800	0	10
RECEPTOR 856 GRID	549200	4196800	0	10
RECEPTOR 857 GRID	549400	4196800	0	10
RECEPTOR 858 GRID	549600	4196800	0	10
RECEPTOR 859 GRID	549800	4196800	0	10
RECEPTOR 860 GRID	550000	4196800	0	10
RECEPTOR 861 GRID	550200	4196800	0	10
RECEPTOR 862 GRID	550400	4196800	0	10
RECEPTOR 863 GRID	550600	4196800	0	10
RECEPTOR 864 GRID	550800	4196800	0	10
RECEPTOR 865 GRID	551000	4196800	0	10
RECEPTOR 866 GRID	551200	4196800	0	10
RECEPTOR 867 GRID	551400	4196800	0	10
RECEPTOR 868 GRID	551600	4196800	0	10
RECEPTOR 869 GRID	551800	4196800	0	10
RECEPTOR 870 GRID	552000	4196800	0	10
RECEPTOR 871 GRID	552200	4196800	0	10
RECEPTOR 872 GRID	552400	4196800	0	10
RECEPTOR 873 GRID	552600	4196800	0	10
RECEPTOR 874 GRID	552800	4196800	0	10
RECEPTOR 875 GRID	553000	4196800	0	10
RECEPTOR 876 GRID	553200	4196800	0	10
RECEPTOR 877 GRID	553400	4196800	0	10
RECEPTOR 878 GRID	553600	4196800	0	10
RECEPTOR 879 GRID	553800	4196800	1.2	10
RECEPTOR 880 GRID	554000	4196800	3	10
RECEPTOR 881 GRID	554200	4196800	5	10
RECEPTOR 882 GRID	554400	4196800	26.8	10
RECEPTOR 883 GRID	554600	4196800	56.9	10
RECEPTOR 884 GRID	554800	4196800	6.8	10
RECEPTOR 885 GRID	555000	4196800	6.2	10
RECEPTOR 886 GRID	555200	4196800	4.5	10
RECEPTOR 887 GRID	555400	4196800	4.2	10
RECEPTOR 888 GRID	555600	4196800	3.6	10
RECEPTOR 889 GRID	555800	4196800	1.1	10
RECEPTOR 890 GRID	556000	4196800	1.1	10
RECEPTOR 891 GRID	556200	4196800	3.3	10
RECEPTOR 892 GRID	556400	4196800	3.7	10
RECEPTOR 893 GRID	556600	4196800	3.9	10
RECEPTOR 894 GRID	556800	4196800	4	10
RECEPTOR 895 GRID	557000	4196800	4.2	10
RECEPTOR 896 GRID	557200	4196800	4.4	10

RECEPTOR 897 GRID	557400	4196800	4	10
RECEPTOR 898 GRID	557600	4196800	3.6	10
RECEPTOR 899 GRID	557800	4196800	3.4	10
RECEPTOR 900 GRID	558000	4196800	3.9	10
RECEPTOR 901 GRID	558200	4196800	5.3	10
RECEPTOR 902 GRID	558400	4196800	6.9	10
RECEPTOR 903 GRID	558600	4196800	7.2	10
RECEPTOR 904 GRID	558800	4196800	7.8	10
RECEPTOR 905 GRID	559000	4196800	8	10
RECEPTOR 906 GRID	559200	4196800	7.4	10
RECEPTOR 907 GRID	559400	4196800	6.4	10
RECEPTOR 908 GRID	559600	4196800	7	10
RECEPTOR 909 GRID	559800	4196800	9.5	10
RECEPTOR 910 GRID	560000	4196800	16	10
RECEPTOR 911 GRID	560200	4196800	15.8	10
RECEPTOR 912 GRID	560400	4196800	19.5	10
RECEPTOR 913 GRID	560600	4196800	21.4	10
RECEPTOR 914 GRID	560800	4196800	26.5	10
RECEPTOR 915 GRID	561000	4196800	31.6	10
RECEPTOR 916 GRID	549000	4197000	0	10
RECEPTOR 917 GRID	549200	4197000	0	10
RECEPTOR 918 GRID	549400	4197000	0	10
RECEPTOR 919 GRID	549600	4197000	0	10
RECEPTOR 920 GRID	549800	4197000	0	10
RECEPTOR 921 GRID	550000	4197000	0	10
RECEPTOR 922 GRID	550200	4197000	0	10
RECEPTOR 923 GRID	550400	4197000	0	10
RECEPTOR 924 GRID	550600	4197000	0	10
RECEPTOR 925 GRID	550800	4197000	0	10
RECEPTOR 926 GRID	551000	4197000	0	10
RECEPTOR 927 GRID	551200	4197000	0	10
RECEPTOR 928 GRID	551400	4197000	0	10
RECEPTOR 929 GRID	551600	4197000	0	10
RECEPTOR 930 GRID	551800	4197000	0	10
RECEPTOR 931 GRID	552000	4197000	0	10
RECEPTOR 932 GRID	552200	4197000	0	10
RECEPTOR 933 GRID	552400	4197000	0	10
RECEPTOR 934 GRID	552600	4197000	0	10
RECEPTOR 935 GRID	552800	4197000	0	10
RECEPTOR 936 GRID	553000	4197000	0	10
RECEPTOR 937 GRID	553200	4197000	0	10
RECEPTOR 938 GRID	553400	4197000	0	10
RECEPTOR 939 GRID	553600	4197000	0	10
RECEPTOR 940 GRID	553800	4197000	1.2	10
RECEPTOR 941 GRID	554000	4197000	3.6	10

RECEPTOR 942 GRID	554200	4197000	50.3	10
RECEPTOR 943 GRID	554400	4197000	69.9	10
RECEPTOR 944 GRID	554600	4197000	7.4	10
RECEPTOR 945 GRID	554800	4197000	5.2	10
RECEPTOR 946 GRID	555000	4197000	4	10
RECEPTOR 947 GRID	555200	4197000	3.8	10
RECEPTOR 948 GRID	555400	4197000	3.9	10
RECEPTOR 949 GRID	555600	4197000	1.1	10
RECEPTOR 950 GRID	555800	4197000	3.3	10
RECEPTOR 951 GRID	556000	4197000	2.3	10
RECEPTOR 952 GRID	556200	4197000	3.5	10
RECEPTOR 953 GRID	556400	4197000	2.8	10
RECEPTOR 954 GRID	556600	4197000	3.2	10
RECEPTOR 955 GRID	556800	4197000	3.6	10
RECEPTOR 956 GRID	557000	4197000	3.8	10
RECEPTOR 957 GRID	557200	4197000	3.6	10
RECEPTOR 958 GRID	557400	4197000	3.9	10
RECEPTOR 959 GRID	557600	4197000	5.6	10
RECEPTOR 960 GRID	557800	4197000	5.4	10
RECEPTOR 961 GRID	558000	4197000	5.5	10
RECEPTOR 962 GRID	558200	4197000	6.3	10
RECEPTOR 963 GRID	558400	4197000	7.7	10
RECEPTOR 964 GRID	558600	4197000	9.4	10
RECEPTOR 965 GRID	558800	4197000	8	10
RECEPTOR 966 GRID	559000	4197000	9.6	10
RECEPTOR 967 GRID	559200	4197000	8.7	10
RECEPTOR 968 GRID	559400	4197000	8.4	10
RECEPTOR 969 GRID	559600	4197000	9.4	10
RECEPTOR 970 GRID	559800	4197000	9.7	10
RECEPTOR 971 GRID	560000	4197000	17.8	10
RECEPTOR 972 GRID	560200	4197000	15.8	10
RECEPTOR 973 GRID	560400	4197000	18.6	10
RECEPTOR 974 GRID	560600	4197000	21.9	10
RECEPTOR 975 GRID	560800	4197000	26.3	10
RECEPTOR 976 GRID	561000	4197000	32.7	10
RECEPTOR 977 GRID	549000	4197200	0	10
RECEPTOR 978 GRID	549200	4197200	0	10
RECEPTOR 979 GRID	549400	4197200	0	10
RECEPTOR 980 GRID	549600	4197200	0	10
RECEPTOR 981 GRID	549800	4197200	0	10
RECEPTOR 982 GRID	550000	4197200	0	10
RECEPTOR 983 GRID	550200	4197200	0	10
RECEPTOR 984 GRID	550400	4197200	0	10
RECEPTOR 985 GRID	550600	4197200	0	10
RECEPTOR 986 GRID	550800	4197200	0	10

RECEPTOR 987 GRID	551000	4197200	0	10
RECEPTOR 988 GRID	551200	4197200	0	10
RECEPTOR 989 GRID	551400	4197200	0	10
RECEPTOR 990 GRID	551600	4197200	0	10
RECEPTOR 991 GRID	551800	4197200	0	10
RECEPTOR 992 GRID	552000	4197200	0	10
RECEPTOR 993 GRID	552200	4197200	0	10
RECEPTOR 994 GRID	552400	4197200	0	10
RECEPTOR 995 GRID	552600	4197200	0	10
RECEPTOR 996 GRID	552800	4197200	0	10
RECEPTOR 997 GRID	553000	4197200	0	10
RECEPTOR 998 GRID	553200	4197200	0	10
RECEPTOR 999 GRID	553400	4197200	0	10
RECEPTOR 1000 GRID	553600	4197200	0	10
RECEPTOR 1001 GRID	553800	4197200	1.2	10
RECEPTOR 1002 GRID	554000	4197200	14.7	10
RECEPTOR 1003 GRID	554200	4197200	93	10
RECEPTOR 1004 GRID	554400	4197200	68	10
RECEPTOR 1005 GRID	554600	4197200	6.6	10
RECEPTOR 1006 GRID	554800	4197200	4.1	10
RECEPTOR 1007 GRID	555000	4197200	4	10
RECEPTOR 1008 GRID	555200	4197200	4.1	10
RECEPTOR 1009 GRID	555400	4197200	1.1	10
RECEPTOR 1010 GRID	555600	4197200	1.1	10
RECEPTOR 1011 GRID	555800	4197200	3.7	10
RECEPTOR 1012 GRID	556000	4197200	4.3	10
RECEPTOR 1013 GRID	556200	4197200	3.4	10
RECEPTOR 1014 GRID	556400	4197200	2.7	10
RECEPTOR 1015 GRID	556600	4197200	2.7	10
RECEPTOR 1016 GRID	556800	4197200	3.7	10
RECEPTOR 1017 GRID	557000	4197200	3.2	10
RECEPTOR 1018 GRID	557200	4197200	4.1	10
RECEPTOR 1019 GRID	557400	4197200	5.3	10
RECEPTOR 1020 GRID	557600	4197200	6.3	10
RECEPTOR 1021 GRID	557800	4197200	6.4	10
RECEPTOR 1022 GRID	558000	4197200	6	10
RECEPTOR 1023 GRID	558200	4197200	5.6	10
RECEPTOR 1024 GRID	558400	4197200	8.4	10
RECEPTOR 1025 GRID	558600	4197200	5.7	10
RECEPTOR 1026 GRID	558800	4197200	9.9	10
RECEPTOR 1027 GRID	559000	4197200	11	10
RECEPTOR 1028 GRID	559200	4197200	9.8	10
RECEPTOR 1029 GRID	559400	4197200	10.8	10
RECEPTOR 1030 GRID	559600	4197200	11	10
RECEPTOR 1031 GRID	559800	4197200	11.8	10

RECEPTOR 1032 GRID	560000	4197200	16.3	10
RECEPTOR 1033 GRID	560200	4197200	16.6	10
RECEPTOR 1034 GRID	560400	4197200	20.1	10
RECEPTOR 1035 GRID	560600	4197200	24.9	10
RECEPTOR 1036 GRID	560800	4197200	30.8	10
RECEPTOR 1037 GRID	561000	4197200	42.3	10
RECEPTOR 1038 GRID	549000	4197400	0	10
RECEPTOR 1039 GRID	549200	4197400	0	10
RECEPTOR 1040 GRID	549400	4197400	0	10
RECEPTOR 1041 GRID	549600	4197400	0	10
RECEPTOR 1042 GRID	549800	4197400	0	10
RECEPTOR 1043 GRID	550000	4197400	0	10
RECEPTOR 1044 GRID	550200	4197400	0	10
RECEPTOR 1045 GRID	550400	4197400	0	10
RECEPTOR 1046 GRID	550600	4197400	0	10
RECEPTOR 1047 GRID	550800	4197400	0	10
RECEPTOR 1048 GRID	551000	4197400	0	10
RECEPTOR 1049 GRID	551200	4197400	0	10
RECEPTOR 1050 GRID	551400	4197400	0	10
RECEPTOR 1051 GRID	551600	4197400	0	10
RECEPTOR 1052 GRID	551800	4197400	5.1	10
RECEPTOR 1053 GRID	552000	4197400	0	10
RECEPTOR 1054 GRID	552200	4197400	0	10
RECEPTOR 1055 GRID	552400	4197400	0	10
RECEPTOR 1056 GRID	552600	4197400	0	10
RECEPTOR 1057 GRID	552800	4197400	0	10
RECEPTOR 1058 GRID	553000	4197400	0	10
RECEPTOR 1059 GRID	553200	4197400	0	10
RECEPTOR 1060 GRID	553400	4197400	0	10
RECEPTOR 1061 GRID	553600	4197400	1.1	10
RECEPTOR 1062 GRID	553800	4197400	8.2	10
RECEPTOR 1063 GRID	554000	4197400	50.6	10
RECEPTOR 1064 GRID	554200	4197400	21.2	10
RECEPTOR 1065 GRID	554400	4197400	25.7	10
RECEPTOR 1066 GRID	554600	4197400	4.6	10
RECEPTOR 1067 GRID	554800	4197400	3.4	10
RECEPTOR 1068 GRID	555000	4197400	1.1	10
RECEPTOR 1069 GRID	555200	4197400	1.1	10
RECEPTOR 1070 GRID	555400	4197400	2.8	10
RECEPTOR 1071 GRID	555600	4197400	1.6	10
RECEPTOR 1072 GRID	555800	4197400	3.8	10
RECEPTOR 1073 GRID	556000	4197400	4	10
RECEPTOR 1074 GRID	556200	4197400	3.2	10
RECEPTOR 1075 GRID	556400	4197400	-0.9	10
RECEPTOR 1076 GRID	556600	4197400	5.4	10

RECEPTOR 1077 GRID	556800	4197400	5	10
RECEPTOR 1078 GRID	557000	4197400	5.3	10
RECEPTOR 1079 GRID	557200	4197400	5.7	10
RECEPTOR 1080 GRID	557400	4197400	2.6	10
RECEPTOR 1081 GRID	557600	4197400	8.4	10
RECEPTOR 1082 GRID	557800	4197400	9	10
RECEPTOR 1083 GRID	558000	4197400	8.6	10
RECEPTOR 1084 GRID	558200	4197400	9.1	10
RECEPTOR 1085 GRID	558400	4197400	10.1	10
RECEPTOR 1086 GRID	558600	4197400	11.5	10
RECEPTOR 1087 GRID	558800	4197400	12.6	10
RECEPTOR 1088 GRID	559000	4197400	12.3	10
RECEPTOR 1089 GRID	559200	4197400	12	10
RECEPTOR 1090 GRID	559400	4197400	12.2	10
RECEPTOR 1091 GRID	559600	4197400	13.3	10
RECEPTOR 1092 GRID	559800	4197400	13.3	10
RECEPTOR 1093 GRID	560000	4197400	14.6	10
RECEPTOR 1094 GRID	560200	4197400	17.9	10
RECEPTOR 1095 GRID	560400	4197400	21.6	10
RECEPTOR 1096 GRID	560600	4197400	28.7	10
RECEPTOR 1097 GRID	560800	4197400	36	10
RECEPTOR 1098 GRID	561000	4197400	43	10
RECEPTOR 1099 GRID	549000	4197600	0	10
RECEPTOR 1100 GRID	549200	4197600	0	10
RECEPTOR 1101 GRID	549400	4197600	0	10
RECEPTOR 1102 GRID	549600	4197600	0	10
RECEPTOR 1103 GRID	549800	4197600	0	10
RECEPTOR 1104 GRID	550000	4197600	0	10
RECEPTOR 1105 GRID	550200	4197600	0	10
RECEPTOR 1106 GRID	550400	4197600	0	10
RECEPTOR 1107 GRID	550600	4197600	0	10
RECEPTOR 1108 GRID	550800	4197600	0	10
RECEPTOR 1109 GRID	551000	4197600	0	10
RECEPTOR 1110 GRID	551200	4197600	0	10
RECEPTOR 1111 GRID	551400	4197600	0	10
RECEPTOR 1112 GRID	551600	4197600	0	10
RECEPTOR 1113 GRID	551800	4197600	0	10
RECEPTOR 1114 GRID	552000	4197600	0	10
RECEPTOR 1115 GRID	552200	4197600	0	10
RECEPTOR 1116 GRID	552400	4197600	0	10
RECEPTOR 1117 GRID	552600	4197600	0	10
RECEPTOR 1118 GRID	552800	4197600	0	10
RECEPTOR 1119 GRID	553000	4197600	0	10
RECEPTOR 1120 GRID	553200	4197600	0	10
RECEPTOR 1121 GRID	553400	4197600	1.1	10

RECEPTOR 1122 GRID	553600	4197600	19.9	10
RECEPTOR 1123 GRID	553800	4197600	40.2	10
RECEPTOR 1124 GRID	554000	4197600	13.8	10
RECEPTOR 1125 GRID	554200	4197600	3.7	10
RECEPTOR 1126 GRID	554400	4197600	2.8	10
RECEPTOR 1127 GRID	554600	4197600	3.7	10
RECEPTOR 1128 GRID	554800	4197600	2.9	10
RECEPTOR 1129 GRID	555000	4197600	3.3	10
RECEPTOR 1130 GRID	555200	4197600	3.2	10
RECEPTOR 1131 GRID	555400	4197600	3	10
RECEPTOR 1132 GRID	555600	4197600	2.3	10
RECEPTOR 1133 GRID	555800	4197600	4	10
RECEPTOR 1134 GRID	556000	4197600	3	10
RECEPTOR 1135 GRID	556200	4197600	0	10
RECEPTOR 1136 GRID	556400	4197600	3.7	10
RECEPTOR 1137 GRID	556600	4197600	3.8	10
RECEPTOR 1138 GRID	556800	4197600	6.1	10
RECEPTOR 1139 GRID	557000	4197600	6.7	10
RECEPTOR 1140 GRID	557200	4197600	7.1	10
RECEPTOR 1141 GRID	557400	4197600	8.7	10
RECEPTOR 1142 GRID	557600	4197600	13.7	10
RECEPTOR 1143 GRID	557800	4197600	12.5	10
RECEPTOR 1144 GRID	558000	4197600	10.5	10
RECEPTOR 1145 GRID	558200	4197600	10.6	10
RECEPTOR 1146 GRID	558400	4197600	11.8	10
RECEPTOR 1147 GRID	558600	4197600	11.8	10
RECEPTOR 1148 GRID	558800	4197600	13.6	10
RECEPTOR 1149 GRID	559000	4197600	14.1	10
RECEPTOR 1150 GRID	559200	4197600	13	10
RECEPTOR 1151 GRID	559400	4197600	12.8	10
RECEPTOR 1152 GRID	559600	4197600	14.6	10
RECEPTOR 1153 GRID	559800	4197600	18.9	10
RECEPTOR 1154 GRID	560000	4197600	16.4	10
RECEPTOR 1155 GRID	560200	4197600	19.2	10
RECEPTOR 1156 GRID	560400	4197600	24.4	10
RECEPTOR 1157 GRID	560600	4197600	31.5	10
RECEPTOR 1158 GRID	560800	4197600	38.3	10
RECEPTOR 1159 GRID	561000	4197600	60	10
RECEPTOR 1160 GRID	549000	4197800	0	10
RECEPTOR 1161 GRID	549200	4197800	0	10
RECEPTOR 1162 GRID	549400	4197800	0	10
RECEPTOR 1163 GRID	549600	4197800	0	10
RECEPTOR 1164 GRID	549800	4197800	0	10
RECEPTOR 1165 GRID	550000	4197800	0	10
RECEPTOR 1166 GRID	550200	4197800	0	10

RECEPTOR 1167 GRID	550400	4197800	0	10
RECEPTOR 1168 GRID	550600	4197800	0	10
RECEPTOR 1169 GRID	550800	4197800	0	10
RECEPTOR 1170 GRID	551000	4197800	0	10
RECEPTOR 1171 GRID	551200	4197800	0	10
RECEPTOR 1172 GRID	551400	4197800	0	10
RECEPTOR 1173 GRID	551600	4197800	0	10
RECEPTOR 1174 GRID	551800	4197800	0	10
RECEPTOR 1175 GRID	552000	4197800	0	10
RECEPTOR 1176 GRID	552200	4197800	0	10
RECEPTOR 1177 GRID	552400	4197800	0	10
RECEPTOR 1178 GRID	552600	4197800	0	10
RECEPTOR 1179 GRID	552800	4197800	0	10
RECEPTOR 1180 GRID	553000	4197800	1.1	10
RECEPTOR 1181 GRID	553200	4197800	1.1	10
RECEPTOR 1182 GRID	553400	4197800	1.1	10
RECEPTOR 1183 GRID	553600	4197800	39.3	10
RECEPTOR 1184 GRID	553800	4197800	25.6	10
RECEPTOR 1185 GRID	554000	4197800	6	10
RECEPTOR 1186 GRID	554200	4197800	3.5	10
RECEPTOR 1187 GRID	554400	4197800	2.7	10
RECEPTOR 1188 GRID	554600	4197800	2.8	10
RECEPTOR 1189 GRID	554800	4197800	2.6	10
RECEPTOR 1190 GRID	555000	4197800	2.9	10
RECEPTOR 1191 GRID	555200	4197800	2.7	10
RECEPTOR 1192 GRID	555400	4197800	3.2	10
RECEPTOR 1193 GRID	555600	4197800	2.6	10
RECEPTOR 1194 GRID	555800	4197800	4.5	10
RECEPTOR 1195 GRID	556000	4197800	3.6	10
RECEPTOR 1196 GRID	556200	4197800	4.5	10
RECEPTOR 1197 GRID	556400	4197800	4.8	10
RECEPTOR 1198 GRID	556600	4197800	4.8	10
RECEPTOR 1199 GRID	556800	4197800	6.1	10
RECEPTOR 1200 GRID	557000	4197800	8	10
RECEPTOR 1201 GRID	557200	4197800	8.4	10
RECEPTOR 1202 GRID	557400	4197800	9	10
RECEPTOR 1203 GRID	557600	4197800	9.9	10
RECEPTOR 1204 GRID	557800	4197800	11.6	10
RECEPTOR 1205 GRID	558000	4197800	12.1	10
RECEPTOR 1206 GRID	558200	4197800	12.4	10
RECEPTOR 1207 GRID	558400	4197800	12.9	10
RECEPTOR 1208 GRID	558600	4197800	13.8	10
RECEPTOR 1209 GRID	558800	4197800	14.3	10
RECEPTOR 1210 GRID	559000	4197800	15.3	10
RECEPTOR 1211 GRID	559200	4197800	15.5	10

RECEPTOR 1212 GRID	559400	4197800	14.8	10
RECEPTOR 1213 GRID	559600	4197800	16.8	10
RECEPTOR 1214 GRID	559800	4197800	16.2	10
RECEPTOR 1215 GRID	560000	4197800	19.3	10
RECEPTOR 1216 GRID	560200	4197800	25.2	10
RECEPTOR 1217 GRID	560400	4197800	34.6	10
RECEPTOR 1218 GRID	560600	4197800	49.3	10
RECEPTOR 1219 GRID	560800	4197800	51.8	10
RECEPTOR 1220 GRID	561000	4197800	104.2	10
RECEPTOR 1221 GRID	549000	4198000	0	10
RECEPTOR 1222 GRID	549200	4198000	0	10
RECEPTOR 1223 GRID	549400	4198000	0	10
RECEPTOR 1224 GRID	549600	4198000	0	10
RECEPTOR 1225 GRID	549800	4198000	0	10
RECEPTOR 1226 GRID	550000	4198000	0	10
RECEPTOR 1227 GRID	550200	4198000	0	10
RECEPTOR 1228 GRID	550400	4198000	0	10
RECEPTOR 1229 GRID	550600	4198000	0	10
RECEPTOR 1230 GRID	550800	4198000	0	10
RECEPTOR 1231 GRID	551000	4198000	0	10
RECEPTOR 1232 GRID	551200	4198000	0	10
RECEPTOR 1233 GRID	551400	4198000	0	10
RECEPTOR 1234 GRID	551600	4198000	0	10
RECEPTOR 1235 GRID	551800	4198000	0	10
RECEPTOR 1236 GRID	552000	4198000	0	10
RECEPTOR 1237 GRID	552200	4198000	0	10
RECEPTOR 1238 GRID	552400	4198000	0	10
RECEPTOR 1239 GRID	552600	4198000	0	10
RECEPTOR 1240 GRID	552800	4198000	1.1	10
RECEPTOR 1241 GRID	553000	4198000	1	10
RECEPTOR 1242 GRID	553200	4198000	1.1	10
RECEPTOR 1243 GRID	553400	4198000	33	10
RECEPTOR 1244 GRID	553600	4198000	39.6	10
RECEPTOR 1245 GRID	553800	4198000	12.9	10
RECEPTOR 1246 GRID	554000	4198000	8.1	10
RECEPTOR 1247 GRID	554200	4198000	3.3	10
RECEPTOR 1248 GRID	554400	4198000	2.8	10
RECEPTOR 1249 GRID	554600	4198000	2.7	10
RECEPTOR 1250 GRID	554800	4198000	3.5	10
RECEPTOR 1251 GRID	555000	4198000	3.2	10
RECEPTOR 1252 GRID	555200	4198000	4.3	10
RECEPTOR 1253 GRID	555400	4198000	4.2	10
RECEPTOR 1254 GRID	555600	4198000	3.6	10
RECEPTOR 1255 GRID	555800	4198000	3.5	10
RECEPTOR 1256 GRID	556000	4198000	4.1	10

RECEPTOR 1257 GRID	556200	4198000	4.9	10
RECEPTOR 1258 GRID	556400	4198000	6	10
RECEPTOR 1259 GRID	556600	4198000	5.6	10
RECEPTOR 1260 GRID	556800	4198000	7.3	10
RECEPTOR 1261 GRID	557000	4198000	8.6	10
RECEPTOR 1262 GRID	557200	4198000	9.7	10
RECEPTOR 1263 GRID	557400	4198000	10.4	10
RECEPTOR 1264 GRID	557600	4198000	11.4	10
RECEPTOR 1265 GRID	557800	4198000	11.5	10
RECEPTOR 1266 GRID	558000	4198000	13.5	10
RECEPTOR 1267 GRID	558200	4198000	14.3	10
RECEPTOR 1268 GRID	558400	4198000	14	10
RECEPTOR 1269 GRID	558600	4198000	14.9	10
RECEPTOR 1270 GRID	558800	4198000	15.1	10
RECEPTOR 1271 GRID	559000	4198000	16.8	10
RECEPTOR 1272 GRID	559200	4198000	16.7	10
RECEPTOR 1273 GRID	559400	4198000	16.5	10
RECEPTOR 1274 GRID	559600	4198000	17.9	10
RECEPTOR 1275 GRID	559800	4198000	19.3	10
RECEPTOR 1276 GRID	560000	4198000	26.3	10
RECEPTOR 1277 GRID	560200	4198000	45.2	10
RECEPTOR 1278 GRID	560400	4198000	56.9	10
RECEPTOR 1279 GRID	560600	4198000	68.4	10
RECEPTOR 1280 GRID	560800	4198000	84.3	10
RECEPTOR 1281 GRID	561000	4198000	137.8	10
RECEPTOR 1282 GRID	549000	4198200	0	10
RECEPTOR 1283 GRID	549200	4198200	0	10
RECEPTOR 1284 GRID	549400	4198200	0	10
RECEPTOR 1285 GRID	549600	4198200	0	10
RECEPTOR 1286 GRID	549800	4198200	0	10
RECEPTOR 1287 GRID	550000	4198200	1.4	10
RECEPTOR 1288 GRID	550200	4198200	0	10
RECEPTOR 1289 GRID	550400	4198200	0	10
RECEPTOR 1290 GRID	550600	4198200	0	10
RECEPTOR 1291 GRID	550800	4198200	0	10
RECEPTOR 1292 GRID	551000	4198200	0	10
RECEPTOR 1293 GRID	551200	4198200	0	10
RECEPTOR 1294 GRID	551400	4198200	0	10
RECEPTOR 1295 GRID	551600	4198200	0	10
RECEPTOR 1296 GRID	551800	4198200	0	10
RECEPTOR 1297 GRID	552000	4198200	0	10
RECEPTOR 1298 GRID	552200	4198200	1	10
RECEPTOR 1299 GRID	552400	4198200	1.1	10
RECEPTOR 1300 GRID	552600	4198200	1.1	10
RECEPTOR 1301 GRID	552800	4198200	5.6	10

RECEPTOR 1302 GRID	553000	4198200	6.1	10
RECEPTOR 1303 GRID	553200	4198200	28.6	10
RECEPTOR 1304 GRID	553400	4198200	27.1	10
RECEPTOR 1305 GRID	553600	4198200	12.6	10
RECEPTOR 1306 GRID	553800	4198200	9.6	10
RECEPTOR 1307 GRID	554000	4198200	3.3	10
RECEPTOR 1308 GRID	554200	4198200	2.3	10
RECEPTOR 1309 GRID	554400	4198200	3.5	10
RECEPTOR 1310 GRID	554600	4198200	2.9	10
RECEPTOR 1311 GRID	554800	4198200	3.1	10
RECEPTOR 1312 GRID	555000	4198200	4.3	10
RECEPTOR 1313 GRID	555200	4198200	3.8	10
RECEPTOR 1314 GRID	555400	4198200	4.7	10
RECEPTOR 1315 GRID	555600	4198200	4.1	10
RECEPTOR 1316 GRID	555800	4198200	4.3	10
RECEPTOR 1317 GRID	556000	4198200	4.7	10
RECEPTOR 1318 GRID	556200	4198200	5.4	10
RECEPTOR 1319 GRID	556400	4198200	6.6	10
RECEPTOR 1320 GRID	556600	4198200	6.7	10
RECEPTOR 1321 GRID	556800	4198200	7.7	10
RECEPTOR 1322 GRID	557000	4198200	9.6	10
RECEPTOR 1323 GRID	557200	4198200	11	10
RECEPTOR 1324 GRID	557400	4198200	11.6	10
RECEPTOR 1325 GRID	557600	4198200	11.8	10
RECEPTOR 1326 GRID	557800	4198200	12.4	10
RECEPTOR 1327 GRID	558000	4198200	14.2	10
RECEPTOR 1328 GRID	558200	4198200	14.7	10
RECEPTOR 1329 GRID	558400	4198200	15.6	10
RECEPTOR 1330 GRID	558600	4198200	15.8	10
RECEPTOR 1331 GRID	558800	4198200	16.8	10
RECEPTOR 1332 GRID	559000	4198200	18	10
RECEPTOR 1333 GRID	559200	4198200	18.4	10
RECEPTOR 1334 GRID	559400	4198200	17.1	10
RECEPTOR 1335 GRID	559600	4198200	20.6	10
RECEPTOR 1336 GRID	559800	4198200	35	10
RECEPTOR 1337 GRID	560000	4198200	62.2	10
RECEPTOR 1338 GRID	560200	4198200	81.1	10
RECEPTOR 1339 GRID	560400	4198200	75.5	10
RECEPTOR 1340 GRID	560600	4198200	83.3	10
RECEPTOR 1341 GRID	560800	4198200	105.6	10
RECEPTOR 1342 GRID	561000	4198200	150.9	10
RECEPTOR 1343 GRID	549000	4198400	0	10
RECEPTOR 1344 GRID	549200	4198400	0	10
RECEPTOR 1345 GRID	549400	4198400	0	10
RECEPTOR 1346 GRID	549600	4198400	0	10

RECEPTOR 1347 GRID	549800	4198400	0	10
RECEPTOR 1348 GRID	550000	4198400	0	10
RECEPTOR 1349 GRID	550200	4198400	0	10
RECEPTOR 1350 GRID	550400	4198400	0	10
RECEPTOR 1351 GRID	550600	4198400	0	10
RECEPTOR 1352 GRID	550800	4198400	0	10
RECEPTOR 1353 GRID	551000	4198400	0	10
RECEPTOR 1354 GRID	551200	4198400	0	10
RECEPTOR 1355 GRID	551400	4198400	0	10
RECEPTOR 1356 GRID	551600	4198400	0	10
RECEPTOR 1357 GRID	551800	4198400	1.1	10
RECEPTOR 1358 GRID	552000	4198400	1.1	10
RECEPTOR 1359 GRID	552200	4198400	1	10
RECEPTOR 1360 GRID	552400	4198400	1.3	10
RECEPTOR 1361 GRID	552600	4198400	3.7	10
RECEPTOR 1362 GRID	552800	4198400	10.3	10
RECEPTOR 1363 GRID	553000	4198400	43.7	10
RECEPTOR 1364 GRID	553200	4198400	36.1	10
RECEPTOR 1365 GRID	553400	4198400	15.6	10
RECEPTOR 1366 GRID	553600	4198400	2.9	10
RECEPTOR 1367 GRID	553800	4198400	3.1	10
RECEPTOR 1368 GRID	554000	4198400	3.3	10
RECEPTOR 1369 GRID	554200	4198400	3.1	10
RECEPTOR 1370 GRID	554400	4198400	4.1	10
RECEPTOR 1371 GRID	554600	4198400	3.6	10
RECEPTOR 1372 GRID	554800	4198400	3	10
RECEPTOR 1373 GRID	555000	4198400	3.6	10
RECEPTOR 1374 GRID	555200	4198400	3.8	10
RECEPTOR 1375 GRID	555400	4198400	4.3	10
RECEPTOR 1376 GRID	555600	4198400	4.8	10
RECEPTOR 1377 GRID	555800	4198400	5	10
RECEPTOR 1378 GRID	556000	4198400	5.4	10
RECEPTOR 1379 GRID	556200	4198400	6.2	10
RECEPTOR 1380 GRID	556400	4198400	6.9	10
RECEPTOR 1381 GRID	556600	4198400	9.2	10
RECEPTOR 1382 GRID	556800	4198400	9	10
RECEPTOR 1383 GRID	557000	4198400	9.6	10
RECEPTOR 1384 GRID	557200	4198400	11.5	10
RECEPTOR 1385 GRID	557400	4198400	12.4	10
RECEPTOR 1386 GRID	557600	4198400	15.6	10
RECEPTOR 1387 GRID	557800	4198400	15.6	10
RECEPTOR 1388 GRID	558000	4198400	15.4	10
RECEPTOR 1389 GRID	558200	4198400	16.9	10
RECEPTOR 1390 GRID	558400	4198400	18.8	10
RECEPTOR 1391 GRID	558600	4198400	18.5	10

RECEPTOR 1392 GRID	558800	4198400	18.4	10
RECEPTOR 1393 GRID	559000	4198400	17.6	10
RECEPTOR 1394 GRID	559200	4198400	17.3	10
RECEPTOR 1395 GRID	559400	4198400	20.1	10
RECEPTOR 1396 GRID	559600	4198400	23.6	10
RECEPTOR 1397 GRID	559800	4198400	35.9	10
RECEPTOR 1398 GRID	560000	4198400	45.6	10
RECEPTOR 1399 GRID	560200	4198400	66.2	10
RECEPTOR 1400 GRID	560400	4198400	90.5	10
RECEPTOR 1401 GRID	560600	4198400	116.6	10
RECEPTOR 1402 GRID	560800	4198400	140.7	10
RECEPTOR 1403 GRID	561000	4198400	162	10
RECEPTOR 1404 GRID	549000	4198600	0	10
RECEPTOR 1405 GRID	549200	4198600	0	10
RECEPTOR 1406 GRID	549400	4198600	0	10
RECEPTOR 1407 GRID	549600	4198600	0	10
RECEPTOR 1408 GRID	549800	4198600	0	10
RECEPTOR 1409 GRID	550000	4198600	0	10
RECEPTOR 1410 GRID	550200	4198600	0	10
RECEPTOR 1411 GRID	550400	4198600	0	10
RECEPTOR 1412 GRID	550600	4198600	0	10
RECEPTOR 1413 GRID	550800	4198600	0	10
RECEPTOR 1414 GRID	551000	4198600	0	10
RECEPTOR 1415 GRID	551200	4198600	0	10
RECEPTOR 1416 GRID	551400	4198600	0	10
RECEPTOR 1417 GRID	551600	4198600	0	10
RECEPTOR 1418 GRID	551800	4198600	0.8	10
RECEPTOR 1419 GRID	552000	4198600	27.4	10
RECEPTOR 1420 GRID	552200	4198600	13.4	10
RECEPTOR 1421 GRID	552400	4198600	14.5	10
RECEPTOR 1422 GRID	552600	4198600	31.8	10
RECEPTOR 1423 GRID	552800	4198600	38.7	10
RECEPTOR 1424 GRID	553000	4198600	12.8	10
RECEPTOR 1425 GRID	553200	4198600	5	10
RECEPTOR 1426 GRID	553400	4198600	3.9	10
RECEPTOR 1427 GRID	553600	4198600	3.1	10
RECEPTOR 1428 GRID	553800	4198600	4	10
RECEPTOR 1429 GRID	554000	4198600	3	10
RECEPTOR 1430 GRID	554200	4198600	3.1	10
RECEPTOR 1431 GRID	554400	4198600	3.4	10
RECEPTOR 1432 GRID	554600	4198600	3.5	10
RECEPTOR 1433 GRID	554800	4198600	3.8	10
RECEPTOR 1434 GRID	555000	4198600	3.4	10
RECEPTOR 1435 GRID	555200	4198600	3.9	10
RECEPTOR 1436 GRID	555400	4198600	3.8	10

RECEPTOR 1437 GRID	555600	4198600	5.5	10
RECEPTOR 1438 GRID	555800	4198600	5.8	10
RECEPTOR 1439 GRID	556000	4198600	6.5	10
RECEPTOR 1440 GRID	556200	4198600	6.8	10
RECEPTOR 1441 GRID	556400	4198600	7.7	10
RECEPTOR 1442 GRID	556600	4198600	8.8	10
RECEPTOR 1443 GRID	556800	4198600	9.6	10
RECEPTOR 1444 GRID	557000	4198600	10.3	10
RECEPTOR 1445 GRID	557200	4198600	12.1	10
RECEPTOR 1446 GRID	557400	4198600	13.8	10
RECEPTOR 1447 GRID	557600	4198600	15.7	10
RECEPTOR 1448 GRID	557800	4198600	16.3	10
RECEPTOR 1449 GRID	558000	4198600	16.4	10
RECEPTOR 1450 GRID	558200	4198600	16.8	10
RECEPTOR 1451 GRID	558400	4198600	18	10
RECEPTOR 1452 GRID	558600	4198600	18.9	10
RECEPTOR 1453 GRID	558800	4198600	19.9	10
RECEPTOR 1454 GRID	559000	4198600	20	10
RECEPTOR 1455 GRID	559200	4198600	27.1	10
RECEPTOR 1456 GRID	559400	4198600	21.2	10
RECEPTOR 1457 GRID	559600	4198600	25.3	10
RECEPTOR 1458 GRID	559800	4198600	39.9	10
RECEPTOR 1459 GRID	560000	4198600	58.5	10
RECEPTOR 1460 GRID	560200	4198600	73.2	10
RECEPTOR 1461 GRID	560400	4198600	97.5	10
RECEPTOR 1462 GRID	560600	4198600	129.8	10
RECEPTOR 1463 GRID	560800	4198600	147.6	10
RECEPTOR 1464 GRID	561000	4198600	160	10
RECEPTOR 1465 GRID	549000	4198800	0	10
RECEPTOR 1466 GRID	549200	4198800	0	10
RECEPTOR 1467 GRID	549400	4198800	0	10
RECEPTOR 1468 GRID	549600	4198800	0	10
RECEPTOR 1469 GRID	549800	4198800	0	10
RECEPTOR 1470 GRID	550000	4198800	0	10
RECEPTOR 1471 GRID	550200	4198800	0	10
RECEPTOR 1472 GRID	550400	4198800	0	10
RECEPTOR 1473 GRID	550600	4198800	0	10
RECEPTOR 1474 GRID	550800	4198800	0	10
RECEPTOR 1475 GRID	551000	4198800	0	10
RECEPTOR 1476 GRID	551200	4198800	0	10
RECEPTOR 1477 GRID	551400	4198800	0	10
RECEPTOR 1478 GRID	551600	4198800	0.9	10
RECEPTOR 1479 GRID	551800	4198800	20.4	10
RECEPTOR 1480 GRID	552000	4198800	30.5	10
RECEPTOR 1481 GRID	552200	4198800	29.6	10

RECEPTOR 1482 GRID	552400	4198800	32.7	10
RECEPTOR 1483 GRID	552600	4198800	28.6	10
RECEPTOR 1484 GRID	552800	4198800	75.7	10
RECEPTOR 1485 GRID	553000	4198800	18.3	10
RECEPTOR 1486 GRID	553200	4198800	5.3	10
RECEPTOR 1487 GRID	553400	4198800	3	10
RECEPTOR 1488 GRID	553600	4198800	3.1	10
RECEPTOR 1489 GRID	553800	4198800	2.9	10
RECEPTOR 1490 GRID	554000	4198800	3.3	10
RECEPTOR 1491 GRID	554200	4198800	3.6	10
RECEPTOR 1492 GRID	554400	4198800	2.6	10
RECEPTOR 1493 GRID	554600	4198800	4	10
RECEPTOR 1494 GRID	554800	4198800	3.5	10
RECEPTOR 1495 GRID	555000	4198800	4.1	10
RECEPTOR 1496 GRID	555200	4198800	4.4	10
RECEPTOR 1497 GRID	555400	4198800	4.9	10
RECEPTOR 1498 GRID	555600	4198800	6	10
RECEPTOR 1499 GRID	555800	4198800	7.2	10
RECEPTOR 1500 GRID	556000	4198800	7.3	10
RECEPTOR 1501 GRID	556200	4198800	7.9	10
RECEPTOR 1502 GRID	556400	4198800	8.4	10
RECEPTOR 1503 GRID	556600	4198800	9	10
RECEPTOR 1504 GRID	556800	4198800	10.7	10
RECEPTOR 1505 GRID	557000	4198800	12.7	10
RECEPTOR 1506 GRID	557200	4198800	12.9	10
RECEPTOR 1507 GRID	557400	4198800	13.4	10
RECEPTOR 1508 GRID	557600	4198800	15.6	10
RECEPTOR 1509 GRID	557800	4198800	17.1	10
RECEPTOR 1510 GRID	558000	4198800	19.2	10
RECEPTOR 1511 GRID	558200	4198800	18.4	10
RECEPTOR 1512 GRID	558400	4198800	19.3	10
RECEPTOR 1513 GRID	558600	4198800	19.8	10
RECEPTOR 1514 GRID	558800	4198800	21.4	10
RECEPTOR 1515 GRID	559000	4198800	21.3	10
RECEPTOR 1516 GRID	559200	4198800	21.5	10
RECEPTOR 1517 GRID	559400	4198800	24.1	10
RECEPTOR 1518 GRID	559600	4198800	29.2	10
RECEPTOR 1519 GRID	559800	4198800	42.8	10
RECEPTOR 1520 GRID	560000	4198800	55.5	10
RECEPTOR 1521 GRID	560200	4198800	80.3	10
RECEPTOR 1522 GRID	560400	4198800	122.1	10
RECEPTOR 1523 GRID	560600	4198800	129.4	10
RECEPTOR 1524 GRID	560800	4198800	146.8	10
RECEPTOR 1525 GRID	561000	4198800	167.2	10
RECEPTOR 1526 GRID	549000	4199000	0	10

RECEPTOR 1527 GRID	549200	4199000	0	10
RECEPTOR 1528 GRID	549400	4199000	0	10
RECEPTOR 1529 GRID	549600	4199000	0	10
RECEPTOR 1530 GRID	549800	4199000	0	10
RECEPTOR 1531 GRID	550000	4199000	0	10
RECEPTOR 1532 GRID	550200	4199000	0	10
RECEPTOR 1533 GRID	550400	4199000	0	10
RECEPTOR 1534 GRID	550600	4199000	0	10
RECEPTOR 1535 GRID	550800	4199000	0	10
RECEPTOR 1536 GRID	551000	4199000	0	10
RECEPTOR 1537 GRID	551200	4199000	0	10
RECEPTOR 1538 GRID	551400	4199000	0	10
RECEPTOR 1539 GRID	551600	4199000	6.3	10
RECEPTOR 1540 GRID	551800	4199000	28.6	10
RECEPTOR 1541 GRID	552000	4199000	32.4	10
RECEPTOR 1542 GRID	552200	4199000	34.5	10
RECEPTOR 1543 GRID	552400	4199000	35.8	10
RECEPTOR 1544 GRID	552600	4199000	98.3	10
RECEPTOR 1545 GRID	552800	4199000	33.6	10
RECEPTOR 1546 GRID	553000	4199000	19.7	10
RECEPTOR 1547 GRID	553200	4199000	22	10
RECEPTOR 1548 GRID	553400	4199000	4.2	10
RECEPTOR 1549 GRID	553600	4199000	3.6	10
RECEPTOR 1550 GRID	553800	4199000	3	10
RECEPTOR 1551 GRID	554000	4199000	2.9	10
RECEPTOR 1552 GRID	554200	4199000	3	10
RECEPTOR 1553 GRID	554400	4199000	2.2	10
RECEPTOR 1554 GRID	554600	4199000	9.4	10
RECEPTOR 1555 GRID	554800	4199000	4.1	10
RECEPTOR 1556 GRID	555000	4199000	3.9	10
RECEPTOR 1557 GRID	555200	4199000	4.8	10
RECEPTOR 1558 GRID	555400	4199000	4.6	10
RECEPTOR 1559 GRID	555600	4199000	5.6	10
RECEPTOR 1560 GRID	555800	4199000	6.3	10
RECEPTOR 1561 GRID	556000	4199000	7.4	10
RECEPTOR 1562 GRID	556200	4199000	8.4	10
RECEPTOR 1563 GRID	556400	4199000	9.2	10
RECEPTOR 1564 GRID	556600	4199000	10.3	10
RECEPTOR 1565 GRID	556800	4199000	12.1	10
RECEPTOR 1566 GRID	557000	4199000	13.2	10
RECEPTOR 1567 GRID	557200	4199000	14.2	10
RECEPTOR 1568 GRID	557400	4199000	14.4	10
RECEPTOR 1569 GRID	557600	4199000	17.1	10
RECEPTOR 1570 GRID	557800	4199000	18.4	10
RECEPTOR 1571 GRID	558000	4199000	19.8	10

RECEPTOR 1572 GRID	558200	4199000	20.8	10
RECEPTOR 1573 GRID	558400	4199000	20.5	10
RECEPTOR 1574 GRID	558600	4199000	21.9	10
RECEPTOR 1575 GRID	558800	4199000	23.3	10
RECEPTOR 1576 GRID	559000	4199000	23.8	10
RECEPTOR 1577 GRID	559200	4199000	30.3	10
RECEPTOR 1578 GRID	559400	4199000	27.4	10
RECEPTOR 1579 GRID	559600	4199000	36.5	10
RECEPTOR 1580 GRID	559800	4199000	51.4	10
RECEPTOR 1581 GRID	560000	4199000	70.5	10
RECEPTOR 1582 GRID	560200	4199000	87.3	10
RECEPTOR 1583 GRID	560400	4199000	109.3	10
RECEPTOR 1584 GRID	560600	4199000	123.5	10
RECEPTOR 1585 GRID	560800	4199000	158.4	10
RECEPTOR 1586 GRID	561000	4199000	174.1	10
RECEPTOR 1587 GRID	549000	4199200	0	10
RECEPTOR 1588 GRID	549200	4199200	0	10
RECEPTOR 1589 GRID	549400	4199200	0	10
RECEPTOR 1590 GRID	549600	4199200	0	10
RECEPTOR 1591 GRID	549800	4199200	0	10
RECEPTOR 1592 GRID	550000	4199200	0	10
RECEPTOR 1593 GRID	550200	4199200	0	10
RECEPTOR 1594 GRID	550400	4199200	0	10
RECEPTOR 1595 GRID	550600	4199200	0	10
RECEPTOR 1596 GRID	550800	4199200	0	10
RECEPTOR 1597 GRID	551000	4199200	0	10
RECEPTOR 1598 GRID	551200	4199200	0	10
RECEPTOR 1599 GRID	551400	4199200	0	10
RECEPTOR 1600 GRID	551600	4199200	0.9	10
RECEPTOR 1601 GRID	551800	4199200	7.9	10
RECEPTOR 1602 GRID	552000	4199200	39.1	10
RECEPTOR 1603 GRID	552200	4199200	60.2	10
RECEPTOR 1604 GRID	552400	4199200	85	10
RECEPTOR 1605 GRID	552600	4199200	81.1	10
RECEPTOR 1606 GRID	552800	4199200	51	10
RECEPTOR 1607 GRID	553000	4199200	40.9	10
RECEPTOR 1608 GRID	553200	4199200	56.7	10
RECEPTOR 1609 GRID	553400	4199200	11.9	10
RECEPTOR 1610 GRID	553600	4199200	3.4	10
RECEPTOR 1611 GRID	553800	4199200	0.8	10
RECEPTOR 1612 GRID	554000	4199200	2.8	10
RECEPTOR 1613 GRID	554200	4199200	3.3	10
RECEPTOR 1614 GRID	554400	4199200	3.7	10
RECEPTOR 1615 GRID	554600	4199200	4.4	10
RECEPTOR 1616 GRID	554800	4199200	2.3	10

RECEPTOR 1617 GRID	555000	4199200	3.6	10
RECEPTOR 1618 GRID	555200	4199200	4.5	10
RECEPTOR 1619 GRID	555400	4199200	4	10
RECEPTOR 1620 GRID	555600	4199200	5	10
RECEPTOR 1621 GRID	555800	4199200	6	10
RECEPTOR 1622 GRID	556000	4199200	7.4	10
RECEPTOR 1623 GRID	556200	4199200	9	10
RECEPTOR 1624 GRID	556400	4199200	9.7	10
RECEPTOR 1625 GRID	556600	4199200	10.8	10
RECEPTOR 1626 GRID	556800	4199200	11.9	10
RECEPTOR 1627 GRID	557000	4199200	12.9	10
RECEPTOR 1628 GRID	557200	4199200	15	10
RECEPTOR 1629 GRID	557400	4199200	15.6	10
RECEPTOR 1630 GRID	557600	4199200	16.8	10
RECEPTOR 1631 GRID	557800	4199200	19.3	10
RECEPTOR 1632 GRID	558000	4199200	21.3	10
RECEPTOR 1633 GRID	558200	4199200	22	10
RECEPTOR 1634 GRID	558400	4199200	21.5	10
RECEPTOR 1635 GRID	558600	4199200	23.8	10
RECEPTOR 1636 GRID	558800	4199200	24.8	10
RECEPTOR 1637 GRID	559000	4199200	25.7	10
RECEPTOR 1638 GRID	559200	4199200	24.4	10
RECEPTOR 1639 GRID	559400	4199200	29.9	10
RECEPTOR 1640 GRID	559600	4199200	52.7	10
RECEPTOR 1641 GRID	559800	4199200	60.9	10
RECEPTOR 1642 GRID	560000	4199200	71.8	10
RECEPTOR 1643 GRID	560200	4199200	92.6	10
RECEPTOR 1644 GRID	560400	4199200	107.4	10
RECEPTOR 1645 GRID	560600	4199200	127.1	10
RECEPTOR 1646 GRID	560800	4199200	153.3	10
RECEPTOR 1647 GRID	561000	4199200	178.6	10
RECEPTOR 1648 GRID	549000	4199400	0	10
RECEPTOR 1649 GRID	549200	4199400	0	10
RECEPTOR 1650 GRID	549400	4199400	0	10
RECEPTOR 1651 GRID	549600	4199400	0	10
RECEPTOR 1652 GRID	549800	4199400	0	10
RECEPTOR 1653 GRID	550000	4199400	0	10
RECEPTOR 1654 GRID	550200	4199400	0	10
RECEPTOR 1655 GRID	550400	4199400	0	10
RECEPTOR 1656 GRID	550600	4199400	0	10
RECEPTOR 1657 GRID	550800	4199400	0	10
RECEPTOR 1658 GRID	551000	4199400	0	10
RECEPTOR 1659 GRID	551200	4199400	0	10
RECEPTOR 1660 GRID	551400	4199400	0	10
RECEPTOR 1661 GRID	551600	4199400	0.9	10

RECEPTOR 1662 GRID	551800	4199400	1.7	10
RECEPTOR 1663 GRID	552000	4199400	41.8	10
RECEPTOR 1664 GRID	552200	4199400	71.2	10
RECEPTOR 1665 GRID	552400	4199400	95.4	10
RECEPTOR 1666 GRID	552600	4199400	97.6	10
RECEPTOR 1667 GRID	552800	4199400	88.4	10
RECEPTOR 1668 GRID	553000	4199400	72.3	10
RECEPTOR 1669 GRID	553200	4199400	53.9	10
RECEPTOR 1670 GRID	553400	4199400	4	10
RECEPTOR 1671 GRID	553600	4199400	3.7	10
RECEPTOR 1672 GRID	553800	4199400	1.4	10
RECEPTOR 1673 GRID	554000	4199400	2.4	10
RECEPTOR 1674 GRID	554200	4199400	2.4	10
RECEPTOR 1675 GRID	554400	4199400	3.5	10
RECEPTOR 1676 GRID	554600	4199400	2.9	10
RECEPTOR 1677 GRID	554800	4199400	2.8	10
RECEPTOR 1678 GRID	555000	4199400	3.5	10
RECEPTOR 1679 GRID	555200	4199400	3.4	10
RECEPTOR 1680 GRID	555400	4199400	4.6	10
RECEPTOR 1681 GRID	555600	4199400	4.9	10
RECEPTOR 1682 GRID	555800	4199400	6	10
RECEPTOR 1683 GRID	556000	4199400	6.9	10
RECEPTOR 1684 GRID	556200	4199400	8.2	10
RECEPTOR 1685 GRID	556400	4199400	9.8	10
RECEPTOR 1686 GRID	556600	4199400	11.2	10
RECEPTOR 1687 GRID	556800	4199400	12.8	10
RECEPTOR 1688 GRID	557000	4199400	14.1	10
RECEPTOR 1689 GRID	557200	4199400	15.3	10
RECEPTOR 1690 GRID	557400	4199400	17.3	10
RECEPTOR 1691 GRID	557600	4199400	17.6	10
RECEPTOR 1692 GRID	557800	4199400	20.1	10
RECEPTOR 1693 GRID	558000	4199400	22.3	10
RECEPTOR 1694 GRID	558200	4199400	24.2	10
RECEPTOR 1695 GRID	558400	4199400	23.6	10
RECEPTOR 1696 GRID	558600	4199400	27.4	10
RECEPTOR 1697 GRID	558800	4199400	27.3	10
RECEPTOR 1698 GRID	559000	4199400	27.2	10
RECEPTOR 1699 GRID	559200	4199400	27.4	10
RECEPTOR 1700 GRID	559400	4199400	27.4	10
RECEPTOR 1701 GRID	559600	4199400	55.4	10
RECEPTOR 1702 GRID	559800	4199400	64.8	10
RECEPTOR 1703 GRID	560000	4199400	78.2	10
RECEPTOR 1704 GRID	560200	4199400	96	10
RECEPTOR 1705 GRID	560400	4199400	112.2	10
RECEPTOR 1706 GRID	560600	4199400	128	10

RECEPTOR 1707 GRID	560800	4199400	152.2	10
RECEPTOR 1708 GRID	561000	4199400	148.1	10
RECEPTOR 1709 GRID	549000	4199600	0	10
RECEPTOR 1710 GRID	549200	4199600	0	10
RECEPTOR 1711 GRID	549400	4199600	0	10
RECEPTOR 1712 GRID	549600	4199600	0	10
RECEPTOR 1713 GRID	549800	4199600	0	10
RECEPTOR 1714 GRID	550000	4199600	0	10
RECEPTOR 1715 GRID	550200	4199600	0	10
RECEPTOR 1716 GRID	550400	4199600	0	10
RECEPTOR 1717 GRID	550600	4199600	0	10
RECEPTOR 1718 GRID	550800	4199600	0	10
RECEPTOR 1719 GRID	551000	4199600	0	10
RECEPTOR 1720 GRID	551200	4199600	0	10
RECEPTOR 1721 GRID	551400	4199600	0	10
RECEPTOR 1722 GRID	551600	4199600	0.1	10
RECEPTOR 1723 GRID	551800	4199600	6.2	10
RECEPTOR 1724 GRID	552000	4199600	18.1	10
RECEPTOR 1725 GRID	552200	4199600	37.3	10
RECEPTOR 1726 GRID	552400	4199600	102.5	10
RECEPTOR 1727 GRID	552600	4199600	109.7	10
RECEPTOR 1728 GRID	552800	4199600	82.6	10
RECEPTOR 1729 GRID	553000	4199600	48.8	10
RECEPTOR 1730 GRID	553200	4199600	9.5	10
RECEPTOR 1731 GRID	553400	4199600	4.1	10
RECEPTOR 1732 GRID	553600	4199600	3.5	10
RECEPTOR 1733 GRID	553800	4199600	2.5	10
RECEPTOR 1734 GRID	554000	4199600	1.5	10
RECEPTOR 1735 GRID	554200	4199600	3.3	10
RECEPTOR 1736 GRID	554400	4199600	3.4	10
RECEPTOR 1737 GRID	554600	4199600	3.3	10
RECEPTOR 1738 GRID	554800	4199600	3.3	10
RECEPTOR 1739 GRID	555000	4199600	2.4	10
RECEPTOR 1740 GRID	555200	4199600	3	10
RECEPTOR 1741 GRID	555400	4199600	3.8	10
RECEPTOR 1742 GRID	555600	4199600	4.8	10
RECEPTOR 1743 GRID	555800	4199600	6.2	10
RECEPTOR 1744 GRID	556000	4199600	7.2	10
RECEPTOR 1745 GRID	556200	4199600	8.9	10
RECEPTOR 1746 GRID	556400	4199600	9.9	10
RECEPTOR 1747 GRID	556600	4199600	11.9	10
RECEPTOR 1748 GRID	556800	4199600	13	10
RECEPTOR 1749 GRID	557000	4199600	14.3	10
RECEPTOR 1750 GRID	557200	4199600	16.3	10
RECEPTOR 1751 GRID	557400	4199600	18.1	10

RECEPTOR 1752 GRID	557600	4199600	19	10
RECEPTOR 1753 GRID	557800	4199600	21.1	10
RECEPTOR 1754 GRID	558000	4199600	23.2	10
RECEPTOR 1755 GRID	558200	4199600	26	10
RECEPTOR 1756 GRID	558400	4199600	25.6	10
RECEPTOR 1757 GRID	558600	4199600	36.6	10
RECEPTOR 1758 GRID	558800	4199600	29.1	10
RECEPTOR 1759 GRID	559000	4199600	30.6	10
RECEPTOR 1760 GRID	559200	4199600	29.5	10
RECEPTOR 1761 GRID	559400	4199600	24.7	10
RECEPTOR 1762 GRID	559600	4199600	38.8	10
RECEPTOR 1763 GRID	559800	4199600	63.1	10
RECEPTOR 1764 GRID	560000	4199600	80.3	10
RECEPTOR 1765 GRID	560200	4199600	96.5	10
RECEPTOR 1766 GRID	560400	4199600	116.1	10
RECEPTOR 1767 GRID	560600	4199600	132.3	10
RECEPTOR 1768 GRID	560800	4199600	127.9	10
RECEPTOR 1769 GRID	561000	4199600	81.1	10
RECEPTOR 1770 GRID	549000	4199800	0	10
RECEPTOR 1771 GRID	549200	4199800	0	10
RECEPTOR 1772 GRID	549400	4199800	0	10
RECEPTOR 1773 GRID	549600	4199800	0	10
RECEPTOR 1774 GRID	549800	4199800	0	10
RECEPTOR 1775 GRID	550000	4199800	0	10
RECEPTOR 1776 GRID	550200	4199800	0	10
RECEPTOR 1777 GRID	550400	4199800	0	10
RECEPTOR 1778 GRID	550600	4199800	0	10
RECEPTOR 1779 GRID	550800	4199800	0	10
RECEPTOR 1780 GRID	551000	4199800	0	10
RECEPTOR 1781 GRID	551200	4199800	0	10
RECEPTOR 1782 GRID	551400	4199800	-0.1	10
RECEPTOR 1783 GRID	551600	4199800	2.6	10
RECEPTOR 1784 GRID	551800	4199800	11.9	10
RECEPTOR 1785 GRID	552000	4199800	28.7	10
RECEPTOR 1786 GRID	552200	4199800	87.7	10
RECEPTOR 1787 GRID	552400	4199800	115.1	10
RECEPTOR 1788 GRID	552600	4199800	69.3	10
RECEPTOR 1789 GRID	552800	4199800	89.7	10
RECEPTOR 1790 GRID	553000	4199800	39.5	10
RECEPTOR 1791 GRID	553200	4199800	5.7	10
RECEPTOR 1792 GRID	553400	4199800	4.1	10
RECEPTOR 1793 GRID	553600	4199800	4.2	10
RECEPTOR 1794 GRID	553800	4199800	2.7	10
RECEPTOR 1795 GRID	554000	4199800	2.9	10
RECEPTOR 1796 GRID	554200	4199800	5.1	10

RECEPTOR 1797 GRID	554400	4199800	3.4	10
RECEPTOR 1798 GRID	554600	4199800	3.7	10
RECEPTOR 1799 GRID	554800	4199800	1.6	10
RECEPTOR 1800 GRID	555000	4199800	3	10
RECEPTOR 1801 GRID	555200	4199800	3.3	10
RECEPTOR 1802 GRID	555400	4199800	3.9	10
RECEPTOR 1803 GRID	555600	4199800	5.2	10
RECEPTOR 1804 GRID	555800	4199800	6.2	10
RECEPTOR 1805 GRID	556000	4199800	7.4	10
RECEPTOR 1806 GRID	556200	4199800	9.9	10
RECEPTOR 1807 GRID	556400	4199800	11.2	10
RECEPTOR 1808 GRID	556600	4199800	12.6	10
RECEPTOR 1809 GRID	556800	4199800	14.2	10
RECEPTOR 1810 GRID	557000	4199800	15.5	10
RECEPTOR 1811 GRID	557200	4199800	17.3	10
RECEPTOR 1812 GRID	557400	4199800	19.3	10
RECEPTOR 1813 GRID	557600	4199800	21.2	10
RECEPTOR 1814 GRID	557800	4199800	22	10
RECEPTOR 1815 GRID	558000	4199800	23.9	10
RECEPTOR 1816 GRID	558200	4199800	28.1	10
RECEPTOR 1817 GRID	558400	4199800	28.2	10
RECEPTOR 1818 GRID	558600	4199800	28.3	10
RECEPTOR 1819 GRID	558800	4199800	30.9	10
RECEPTOR 1820 GRID	559000	4199800	32.3	10
RECEPTOR 1821 GRID	559200	4199800	31.6	10
RECEPTOR 1822 GRID	559400	4199800	24.2	10
RECEPTOR 1823 GRID	559600	4199800	34.6	10
RECEPTOR 1824 GRID	559800	4199800	45.7	10
RECEPTOR 1825 GRID	560000	4199800	72.6	10
RECEPTOR 1826 GRID	560200	4199800	90	10
RECEPTOR 1827 GRID	560400	4199800	122.6	10
RECEPTOR 1828 GRID	560600	4199800	120.1	10
RECEPTOR 1829 GRID	560800	4199800	79.2	10
RECEPTOR 1830 GRID	561000	4199800	113.3	10
RECEPTOR 1831 GRID	549000	4200000	0	10
RECEPTOR 1832 GRID	549200	4200000	0	10
RECEPTOR 1833 GRID	549400	4200000	0	10
RECEPTOR 1834 GRID	549600	4200000	0	10
RECEPTOR 1835 GRID	549800	4200000	0	10
RECEPTOR 1836 GRID	550000	4200000	0	10
RECEPTOR 1837 GRID	550200	4200000	0	10
RECEPTOR 1838 GRID	550400	4200000	0	10
RECEPTOR 1839 GRID	550600	4200000	0	10
RECEPTOR 1840 GRID	550800	4200000	0.2	10
RECEPTOR 1841 GRID	551000	4200000	0.2	10

RECEPTOR 1842 GRID	551200	4200000	0.4	10
RECEPTOR 1843 GRID	551400	4200000	10.4	10
RECEPTOR 1844 GRID	551600	4200000	19.8	10
RECEPTOR 1845 GRID	551800	4200000	26.1	10
RECEPTOR 1846 GRID	552000	4200000	67.4	10
RECEPTOR 1847 GRID	552200	4200000	118.2	10
RECEPTOR 1848 GRID	552400	4200000	55.6	10
RECEPTOR 1849 GRID	552600	4200000	25.1	10
RECEPTOR 1850 GRID	552800	4200000	23.1	10
RECEPTOR 1851 GRID	553000	4200000	46.4	10
RECEPTOR 1852 GRID	553200	4200000	3.3	10
RECEPTOR 1853 GRID	553400	4200000	3.6	10
RECEPTOR 1854 GRID	553600	4200000	5	10
RECEPTOR 1855 GRID	553800	4200000	3.1	10
RECEPTOR 1856 GRID	554000	4200000	3	10
RECEPTOR 1857 GRID	554200	4200000	2.6	10
RECEPTOR 1858 GRID	554400	4200000	3.2	10
RECEPTOR 1859 GRID	554600	4200000	6.2	10
RECEPTOR 1860 GRID	554800	4200000	2.1	10
RECEPTOR 1861 GRID	555000	4200000	5.1	10
RECEPTOR 1862 GRID	555200	4200000	2.8	10
RECEPTOR 1863 GRID	555400	4200000	3.9	10
RECEPTOR 1864 GRID	555600	4200000	4.2	10
RECEPTOR 1865 GRID	555800	4200000	9.7	10
RECEPTOR 1866 GRID	556000	4200000	7.6	10
RECEPTOR 1867 GRID	556200	4200000	8.8	10
RECEPTOR 1868 GRID	556400	4200000	11.4	10
RECEPTOR 1869 GRID	556600	4200000	12.7	10
RECEPTOR 1870 GRID	556800	4200000	13.8	10
RECEPTOR 1871 GRID	557000	4200000	16.3	10
RECEPTOR 1872 GRID	557200	4200000	18.8	10
RECEPTOR 1873 GRID	557400	4200000	19.4	10
RECEPTOR 1874 GRID	557600	4200000	21.8	10
RECEPTOR 1875 GRID	557800	4200000	22.9	10
RECEPTOR 1876 GRID	558000	4200000	25.4	10
RECEPTOR 1877 GRID	558200	4200000	28.5	10
RECEPTOR 1878 GRID	558400	4200000	31	10
RECEPTOR 1879 GRID	558600	4200000	31.4	10
RECEPTOR 1880 GRID	558800	4200000	33.1	10
RECEPTOR 1881 GRID	559000	4200000	35.5	10
RECEPTOR 1882 GRID	559200	4200000	34.3	10
RECEPTOR 1883 GRID	559400	4200000	34.5	10
RECEPTOR 1884 GRID	559600	4200000	48.4	10
RECEPTOR 1885 GRID	559800	4200000	66.8	10
RECEPTOR 1886 GRID	560000	4200000	74.2	10

RECEPTOR 1887 GRID	560200	4200000	108.4	10
RECEPTOR 1888 GRID	560400	4200000	115.4	10
RECEPTOR 1889 GRID	560600	4200000	76.9	10
RECEPTOR 1890 GRID	560800	4200000	99	10
RECEPTOR 1891 GRID	561000	4200000	149	10
RECEPTOR 1892 GRID	549000	4200200	0	10
RECEPTOR 1893 GRID	549200	4200200	0	10
RECEPTOR 1894 GRID	549400	4200200	0	10
RECEPTOR 1895 GRID	549600	4200200	0	10
RECEPTOR 1896 GRID	549800	4200200	0	10
RECEPTOR 1897 GRID	550000	4200200	0	10
RECEPTOR 1898 GRID	550200	4200200	0	10
RECEPTOR 1899 GRID	550400	4200200	0	10
RECEPTOR 1900 GRID	550600	4200200	0.1	10
RECEPTOR 1901 GRID	550800	4200200	3.6	10
RECEPTOR 1902 GRID	551000	4200200	28.8	10
RECEPTOR 1903 GRID	551200	4200200	27	10
RECEPTOR 1904 GRID	551400	4200200	41.1	10
RECEPTOR 1905 GRID	551600	4200200	56	10
RECEPTOR 1906 GRID	551800	4200200	81.2	10
RECEPTOR 1907 GRID	552000	4200200	87	10
RECEPTOR 1908 GRID	552200	4200200	82.2	10
RECEPTOR 1909 GRID	552400	4200200	27.1	10
RECEPTOR 1910 GRID	552600	4200200	7.5	10
RECEPTOR 1911 GRID	552800	4200200	5	10
RECEPTOR 1912 GRID	553000	4200200	6.2	10
RECEPTOR 1913 GRID	553200	4200200	4.1	10
RECEPTOR 1914 GRID	553400	4200200	4.4	10
RECEPTOR 1915 GRID	553600	4200200	3	10
RECEPTOR 1916 GRID	553800	4200200	1.4	10
RECEPTOR 1917 GRID	554000	4200200	2.1	10
RECEPTOR 1918 GRID	554200	4200200	2	10
RECEPTOR 1919 GRID	554400	4200200	1.8	10
RECEPTOR 1920 GRID	554600	4200200	3.7	10
RECEPTOR 1921 GRID	554800	4200200	2.8	10
RECEPTOR 1922 GRID	555000	4200200	6.1	10
RECEPTOR 1923 GRID	555200	4200200	2.8	10
RECEPTOR 1924 GRID	555400	4200200	4.4	10
RECEPTOR 1925 GRID	555600	4200200	4.8	10
RECEPTOR 1926 GRID	555800	4200200	6.3	10
RECEPTOR 1927 GRID	556000	4200200	10.4	10
RECEPTOR 1928 GRID	556200	4200200	10.3	10
RECEPTOR 1929 GRID	556400	4200200	11.6	10
RECEPTOR 1930 GRID	556600	4200200	12.8	10
RECEPTOR 1931 GRID	556800	4200200	14.7	10

RECEPTOR 1932 GRID	557000	4200200	16.4	10
RECEPTOR 1933 GRID	557200	4200200	17.6	10
RECEPTOR 1934 GRID	557400	4200200	19.8	10
RECEPTOR 1935 GRID	557600	4200200	21.6	10
RECEPTOR 1936 GRID	557800	4200200	24.1	10
RECEPTOR 1937 GRID	558000	4200200	24.8	10
RECEPTOR 1938 GRID	558200	4200200	27.9	10
RECEPTOR 1939 GRID	558400	4200200	30.3	10
RECEPTOR 1940 GRID	558600	4200200	33.9	10
RECEPTOR 1941 GRID	558800	4200200	34	10
RECEPTOR 1942 GRID	559000	4200200	37	10
RECEPTOR 1943 GRID	559200	4200200	36.4	10
RECEPTOR 1944 GRID	559400	4200200	39.1	10
RECEPTOR 1945 GRID	559600	4200200	51.8	10
RECEPTOR 1946 GRID	559800	4200200	77.2	10
RECEPTOR 1947 GRID	560000	4200200	100.9	10
RECEPTOR 1948 GRID	560200	4200200	105.5	10
RECEPTOR 1949 GRID	560400	4200200	59.1	10
RECEPTOR 1950 GRID	560600	4200200	90.6	10
RECEPTOR 1951 GRID	560800	4200200	141	10
RECEPTOR 1952 GRID	561000	4200200	185.1	10
RECEPTOR 1953 GRID	549000	4200400	0	10
RECEPTOR 1954 GRID	549200	4200400	0	10
RECEPTOR 1955 GRID	549400	4200400	0	10
RECEPTOR 1956 GRID	549600	4200400	0	10
RECEPTOR 1957 GRID	549800	4200400	0	10
RECEPTOR 1958 GRID	550000	4200400	0	10
RECEPTOR 1959 GRID	550200	4200400	0	10
RECEPTOR 1960 GRID	550400	4200400	0	10
RECEPTOR 1961 GRID	550600	4200400	0	10
RECEPTOR 1962 GRID	550800	4200400	0.2	10
RECEPTOR 1963 GRID	551000	4200400	5.1	10
RECEPTOR 1964 GRID	551200	4200400	11.7	10
RECEPTOR 1965 GRID	551400	4200400	24.9	10
RECEPTOR 1966 GRID	551600	4200400	98.5	10
RECEPTOR 1967 GRID	551800	4200400	98.9	10
RECEPTOR 1968 GRID	552000	4200400	97	10
RECEPTOR 1969 GRID	552200	4200400	46.6	10
RECEPTOR 1970 GRID	552400	4200400	50.4	10
RECEPTOR 1971 GRID	552600	4200400	4.7	10
RECEPTOR 1972 GRID	552800	4200400	3.8	10
RECEPTOR 1973 GRID	553000	4200400	4.2	10
RECEPTOR 1974 GRID	553200	4200400	3.4	10
RECEPTOR 1975 GRID	553400	4200400	2.2	10
RECEPTOR 1976 GRID	553600	4200400	2.2	10

RECEPTOR 1977 GRID	553800	4200400	1.3	10
RECEPTOR 1978 GRID	554000	4200400	1.4	10
RECEPTOR 1979 GRID	554200	4200400	1.7	10
RECEPTOR 1980 GRID	554400	4200400	2.7	10
RECEPTOR 1981 GRID	554600	4200400	3.4	10
RECEPTOR 1982 GRID	554800	4200400	0.2	10
RECEPTOR 1983 GRID	555000	4200400	2.3	10
RECEPTOR 1984 GRID	555200	4200400	9.5	10
RECEPTOR 1985 GRID	555400	4200400	3.6	10
RECEPTOR 1986 GRID	555600	4200400	4.5	10
RECEPTOR 1987 GRID	555800	4200400	5.8	10
RECEPTOR 1988 GRID	556000	4200400	7.3	10
RECEPTOR 1989 GRID	556200	4200400	9.5	10
RECEPTOR 1990 GRID	556400	4200400	11	10
RECEPTOR 1991 GRID	556600	4200400	13	10
RECEPTOR 1992 GRID	556800	4200400	14.9	10
RECEPTOR 1993 GRID	557000	4200400	16.2	10
RECEPTOR 1994 GRID	557200	4200400	18.1	10
RECEPTOR 1995 GRID	557400	4200400	19.8	10
RECEPTOR 1996 GRID	557600	4200400	21.5	10
RECEPTOR 1997 GRID	557800	4200400	23.2	10
RECEPTOR 1998 GRID	558000	4200400	26.6	10
RECEPTOR 1999 GRID	558200	4200400	27.8	10
RECEPTOR 2000 GRID	558400	4200400	30.4	10
RECEPTOR 2001 GRID	558600	4200400	32	10
RECEPTOR 2002 GRID	558800	4200400	36.8	10
RECEPTOR 2003 GRID	559000	4200400	35.2	10
RECEPTOR 2004 GRID	559200	4200400	33	10
RECEPTOR 2005 GRID	559400	4200400	41.2	10
RECEPTOR 2006 GRID	559600	4200400	62.2	10
RECEPTOR 2007 GRID	559800	4200400	90.3	10
RECEPTOR 2008 GRID	560000	4200400	99.6	10
RECEPTOR 2009 GRID	560200	4200400	61.2	10
RECEPTOR 2010 GRID	560400	4200400	82.1	10
RECEPTOR 2011 GRID	560600	4200400	108.3	10
RECEPTOR 2012 GRID	560800	4200400	139.6	10
RECEPTOR 2013 GRID	561000	4200400	163.7	10
RECEPTOR 2014 GRID	549000	4200600	0	10
RECEPTOR 2015 GRID	549200	4200600	0	10
RECEPTOR 2016 GRID	549400	4200600	0	10
RECEPTOR 2017 GRID	549600	4200600	0	10
RECEPTOR 2018 GRID	549800	4200600	0	10
RECEPTOR 2019 GRID	550000	4200600	0	10
RECEPTOR 2020 GRID	550200	4200600	0	10
RECEPTOR 2021 GRID	550400	4200600	0	10

RECEPTOR 2022 GRID	550600	4200600	0	10
RECEPTOR 2023 GRID	550800	4200600	0	10
RECEPTOR 2024 GRID	551000	4200600	0.4	10
RECEPTOR 2025 GRID	551200	4200600	11.1	10
RECEPTOR 2026 GRID	551400	4200600	50.6	10
RECEPTOR 2027 GRID	551600	4200600	83.4	10
RECEPTOR 2028 GRID	551800	4200600	90.1	10
RECEPTOR 2029 GRID	552000	4200600	66.2	10
RECEPTOR 2030 GRID	552200	4200600	4.5	10
RECEPTOR 2031 GRID	552400	4200600	5.8	10
RECEPTOR 2032 GRID	552600	4200600	2.9	10
RECEPTOR 2033 GRID	552800	4200600	4	10
RECEPTOR 2034 GRID	553000	4200600	3.5	10
RECEPTOR 2035 GRID	553200	4200600	3	10
RECEPTOR 2036 GRID	553400	4200600	2.7	10
RECEPTOR 2037 GRID	553600	4200600	2.3	10
RECEPTOR 2038 GRID	553800	4200600	0.4	10
RECEPTOR 2039 GRID	554000	4200600	1.7	10
RECEPTOR 2040 GRID	554200	4200600	2.2	10
RECEPTOR 2041 GRID	554400	4200600	3	10
RECEPTOR 2042 GRID	554600	4200600	3.7	10
RECEPTOR 2043 GRID	554800	4200600	3.5	10
RECEPTOR 2044 GRID	555000	4200600	2.6	10
RECEPTOR 2045 GRID	555200	4200600	2.2	10
RECEPTOR 2046 GRID	555400	4200600	3.5	10
RECEPTOR 2047 GRID	555600	4200600	4.7	10
RECEPTOR 2048 GRID	555800	4200600	6.7	10
RECEPTOR 2049 GRID	556000	4200600	8.8	10
RECEPTOR 2050 GRID	556200	4200600	9.9	10
RECEPTOR 2051 GRID	556400	4200600	12	10
RECEPTOR 2052 GRID	556600	4200600	14.5	10
RECEPTOR 2053 GRID	556800	4200600	15.7	10
RECEPTOR 2054 GRID	557000	4200600	17.5	10
RECEPTOR 2055 GRID	557200	4200600	19.2	10
RECEPTOR 2056 GRID	557400	4200600	20.7	10
RECEPTOR 2057 GRID	557600	4200600	22.7	10
RECEPTOR 2058 GRID	557800	4200600	23.8	10
RECEPTOR 2059 GRID	558000	4200600	25.5	10
RECEPTOR 2060 GRID	558200	4200600	27.4	10
RECEPTOR 2061 GRID	558400	4200600	29.2	10
RECEPTOR 2062 GRID	558600	4200600	31.5	10
RECEPTOR 2063 GRID	558800	4200600	33.3	10
RECEPTOR 2064 GRID	559000	4200600	31.4	10
RECEPTOR 2065 GRID	559200	4200600	37.3	10
RECEPTOR 2066 GRID	559400	4200600	43.7	10

RECEPTOR 2067 GRID	559600	4200600	59.8	10
RECEPTOR 2068 GRID	559800	4200600	75.2	10
RECEPTOR 2069 GRID	560000	4200600	57.6	10
RECEPTOR 2070 GRID	560200	4200600	73.6	10
RECEPTOR 2071 GRID	560400	4200600	94.9	10
RECEPTOR 2072 GRID	560600	4200600	125.4	10
RECEPTOR 2073 GRID	560800	4200600	149.3	10
RECEPTOR 2074 GRID	561000	4200600	180.1	10
RECEPTOR 2075 GRID	549000	4200800	0	10
RECEPTOR 2076 GRID	549200	4200800	0	10
RECEPTOR 2077 GRID	549400	4200800	0	10
RECEPTOR 2078 GRID	549600	4200800	0	10
RECEPTOR 2079 GRID	549800	4200800	0	10
RECEPTOR 2080 GRID	550000	4200800	0	10
RECEPTOR 2081 GRID	550200	4200800	0	10
RECEPTOR 2082 GRID	550400	4200800	0	10
RECEPTOR 2083 GRID	550600	4200800	0	10
RECEPTOR 2084 GRID	550800	4200800	0.4	10
RECEPTOR 2085 GRID	551000	4200800	9.2	10
RECEPTOR 2086 GRID	551200	4200800	20.2	10
RECEPTOR 2087 GRID	551400	4200800	71.4	10
RECEPTOR 2088 GRID	551600	4200800	81.2	10
RECEPTOR 2089 GRID	551800	4200800	59.4	10
RECEPTOR 2090 GRID	552000	4200800	33	10
RECEPTOR 2091 GRID	552200	4200800	4.6	10
RECEPTOR 2092 GRID	552400	4200800	2.3	10
RECEPTOR 2093 GRID	552600	4200800	1.2	10
RECEPTOR 2094 GRID	552800	4200800	0.1	10
RECEPTOR 2095 GRID	553000	4200800	-0.6	10
RECEPTOR 2096 GRID	553200	4200800	0.1	10
RECEPTOR 2097 GRID	553400	4200800	0.1	10
RECEPTOR 2098 GRID	553600	4200800	1.7	10
RECEPTOR 2099 GRID	553800	4200800	1.6	10
RECEPTOR 2100 GRID	554000	4200800	1.6	10
RECEPTOR 2101 GRID	554200	4200800	1.4	10
RECEPTOR 2102 GRID	554400	4200800	4.4	10
RECEPTOR 2103 GRID	554600	4200800	4.9	10
RECEPTOR 2104 GRID	554800	4200800	0.6	10
RECEPTOR 2105 GRID	555000	4200800	1.5	10
RECEPTOR 2106 GRID	555200	4200800	3.6	10
RECEPTOR 2107 GRID	555400	4200800	3.3	10
RECEPTOR 2108 GRID	555600	4200800	4.8	10
RECEPTOR 2109 GRID	555800	4200800	6.5	10
RECEPTOR 2110 GRID	556000	4200800	7.9	10
RECEPTOR 2111 GRID	556200	4200800	10.1	10

RECEPTOR 2112 GRID	556400	4200800	12.3	10
RECEPTOR 2113 GRID	556600	4200800	13.9	10
RECEPTOR 2114 GRID	556800	4200800	14.8	10
RECEPTOR 2115 GRID	557000	4200800	16.8	10
RECEPTOR 2116 GRID	557200	4200800	18.8	10
RECEPTOR 2117 GRID	557400	4200800	20.9	10
RECEPTOR 2118 GRID	557600	4200800	23	10
RECEPTOR 2119 GRID	557800	4200800	24.6	10
RECEPTOR 2120 GRID	558000	4200800	24.7	10
RECEPTOR 2121 GRID	558200	4200800	27.1	10
RECEPTOR 2122 GRID	558400	4200800	28.8	10
RECEPTOR 2123 GRID	558600	4200800	31.5	10
RECEPTOR 2124 GRID	558800	4200800	33.8	10
RECEPTOR 2125 GRID	559000	4200800	37.7	10
RECEPTOR 2126 GRID	559200	4200800	39.5	10
RECEPTOR 2127 GRID	559400	4200800	50.5	10
RECEPTOR 2128 GRID	559600	4200800	54.7	10
RECEPTOR 2129 GRID	559800	4200800	70	10
RECEPTOR 2130 GRID	560000	4200800	109.5	10
RECEPTOR 2131 GRID	560200	4200800	94.9	10
RECEPTOR 2132 GRID	560400	4200800	117.5	10
RECEPTOR 2133 GRID	560600	4200800	145.3	10
RECEPTOR 2134 GRID	560800	4200800	192.3	10
RECEPTOR 2135 GRID	561000	4200800	208.5	10
RECEPTOR 2136 GRID	549000	4201000	0	10
RECEPTOR 2137 GRID	549200	4201000	0	10
RECEPTOR 2138 GRID	549400	4201000	0	10
RECEPTOR 2139 GRID	549600	4201000	0	10
RECEPTOR 2140 GRID	549800	4201000	0	10
RECEPTOR 2141 GRID	550000	4201000	0	10
RECEPTOR 2142 GRID	550200	4201000	0	10
RECEPTOR 2143 GRID	550400	4201000	0	10
RECEPTOR 2144 GRID	550600	4201000	0.4	10
RECEPTOR 2145 GRID	550800	4201000	3	10
RECEPTOR 2146 GRID	551000	4201000	14.6	10
RECEPTOR 2147 GRID	551200	4201000	44.6	10
RECEPTOR 2148 GRID	551400	4201000	66.2	10
RECEPTOR 2149 GRID	551600	4201000	29.3	10
RECEPTOR 2150 GRID	551800	4201000	8.7	10
RECEPTOR 2151 GRID	552000	4201000	1	10
RECEPTOR 2152 GRID	552200	4201000	2.9	10
RECEPTOR 2153 GRID	552400	4201000	0.9	10
RECEPTOR 2154 GRID	552600	4201000	0.6	10
RECEPTOR 2155 GRID	552800	4201000	1.2	10
RECEPTOR 2156 GRID	553000	4201000	0.9	10

RECEPTOR 2157 GRID	553200	4201000	1.7	10
RECEPTOR 2158 GRID	553400	4201000	0.9	10
RECEPTOR 2159 GRID	553600	4201000	1.6	10
RECEPTOR 2160 GRID	553800	4201000	1.8	10
RECEPTOR 2161 GRID	554000	4201000	1.8	10
RECEPTOR 2162 GRID	554200	4201000	2	10
RECEPTOR 2163 GRID	554400	4201000	4.1	10
RECEPTOR 2164 GRID	554600	4201000	2.3	10
RECEPTOR 2165 GRID	554800	4201000	3.2	10
RECEPTOR 2166 GRID	555000	4201000	3	10
RECEPTOR 2167 GRID	555200	4201000	4.5	10
RECEPTOR 2168 GRID	555400	4201000	3.5	10
RECEPTOR 2169 GRID	555600	4201000	4.1	10
RECEPTOR 2170 GRID	555800	4201000	5.6	10
RECEPTOR 2171 GRID	556000	4201000	7.6	10
RECEPTOR 2172 GRID	556200	4201000	9.6	10
RECEPTOR 2173 GRID	556400	4201000	11.5	10
RECEPTOR 2174 GRID	556600	4201000	11.6	10
RECEPTOR 2175 GRID	556800	4201000	13.5	10
RECEPTOR 2176 GRID	557000	4201000	15.3	10
RECEPTOR 2177 GRID	557200	4201000	17.4	10
RECEPTOR 2178 GRID	557400	4201000	19	10
RECEPTOR 2179 GRID	557600	4201000	20.5	10
RECEPTOR 2180 GRID	557800	4201000	21.3	10
RECEPTOR 2181 GRID	558000	4201000	24	10
RECEPTOR 2182 GRID	558200	4201000	24.8	10
RECEPTOR 2183 GRID	558400	4201000	29.9	10
RECEPTOR 2184 GRID	558600	4201000	34.3	10
RECEPTOR 2185 GRID	558800	4201000	39.7	10
RECEPTOR 2186 GRID	559000	4201000	47.1	10
RECEPTOR 2187 GRID	559200	4201000	69.8	10
RECEPTOR 2188 GRID	559400	4201000	75.6	10
RECEPTOR 2189 GRID	559600	4201000	89.6	10
RECEPTOR 2190 GRID	559800	4201000	117.9	10
RECEPTOR 2191 GRID	560000	4201000	128.9	10
RECEPTOR 2192 GRID	560200	4201000	129.7	10
RECEPTOR 2193 GRID	560400	4201000	156.5	10
RECEPTOR 2194 GRID	560600	4201000	173.2	10
RECEPTOR 2195 GRID	560800	4201000	197.9	10
RECEPTOR 2196 GRID	561000	4201000	168.1	10
RECEPTOR 2197 GRID	549000	4201200	0	10
RECEPTOR 2198 GRID	549200	4201200	0	10
RECEPTOR 2199 GRID	549400	4201200	0	10
RECEPTOR 2200 GRID	549600	4201200	0	10
RECEPTOR 2201 GRID	549800	4201200	0	10

RECEPTOR 2202 GRID	550000	4201200	0	10
RECEPTOR 2203 GRID	550200	4201200	0	10
RECEPTOR 2204 GRID	550400	4201200	0.6	10
RECEPTOR 2205 GRID	550600	4201200	14.9	10
RECEPTOR 2206 GRID	550800	4201200	10.4	10
RECEPTOR 2207 GRID	551000	4201200	23.6	10
RECEPTOR 2208 GRID	551200	4201200	66.2	10
RECEPTOR 2209 GRID	551400	4201200	31.4	10
RECEPTOR 2210 GRID	551600	4201200	4.4	10
RECEPTOR 2211 GRID	551800	4201200	1	10
RECEPTOR 2212 GRID	552000	4201200	0.4	10
RECEPTOR 2213 GRID	552200	4201200	0	10
RECEPTOR 2214 GRID	552400	4201200	0	10
RECEPTOR 2215 GRID	552600	4201200	0	10
RECEPTOR 2216 GRID	552800	4201200	0.8	10
RECEPTOR 2217 GRID	553000	4201200	1.5	10
RECEPTOR 2218 GRID	553200	4201200	1.7	10
RECEPTOR 2219 GRID	553400	4201200	1.8	10
RECEPTOR 2220 GRID	553600	4201200	1.7	10
RECEPTOR 2221 GRID	553800	4201200	1.8	10
RECEPTOR 2222 GRID	554000	4201200	1.9	10
RECEPTOR 2223 GRID	554200	4201200	2.1	10
RECEPTOR 2224 GRID	554400	4201200	2.4	10
RECEPTOR 2225 GRID	554600	4201200	3.7	10
RECEPTOR 2226 GRID	554800	4201200	4.1	10
RECEPTOR 2227 GRID	555000	4201200	3.1	10
RECEPTOR 2228 GRID	555200	4201200	3.9	10
RECEPTOR 2229 GRID	555400	4201200	3.6	10
RECEPTOR 2230 GRID	555600	4201200	4.2	10
RECEPTOR 2231 GRID	555800	4201200	5.1	10
RECEPTOR 2232 GRID	556000	4201200	7.2	10
RECEPTOR 2233 GRID	556200	4201200	9	10
RECEPTOR 2234 GRID	556400	4201200	10.8	10
RECEPTOR 2235 GRID	556600	4201200	10.2	10
RECEPTOR 2236 GRID	556800	4201200	12	10
RECEPTOR 2237 GRID	557000	4201200	14.1	10
RECEPTOR 2238 GRID	557200	4201200	15.9	10
RECEPTOR 2239 GRID	557400	4201200	17.6	10
RECEPTOR 2240 GRID	557600	4201200	19.5	10
RECEPTOR 2241 GRID	557800	4201200	20.7	10
RECEPTOR 2242 GRID	558000	4201200	23	10
RECEPTOR 2243 GRID	558200	4201200	26.9	10
RECEPTOR 2244 GRID	558400	4201200	30	10
RECEPTOR 2245 GRID	558600	4201200	29.5	10
RECEPTOR 2246 GRID	558800	4201200	41.9	10

RECEPTOR 2247 GRID	559000	4201200	66.1	10
RECEPTOR 2248 GRID	559200	4201200	93.6	10
RECEPTOR 2249 GRID	559400	4201200	114.5	10
RECEPTOR 2250 GRID	559600	4201200	128.9	10
RECEPTOR 2251 GRID	559800	4201200	157.7	10
RECEPTOR 2252 GRID	560000	4201200	147.6	10
RECEPTOR 2253 GRID	560200	4201200	163.5	10
RECEPTOR 2254 GRID	560400	4201200	179.7	10
RECEPTOR 2255 GRID	560600	4201200	208.5	10
RECEPTOR 2256 GRID	560800	4201200	168.3	10
RECEPTOR 2257 GRID	561000	4201200	136.3	10
RECEPTOR 2258 GRID	549000	4201400	0	10
RECEPTOR 2259 GRID	549200	4201400	0	10
RECEPTOR 2260 GRID	549400	4201400	0	10
RECEPTOR 2261 GRID	549600	4201400	0	10
RECEPTOR 2262 GRID	549800	4201400	0	10
RECEPTOR 2263 GRID	550000	4201400	0	10
RECEPTOR 2264 GRID	550200	4201400	0.7	10
RECEPTOR 2265 GRID	550400	4201400	0.5	10
RECEPTOR 2266 GRID	550600	4201400	5.3	10
RECEPTOR 2267 GRID	550800	4201400	42.2	10
RECEPTOR 2268 GRID	551000	4201400	62.2	10
RECEPTOR 2269 GRID	551200	4201400	84.5	10
RECEPTOR 2270 GRID	551400	4201400	67.4	10
RECEPTOR 2271 GRID	551600	4201400	19.9	10
RECEPTOR 2272 GRID	551800	4201400	0.4	10
RECEPTOR 2273 GRID	552000	4201400	0.3	10
RECEPTOR 2274 GRID	552200	4201400	0	10
RECEPTOR 2275 GRID	552400	4201400	0	10
RECEPTOR 2276 GRID	552600	4201400	0	10
RECEPTOR 2277 GRID	552800	4201400	0.6	10
RECEPTOR 2278 GRID	553000	4201400	1.9	10
RECEPTOR 2279 GRID	553200	4201400	1.6	10
RECEPTOR 2280 GRID	553400	4201400	1.8	10
RECEPTOR 2281 GRID	553600	4201400	1.8	10
RECEPTOR 2282 GRID	553800	4201400	1.5	10
RECEPTOR 2283 GRID	554000	4201400	1.9	10
RECEPTOR 2284 GRID	554200	4201400	1.7	10
RECEPTOR 2285 GRID	554400	4201400	2.4	10
RECEPTOR 2286 GRID	554600	4201400	2.3	10
RECEPTOR 2287 GRID	554800	4201400	3.6	10
RECEPTOR 2288 GRID	555000	4201400	4.5	10
RECEPTOR 2289 GRID	555200	4201400	4.3	10
RECEPTOR 2290 GRID	555400	4201400	4.6	10
RECEPTOR 2291 GRID	555600	4201400	4.7	10

RECEPTOR 2292 GRID	555800	4201400	5.9	10
RECEPTOR 2293 GRID	556000	4201400	6.8	10
RECEPTOR 2294 GRID	556200	4201400	8.3	10
RECEPTOR 2295 GRID	556400	4201400	10.1	10
RECEPTOR 2296 GRID	556600	4201400	10.4	10
RECEPTOR 2297 GRID	556800	4201400	11.4	10
RECEPTOR 2298 GRID	557000	4201400	13.8	10
RECEPTOR 2299 GRID	557200	4201400	15.2	10
RECEPTOR 2300 GRID	557400	4201400	16.8	10
RECEPTOR 2301 GRID	557600	4201400	17.6	10
RECEPTOR 2302 GRID	557800	4201400	19.1	10
RECEPTOR 2303 GRID	558000	4201400	23.3	10
RECEPTOR 2304 GRID	558200	4201400	18.2	10
RECEPTOR 2305 GRID	558400	4201400	21	10
RECEPTOR 2306 GRID	558600	4201400	35	10
RECEPTOR 2307 GRID	558800	4201400	39.9	10
RECEPTOR 2308 GRID	559000	4201400	65.6	10
RECEPTOR 2309 GRID	559200	4201400	97.5	10
RECEPTOR 2310 GRID	559400	4201400	125.2	10
RECEPTOR 2311 GRID	559600	4201400	121.7	10
RECEPTOR 2312 GRID	559800	4201400	122.7	10
RECEPTOR 2313 GRID	560000	4201400	148.8	10
RECEPTOR 2314 GRID	560200	4201400	145.1	10
RECEPTOR 2315 GRID	560400	4201400	180.3	10
RECEPTOR 2316 GRID	560600	4201400	181.2	10
RECEPTOR 2317 GRID	560800	4201400	122	10
RECEPTOR 2318 GRID	561000	4201400	109.6	10
RECEPTOR 2319 GRID	549000	4201600	0	10
RECEPTOR 2320 GRID	549200	4201600	0	10
RECEPTOR 2321 GRID	549400	4201600	0	10
RECEPTOR 2322 GRID	549600	4201600	0	10
RECEPTOR 2323 GRID	549800	4201600	0.6	10
RECEPTOR 2324 GRID	550000	4201600	0.5	10
RECEPTOR 2325 GRID	550200	4201600	0.5	10
RECEPTOR 2326 GRID	550400	4201600	0.4	10
RECEPTOR 2327 GRID	550600	4201600	33.9	10
RECEPTOR 2328 GRID	550800	4201600	58.3	10
RECEPTOR 2329 GRID	551000	4201600	34.4	10
RECEPTOR 2330 GRID	551200	4201600	48.8	10
RECEPTOR 2331 GRID	551400	4201600	58.6	10
RECEPTOR 2332 GRID	551600	4201600	5.2	10
RECEPTOR 2333 GRID	551800	4201600	0.6	10
RECEPTOR 2334 GRID	552000	4201600	0	10
RECEPTOR 2335 GRID	552200	4201600	0	10
RECEPTOR 2336 GRID	552400	4201600	0	10

RECEPTOR 2337 GRID	552600	4201600	0	10
RECEPTOR 2338 GRID	552800	4201600	1	10
RECEPTOR 2339 GRID	553000	4201600	1.8	10
RECEPTOR 2340 GRID	553200	4201600	1.8	10
RECEPTOR 2341 GRID	553400	4201600	1.8	10
RECEPTOR 2342 GRID	553600	4201600	1.7	10
RECEPTOR 2343 GRID	553800	4201600	1.8	10
RECEPTOR 2344 GRID	554000	4201600	1.8	10
RECEPTOR 2345 GRID	554200	4201600	1.8	10
RECEPTOR 2346 GRID	554400	4201600	2.2	10
RECEPTOR 2347 GRID	554600	4201600	1.8	10
RECEPTOR 2348 GRID	554800	4201600	2.8	10
RECEPTOR 2349 GRID	555000	4201600	4	10
RECEPTOR 2350 GRID	555200	4201600	7.2	10
RECEPTOR 2351 GRID	555400	4201600	3.2	10
RECEPTOR 2352 GRID	555600	4201600	2.9	10
RECEPTOR 2353 GRID	555800	4201600	6	10
RECEPTOR 2354 GRID	556000	4201600	6.4	10
RECEPTOR 2355 GRID	556200	4201600	8.1	10
RECEPTOR 2356 GRID	556400	4201600	9.8	10
RECEPTOR 2357 GRID	556600	4201600	10.7	10
RECEPTOR 2358 GRID	556800	4201600	12.4	10
RECEPTOR 2359 GRID	557000	4201600	13.7	10
RECEPTOR 2360 GRID	557200	4201600	15.6	10
RECEPTOR 2361 GRID	557400	4201600	16.3	10
RECEPTOR 2362 GRID	557600	4201600	16.6	10
RECEPTOR 2363 GRID	557800	4201600	18.5	10
RECEPTOR 2364 GRID	558000	4201600	19	10
RECEPTOR 2365 GRID	558200	4201600	19.6	10
RECEPTOR 2366 GRID	558400	4201600	19.5	10
RECEPTOR 2367 GRID	558600	4201600	29.3	10
RECEPTOR 2368 GRID	558800	4201600	39.5	10
RECEPTOR 2369 GRID	559000	4201600	64.1	10
RECEPTOR 2370 GRID	559200	4201600	84	10
RECEPTOR 2371 GRID	559400	4201600	87.4	10
RECEPTOR 2372 GRID	559600	4201600	91.7	10
RECEPTOR 2373 GRID	559800	4201600	98.3	10
RECEPTOR 2374 GRID	560000	4201600	101.6	10
RECEPTOR 2375 GRID	560200	4201600	90.6	10
RECEPTOR 2376 GRID	560400	4201600	125.6	10
RECEPTOR 2377 GRID	560600	4201600	114.1	10
RECEPTOR 2378 GRID	560800	4201600	89.4	10
RECEPTOR 2379 GRID	561000	4201600	81.6	10
RECEPTOR 2380 GRID	549000	4201800	0	10
RECEPTOR 2381 GRID	549200	4201800	0	10

RECEPTOR 2382 GRID	549400	4201800	0	10
RECEPTOR 2383 GRID	549600	4201800	0.5	10
RECEPTOR 2384 GRID	549800	4201800	0.4	10
RECEPTOR 2385 GRID	550000	4201800	0.4	10
RECEPTOR 2386 GRID	550200	4201800	0.5	10
RECEPTOR 2387 GRID	550400	4201800	10.7	10
RECEPTOR 2388 GRID	550600	4201800	59.4	10
RECEPTOR 2389 GRID	550800	4201800	31.9	10
RECEPTOR 2390 GRID	551000	4201800	2.9	10
RECEPTOR 2391 GRID	551200	4201800	9.8	10
RECEPTOR 2392 GRID	551400	4201800	30.3	10
RECEPTOR 2393 GRID	551600	4201800	1.6	10
RECEPTOR 2394 GRID	551800	4201800	0	10
RECEPTOR 2395 GRID	552000	4201800	0	10
RECEPTOR 2396 GRID	552200	4201800	0	10
RECEPTOR 2397 GRID	552400	4201800	0	10
RECEPTOR 2398 GRID	552600	4201800	0	10
RECEPTOR 2399 GRID	552800	4201800	1.6	10
RECEPTOR 2400 GRID	553000	4201800	1.5	10
RECEPTOR 2401 GRID	553200	4201800	1.4	10
RECEPTOR 2402 GRID	553400	4201800	1.6	10
RECEPTOR 2403 GRID	553600	4201800	1.4	10
RECEPTOR 2404 GRID	553800	4201800	1.3	10
RECEPTOR 2405 GRID	554000	4201800	1.9	10
RECEPTOR 2406 GRID	554200	4201800	1.9	10
RECEPTOR 2407 GRID	554400	4201800	1.6	10
RECEPTOR 2408 GRID	554600	4201800	2.5	10
RECEPTOR 2409 GRID	554800	4201800	2.9	10
RECEPTOR 2410 GRID	555000	4201800	3.4	10
RECEPTOR 2411 GRID	555200	4201800	3.3	10
RECEPTOR 2412 GRID	555400	4201800	4.7	10
RECEPTOR 2413 GRID	555600	4201800	5.2	10
RECEPTOR 2414 GRID	555800	4201800	6.2	10
RECEPTOR 2415 GRID	556000	4201800	6.5	10
RECEPTOR 2416 GRID	556200	4201800	7.8	10
RECEPTOR 2417 GRID	556400	4201800	9.6	10
RECEPTOR 2418 GRID	556600	4201800	11.3	10
RECEPTOR 2419 GRID	556800	4201800	12	10
RECEPTOR 2420 GRID	557000	4201800	12.1	10
RECEPTOR 2421 GRID	557200	4201800	14	10
RECEPTOR 2422 GRID	557400	4201800	15.3	10
RECEPTOR 2423 GRID	557600	4201800	16.1	10
RECEPTOR 2424 GRID	557800	4201800	17	10
RECEPTOR 2425 GRID	558000	4201800	17.7	10
RECEPTOR 2426 GRID	558200	4201800	16.3	10

RECEPTOR 2427 GRID	558400	4201800	20.6	10
RECEPTOR 2428 GRID	558600	4201800	30.5	10
RECEPTOR 2429 GRID	558800	4201800	22.3	10
RECEPTOR 2430 GRID	559000	4201800	36.8	10
RECEPTOR 2431 GRID	559200	4201800	47.3	10
RECEPTOR 2432 GRID	559400	4201800	51.4	10
RECEPTOR 2433 GRID	559600	4201800	58.1	10
RECEPTOR 2434 GRID	559800	4201800	47.9	10
RECEPTOR 2435 GRID	560000	4201800	60.2	10
RECEPTOR 2436 GRID	560200	4201800	57.9	10
RECEPTOR 2437 GRID	560400	4201800	75	10
RECEPTOR 2438 GRID	560600	4201800	75.7	10
RECEPTOR 2439 GRID	560800	4201800	66.4	10
RECEPTOR 2440 GRID	561000	4201800	50.3	10
RECEPTOR 2441 GRID	549000	4202000	0	10
RECEPTOR 2442 GRID	549200	4202000	0	10
RECEPTOR 2443 GRID	549400	4202000	0	10
RECEPTOR 2444 GRID	549600	4202000	0	10
RECEPTOR 2445 GRID	549800	4202000	0	10
RECEPTOR 2446 GRID	550000	4202000	0.4	10
RECEPTOR 2447 GRID	550200	4202000	4.6	10
RECEPTOR 2448 GRID	550400	4202000	41.7	10
RECEPTOR 2449 GRID	550600	4202000	7.1	10
RECEPTOR 2450 GRID	550800	4202000	0.5	10
RECEPTOR 2451 GRID	551000	4202000	2.6	10
RECEPTOR 2452 GRID	551200	4202000	2	10
RECEPTOR 2453 GRID	551400	4202000	0	10
RECEPTOR 2454 GRID	551600	4202000	0	10
RECEPTOR 2455 GRID	551800	4202000	0	10
RECEPTOR 2456 GRID	552000	4202000	0	10
RECEPTOR 2457 GRID	552200	4202000	0	10
RECEPTOR 2458 GRID	552400	4202000	0	10
RECEPTOR 2459 GRID	552600	4202000	0	10
RECEPTOR 2460 GRID	552800	4202000	1.5	10
RECEPTOR 2461 GRID	553000	4202000	1.7	10
RECEPTOR 2462 GRID	553200	4202000	1.7	10
RECEPTOR 2463 GRID	553400	4202000	1.4	10
RECEPTOR 2464 GRID	553600	4202000	8.1	10
RECEPTOR 2465 GRID	553800	4202000	2.3	10
RECEPTOR 2466 GRID	554000	4202000	1.4	10
RECEPTOR 2467 GRID	554200	4202000	1.7	10
RECEPTOR 2468 GRID	554400	4202000	2	10
RECEPTOR 2469 GRID	554600	4202000	2.2	10
RECEPTOR 2470 GRID	554800	4202000	3.2	10
RECEPTOR 2471 GRID	555000	4202000	4	10

RECEPTOR 2472 GRID	555200	4202000	4.6	10
RECEPTOR 2473 GRID	555400	4202000	4.5	10
RECEPTOR 2474 GRID	555600	4202000	5.3	10
RECEPTOR 2475 GRID	555800	4202000	5.5	10
RECEPTOR 2476 GRID	556000	4202000	6	10
RECEPTOR 2477 GRID	556200	4202000	7.2	10
RECEPTOR 2478 GRID	556400	4202000	8.4	10
RECEPTOR 2479 GRID	556600	4202000	11.2	10
RECEPTOR 2480 GRID	556800	4202000	11.9	10
RECEPTOR 2481 GRID	557000	4202000	10.5	10
RECEPTOR 2482 GRID	557200	4202000	14.3	10
RECEPTOR 2483 GRID	557400	4202000	14.2	10
RECEPTOR 2484 GRID	557600	4202000	15.9	10
RECEPTOR 2485 GRID	557800	4202000	17.1	10
RECEPTOR 2486 GRID	558000	4202000	17.9	10
RECEPTOR 2487 GRID	558200	4202000	19.2	10
RECEPTOR 2488 GRID	558400	4202000	20.9	10
RECEPTOR 2489 GRID	558600	4202000	23.3	10
RECEPTOR 2490 GRID	558800	4202000	24.1	10
RECEPTOR 2491 GRID	559000	4202000	25.2	10
RECEPTOR 2492 GRID	559200	4202000	25.6	10
RECEPTOR 2493 GRID	559400	4202000	34.4	10
RECEPTOR 2494 GRID	559600	4202000	30.5	10
RECEPTOR 2495 GRID	559800	4202000	30.4	10
RECEPTOR 2496 GRID	560000	4202000	35.2	10
RECEPTOR 2497 GRID	560200	4202000	33.4	10
RECEPTOR 2498 GRID	560400	4202000	36.1	10
RECEPTOR 2499 GRID	560600	4202000	67.8	10
RECEPTOR 2500 GRID	560800	4202000	49.3	10
RECEPTOR 2501 GRID	561000	4202000	62.4	10
RECEPTOR 2502 GRID	549000	4202200	0	10
RECEPTOR 2503 GRID	549200	4202200	0	10
RECEPTOR 2504 GRID	549400	4202200	0	10
RECEPTOR 2505 GRID	549600	4202200	0	10
RECEPTOR 2506 GRID	549800	4202200	0	10
RECEPTOR 2507 GRID	550000	4202200	0	10
RECEPTOR 2508 GRID	550200	4202200	0	10
RECEPTOR 2509 GRID	550400	4202200	0	10
RECEPTOR 2510 GRID	550600	4202200	0	10
RECEPTOR 2511 GRID	550800	4202200	0	10
RECEPTOR 2512 GRID	551000	4202200	0	10
RECEPTOR 2513 GRID	551200	4202200	0	10
RECEPTOR 2514 GRID	551400	4202200	0	10
RECEPTOR 2515 GRID	551600	4202200	0	10
RECEPTOR 2516 GRID	551800	4202200	0	10

RECEPTOR 2517 GRID	552000	4202200	0	10
RECEPTOR 2518 GRID	552200	4202200	0	10
RECEPTOR 2519 GRID	552400	4202200	0	10
RECEPTOR 2520 GRID	552600	4202200	1.8	10
RECEPTOR 2521 GRID	552800	4202200	1.6	10
RECEPTOR 2522 GRID	553000	4202200	1.5	10
RECEPTOR 2523 GRID	553200	4202200	26.6	10
RECEPTOR 2524 GRID	553400	4202200	35.1	10
RECEPTOR 2525 GRID	553600	4202200	34	10
RECEPTOR 2526 GRID	553800	4202200	23.2	10
RECEPTOR 2527 GRID	554000	4202200	2.7	10
RECEPTOR 2528 GRID	554200	4202200	2.9	10
RECEPTOR 2529 GRID	554400	4202200	1.7	10
RECEPTOR 2530 GRID	554600	4202200	2.3	10
RECEPTOR 2531 GRID	554800	4202200	3.4	10
RECEPTOR 2532 GRID	555000	4202200	4.9	10
RECEPTOR 2533 GRID	555200	4202200	4.1	10
RECEPTOR 2534 GRID	555400	4202200	6.3	10
RECEPTOR 2535 GRID	555600	4202200	5.4	10
RECEPTOR 2536 GRID	555800	4202200	4.9	10
RECEPTOR 2537 GRID	556000	4202200	5.9	10
RECEPTOR 2538 GRID	556200	4202200	6.9	10
RECEPTOR 2539 GRID	556400	4202200	8.4	10
RECEPTOR 2540 GRID	556600	4202200	10.3	10
RECEPTOR 2541 GRID	556800	4202200	10.5	10
RECEPTOR 2542 GRID	557000	4202200	11.4	10
RECEPTOR 2543 GRID	557200	4202200	12	10
RECEPTOR 2544 GRID	557400	4202200	13.2	10
RECEPTOR 2545 GRID	557600	4202200	15.3	10
RECEPTOR 2546 GRID	557800	4202200	16.2	10
RECEPTOR 2547 GRID	558000	4202200	17.6	10
RECEPTOR 2548 GRID	558200	4202200	18.6	10
RECEPTOR 2549 GRID	558400	4202200	22.3	10
RECEPTOR 2550 GRID	558600	4202200	23.2	10
RECEPTOR 2551 GRID	558800	4202200	24.7	10
RECEPTOR 2552 GRID	559000	4202200	25.8	10
RECEPTOR 2553 GRID	559200	4202200	26.7	10
RECEPTOR 2554 GRID	559400	4202200	32.2	10
RECEPTOR 2555 GRID	559600	4202200	26.6	10
RECEPTOR 2556 GRID	559800	4202200	29.3	10
RECEPTOR 2557 GRID	560000	4202200	23	10
RECEPTOR 2558 GRID	560200	4202200	23.2	10
RECEPTOR 2559 GRID	560400	4202200	33.1	10
RECEPTOR 2560 GRID	560600	4202200	43.6	10
RECEPTOR 2561 GRID	560800	4202200	44.7	10

RECEPTOR 2562 GRID	561000	4202200	38.2	10
RECEPTOR 2563 GRID	549000	4202400	0	10
RECEPTOR 2564 GRID	549200	4202400	0	10
RECEPTOR 2565 GRID	549400	4202400	0	10
RECEPTOR 2566 GRID	549600	4202400	0	10
RECEPTOR 2567 GRID	549800	4202400	0	10
RECEPTOR 2568 GRID	550000	4202400	0	10
RECEPTOR 2569 GRID	550200	4202400	0	10
RECEPTOR 2570 GRID	550400	4202400	0	10
RECEPTOR 2571 GRID	550600	4202400	0	10
RECEPTOR 2572 GRID	550800	4202400	0	10
RECEPTOR 2573 GRID	551000	4202400	0	10
RECEPTOR 2574 GRID	551200	4202400	0	10
RECEPTOR 2575 GRID	551400	4202400	0	10
RECEPTOR 2576 GRID	551600	4202400	0	10
RECEPTOR 2577 GRID	551800	4202400	0	10
RECEPTOR 2578 GRID	552000	4202400	0	10
RECEPTOR 2579 GRID	552200	4202400	0	10
RECEPTOR 2580 GRID	552400	4202400	0	10
RECEPTOR 2581 GRID	552600	4202400	1.8	10
RECEPTOR 2582 GRID	552800	4202400	1.6	10
RECEPTOR 2583 GRID	553000	4202400	2.5	10
RECEPTOR 2584 GRID	553200	4202400	37.3	10
RECEPTOR 2585 GRID	553400	4202400	47.8	10
RECEPTOR 2586 GRID	553600	4202400	47.1	10
RECEPTOR 2587 GRID	553800	4202400	45.6	10
RECEPTOR 2588 GRID	554000	4202400	6.9	10
RECEPTOR 2589 GRID	554200	4202400	4.2	10
RECEPTOR 2590 GRID	554400	4202400	1.8	10
RECEPTOR 2591 GRID	554600	4202400	2.5	10
RECEPTOR 2592 GRID	554800	4202400	1.6	10
RECEPTOR 2593 GRID	555000	4202400	4.8	10
RECEPTOR 2594 GRID	555200	4202400	3.6	10
RECEPTOR 2595 GRID	555400	4202400	4.2	10
RECEPTOR 2596 GRID	555600	4202400	5.3	10
RECEPTOR 2597 GRID	555800	4202400	2.5	10
RECEPTOR 2598 GRID	556000	4202400	7.3	10
RECEPTOR 2599 GRID	556200	4202400	3.6	10
RECEPTOR 2600 GRID	556400	4202400	8.8	10
RECEPTOR 2601 GRID	556600	4202400	8.1	10
RECEPTOR 2602 GRID	556800	4202400	8.3	10
RECEPTOR 2603 GRID	557000	4202400	10.5	10
RECEPTOR 2604 GRID	557200	4202400	11.5	10
RECEPTOR 2605 GRID	557400	4202400	13.1	10
RECEPTOR 2606 GRID	557600	4202400	15	10

RECEPTOR 2607 GRID	557800	4202400	16	10
RECEPTOR 2608 GRID	558000	4202400	15.8	10
RECEPTOR 2609 GRID	558200	4202400	18.6	10
RECEPTOR 2610 GRID	558400	4202400	20.9	10
RECEPTOR 2611 GRID	558600	4202400	31.3	10
RECEPTOR 2612 GRID	558800	4202400	30.3	10
RECEPTOR 2613 GRID	559000	4202400	26.2	10
RECEPTOR 2614 GRID	559200	4202400	31.8	10
RECEPTOR 2615 GRID	559400	4202400	38.8	10
RECEPTOR 2616 GRID	559600	4202400	41.9	10
RECEPTOR 2617 GRID	559800	4202400	35.4	10
RECEPTOR 2618 GRID	560000	4202400	34.9	10
RECEPTOR 2619 GRID	560200	4202400	38.2	10
RECEPTOR 2620 GRID	560400	4202400	27	10
RECEPTOR 2621 GRID	560600	4202400	34.3	10
RECEPTOR 2622 GRID	560800	4202400	31.7	10
RECEPTOR 2623 GRID	561000	4202400	26.8	10
RECEPTOR 2624 GRID	549000	4202600	0	10
RECEPTOR 2625 GRID	549200	4202600	0	10
RECEPTOR 2626 GRID	549400	4202600	0	10
RECEPTOR 2627 GRID	549600	4202600	0	10
RECEPTOR 2628 GRID	549800	4202600	0	10
RECEPTOR 2629 GRID	550000	4202600	0	10
RECEPTOR 2630 GRID	550200	4202600	0	10
RECEPTOR 2631 GRID	550400	4202600	0	10
RECEPTOR 2632 GRID	550600	4202600	0	10
RECEPTOR 2633 GRID	550800	4202600	0	10
RECEPTOR 2634 GRID	551000	4202600	0	10
RECEPTOR 2635 GRID	551200	4202600	0	10
RECEPTOR 2636 GRID	551400	4202600	0	10
RECEPTOR 2637 GRID	551600	4202600	0	10
RECEPTOR 2638 GRID	551800	4202600	0	10
RECEPTOR 2639 GRID	552000	4202600	0	10
RECEPTOR 2640 GRID	552200	4202600	0	10
RECEPTOR 2641 GRID	552400	4202600	0	10
RECEPTOR 2642 GRID	552600	4202600	0	10
RECEPTOR 2643 GRID	552800	4202600	0	10
RECEPTOR 2644 GRID	553000	4202600	0	10
RECEPTOR 2645 GRID	553200	4202600	4.5	10
RECEPTOR 2646 GRID	553400	4202600	1.8	10
RECEPTOR 2647 GRID	553600	4202600	1.5	10
RECEPTOR 2648 GRID	553800	4202600	23.2	10
RECEPTOR 2649 GRID	554000	4202600	10.5	10
RECEPTOR 2650 GRID	554200	4202600	10.4	10
RECEPTOR 2651 GRID	554400	4202600	4.6	10

RECEPTOR 2652 GRID	554600	4202600	2.3	10
RECEPTOR 2653 GRID	554800	4202600	2.6	10
RECEPTOR 2654 GRID	555000	4202600	3.3	10
RECEPTOR 2655 GRID	555200	4202600	3.2	10
RECEPTOR 2656 GRID	555400	4202600	3.2	10
RECEPTOR 2657 GRID	555600	4202600	4.2	10
RECEPTOR 2658 GRID	555800	4202600	5.1	10
RECEPTOR 2659 GRID	556000	4202600	5.7	10
RECEPTOR 2660 GRID	556200	4202600	7.1	10
RECEPTOR 2661 GRID	556400	4202600	7.4	10
RECEPTOR 2662 GRID	556600	4202600	7.8	10
RECEPTOR 2663 GRID	556800	4202600	8.8	10
RECEPTOR 2664 GRID	557000	4202600	10	10
RECEPTOR 2665 GRID	557200	4202600	11.5	10
RECEPTOR 2666 GRID	557400	4202600	13.2	10
RECEPTOR 2667 GRID	557600	4202600	14.1	10
RECEPTOR 2668 GRID	557800	4202600	15.1	10
RECEPTOR 2669 GRID	558000	4202600	16.2	10
RECEPTOR 2670 GRID	558200	4202600	21.2	10
RECEPTOR 2671 GRID	558400	4202600	31.8	10
RECEPTOR 2672 GRID	558600	4202600	40.3	10
RECEPTOR 2673 GRID	558800	4202600	51.5	10
RECEPTOR 2674 GRID	559000	4202600	32.1	10
RECEPTOR 2675 GRID	559200	4202600	33.6	10
RECEPTOR 2676 GRID	559400	4202600	45.8	10
RECEPTOR 2677 GRID	559600	4202600	47.8	10
RECEPTOR 2678 GRID	559800	4202600	67.4	10
RECEPTOR 2679 GRID	560000	4202600	70.4	10
RECEPTOR 2680 GRID	560200	4202600	63.5	10
RECEPTOR 2681 GRID	560400	4202600	40	10
RECEPTOR 2682 GRID	560600	4202600	33.7	10
RECEPTOR 2683 GRID	560800	4202600	34.6	10
RECEPTOR 2684 GRID	561000	4202600	56	10
RECEPTOR 2685 GRID	549000	4202800	0	10
RECEPTOR 2686 GRID	549200	4202800	0	10
RECEPTOR 2687 GRID	549400	4202800	0	10
RECEPTOR 2688 GRID	549600	4202800	0	10
RECEPTOR 2689 GRID	549800	4202800	0	10
RECEPTOR 2690 GRID	550000	4202800	0	10
RECEPTOR 2691 GRID	550200	4202800	0	10
RECEPTOR 2692 GRID	550400	4202800	0	10
RECEPTOR 2693 GRID	550600	4202800	0	10
RECEPTOR 2694 GRID	550800	4202800	0	10
RECEPTOR 2695 GRID	551000	4202800	0	10
RECEPTOR 2696 GRID	551200	4202800	0	10

RECEPTOR 2697 GRID	551400	4202800	0	10
RECEPTOR 2698 GRID	551600	4202800	0	10
RECEPTOR 2699 GRID	551800	4202800	0	10
RECEPTOR 2700 GRID	552000	4202800	0	10
RECEPTOR 2701 GRID	552200	4202800	0	10
RECEPTOR 2702 GRID	552400	4202800	0	10
RECEPTOR 2703 GRID	552600	4202800	0	10
RECEPTOR 2704 GRID	552800	4202800	0	10
RECEPTOR 2705 GRID	553000	4202800	0	10
RECEPTOR 2706 GRID	553200	4202800	0	10
RECEPTOR 2707 GRID	553400	4202800	0	10
RECEPTOR 2708 GRID	553600	4202800	1.7	10
RECEPTOR 2709 GRID	553800	4202800	5.8	10
RECEPTOR 2710 GRID	554000	4202800	7.4	10
RECEPTOR 2711 GRID	554200	4202800	7.1	10
RECEPTOR 2712 GRID	554400	4202800	2.1	10
RECEPTOR 2713 GRID	554600	4202800	2.3	10
RECEPTOR 2714 GRID	554800	4202800	2.4	10
RECEPTOR 2715 GRID	555000	4202800	2.5	10
RECEPTOR 2716 GRID	555200	4202800	3.5	10
RECEPTOR 2717 GRID	555400	4202800	2.7	10
RECEPTOR 2718 GRID	555600	4202800	3.2	10
RECEPTOR 2719 GRID	555800	4202800	4.5	10
RECEPTOR 2720 GRID	556000	4202800	4.6	10
RECEPTOR 2721 GRID	556200	4202800	5.6	10
RECEPTOR 2722 GRID	556400	4202800	6.2	10
RECEPTOR 2723 GRID	556600	4202800	7.6	10
RECEPTOR 2724 GRID	556800	4202800	9.3	10
RECEPTOR 2725 GRID	557000	4202800	9.9	10
RECEPTOR 2726 GRID	557200	4202800	11.5	10
RECEPTOR 2727 GRID	557400	4202800	12.3	10
RECEPTOR 2728 GRID	557600	4202800	13	10
RECEPTOR 2729 GRID	557800	4202800	14.7	10
RECEPTOR 2730 GRID	558000	4202800	21.6	10
RECEPTOR 2731 GRID	558200	4202800	24.6	10
RECEPTOR 2732 GRID	558400	4202800	54.2	10
RECEPTOR 2733 GRID	558600	4202800	59.2	10
RECEPTOR 2734 GRID	558800	4202800	46.2	10
RECEPTOR 2735 GRID	559000	4202800	63.8	10
RECEPTOR 2736 GRID	559200	4202800	43.3	10
RECEPTOR 2737 GRID	559400	4202800	52	10
RECEPTOR 2738 GRID	559600	4202800	55.1	10
RECEPTOR 2739 GRID	559800	4202800	70	10
RECEPTOR 2740 GRID	560000	4202800	67.9	10
RECEPTOR 2741 GRID	560200	4202800	75.4	10

RECEPTOR 2742 GRID	560400	4202800	62.1	10
RECEPTOR 2743 GRID	560600	4202800	63.2	10
RECEPTOR 2744 GRID	560800	4202800	40.6	10
RECEPTOR 2745 GRID	561000	4202800	35.5	10
RECEPTOR 2746 GRID	549000	4203000	0	10
RECEPTOR 2747 GRID	549200	4203000	0	10
RECEPTOR 2748 GRID	549400	4203000	0	10
RECEPTOR 2749 GRID	549600	4203000	0	10
RECEPTOR 2750 GRID	549800	4203000	0	10
RECEPTOR 2751 GRID	550000	4203000	0	10
RECEPTOR 2752 GRID	550200	4203000	0	10
RECEPTOR 2753 GRID	550400	4203000	0	10
RECEPTOR 2754 GRID	550600	4203000	0	10
RECEPTOR 2755 GRID	550800	4203000	0	10
RECEPTOR 2756 GRID	551000	4203000	0	10
RECEPTOR 2757 GRID	551200	4203000	0	10
RECEPTOR 2758 GRID	551400	4203000	0	10
RECEPTOR 2759 GRID	551600	4203000	0	10
RECEPTOR 2760 GRID	551800	4203000	0	10
RECEPTOR 2761 GRID	552000	4203000	0	10
RECEPTOR 2762 GRID	552200	4203000	0	10
RECEPTOR 2763 GRID	552400	4203000	0	10
RECEPTOR 2764 GRID	552600	4203000	0	10
RECEPTOR 2765 GRID	552800	4203000	0	10
RECEPTOR 2766 GRID	553000	4203000	0	10
RECEPTOR 2767 GRID	553200	4203000	0	10
RECEPTOR 2768 GRID	553400	4203000	0	10
RECEPTOR 2769 GRID	553600	4203000	0	10
RECEPTOR 2770 GRID	553800	4203000	1.6	10
RECEPTOR 2771 GRID	554000	4203000	1.4	10
RECEPTOR 2772 GRID	554200	4203000	1.7	10
RECEPTOR 2773 GRID	554400	4203000	1.8	10
RECEPTOR 2774 GRID	554600	4203000	1.9	10
RECEPTOR 2775 GRID	554800	4203000	1.8	10
RECEPTOR 2776 GRID	555000	4203000	1.7	10
RECEPTOR 2777 GRID	555200	4203000	2	10
RECEPTOR 2778 GRID	555400	4203000	4.4	10
RECEPTOR 2779 GRID	555600	4203000	3.4	10
RECEPTOR 2780 GRID	555800	4203000	3.9	10
RECEPTOR 2781 GRID	556000	4203000	4.3	10
RECEPTOR 2782 GRID	556200	4203000	5.7	10
RECEPTOR 2783 GRID	556400	4203000	7.4	10
RECEPTOR 2784 GRID	556600	4203000	8.4	10
RECEPTOR 2785 GRID	556800	4203000	8.9	10
RECEPTOR 2786 GRID	557000	4203000	10.2	10

RECEPTOR 2787 GRID	557200	4203000	10.9	10
RECEPTOR 2788 GRID	557400	4203000	10.9	10
RECEPTOR 2789 GRID	557600	4203000	12.7	10
RECEPTOR 2790 GRID	557800	4203000	19	10
RECEPTOR 2791 GRID	558000	4203000	33.2	10
RECEPTOR 2792 GRID	558200	4203000	59.6	10
RECEPTOR 2793 GRID	558400	4203000	60.6	10
RECEPTOR 2794 GRID	558600	4203000	67.8	10
RECEPTOR 2795 GRID	558800	4203000	76.5	10
RECEPTOR 2796 GRID	559000	4203000	69.8	10
RECEPTOR 2797 GRID	559200	4203000	71.3	10
RECEPTOR 2798 GRID	559400	4203000	65.6	10
RECEPTOR 2799 GRID	559600	4203000	57.3	10
RECEPTOR 2800 GRID	559800	4203000	63.1	10
RECEPTOR 2801 GRID	560000	4203000	75.3	10
RECEPTOR 2802 GRID	560200	4203000	85	10
RECEPTOR 2803 GRID	560400	4203000	87	10
RECEPTOR 2804 GRID	560600	4203000	82.2	10
RECEPTOR 2805 GRID	560800	4203000	51.2	10
RECEPTOR 2806 GRID	561000	4203000	51.5	10
RECEPTOR 2807 GRID	549000	4203200	0	10
RECEPTOR 2808 GRID	549200	4203200	0	10
RECEPTOR 2809 GRID	549400	4203200	0	10
RECEPTOR 2810 GRID	549600	4203200	0	10
RECEPTOR 2811 GRID	549800	4203200	0	10
RECEPTOR 2812 GRID	550000	4203200	0	10
RECEPTOR 2813 GRID	550200	4203200	0	10
RECEPTOR 2814 GRID	550400	4203200	0	10
RECEPTOR 2815 GRID	550600	4203200	0	10
RECEPTOR 2816 GRID	550800	4203200	0	10
RECEPTOR 2817 GRID	551000	4203200	0	10
RECEPTOR 2818 GRID	551200	4203200	0	10
RECEPTOR 2819 GRID	551400	4203200	0	10
RECEPTOR 2820 GRID	551600	4203200	0	10
RECEPTOR 2821 GRID	551800	4203200	0	10
RECEPTOR 2822 GRID	552000	4203200	0	10
RECEPTOR 2823 GRID	552200	4203200	0	10
RECEPTOR 2824 GRID	552400	4203200	0	10
RECEPTOR 2825 GRID	552600	4203200	0	10
RECEPTOR 2826 GRID	552800	4203200	0	10
RECEPTOR 2827 GRID	553000	4203200	0	10
RECEPTOR 2828 GRID	553200	4203200	0	10
RECEPTOR 2829 GRID	553400	4203200	0	10
RECEPTOR 2830 GRID	553600	4203200	0	10
RECEPTOR 2831 GRID	553800	4203200	0	10

RECEPTOR 2832 GRID	554000	4203200	1.5	10
RECEPTOR 2833 GRID	554200	4203200	1.9	10
RECEPTOR 2834 GRID	554400	4203200	1.8	10
RECEPTOR 2835 GRID	554600	4203200	1.7	10
RECEPTOR 2836 GRID	554800	4203200	1.5	10
RECEPTOR 2837 GRID	555000	4203200	1.4	10
RECEPTOR 2838 GRID	555200	4203200	1.9	10
RECEPTOR 2839 GRID	555400	4203200	3.5	10
RECEPTOR 2840 GRID	555600	4203200	3.8	10
RECEPTOR 2841 GRID	555800	4203200	2.9	10
RECEPTOR 2842 GRID	556000	4203200	4.1	10
RECEPTOR 2843 GRID	556200	4203200	4.9	10
RECEPTOR 2844 GRID	556400	4203200	6	10
RECEPTOR 2845 GRID	556600	4203200	7.4	10
RECEPTOR 2846 GRID	556800	4203200	8.4	10
RECEPTOR 2847 GRID	557000	4203200	9.3	10
RECEPTOR 2848 GRID	557200	4203200	11.1	10
RECEPTOR 2849 GRID	557400	4203200	11.1	10
RECEPTOR 2850 GRID	557600	4203200	13.8	10
RECEPTOR 2851 GRID	557800	4203200	30.6	10
RECEPTOR 2852 GRID	558000	4203200	48.4	10
RECEPTOR 2853 GRID	558200	4203200	62.8	10
RECEPTOR 2854 GRID	558400	4203200	69.9	10
RECEPTOR 2855 GRID	558600	4203200	77.1	10
RECEPTOR 2856 GRID	558800	4203200	73.9	10
RECEPTOR 2857 GRID	559000	4203200	74.7	10
RECEPTOR 2858 GRID	559200	4203200	71.5	10
RECEPTOR 2859 GRID	559400	4203200	80.7	10
RECEPTOR 2860 GRID	559600	4203200	82.6	10
RECEPTOR 2861 GRID	559800	4203200	70.1	10
RECEPTOR 2862 GRID	560000	4203200	82.8	10
RECEPTOR 2863 GRID	560200	4203200	90.3	10
RECEPTOR 2864 GRID	560400	4203200	103.1	10
RECEPTOR 2865 GRID	560600	4203200	87.7	10
RECEPTOR 2866 GRID	560800	4203200	81.4	10
RECEPTOR 2867 GRID	561000	4203200	62.5	10
RECEPTOR 2868 GRID	549000	4203400	0	10
RECEPTOR 2869 GRID	549200	4203400	0	10
RECEPTOR 2870 GRID	549400	4203400	0	10
RECEPTOR 2871 GRID	549600	4203400	0	10
RECEPTOR 2872 GRID	549800	4203400	0	10
RECEPTOR 2873 GRID	550000	4203400	0	10
RECEPTOR 2874 GRID	550200	4203400	0	10
RECEPTOR 2875 GRID	550400	4203400	0	10
RECEPTOR 2876 GRID	550600	4203400	0	10

RECEPTOR 2877 GRID	550800	4203400	0	10
RECEPTOR 2878 GRID	551000	4203400	0	10
RECEPTOR 2879 GRID	551200	4203400	0	10
RECEPTOR 2880 GRID	551400	4203400	0	10
RECEPTOR 2881 GRID	551600	4203400	0	10
RECEPTOR 2882 GRID	551800	4203400	0	10
RECEPTOR 2883 GRID	552000	4203400	0	10
RECEPTOR 2884 GRID	552200	4203400	0	10
RECEPTOR 2885 GRID	552400	4203400	0	10
RECEPTOR 2886 GRID	552600	4203400	0	10
RECEPTOR 2887 GRID	552800	4203400	0	10
RECEPTOR 2888 GRID	553000	4203400	0	10
RECEPTOR 2889 GRID	553200	4203400	0	10
RECEPTOR 2890 GRID	553400	4203400	0	10
RECEPTOR 2891 GRID	553600	4203400	0	10
RECEPTOR 2892 GRID	553800	4203400	0	10
RECEPTOR 2893 GRID	554000	4203400	0	10
RECEPTOR 2894 GRID	554200	4203400	0	10
RECEPTOR 2895 GRID	554400	4203400	0	10
RECEPTOR 2896 GRID	554600	4203400	0	10
RECEPTOR 2897 GRID	554800	4203400	0	10
RECEPTOR 2898 GRID	555000	4203400	0	10
RECEPTOR 2899 GRID	555200	4203400	1.3	10
RECEPTOR 2900 GRID	555400	4203400	2.2	10
RECEPTOR 2901 GRID	555600	4203400	3.5	10
RECEPTOR 2902 GRID	555800	4203400	3.2	10
RECEPTOR 2903 GRID	556000	4203400	4	10
RECEPTOR 2904 GRID	556200	4203400	4.5	10
RECEPTOR 2905 GRID	556400	4203400	5.5	10
RECEPTOR 2906 GRID	556600	4203400	7.3	10
RECEPTOR 2907 GRID	556800	4203400	7.8	10
RECEPTOR 2908 GRID	557000	4203400	8.9	10
RECEPTOR 2909 GRID	557200	4203400	11	10
RECEPTOR 2910 GRID	557400	4203400	21.8	10
RECEPTOR 2911 GRID	557600	4203400	40.5	10
RECEPTOR 2912 GRID	557800	4203400	41.3	10
RECEPTOR 2913 GRID	558000	4203400	68.2	10
RECEPTOR 2914 GRID	558200	4203400	63.3	10
RECEPTOR 2915 GRID	558400	4203400	74.5	10
RECEPTOR 2916 GRID	558600	4203400	75.5	10
RECEPTOR 2917 GRID	558800	4203400	74.5	10
RECEPTOR 2918 GRID	559000	4203400	73	10
RECEPTOR 2919 GRID	559200	4203400	79.2	10
RECEPTOR 2920 GRID	559400	4203400	88.5	10
RECEPTOR 2921 GRID	559600	4203400	87.2	10

RECEPTOR 2922 GRID	559800	4203400	83.4	10
RECEPTOR 2923 GRID	560000	4203400	89.6	10
RECEPTOR 2924 GRID	560200	4203400	101.4	10
RECEPTOR 2925 GRID	560400	4203400	107.3	10
RECEPTOR 2926 GRID	560600	4203400	101.3	10
RECEPTOR 2927 GRID	560800	4203400	99.2	10
RECEPTOR 2928 GRID	561000	4203400	95.6	10
RECEPTOR 2929 GRID	549000	4203600	0	10
RECEPTOR 2930 GRID	549200	4203600	0	10
RECEPTOR 2931 GRID	549400	4203600	0	10
RECEPTOR 2932 GRID	549600	4203600	0	10
RECEPTOR 2933 GRID	549800	4203600	0	10
RECEPTOR 2934 GRID	550000	4203600	0	10
RECEPTOR 2935 GRID	550200	4203600	0	10
RECEPTOR 2936 GRID	550400	4203600	0	10
RECEPTOR 2937 GRID	550600	4203600	0	10
RECEPTOR 2938 GRID	550800	4203600	0	10
RECEPTOR 2939 GRID	551000	4203600	0	10
RECEPTOR 2940 GRID	551200	4203600	0	10
RECEPTOR 2941 GRID	551400	4203600	0	10
RECEPTOR 2942 GRID	551600	4203600	0	10
RECEPTOR 2943 GRID	551800	4203600	0	10
RECEPTOR 2944 GRID	552000	4203600	0	10
RECEPTOR 2945 GRID	552200	4203600	0	10
RECEPTOR 2946 GRID	552400	4203600	0	10
RECEPTOR 2947 GRID	552600	4203600	0	10
RECEPTOR 2948 GRID	552800	4203600	0	10
RECEPTOR 2949 GRID	553000	4203600	0	10
RECEPTOR 2950 GRID	553200	4203600	0	10
RECEPTOR 2951 GRID	553400	4203600	0	10
RECEPTOR 2952 GRID	553600	4203600	0	10
RECEPTOR 2953 GRID	553800	4203600	0	10
RECEPTOR 2954 GRID	554000	4203600	0	10
RECEPTOR 2955 GRID	554200	4203600	0	10
RECEPTOR 2956 GRID	554400	4203600	0	10
RECEPTOR 2957 GRID	554600	4203600	0	10
RECEPTOR 2958 GRID	554800	4203600	0	10
RECEPTOR 2959 GRID	555000	4203600	0	10
RECEPTOR 2960 GRID	555200	4203600	1.2	10
RECEPTOR 2961 GRID	555400	4203600	1.6	10
RECEPTOR 2962 GRID	555600	4203600	3.1	10
RECEPTOR 2963 GRID	555800	4203600	3.3	10
RECEPTOR 2964 GRID	556000	4203600	3.7	10
RECEPTOR 2965 GRID	556200	4203600	4.2	10
RECEPTOR 2966 GRID	556400	4203600	6	10

RECEPTOR 2967 GRID	556600	4203600	6.6	10
RECEPTOR 2968 GRID	556800	4203600	8	10
RECEPTOR 2969 GRID	557000	4203600	10.7	10
RECEPTOR 2970 GRID	557200	4203600	14.8	10
RECEPTOR 2971 GRID	557400	4203600	33.8	10
RECEPTOR 2972 GRID	557600	4203600	43	10
RECEPTOR 2973 GRID	557800	4203600	47.8	10
RECEPTOR 2974 GRID	558000	4203600	71.1	10
RECEPTOR 2975 GRID	558200	4203600	79.5	10
RECEPTOR 2976 GRID	558400	4203600	79.4	10
RECEPTOR 2977 GRID	558600	4203600	69.9	10
RECEPTOR 2978 GRID	558800	4203600	63.1	10
RECEPTOR 2979 GRID	559000	4203600	62.1	10
RECEPTOR 2980 GRID	559200	4203600	70.7	10
RECEPTOR 2981 GRID	559400	4203600	81.9	10
RECEPTOR 2982 GRID	559600	4203600	87.2	10
RECEPTOR 2983 GRID	559800	4203600	88.2	10
RECEPTOR 2984 GRID	560000	4203600	98.2	10
RECEPTOR 2985 GRID	560200	4203600	92.6	10
RECEPTOR 2986 GRID	560400	4203600	95.4	10
RECEPTOR 2987 GRID	560600	4203600	85.2	10
RECEPTOR 2988 GRID	560800	4203600	101.4	10
RECEPTOR 2989 GRID	561000	4203600	102.9	10
RECEPTOR 2990 GRID	549000	4203800	0	10
RECEPTOR 2991 GRID	549200	4203800	0	10
RECEPTOR 2992 GRID	549400	4203800	0	10
RECEPTOR 2993 GRID	549600	4203800	0	10
RECEPTOR 2994 GRID	549800	4203800	0	10
RECEPTOR 2995 GRID	550000	4203800	0	10
RECEPTOR 2996 GRID	550200	4203800	0	10
RECEPTOR 2997 GRID	550400	4203800	0	10
RECEPTOR 2998 GRID	550600	4203800	0	10
RECEPTOR 2999 GRID	550800	4203800	0	10
RECEPTOR 3000 GRID	551000	4203800	0	10
RECEPTOR 3001 GRID	551200	4203800	0	10
RECEPTOR 3002 GRID	551400	4203800	0	10
RECEPTOR 3003 GRID	551600	4203800	0	10
RECEPTOR 3004 GRID	551800	4203800	0	10
RECEPTOR 3005 GRID	552000	4203800	0	10
RECEPTOR 3006 GRID	552200	4203800	0	10
RECEPTOR 3007 GRID	552400	4203800	0	10
RECEPTOR 3008 GRID	552600	4203800	0	10
RECEPTOR 3009 GRID	552800	4203800	0	10
RECEPTOR 3010 GRID	553000	4203800	0	10
RECEPTOR 3011 GRID	553200	4203800	0	10

RECEPTOR 3012 GRID	553400	4203800	0	10
RECEPTOR 3013 GRID	553600	4203800	0	10
RECEPTOR 3014 GRID	553800	4203800	0	10
RECEPTOR 3015 GRID	554000	4203800	0	10
RECEPTOR 3016 GRID	554200	4203800	0	10
RECEPTOR 3017 GRID	554400	4203800	0	10
RECEPTOR 3018 GRID	554600	4203800	0	10
RECEPTOR 3019 GRID	554800	4203800	0	10
RECEPTOR 3020 GRID	555000	4203800	0	10
RECEPTOR 3021 GRID	555200	4203800	0	10
RECEPTOR 3022 GRID	555400	4203800	1.2	10
RECEPTOR 3023 GRID	555600	4203800	2.5	10
RECEPTOR 3024 GRID	555800	4203800	3	10
RECEPTOR 3025 GRID	556000	4203800	4.3	10
RECEPTOR 3026 GRID	556200	4203800	4.5	10
RECEPTOR 3027 GRID	556400	4203800	7.3	10
RECEPTOR 3028 GRID	556600	4203800	7.9	10
RECEPTOR 3029 GRID	556800	4203800	8.4	10
RECEPTOR 3030 GRID	557000	4203800	12.2	10
RECEPTOR 3031 GRID	557200	4203800	19.9	10
RECEPTOR 3032 GRID	557400	4203800	42.2	10
RECEPTOR 3033 GRID	557600	4203800	58.1	10
RECEPTOR 3034 GRID	557800	4203800	74.4	10
RECEPTOR 3035 GRID	558000	4203800	66.1	10
RECEPTOR 3036 GRID	558200	4203800	72.7	10
RECEPTOR 3037 GRID	558400	4203800	76.2	10
RECEPTOR 3038 GRID	558600	4203800	60.2	10
RECEPTOR 3039 GRID	558800	4203800	57	10
RECEPTOR 3040 GRID	559000	4203800	61.9	10
RECEPTOR 3041 GRID	559200	4203800	64.6	10
RECEPTOR 3042 GRID	559400	4203800	67.2	10
RECEPTOR 3043 GRID	559600	4203800	56.9	10
RECEPTOR 3044 GRID	559800	4203800	49.9	10
RECEPTOR 3045 GRID	560000	4203800	75.8	10
RECEPTOR 3046 GRID	560200	4203800	70.6	10
RECEPTOR 3047 GRID	560400	4203800	68.2	10
RECEPTOR 3048 GRID	560600	4203800	70.2	10
RECEPTOR 3049 GRID	560800	4203800	72.2	10
RECEPTOR 3050 GRID	561000	4203800	86.9	10
RECEPTOR 3051 GRID	549000	4204000	0	10
RECEPTOR 3052 GRID	549200	4204000	0	10
RECEPTOR 3053 GRID	549400	4204000	0	10
RECEPTOR 3054 GRID	549600	4204000	0	10
RECEPTOR 3055 GRID	549800	4204000	0	10
RECEPTOR 3056 GRID	550000	4204000	0	10

RECEPTOR 3057 GRID	550200	4204000	0	10
RECEPTOR 3058 GRID	550400	4204000	0	10
RECEPTOR 3059 GRID	550600	4204000	0	10
RECEPTOR 3060 GRID	550800	4204000	0	10
RECEPTOR 3061 GRID	551000	4204000	0	10
RECEPTOR 3062 GRID	551200	4204000	0	10
RECEPTOR 3063 GRID	551400	4204000	0	10
RECEPTOR 3064 GRID	551600	4204000	0	10
RECEPTOR 3065 GRID	551800	4204000	0	10
RECEPTOR 3066 GRID	552000	4204000	0	10
RECEPTOR 3067 GRID	552200	4204000	0	10
RECEPTOR 3068 GRID	552400	4204000	0	10
RECEPTOR 3069 GRID	552600	4204000	0	10
RECEPTOR 3070 GRID	552800	4204000	0	10
RECEPTOR 3071 GRID	553000	4204000	0	10
RECEPTOR 3072 GRID	553200	4204000	0	10
RECEPTOR 3073 GRID	553400	4204000	0	10
RECEPTOR 3074 GRID	553600	4204000	0	10
RECEPTOR 3075 GRID	553800	4204000	0	10
RECEPTOR 3076 GRID	554000	4204000	0	10
RECEPTOR 3077 GRID	554200	4204000	0	10
RECEPTOR 3078 GRID	554400	4204000	0	10
RECEPTOR 3079 GRID	554600	4204000	0	10
RECEPTOR 3080 GRID	554800	4204000	0	10
RECEPTOR 3081 GRID	555000	4204000	0	10
RECEPTOR 3082 GRID	555200	4204000	0	10
RECEPTOR 3083 GRID	555400	4204000	0	10
RECEPTOR 3084 GRID	555600	4204000	1.3	10
RECEPTOR 3085 GRID	555800	4204000	1.9	10
RECEPTOR 3086 GRID	556000	4204000	3.4	10
RECEPTOR 3087 GRID	556200	4204000	3.5	10
RECEPTOR 3088 GRID	556400	4204000	5.5	10
RECEPTOR 3089 GRID	556600	4204000	5.7	10
RECEPTOR 3090 GRID	556800	4204000	9.4	10
RECEPTOR 3091 GRID	557000	4204000	16.1	10
RECEPTOR 3092 GRID	557200	4204000	25.1	10
RECEPTOR 3093 GRID	557400	4204000	44	10
RECEPTOR 3094 GRID	557600	4204000	63.5	10
RECEPTOR 3095 GRID	557800	4204000	75.6	10
RECEPTOR 3096 GRID	558000	4204000	75.1	10
RECEPTOR 3097 GRID	558200	4204000	79.1	10
RECEPTOR 3098 GRID	558400	4204000	62.4	10
RECEPTOR 3099 GRID	558600	4204000	57	10
RECEPTOR 3100 GRID	558800	4204000	60.9	10
RECEPTOR 3101 GRID	559000	4204000	57.6	10

RECEPTOR 3102 GRID	559200	4204000	57.4	10
RECEPTOR 3103 GRID	559400	4204000	57.6	10
RECEPTOR 3104 GRID	559600	4204000	52.5	10
RECEPTOR 3105 GRID	559800	4204000	58.7	10
RECEPTOR 3106 GRID	560000	4204000	81.2	10
RECEPTOR 3107 GRID	560200	4204000	61.9	10
RECEPTOR 3108 GRID	560400	4204000	71.6	10
RECEPTOR 3109 GRID	560600	4204000	85	10
RECEPTOR 3110 GRID	560800	4204000	73.1	10
RECEPTOR 3111 GRID	561000	4204000	101.2	10
RECEPTOR 3112 GRID	549000	4204200	0	10
RECEPTOR 3113 GRID	549200	4204200	0	10
RECEPTOR 3114 GRID	549400	4204200	0	10
RECEPTOR 3115 GRID	549600	4204200	0	10
RECEPTOR 3116 GRID	549800	4204200	0	10
RECEPTOR 3117 GRID	550000	4204200	0	10
RECEPTOR 3118 GRID	550200	4204200	0	10
RECEPTOR 3119 GRID	550400	4204200	0	10
RECEPTOR 3120 GRID	550600	4204200	0	10
RECEPTOR 3121 GRID	550800	4204200	0	10
RECEPTOR 3122 GRID	551000	4204200	0	10
RECEPTOR 3123 GRID	551200	4204200	0	10
RECEPTOR 3124 GRID	551400	4204200	0	10
RECEPTOR 3125 GRID	551600	4204200	0	10
RECEPTOR 3126 GRID	551800	4204200	0	10
RECEPTOR 3127 GRID	552000	4204200	0	10
RECEPTOR 3128 GRID	552200	4204200	0	10
RECEPTOR 3129 GRID	552400	4204200	0	10
RECEPTOR 3130 GRID	552600	4204200	0	10
RECEPTOR 3131 GRID	552800	4204200	0	10
RECEPTOR 3132 GRID	553000	4204200	0	10
RECEPTOR 3133 GRID	553200	4204200	0	10
RECEPTOR 3134 GRID	553400	4204200	0	10
RECEPTOR 3135 GRID	553600	4204200	0	10
RECEPTOR 3136 GRID	553800	4204200	0	10
RECEPTOR 3137 GRID	554000	4204200	0	10
RECEPTOR 3138 GRID	554200	4204200	0	10
RECEPTOR 3139 GRID	554400	4204200	0	10
RECEPTOR 3140 GRID	554600	4204200	0	10
RECEPTOR 3141 GRID	554800	4204200	0	10
RECEPTOR 3142 GRID	555000	4204200	0	10
RECEPTOR 3143 GRID	555200	4204200	0	10
RECEPTOR 3144 GRID	555400	4204200	0	10
RECEPTOR 3145 GRID	555600	4204200	0	10
RECEPTOR 3146 GRID	555800	4204200	1.1	10

RECEPTOR 3147 GRID	556000	4204200	2.5	10
RECEPTOR 3148 GRID	556200	4204200	2.9	10
RECEPTOR 3149 GRID	556400	4204200	3.8	10
RECEPTOR 3150 GRID	556600	4204200	6	10
RECEPTOR 3151 GRID	556800	4204200	9.4	10
RECEPTOR 3152 GRID	557000	4204200	14.2	10
RECEPTOR 3153 GRID	557200	4204200	31.8	10
RECEPTOR 3154 GRID	557400	4204200	40.5	10
RECEPTOR 3155 GRID	557600	4204200	55.8	10
RECEPTOR 3156 GRID	557800	4204200	66	10
RECEPTOR 3157 GRID	558000	4204200	70.3	10
RECEPTOR 3158 GRID	558200	4204200	70.7	10
RECEPTOR 3159 GRID	558400	4204200	57.6	10
RECEPTOR 3160 GRID	558600	4204200	47.9	10
RECEPTOR 3161 GRID	558800	4204200	44.2	10
RECEPTOR 3162 GRID	559000	4204200	51.9	10
RECEPTOR 3163 GRID	559200	4204200	33.9	10
RECEPTOR 3164 GRID	559400	4204200	55.8	10
RECEPTOR 3165 GRID	559600	4204200	59	10
RECEPTOR 3166 GRID	559800	4204200	65.3	10
RECEPTOR 3167 GRID	560000	4204200	75.3	10
RECEPTOR 3168 GRID	560200	4204200	67.6	10
RECEPTOR 3169 GRID	560400	4204200	69.3	10
RECEPTOR 3170 GRID	560600	4204200	96.2	10
RECEPTOR 3171 GRID	560800	4204200	83.8	10
RECEPTOR 3172 GRID	561000	4204200	90.1	10
RECEPTOR 3173 GRID	549000	4204400	0	10
RECEPTOR 3174 GRID	549200	4204400	0	10
RECEPTOR 3175 GRID	549400	4204400	0	10
RECEPTOR 3176 GRID	549600	4204400	0	10
RECEPTOR 3177 GRID	549800	4204400	0	10
RECEPTOR 3178 GRID	550000	4204400	0	10
RECEPTOR 3179 GRID	550200	4204400	0	10
RECEPTOR 3180 GRID	550400	4204400	0	10
RECEPTOR 3181 GRID	550600	4204400	0	10
RECEPTOR 3182 GRID	550800	4204400	0	10
RECEPTOR 3183 GRID	551000	4204400	0	10
RECEPTOR 3184 GRID	551200	4204400	0	10
RECEPTOR 3185 GRID	551400	4204400	0	10
RECEPTOR 3186 GRID	551600	4204400	0	10
RECEPTOR 3187 GRID	551800	4204400	0	10
RECEPTOR 3188 GRID	552000	4204400	0	10
RECEPTOR 3189 GRID	552200	4204400	0	10
RECEPTOR 3190 GRID	552400	4204400	0	10
RECEPTOR 3191 GRID	552600	4204400	0	10

RECEPTOR 3192	GRID	552800	4204400	0	10
RECEPTOR 3193	GRID	553000	4204400	0	10
RECEPTOR 3194	GRID	553200	4204400	0	10
RECEPTOR 3195	GRID	553400	4204400	0	10
RECEPTOR 3196	GRID	553600	4204400	0	10
RECEPTOR 3197	GRID	553800	4204400	0	10
RECEPTOR 3198	GRID	554000	4204400	0	10
RECEPTOR 3199	GRID	554200	4204400	0	10
RECEPTOR 3200	GRID	554400	4204400	0	10
RECEPTOR 3201	GRID	554600	4204400	0	10
RECEPTOR 3202	GRID	554800	4204400	0	10
RECEPTOR 3203	GRID	555000	4204400	0	10
RECEPTOR 3204	GRID	555200	4204400	0	10
RECEPTOR 3205	GRID	555400	4204400	0	10
RECEPTOR 3206	GRID	555600	4204400	0	10
RECEPTOR 3207	GRID	555800	4204400	2.8	10
RECEPTOR 3208	GRID	556000	4204400	3.9	10
RECEPTOR 3209	GRID	556200	4204400	2.7	10
RECEPTOR 3210	GRID	556400	4204400	2.8	10
RECEPTOR 3211	GRID	556600	4204400	4.5	10
RECEPTOR 3212	GRID	556800	4204400	9.3	10
RECEPTOR 3213	GRID	557000	4204400	22.9	10
RECEPTOR 3214	GRID	557200	4204400	27.3	10
RECEPTOR 3215	GRID	557400	4204400	32.7	10
RECEPTOR 3216	GRID	557600	4204400	48.2	10
RECEPTOR 3217	GRID	557800	4204400	54.1	10
RECEPTOR 3218	GRID	558000	4204400	52.6	10
RECEPTOR 3219	GRID	558200	4204400	56.5	10
RECEPTOR 3220	GRID	558400	4204400	60.9	10
RECEPTOR 3221	GRID	558600	4204400	50.9	10
RECEPTOR 3222	GRID	558800	4204400	41.8	10
RECEPTOR 3223	GRID	559000	4204400	27	10
RECEPTOR 3224	GRID	559200	4204400	43.1	10
RECEPTOR 3225	GRID	559400	4204400	59.4	10
RECEPTOR 3226	GRID	559600	4204400	63.3	10
RECEPTOR 3227	GRID	559800	4204400	68.2	10
RECEPTOR 3228	GRID	560000	4204400	71.9	10
RECEPTOR 3229	GRID	560200	4204400	78.7	10
RECEPTOR 3230	GRID	560400	4204400	77.3	10
RECEPTOR 3231	GRID	560600	4204400	84.3	10
RECEPTOR 3232	GRID	560800	4204400	82.3	10
RECEPTOR 3233	GRID	561000	4204400	78.1	10
RECEPTOR 3234	GRID	549000	4204600	0	10
RECEPTOR 3235	GRID	549200	4204600	0	10
RECEPTOR 3236	GRID	549400	4204600	0	10

RECEPTOR 3237 GRID	549600	4204600	0	10
RECEPTOR 3238 GRID	549800	4204600	0	10
RECEPTOR 3239 GRID	550000	4204600	0	10
RECEPTOR 3240 GRID	550200	4204600	0	10
RECEPTOR 3241 GRID	550400	4204600	0	10
RECEPTOR 3242 GRID	550600	4204600	0	10
RECEPTOR 3243 GRID	550800	4204600	0	10
RECEPTOR 3244 GRID	551000	4204600	0	10
RECEPTOR 3245 GRID	551200	4204600	0	10
RECEPTOR 3246 GRID	551400	4204600	0	10
RECEPTOR 3247 GRID	551600	4204600	0	10
RECEPTOR 3248 GRID	551800	4204600	0	10
RECEPTOR 3249 GRID	552000	4204600	0	10
RECEPTOR 3250 GRID	552200	4204600	0	10
RECEPTOR 3251 GRID	552400	4204600	0	10
RECEPTOR 3252 GRID	552600	4204600	0	10
RECEPTOR 3253 GRID	552800	4204600	0	10
RECEPTOR 3254 GRID	553000	4204600	0	10
RECEPTOR 3255 GRID	553200	4204600	0	10
RECEPTOR 3256 GRID	553400	4204600	0	10
RECEPTOR 3257 GRID	553600	4204600	0	10
RECEPTOR 3258 GRID	553800	4204600	0	10
RECEPTOR 3259 GRID	554000	4204600	0	10
RECEPTOR 3260 GRID	554200	4204600	0	10
RECEPTOR 3261 GRID	554400	4204600	0	10
RECEPTOR 3262 GRID	554600	4204600	0	10
RECEPTOR 3263 GRID	554800	4204600	0	10
RECEPTOR 3264 GRID	555000	4204600	0	10
RECEPTOR 3265 GRID	555200	4204600	0	10
RECEPTOR 3266 GRID	555400	4204600	0	10
RECEPTOR 3267 GRID	555600	4204600	0	10
RECEPTOR 3268 GRID	555800	4204600	0	10
RECEPTOR 3269 GRID	556000	4204600	1.2	10
RECEPTOR 3270 GRID	556200	4204600	2	10
RECEPTOR 3271 GRID	556400	4204600	2	10
RECEPTOR 3272 GRID	556600	4204600	4.4	10
RECEPTOR 3273 GRID	556800	4204600	10.8	10
RECEPTOR 3274 GRID	557000	4204600	30.7	10
RECEPTOR 3275 GRID	557200	4204600	40.6	10
RECEPTOR 3276 GRID	557400	4204600	34.9	10
RECEPTOR 3277 GRID	557600	4204600	34	10
RECEPTOR 3278 GRID	557800	4204600	51.7	10
RECEPTOR 3279 GRID	558000	4204600	49.9	10
RECEPTOR 3280 GRID	558200	4204600	47.4	10
RECEPTOR 3281 GRID	558400	4204600	52.5	10

RECEPTOR 3282 GRID	558600	4204600	49.6	10
RECEPTOR 3283 GRID	558800	4204600	41.3	10
RECEPTOR 3284 GRID	559000	4204600	27.9	10
RECEPTOR 3285 GRID	559200	4204600	33.9	10
RECEPTOR 3286 GRID	559400	4204600	63.1	10
RECEPTOR 3287 GRID	559600	4204600	71.4	10
RECEPTOR 3288 GRID	559800	4204600	72.3	10
RECEPTOR 3289 GRID	560000	4204600	75.6	10
RECEPTOR 3290 GRID	560200	4204600	76	10
RECEPTOR 3291 GRID	560400	4204600	82.1	10
RECEPTOR 3292 GRID	560600	4204600	72.7	10
RECEPTOR 3293 GRID	560800	4204600	79.4	10
RECEPTOR 3294 GRID	561000	4204600	88.2	10
RECEPTOR 3295 GRID	549000	4204800	0	10
RECEPTOR 3296 GRID	549200	4204800	0	10
RECEPTOR 3297 GRID	549400	4204800	0	10
RECEPTOR 3298 GRID	549600	4204800	0	10
RECEPTOR 3299 GRID	549800	4204800	0	10
RECEPTOR 3300 GRID	550000	4204800	0	10
RECEPTOR 3301 GRID	550200	4204800	0	10
RECEPTOR 3302 GRID	550400	4204800	0	10
RECEPTOR 3303 GRID	550600	4204800	0	10
RECEPTOR 3304 GRID	550800	4204800	0	10
RECEPTOR 3305 GRID	551000	4204800	0	10
RECEPTOR 3306 GRID	551200	4204800	0	10
RECEPTOR 3307 GRID	551400	4204800	0	10
RECEPTOR 3308 GRID	551600	4204800	0	10
RECEPTOR 3309 GRID	551800	4204800	0	10
RECEPTOR 3310 GRID	552000	4204800	0	10
RECEPTOR 3311 GRID	552200	4204800	0	10
RECEPTOR 3312 GRID	552400	4204800	0	10
RECEPTOR 3313 GRID	552600	4204800	0	10
RECEPTOR 3314 GRID	552800	4204800	0	10
RECEPTOR 3315 GRID	553000	4204800	0	10
RECEPTOR 3316 GRID	553200	4204800	0	10
RECEPTOR 3317 GRID	553400	4204800	0	10
RECEPTOR 3318 GRID	553600	4204800	0	10
RECEPTOR 3319 GRID	553800	4204800	0	10
RECEPTOR 3320 GRID	554000	4204800	0	10
RECEPTOR 3321 GRID	554200	4204800	0	10
RECEPTOR 3322 GRID	554400	4204800	0	10
RECEPTOR 3323 GRID	554600	4204800	0	10
RECEPTOR 3324 GRID	554800	4204800	0	10
RECEPTOR 3325 GRID	555000	4204800	0	10
RECEPTOR 3326 GRID	555200	4204800	0	10

RECEPTOR 3327 GRID	555400	4204800	0	10
RECEPTOR 3328 GRID	555600	4204800	0	10
RECEPTOR 3329 GRID	555800	4204800	0	10
RECEPTOR 3330 GRID	556000	4204800	1.3	10
RECEPTOR 3331 GRID	556200	4204800	1.3	10
RECEPTOR 3332 GRID	556400	4204800	2.1	10
RECEPTOR 3333 GRID	556600	4204800	8.1	10
RECEPTOR 3334 GRID	556800	4204800	15.9	10
RECEPTOR 3335 GRID	557000	4204800	31.6	10
RECEPTOR 3336 GRID	557200	4204800	39.6	10
RECEPTOR 3337 GRID	557400	4204800	43.8	10
RECEPTOR 3338 GRID	557600	4204800	47.2	10
RECEPTOR 3339 GRID	557800	4204800	44.6	10
RECEPTOR 3340 GRID	558000	4204800	45.8	10
RECEPTOR 3341 GRID	558200	4204800	40.8	10
RECEPTOR 3342 GRID	558400	4204800	44.7	10
RECEPTOR 3343 GRID	558600	4204800	44.9	10
RECEPTOR 3344 GRID	558800	4204800	38.7	10
RECEPTOR 3345 GRID	559000	4204800	28.6	10
RECEPTOR 3346 GRID	559200	4204800	31.9	10
RECEPTOR 3347 GRID	559400	4204800	51.1	10
RECEPTOR 3348 GRID	559600	4204800	47.6	10
RECEPTOR 3349 GRID	559800	4204800	60.7	10
RECEPTOR 3350 GRID	560000	4204800	64.4	10
RECEPTOR 3351 GRID	560200	4204800	63.4	10
RECEPTOR 3352 GRID	560400	4204800	73.1	10
RECEPTOR 3353 GRID	560600	4204800	68.3	10
RECEPTOR 3354 GRID	560800	4204800	81.7	10
RECEPTOR 3355 GRID	561000	4204800	82.7	10
RECEPTOR 3356 GRID	549000	4205000	0	10
RECEPTOR 3357 GRID	549200	4205000	0	10
RECEPTOR 3358 GRID	549400	4205000	0	10
RECEPTOR 3359 GRID	549600	4205000	0	10
RECEPTOR 3360 GRID	549800	4205000	0	10
RECEPTOR 3361 GRID	550000	4205000	0	10
RECEPTOR 3362 GRID	550200	4205000	0	10
RECEPTOR 3363 GRID	550400	4205000	0	10
RECEPTOR 3364 GRID	550600	4205000	0	10
RECEPTOR 3365 GRID	550800	4205000	0	10
RECEPTOR 3366 GRID	551000	4205000	0	10
RECEPTOR 3367 GRID	551200	4205000	0	10
RECEPTOR 3368 GRID	551400	4205000	0	10
RECEPTOR 3369 GRID	551600	4205000	0	10
RECEPTOR 3370 GRID	551800	4205000	0	10
RECEPTOR 3371 GRID	552000	4205000	0	10

RECEPTOR 3372 GRID	552200	4205000	0	10
RECEPTOR 3373 GRID	552400	4205000	0	10
RECEPTOR 3374 GRID	552600	4205000	0	10
RECEPTOR 3375 GRID	552800	4205000	0	10
RECEPTOR 3376 GRID	553000	4205000	0	10
RECEPTOR 3377 GRID	553200	4205000	0	10
RECEPTOR 3378 GRID	553400	4205000	0	10
RECEPTOR 3379 GRID	553600	4205000	0	10
RECEPTOR 3380 GRID	553800	4205000	0	10
RECEPTOR 3381 GRID	554000	4205000	0	10
RECEPTOR 3382 GRID	554200	4205000	0	10
RECEPTOR 3383 GRID	554400	4205000	0	10
RECEPTOR 3384 GRID	554600	4205000	0	10
RECEPTOR 3385 GRID	554800	4205000	0	10
RECEPTOR 3386 GRID	555000	4205000	0	10
RECEPTOR 3387 GRID	555200	4205000	0	10
RECEPTOR 3388 GRID	555400	4205000	0	10
RECEPTOR 3389 GRID	555600	4205000	0	10
RECEPTOR 3390 GRID	555800	4205000	0	10
RECEPTOR 3391 GRID	556000	4205000	0	10
RECEPTOR 3392 GRID	556200	4205000	1.3	10
RECEPTOR 3393 GRID	556400	4205000	2	10
RECEPTOR 3394 GRID	556600	4205000	10.3	10
RECEPTOR 3395 GRID	556800	4205000	22.3	10
RECEPTOR 3396 GRID	557000	4205000	31.1	10
RECEPTOR 3397 GRID	557200	4205000	32.9	10
RECEPTOR 3398 GRID	557400	4205000	34.8	10
RECEPTOR 3399 GRID	557600	4205000	37.6	10
RECEPTOR 3400 GRID	557800	4205000	44.4	10
RECEPTOR 3401 GRID	558000	4205000	37.7	10
RECEPTOR 3402 GRID	558200	4205000	37	10
RECEPTOR 3403 GRID	558400	4205000	42	10
RECEPTOR 3404 GRID	558600	4205000	40.6	10
RECEPTOR 3405 GRID	558800	4205000	35.6	10
RECEPTOR 3406 GRID	559000	4205000	20.6	10
RECEPTOR 3407 GRID	559200	4205000	30.3	10
RECEPTOR 3408 GRID	559400	4205000	25.9	10
RECEPTOR 3409 GRID	559600	4205000	42	10
RECEPTOR 3410 GRID	559800	4205000	50.1	10
RECEPTOR 3411 GRID	560000	4205000	61.4	10
RECEPTOR 3412 GRID	560200	4205000	41	10
RECEPTOR 3413 GRID	560400	4205000	52	10
RECEPTOR 3414 GRID	560600	4205000	64.9	10
RECEPTOR 3415 GRID	560800	4205000	72.6	10
RECEPTOR 3416 GRID	561000	4205000	64.6	10

RECEPTOR 3417 GRID	549000	4205200	0	10
RECEPTOR 3418 GRID	549200	4205200	0	10
RECEPTOR 3419 GRID	549400	4205200	0	10
RECEPTOR 3420 GRID	549600	4205200	0	10
RECEPTOR 3421 GRID	549800	4205200	0	10
RECEPTOR 3422 GRID	550000	4205200	0	10
RECEPTOR 3423 GRID	550200	4205200	0	10
RECEPTOR 3424 GRID	550400	4205200	0	10
RECEPTOR 3425 GRID	550600	4205200	0	10
RECEPTOR 3426 GRID	550800	4205200	0	10
RECEPTOR 3427 GRID	551000	4205200	0	10
RECEPTOR 3428 GRID	551200	4205200	0	10
RECEPTOR 3429 GRID	551400	4205200	0	10
RECEPTOR 3430 GRID	551600	4205200	0	10
RECEPTOR 3431 GRID	551800	4205200	0	10
RECEPTOR 3432 GRID	552000	4205200	0	10
RECEPTOR 3433 GRID	552200	4205200	0	10
RECEPTOR 3434 GRID	552400	4205200	0	10
RECEPTOR 3435 GRID	552600	4205200	0	10
RECEPTOR 3436 GRID	552800	4205200	0	10
RECEPTOR 3437 GRID	553000	4205200	0	10
RECEPTOR 3438 GRID	553200	4205200	0	10
RECEPTOR 3439 GRID	553400	4205200	0	10
RECEPTOR 3440 GRID	553600	4205200	0	10
RECEPTOR 3441 GRID	553800	4205200	0	10
RECEPTOR 3442 GRID	554000	4205200	0	10
RECEPTOR 3443 GRID	554200	4205200	0	10
RECEPTOR 3444 GRID	554400	4205200	0	10
RECEPTOR 3445 GRID	554600	4205200	0	10
RECEPTOR 3446 GRID	554800	4205200	0	10
RECEPTOR 3447 GRID	555000	4205200	0	10
RECEPTOR 3448 GRID	555200	4205200	0	10
RECEPTOR 3449 GRID	555400	4205200	0	10
RECEPTOR 3450 GRID	555600	4205200	0	10
RECEPTOR 3451 GRID	555800	4205200	0	10
RECEPTOR 3452 GRID	556000	4205200	1.4	10
RECEPTOR 3453 GRID	556200	4205200	1.3	10
RECEPTOR 3454 GRID	556400	4205200	6.6	10
RECEPTOR 3455 GRID	556600	4205200	13.4	10
RECEPTOR 3456 GRID	556800	4205200	22.7	10
RECEPTOR 3457 GRID	557000	4205200	28.2	10
RECEPTOR 3458 GRID	557200	4205200	28.7	10
RECEPTOR 3459 GRID	557400	4205200	26.9	10
RECEPTOR 3460 GRID	557600	4205200	26.2	10
RECEPTOR 3461 GRID	557800	4205200	33.4	10

RECEPTOR 3462 GRID	558000	4205200	25.5	10
RECEPTOR 3463 GRID	558200	4205200	27.9	10
RECEPTOR 3464 GRID	558400	4205200	32.9	10
RECEPTOR 3465 GRID	558600	4205200	35.3	10
RECEPTOR 3466 GRID	558800	4205200	36.7	10
RECEPTOR 3467 GRID	559000	4205200	34.5	10
RECEPTOR 3468 GRID	559200	4205200	15.4	10
RECEPTOR 3469 GRID	559400	4205200	18.3	10
RECEPTOR 3470 GRID	559600	4205200	39	10
RECEPTOR 3471 GRID	559800	4205200	52.1	10
RECEPTOR 3472 GRID	560000	4205200	32.4	10
RECEPTOR 3473 GRID	560200	4205200	51	10
RECEPTOR 3474 GRID	560400	4205200	65.8	10
RECEPTOR 3475 GRID	560600	4205200	55.5	10
RECEPTOR 3476 GRID	560800	4205200	64.7	10
RECEPTOR 3477 GRID	561000	4205200	55.1	10
RECEPTOR 3478 GRID	549000	4205400	0	10
RECEPTOR 3479 GRID	549200	4205400	0	10
RECEPTOR 3480 GRID	549400	4205400	0	10
RECEPTOR 3481 GRID	549600	4205400	0	10
RECEPTOR 3482 GRID	549800	4205400	0	10
RECEPTOR 3483 GRID	550000	4205400	0	10
RECEPTOR 3484 GRID	550200	4205400	0	10
RECEPTOR 3485 GRID	550400	4205400	0	10
RECEPTOR 3486 GRID	550600	4205400	0	10
RECEPTOR 3487 GRID	550800	4205400	0	10
RECEPTOR 3488 GRID	551000	4205400	0	10
RECEPTOR 3489 GRID	551200	4205400	0	10
RECEPTOR 3490 GRID	551400	4205400	0	10
RECEPTOR 3491 GRID	551600	4205400	0	10
RECEPTOR 3492 GRID	551800	4205400	0	10
RECEPTOR 3493 GRID	552000	4205400	0	10
RECEPTOR 3494 GRID	552200	4205400	0	10
RECEPTOR 3495 GRID	552400	4205400	0	10
RECEPTOR 3496 GRID	552600	4205400	0	10
RECEPTOR 3497 GRID	552800	4205400	0	10
RECEPTOR 3498 GRID	553000	4205400	0	10
RECEPTOR 3499 GRID	553200	4205400	0	10
RECEPTOR 3500 GRID	553400	4205400	0	10
RECEPTOR 3501 GRID	553600	4205400	0	10
RECEPTOR 3502 GRID	553800	4205400	0	10
RECEPTOR 3503 GRID	554000	4205400	0	10
RECEPTOR 3504 GRID	554200	4205400	0	10
RECEPTOR 3505 GRID	554400	4205400	0	10
RECEPTOR 3506 GRID	554600	4205400	0	10

RECEPTOR 3507 GRID	554800	4205400	0	10
RECEPTOR 3508 GRID	555000	4205400	0	10
RECEPTOR 3509 GRID	555200	4205400	0	10
RECEPTOR 3510 GRID	555400	4205400	0	10
RECEPTOR 3511 GRID	555600	4205400	0	10
RECEPTOR 3512 GRID	555800	4205400	0	10
RECEPTOR 3513 GRID	556000	4205400	1.6	10
RECEPTOR 3514 GRID	556200	4205400	6.5	10
RECEPTOR 3515 GRID	556400	4205400	19.4	10
RECEPTOR 3516 GRID	556600	4205400	21.3	10
RECEPTOR 3517 GRID	556800	4205400	23	10
RECEPTOR 3518 GRID	557000	4205400	21.7	10
RECEPTOR 3519 GRID	557200	4205400	26.4	10
RECEPTOR 3520 GRID	557400	4205400	24.7	10
RECEPTOR 3521 GRID	557600	4205400	17.1	10
RECEPTOR 3522 GRID	557800	4205400	18.3	10
RECEPTOR 3523 GRID	558000	4205400	9.3	10
RECEPTOR 3524 GRID	558200	4205400	24.5	10
RECEPTOR 3525 GRID	558400	4205400	29.2	10
RECEPTOR 3526 GRID	558600	4205400	28.9	10
RECEPTOR 3527 GRID	558800	4205400	26.9	10
RECEPTOR 3528 GRID	559000	4205400	34.8	10
RECEPTOR 3529 GRID	559200	4205400	20.2	10
RECEPTOR 3530 GRID	559400	4205400	11.9	10
RECEPTOR 3531 GRID	559600	4205400	38.2	10
RECEPTOR 3532 GRID	559800	4205400	39.1	10
RECEPTOR 3533 GRID	560000	4205400	26.3	10
RECEPTOR 3534 GRID	560200	4205400	38	10
RECEPTOR 3535 GRID	560400	4205400	49.4	10
RECEPTOR 3536 GRID	560600	4205400	50.9	10
RECEPTOR 3537 GRID	560800	4205400	41	10
RECEPTOR 3538 GRID	561000	4205400	58.9	10
RECEPTOR 3539 GRID	549000	4205600	0	10
RECEPTOR 3540 GRID	549200	4205600	0	10
RECEPTOR 3541 GRID	549400	4205600	0	10
RECEPTOR 3542 GRID	549600	4205600	0	10
RECEPTOR 3543 GRID	549800	4205600	0	10
RECEPTOR 3544 GRID	550000	4205600	0	10
RECEPTOR 3545 GRID	550200	4205600	0	10
RECEPTOR 3546 GRID	550400	4205600	0	10
RECEPTOR 3547 GRID	550600	4205600	0	10
RECEPTOR 3548 GRID	550800	4205600	0	10
RECEPTOR 3549 GRID	551000	4205600	0	10
RECEPTOR 3550 GRID	551200	4205600	0	10
RECEPTOR 3551 GRID	551400	4205600	0	10

RECEPTOR 3552 GRID	551600	4205600	0	10
RECEPTOR 3553 GRID	551800	4205600	0	10
RECEPTOR 3554 GRID	552000	4205600	0	10
RECEPTOR 3555 GRID	552200	4205600	0	10
RECEPTOR 3556 GRID	552400	4205600	0	10
RECEPTOR 3557 GRID	552600	4205600	0	10
RECEPTOR 3558 GRID	552800	4205600	0	10
RECEPTOR 3559 GRID	553000	4205600	0	10
RECEPTOR 3560 GRID	553200	4205600	0	10
RECEPTOR 3561 GRID	553400	4205600	0	10
RECEPTOR 3562 GRID	553600	4205600	0	10
RECEPTOR 3563 GRID	553800	4205600	0	10
RECEPTOR 3564 GRID	554000	4205600	0	10
RECEPTOR 3565 GRID	554200	4205600	0	10
RECEPTOR 3566 GRID	554400	4205600	0	10
RECEPTOR 3567 GRID	554600	4205600	0	10
RECEPTOR 3568 GRID	554800	4205600	0	10
RECEPTOR 3569 GRID	555000	4205600	0	10
RECEPTOR 3570 GRID	555200	4205600	0	10
RECEPTOR 3571 GRID	555400	4205600	0	10
RECEPTOR 3572 GRID	555600	4205600	0	10
RECEPTOR 3573 GRID	555800	4205600	1.6	10
RECEPTOR 3574 GRID	556000	4205600	2.6	10
RECEPTOR 3575 GRID	556200	4205600	20	10
RECEPTOR 3576 GRID	556400	4205600	19.6	10
RECEPTOR 3577 GRID	556600	4205600	20	10
RECEPTOR 3578 GRID	556800	4205600	19.9	10
RECEPTOR 3579 GRID	557000	4205600	19.4	10
RECEPTOR 3580 GRID	557200	4205600	18.4	10
RECEPTOR 3581 GRID	557400	4205600	14.7	10
RECEPTOR 3582 GRID	557600	4205600	14.7	10
RECEPTOR 3583 GRID	557800	4205600	14.7	10
RECEPTOR 3584 GRID	558000	4205600	13.8	10
RECEPTOR 3585 GRID	558200	4205600	19.9	10
RECEPTOR 3586 GRID	558400	4205600	15.8	10
RECEPTOR 3587 GRID	558600	4205600	17.4	10
RECEPTOR 3588 GRID	558800	4205600	20.3	10
RECEPTOR 3589 GRID	559000	4205600	29.5	10
RECEPTOR 3590 GRID	559200	4205600	34.6	10
RECEPTOR 3591 GRID	559400	4205600	19.7	10
RECEPTOR 3592 GRID	559600	4205600	11.6	10
RECEPTOR 3593 GRID	559800	4205600	31.7	10
RECEPTOR 3594 GRID	560000	4205600	20.7	10
RECEPTOR 3595 GRID	560200	4205600	30.7	10
RECEPTOR 3596 GRID	560400	4205600	39.2	10

RECEPTOR 3597 GRID	560600	4205600	37.2	10
RECEPTOR 3598 GRID	560800	4205600	43.9	10
RECEPTOR 3599 GRID	561000	4205600	61.5	10
RECEPTOR 3600 GRID	549000	4205800	0	10
RECEPTOR 3601 GRID	549200	4205800	0	10
RECEPTOR 3602 GRID	549400	4205800	-0.3	10
RECEPTOR 3603 GRID	549600	4205800	0	10
RECEPTOR 3604 GRID	549800	4205800	0	10
RECEPTOR 3605 GRID	550000	4205800	0	10
RECEPTOR 3606 GRID	550200	4205800	0	10
RECEPTOR 3607 GRID	550400	4205800	0	10
RECEPTOR 3608 GRID	550600	4205800	0	10
RECEPTOR 3609 GRID	550800	4205800	0	10
RECEPTOR 3610 GRID	551000	4205800	-0.3	10
RECEPTOR 3611 GRID	551200	4205800	0	10
RECEPTOR 3612 GRID	551400	4205800	0	10
RECEPTOR 3613 GRID	551600	4205800	0	10
RECEPTOR 3614 GRID	551800	4205800	0	10
RECEPTOR 3615 GRID	552000	4205800	0	10
RECEPTOR 3616 GRID	552200	4205800	0	10
RECEPTOR 3617 GRID	552400	4205800	0	10
RECEPTOR 3618 GRID	552600	4205800	-0.1	10
RECEPTOR 3619 GRID	552800	4205800	0	10
RECEPTOR 3620 GRID	553000	4205800	0	10
RECEPTOR 3621 GRID	553200	4205800	0	10
RECEPTOR 3622 GRID	553400	4205800	0	10
RECEPTOR 3623 GRID	553600	4205800	0	10
RECEPTOR 3624 GRID	553800	4205800	0	10
RECEPTOR 3625 GRID	554000	4205800	0	10
RECEPTOR 3626 GRID	554200	4205800	0	10
RECEPTOR 3627 GRID	554400	4205800	0	10
RECEPTOR 3628 GRID	554600	4205800	0	10
RECEPTOR 3629 GRID	554800	4205800	0	10
RECEPTOR 3630 GRID	555000	4205800	0	10
RECEPTOR 3631 GRID	555200	4205800	0	10
RECEPTOR 3632 GRID	555400	4205800	0	10
RECEPTOR 3633 GRID	555600	4205800	0	10
RECEPTOR 3634 GRID	555800	4205800	9.6	10
RECEPTOR 3635 GRID	556000	4205800	29.6	10
RECEPTOR 3636 GRID	556200	4205800	25.2	10
RECEPTOR 3637 GRID	556400	4205800	18.8	10
RECEPTOR 3638 GRID	556600	4205800	9.1	10
RECEPTOR 3639 GRID	556800	4205800	16.5	10
RECEPTOR 3640 GRID	557000	4205800	18.5	10
RECEPTOR 3641 GRID	557200	4205800	17.2	10

RECEPTOR 3642 GRID	557400	4205800	14.1	10
RECEPTOR 3643 GRID	557600	4205800	13.4	10
RECEPTOR 3644 GRID	557800	4205800	14.6	10
RECEPTOR 3645 GRID	558000	4205800	11.5	10
RECEPTOR 3646 GRID	558200	4205800	11.1	10
RECEPTOR 3647 GRID	558400	4205800	8.3	10
RECEPTOR 3648 GRID	558600	4205800	14.1	10
RECEPTOR 3649 GRID	558800	4205800	12.2	10
RECEPTOR 3650 GRID	559000	4205800	22	10
RECEPTOR 3651 GRID	559200	4205800	25.2	10
RECEPTOR 3652 GRID	559400	4205800	8.7	10
RECEPTOR 3653 GRID	559600	4205800	12.2	10
RECEPTOR 3654 GRID	559800	4205800	22.2	10
RECEPTOR 3655 GRID	560000	4205800	14.5	10
RECEPTOR 3656 GRID	560200	4205800	28.6	10
RECEPTOR 3657 GRID	560400	4205800	36.1	10
RECEPTOR 3658 GRID	560600	4205800	32.5	10
RECEPTOR 3659 GRID	560800	4205800	43.3	10
RECEPTOR 3660 GRID	561000	4205800	72.8	10
RECEPTOR 3661 GRID	549000	4206000	0	10
RECEPTOR 3662 GRID	549200	4206000	0	10
RECEPTOR 3663 GRID	549400	4206000	0.9	10
RECEPTOR 3664 GRID	549600	4206000	0	10
RECEPTOR 3665 GRID	549800	4206000	0	10
RECEPTOR 3666 GRID	550000	4206000	0	10
RECEPTOR 3667 GRID	550200	4206000	0	10
RECEPTOR 3668 GRID	550400	4206000	0	10
RECEPTOR 3669 GRID	550600	4206000	0	10
RECEPTOR 3670 GRID	550800	4206000	0	10
RECEPTOR 3671 GRID	551000	4206000	1.1	10
RECEPTOR 3672 GRID	551200	4206000	0	10
RECEPTOR 3673 GRID	551400	4206000	0	10
RECEPTOR 3674 GRID	551600	4206000	0	10
RECEPTOR 3675 GRID	551800	4206000	0	10
RECEPTOR 3676 GRID	552000	4206000	0	10
RECEPTOR 3677 GRID	552200	4206000	0	10
RECEPTOR 3678 GRID	552400	4206000	0	10
RECEPTOR 3679 GRID	552600	4206000	0.6	10
RECEPTOR 3680 GRID	552800	4206000	0	10
RECEPTOR 3681 GRID	553000	4206000	0	10
RECEPTOR 3682 GRID	553200	4206000	0	10
RECEPTOR 3683 GRID	553400	4206000	0	10
RECEPTOR 3684 GRID	553600	4206000	0	10
RECEPTOR 3685 GRID	553800	4206000	0	10
RECEPTOR 3686 GRID	554000	4206000	0	10

RECEPTOR 3687 GRID	554200	4206000	0	10
RECEPTOR 3688 GRID	554400	4206000	0	10
RECEPTOR 3689 GRID	554600	4206000	0	10
RECEPTOR 3690 GRID	554800	4206000	0	10
RECEPTOR 3691 GRID	555000	4206000	0	10
RECEPTOR 3692 GRID	555200	4206000	0	10
RECEPTOR 3693 GRID	555400	4206000	0	10
RECEPTOR 3694 GRID	555600	4206000	0.5	10
RECEPTOR 3695 GRID	555800	4206000	18.3	10
RECEPTOR 3696 GRID	556000	4206000	31.6	10
RECEPTOR 3697 GRID	556200	4206000	26	10
RECEPTOR 3698 GRID	556400	4206000	19.2	10
RECEPTOR 3699 GRID	556600	4206000	13.3	10
RECEPTOR 3700 GRID	556800	4206000	15.4	10
RECEPTOR 3701 GRID	557000	4206000	10.1	10
RECEPTOR 3702 GRID	557200	4206000	10.3	10
RECEPTOR 3703 GRID	557400	4206000	15.6	10
RECEPTOR 3704 GRID	557600	4206000	8.7	10
RECEPTOR 3705 GRID	557800	4206000	4	10
RECEPTOR 3706 GRID	558000	4206000	6.9	10
RECEPTOR 3707 GRID	558200	4206000	8.2	10
RECEPTOR 3708 GRID	558400	4206000	4.7	10
RECEPTOR 3709 GRID	558600	4206000	3.9	10
RECEPTOR 3710 GRID	558800	4206000	5.4	10
RECEPTOR 3711 GRID	559000	4206000	11.6	10
RECEPTOR 3712 GRID	559200	4206000	8.8	10
RECEPTOR 3713 GRID	559400	4206000	6.4	10
RECEPTOR 3714 GRID	559600	4206000	7.7	10
RECEPTOR 3715 GRID	559800	4206000	8.6	10
RECEPTOR 3716 GRID	560000	4206000	12.5	10
RECEPTOR 3717 GRID	560200	4206000	17.2	10
RECEPTOR 3718 GRID	560400	4206000	31.4	10
RECEPTOR 3719 GRID	560600	4206000	31.5	10
RECEPTOR 3720 GRID	560800	4206000	50.9	10
RECEPTOR 3721 GRID	561000	4206000	79.8	10
RECEPTOR 3722 GRID	553800	4197250	1.2	10
RECEPTOR 3723 GRID	553850	4197250	7.76	10
RECEPTOR 3724 GRID	553900	4197250	7.52	10
RECEPTOR 3725 GRID	553950	4197250	14.48	10
RECEPTOR 3726 GRID	554000	4197250	13.22	10
RECEPTOR 3727 GRID	554050	4197250	38.54	10
RECEPTOR 3728 GRID	554100	4197250	67.1	10
RECEPTOR 3729 GRID	554150	4197250	74.36	10
RECEPTOR 3730 GRID	554200	4197250	80.55	10
RECEPTOR 3731 GRID	554250	4197250	74.15	10

RECEPTOR 3732 GRID	554300	4197250	77.64	10
RECEPTOR 3733 GRID	554350	4197250	92.05	10
RECEPTOR 3734 GRID	554400	4197250	80.35	10
RECEPTOR 3735 GRID	554450	4197250	54.76	10
RECEPTOR 3736 GRID	554500	4197250	13.66	10
RECEPTOR 3737 GRID	554550	4197250	9.67	10
RECEPTOR 3738 GRID	554600	4197250	7.91	10
RECEPTOR 3739 GRID	553800	4197300	1.18	10
RECEPTOR 3740 GRID	553850	4197300	18.96	10
RECEPTOR 3741 GRID	553900	4197300	30.97	10
RECEPTOR 3742 GRID	553950	4197300	25.99	10
RECEPTOR 3743 GRID	554000	4197300	35.32	10
RECEPTOR 3744 GRID	554050	4197300	52.71	10
RECEPTOR 3745 GRID	554100	4197300	65.84	10
RECEPTOR 3746 GRID	554150	4197300	48.85	10
RECEPTOR 3747 GRID	554200	4197300	54.07	10
RECEPTOR 3748 GRID	554250	4197300	54.35	10
RECEPTOR 3749 GRID	554300	4197300	64.01	10
RECEPTOR 3750 GRID	554350	4197300	66.48	10
RECEPTOR 3751 GRID	554400	4197300	59.88	10
RECEPTOR 3752 GRID	554450	4197300	66.68	10
RECEPTOR 3753 GRID	554500	4197300	16.29	10
RECEPTOR 3754 GRID	554550	4197300	9.62	10
RECEPTOR 3755 GRID	554600	4197300	8.08	10
RECEPTOR 3756 GRID	553750	4197350	1.15	10
RECEPTOR 3757 GRID	553800	4197350	3.36	10
RECEPTOR 3758 GRID	553850	4197350	19.73	10
RECEPTOR 3759 GRID	553900	4197350	38.01	10
RECEPTOR 3760 GRID	553950	4197350	44.83	10
RECEPTOR 3761 GRID	554000	4197350	55.77	10
RECEPTOR 3762 GRID	554050	4197350	61.64	10
RECEPTOR 3763 GRID	554100	4197350	56.79	10
RECEPTOR 3764 GRID	554150	4197350	32.21	10
RECEPTOR 3765 GRID	554200	4197350	32.62	10
RECEPTOR 3766 GRID	554250	4197350	38.04	10
RECEPTOR 3767 GRID	554300	4197350	53.98	10
RECEPTOR 3768 GRID	554350	4197350	51.86	10
RECEPTOR 3769 GRID	554400	4197350	41.81	10
RECEPTOR 3770 GRID	554450	4197350	52.71	10
RECEPTOR 3771 GRID	554500	4197350	29.66	10
RECEPTOR 3772 GRID	554550	4197350	6.92	10
RECEPTOR 3773 GRID	554600	4197350	6.24	10
RECEPTOR 3774 GRID	553550	4197400	2.63	10
RECEPTOR 3775 GRID	553600	4197400	1.12	10
RECEPTOR 3776 GRID	553650	4197400	1.14	10

RECEPTOR 3777 GRID	553700	4197400	1.12	10
RECEPTOR 3778 GRID	553750	4197400	5.23	10
RECEPTOR 3779 GRID	553800	4197400	8.18	10
RECEPTOR 3780 GRID	553850	4197400	14.42	10
RECEPTOR 3781 GRID	553900	4197400	26.54	10
RECEPTOR 3782 GRID	553950	4197400	50.38	10
RECEPTOR 3783 GRID	554000	4197400	50.55	10
RECEPTOR 3784 GRID	554050	4197400	36.78	10
RECEPTOR 3785 GRID	554100	4197400	45.44	10
RECEPTOR 3786 GRID	554150	4197400	26.69	10
RECEPTOR 3787 GRID	554200	4197400	21.2	10
RECEPTOR 3788 GRID	554250	4197400	29.79	10
RECEPTOR 3789 GRID	554300	4197400	42.17	10
RECEPTOR 3790 GRID	554350	4197400	33.88	10
RECEPTOR 3791 GRID	554400	4197400	25.65	10
RECEPTOR 3792 GRID	554450	4197400	35.95	10
RECEPTOR 3793 GRID	554500	4197400	27.78	10
RECEPTOR 3794 GRID	554550	4197400	5.68	10
RECEPTOR 3795 GRID	554600	4197400	4.61	10
RECEPTOR 3796 GRID	553550	4197450	10.16	10
RECEPTOR 3797 GRID	553600	4197450	17.45	10
RECEPTOR 3798 GRID	553650	4197450	23	10
RECEPTOR 3799 GRID	553700	4197450	20.31	10
RECEPTOR 3800 GRID	553750	4197450	16.78	10
RECEPTOR 3801 GRID	553800	4197450	16.18	10
RECEPTOR 3802 GRID	553850	4197450	18.92	10
RECEPTOR 3803 GRID	553900	4197450	35.57	10
RECEPTOR 3804 GRID	553950	4197450	49.75	10
RECEPTOR 3805 GRID	554000	4197450	33.37	10
RECEPTOR 3806 GRID	554050	4197450	20.61	10
RECEPTOR 3807 GRID	554100	4197450	23.28	10
RECEPTOR 3808 GRID	554150	4197450	14.82	10
RECEPTOR 3809 GRID	554200	4197450	13.79	10
RECEPTOR 3810 GRID	554250	4197450	13.4	10
RECEPTOR 3811 GRID	554300	4197450	20.09	10
RECEPTOR 3812 GRID	554350	4197450	14.62	10
RECEPTOR 3813 GRID	554400	4197450	12.46	10
RECEPTOR 3814 GRID	554450	4197450	12.57	10
RECEPTOR 3815 GRID	554500	4197450	16.3	10
RECEPTOR 3816 GRID	554550	4197450	4.09	10
RECEPTOR 3817 GRID	554600	4197450	4.64	10
RECEPTOR 3818 GRID	556550	4197450	4.07	10
RECEPTOR 3819 GRID	556600	4197450	4.13	10
RECEPTOR 3820 GRID	553550	4197500	1.12	10
RECEPTOR 3821 GRID	553600	4197500	18.23	10

RECEPTOR 3822 GRID	553650	4197500	27.58	10
RECEPTOR 3823 GRID	553700	4197500	31.01	10
RECEPTOR 3824 GRID	553750	4197500	34.59	10
RECEPTOR 3825 GRID	553800	4197500	32.37	10
RECEPTOR 3826 GRID	553850	4197500	35.37	10
RECEPTOR 3827 GRID	553900	4197500	43.32	10
RECEPTOR 3828 GRID	553950	4197500	44.1	10
RECEPTOR 3829 GRID	554000	4197500	27.35	10
RECEPTOR 3830 GRID	554050	4197500	4.1	10
RECEPTOR 3831 GRID	554100	4197500	6.41	10
RECEPTOR 3832 GRID	554150	4197500	6.34	10
RECEPTOR 3833 GRID	554200	4197500	7.24	10
RECEPTOR 3834 GRID	554250	4197500	5.35	10
RECEPTOR 3835 GRID	554300	4197500	2.92	10
RECEPTOR 3836 GRID	554350	4197500	3.7	10
RECEPTOR 3837 GRID	554400	4197500	4.48	10
RECEPTOR 3838 GRID	554450	4197500	3.43	10
RECEPTOR 3839 GRID	554500	4197500	3.3	10
RECEPTOR 3840 GRID	554550	4197500	3.5	10
RECEPTOR 3841 GRID	554600	4197500	3.77	10
RECEPTOR 3842 GRID	556400	4197500	3.15	10
RECEPTOR 3843 GRID	556450	4197500	3.13	10
RECEPTOR 3844 GRID	556500	4197500	3.43	10
RECEPTOR 3845 GRID	556550	4197500	3.68	10
RECEPTOR 3846 GRID	556600	4197500	3.64	10
RECEPTOR 3847 GRID	553550	4197550	1.11	10
RECEPTOR 3848 GRID	553600	4197550	17.66	10
RECEPTOR 3849 GRID	553650	4197550	23.7	10
RECEPTOR 3850 GRID	553700	4197550	34.6	10
RECEPTOR 3851 GRID	553750	4197550	40.31	10
RECEPTOR 3852 GRID	553800	4197550	45.01	10
RECEPTOR 3853 GRID	553850	4197550	49.18	10
RECEPTOR 3854 GRID	553900	4197550	51.62	10
RECEPTOR 3855 GRID	553950	4197550	38.55	10
RECEPTOR 3856 GRID	554000	4197550	21.68	10
RECEPTOR 3857 GRID	554050	4197550	12.71	10
RECEPTOR 3858 GRID	554100	4197550	6.17	10
RECEPTOR 3859 GRID	554150	4197550	4.48	10
RECEPTOR 3860 GRID	554200	4197550	3.84	10
RECEPTOR 3861 GRID	554250	4197550	3.33	10
RECEPTOR 3862 GRID	554300	4197550	3.06	10
RECEPTOR 3863 GRID	554350	4197550	3.02	10
RECEPTOR 3864 GRID	554400	4197550	2.8	10
RECEPTOR 3865 GRID	554450	4197550	3.24	10
RECEPTOR 3866 GRID	554500	4197550	3.57	10

RECEPTOR 3867 GRID	554550	4197550	3.68	10
RECEPTOR 3868 GRID	554600	4197550	3.92	10
RECEPTOR 3869 GRID	556350	4197550	3.41	10
RECEPTOR 3870 GRID	556400	4197550	3.35	10
RECEPTOR 3871 GRID	556450	4197550	3.35	10
RECEPTOR 3872 GRID	556500	4197550	3.51	10
RECEPTOR 3873 GRID	556550	4197550	3.86	10
RECEPTOR 3874 GRID	556600	4197550	3.66	10
RECEPTOR 3875 GRID	553550	4197600	1.77	10
RECEPTOR 3876 GRID	553600	4197600	19.94	10
RECEPTOR 3877 GRID	553650	4197600	26.94	10
RECEPTOR 3878 GRID	553700	4197600	40.24	10
RECEPTOR 3879 GRID	553750	4197600	46.91	10
RECEPTOR 3880 GRID	553800	4197600	40.18	10
RECEPTOR 3881 GRID	553850	4197600	40.75	10
RECEPTOR 3882 GRID	553900	4197600	35.86	10
RECEPTOR 3883 GRID	553950	4197600	33.5	10
RECEPTOR 3884 GRID	554000	4197600	13.8	10
RECEPTOR 3885 GRID	554050	4197600	6.99	10
RECEPTOR 3886 GRID	554100	4197600	5.03	10
RECEPTOR 3887 GRID	554150	4197600	4.04	10
RECEPTOR 3888 GRID	554200	4197600	3.72	10
RECEPTOR 3889 GRID	554250	4197600	3.57	10
RECEPTOR 3890 GRID	554300	4197600	2.89	10
RECEPTOR 3891 GRID	554350	4197600	2.79	10
RECEPTOR 3892 GRID	554400	4197600	2.82	10
RECEPTOR 3893 GRID	554450	4197600	2.99	10
RECEPTOR 3894 GRID	554500	4197600	3.73	10
RECEPTOR 3895 GRID	554550	4197600	3.8	10
RECEPTOR 3896 GRID	554600	4197600	3.68	10
RECEPTOR 3897 GRID	556300	4197600	3.7	10
RECEPTOR 3898 GRID	556350	4197600	3.68	10
RECEPTOR 3899 GRID	556400	4197600	3.71	10
RECEPTOR 3900 GRID	556450	4197600	3.61	10
RECEPTOR 3901 GRID	556500	4197600	3.66	10
RECEPTOR 3902 GRID	556550	4197600	4.28	10
RECEPTOR 3903 GRID	556600	4197600	3.83	10
RECEPTOR 3904 GRID	553550	4197650	1.14	10
RECEPTOR 3905 GRID	553600	4197650	13.97	10
RECEPTOR 3906 GRID	553650	4197650	21.75	10
RECEPTOR 3907 GRID	553700	4197650	34.73	10
RECEPTOR 3908 GRID	553750	4197650	46.58	10
RECEPTOR 3909 GRID	553800	4197650	33.1	10
RECEPTOR 3910 GRID	553850	4197650	31.65	10
RECEPTOR 3911 GRID	553900	4197650	24.14	10

RECEPTOR 3912 GRID	553950	4197650	23.02	10
RECEPTOR 3913 GRID	554000	4197650	9.11	10
RECEPTOR 3914 GRID	554050	4197650	4.95	10
RECEPTOR 3915 GRID	554100	4197650	4.11	10
RECEPTOR 3916 GRID	554150	4197650	3.93	10
RECEPTOR 3917 GRID	554200	4197650	3.69	10
RECEPTOR 3918 GRID	554250	4197650	3.16	10
RECEPTOR 3919 GRID	554300	4197650	2.7	10
RECEPTOR 3920 GRID	554350	4197650	2.82	10
RECEPTOR 3921 GRID	554400	4197650	2.89	10
RECEPTOR 3922 GRID	554450	4197650	3.02	10
RECEPTOR 3923 GRID	554500	4197650	4.29	10
RECEPTOR 3924 GRID	554550	4197650	4.1	10
RECEPTOR 3925 GRID	554600	4197650	3.69	10
RECEPTOR 3926 GRID	556200	4197650	3.62	10
RECEPTOR 3927 GRID	556250	4197650	4.77	10
RECEPTOR 3928 GRID	556300	4197650	4	10
RECEPTOR 3929 GRID	556350	4197650	3.86	10
RECEPTOR 3930 GRID	556400	4197650	3.78	10
RECEPTOR 3931 GRID	556450	4197650	3.76	10
RECEPTOR 3932 GRID	556500	4197650	3.87	10
RECEPTOR 3933 GRID	556550	4197650	4.18	10
RECEPTOR 3934 GRID	556600	4197650	3.83	10
RECEPTOR 3935 GRID	553500	4197700	1.09	10
RECEPTOR 3936 GRID	553550	4197700	11.38	10
RECEPTOR 3937 GRID	553600	4197700	25.53	10
RECEPTOR 3938 GRID	553650	4197700	30.57	10
RECEPTOR 3939 GRID	553700	4197700	36.9	10
RECEPTOR 3940 GRID	553750	4197700	45.12	10
RECEPTOR 3941 GRID	553800	4197700	28.79	10
RECEPTOR 3942 GRID	553850	4197700	24.18	10
RECEPTOR 3943 GRID	553900	4197700	19.66	10
RECEPTOR 3944 GRID	553950	4197700	12.39	10
RECEPTOR 3945 GRID	554000	4197700	6.59	10
RECEPTOR 3946 GRID	554050	4197700	4.76	10
RECEPTOR 3947 GRID	554100	4197700	3.98	10
RECEPTOR 3948 GRID	554150	4197700	3.86	10
RECEPTOR 3949 GRID	554200	4197700	2.94	10
RECEPTOR 3950 GRID	554250	4197700	2.82	10
RECEPTOR 3951 GRID	554300	4197700	2.68	10
RECEPTOR 3952 GRID	554350	4197700	2.61	10
RECEPTOR 3953 GRID	554400	4197700	2.55	10
RECEPTOR 3954 GRID	554450	4197700	2.28	10
RECEPTOR 3955 GRID	554500	4197700	2.57	10
RECEPTOR 3956 GRID	554550	4197700	2.74	10

RECEPTOR 3957 GRID	554600	4197700	2.48	10
RECEPTOR 3958 GRID	556200	4197700	3.72	10
RECEPTOR 3959 GRID	556250	4197700	3.86	10
RECEPTOR 3960 GRID	556300	4197700	3.83	10
RECEPTOR 3961 GRID	556350	4197700	3.77	10
RECEPTOR 3962 GRID	556400	4197700	3.61	10
RECEPTOR 3963 GRID	556450	4197700	3.64	10
RECEPTOR 3964 GRID	556500	4197700	3.75	10
RECEPTOR 3965 GRID	556550	4197700	3.95	10
RECEPTOR 3966 GRID	556600	4197700	4.09	10
RECEPTOR 3967 GRID	553450	4197750	1.09	10
RECEPTOR 3968 GRID	553500	4197750	13.47	10
RECEPTOR 3969 GRID	553550	4197750	16.09	10
RECEPTOR 3970 GRID	553600	4197750	31.57	10
RECEPTOR 3971 GRID	553650	4197750	44.22	10
RECEPTOR 3972 GRID	553700	4197750	55.71	10
RECEPTOR 3973 GRID	553750	4197750	48.27	10
RECEPTOR 3974 GRID	553800	4197750	25.44	10
RECEPTOR 3975 GRID	553850	4197750	19.74	10
RECEPTOR 3976 GRID	553900	4197750	15.76	10
RECEPTOR 3977 GRID	553950	4197750	10.31	10
RECEPTOR 3978 GRID	554000	4197750	5.91	10
RECEPTOR 3979 GRID	554050	4197750	4.78	10
RECEPTOR 3980 GRID	554100	4197750	3.83	10
RECEPTOR 3981 GRID	554150	4197750	3.77	10
RECEPTOR 3982 GRID	554200	4197750	3.22	10
RECEPTOR 3983 GRID	554250	4197750	2.7	10
RECEPTOR 3984 GRID	554300	4197750	2.83	10
RECEPTOR 3985 GRID	554350	4197750	2.84	10
RECEPTOR 3986 GRID	554400	4197750	2.87	10
RECEPTOR 3987 GRID	554450	4197750	2.82	10
RECEPTOR 3988 GRID	554500	4197750	2.67	10
RECEPTOR 3989 GRID	554550	4197750	2.47	10
RECEPTOR 3990 GRID	554600	4197750	2.75	10
RECEPTOR 3991 GRID	556050	4197750	3.58	10
RECEPTOR 3992 GRID	556100	4197750	4.11	10
RECEPTOR 3993 GRID	556150	4197750	3.91	10
RECEPTOR 3994 GRID	556200	4197750	4.42	10
RECEPTOR 3995 GRID	556250	4197750	3.86	10
RECEPTOR 3996 GRID	556300	4197750	4.44	10
RECEPTOR 3997 GRID	556350	4197750	4.34	10
RECEPTOR 3998 GRID	556400	4197750	4.26	10
RECEPTOR 3999 GRID	556450	4197750	4.33	10
RECEPTOR 4000 GRID	556500	4197750	4.39	10
RECEPTOR 4001 GRID	556550	4197750	4.59	10

RECEPTOR 4002 GRID	556600	4197750	4.57	10
RECEPTOR 4003 GRID	553400	4197800	1.13	10
RECEPTOR 4004 GRID	553450	4197800	11.37	10
RECEPTOR 4005 GRID	553500	4197800	20.06	10
RECEPTOR 4006 GRID	553550	4197800	30.45	10
RECEPTOR 4007 GRID	553600	4197800	39.3	10
RECEPTOR 4008 GRID	553650	4197800	59.79	10
RECEPTOR 4009 GRID	553700	4197800	62.66	10
RECEPTOR 4010 GRID	553750	4197800	43.34	10
RECEPTOR 4011 GRID	553800	4197800	25.61	10
RECEPTOR 4012 GRID	553850	4197800	17.85	10
RECEPTOR 4013 GRID	553900	4197800	12.45	10
RECEPTOR 4014 GRID	553950	4197800	8.61	10
RECEPTOR 4015 GRID	554000	4197800	6.03	10
RECEPTOR 4016 GRID	554050	4197800	4.87	10
RECEPTOR 4017 GRID	554100	4197800	3.06	10
RECEPTOR 4018 GRID	554150	4197800	3.87	10
RECEPTOR 4019 GRID	554200	4197800	3.5	10
RECEPTOR 4020 GRID	554250	4197800	2.99	10
RECEPTOR 4021 GRID	554300	4197800	2.82	10
RECEPTOR 4022 GRID	554350	4197800	2.88	10
RECEPTOR 4023 GRID	554400	4197800	2.74	10
RECEPTOR 4024 GRID	554450	4197800	2.66	10
RECEPTOR 4025 GRID	554500	4197800	2.77	10
RECEPTOR 4026 GRID	554550	4197800	2.74	10
RECEPTOR 4027 GRID	554600	4197800	2.77	10
RECEPTOR 4028 GRID	555950	4197800	3.56	10
RECEPTOR 4029 GRID	556000	4197800	3.62	10
RECEPTOR 4030 GRID	556050	4197800	4.11	10
RECEPTOR 4031 GRID	556100	4197800	4.27	10
RECEPTOR 4032 GRID	556150	4197800	4	10
RECEPTOR 4033 GRID	556200	4197800	4.54	10
RECEPTOR 4034 GRID	556250	4197800	4.05	10
RECEPTOR 4035 GRID	556300	4197800	4.67	10
RECEPTOR 4036 GRID	556350	4197800	4.74	10
RECEPTOR 4037 GRID	556400	4197800	4.84	10
RECEPTOR 4038 GRID	556450	4197800	5.15	10
RECEPTOR 4039 GRID	556500	4197800	5.06	10
RECEPTOR 4040 GRID	556550	4197800	5.13	10
RECEPTOR 4041 GRID	556600	4197800	4.77	10
RECEPTOR 4042 GRID	553350	4197850	1.11	10
RECEPTOR 4043 GRID	553400	4197850	7.07	10
RECEPTOR 4044 GRID	553450	4197850	10.79	10
RECEPTOR 4045 GRID	553500	4197850	26.01	10
RECEPTOR 4046 GRID	553550	4197850	38.65	10

RECEPTOR 4047 GRID	553600	4197850	46.79	10
RECEPTOR 4048 GRID	553650	4197850	56.03	10
RECEPTOR 4049 GRID	553700	4197850	52	10
RECEPTOR 4050 GRID	553750	4197850	40.9	10
RECEPTOR 4051 GRID	553800	4197850	28.64	10
RECEPTOR 4052 GRID	553850	4197850	16.39	10
RECEPTOR 4053 GRID	553900	4197850	11.26	10
RECEPTOR 4054 GRID	553950	4197850	8.15	10
RECEPTOR 4055 GRID	554000	4197850	6.01	10
RECEPTOR 4056 GRID	554050	4197850	4.84	10
RECEPTOR 4057 GRID	554100	4197850	2.83	10
RECEPTOR 4058 GRID	554150	4197850	3.8	10
RECEPTOR 4059 GRID	554200	4197850	3.55	10
RECEPTOR 4060 GRID	554250	4197850	3.19	10
RECEPTOR 4061 GRID	554300	4197850	2.87	10
RECEPTOR 4062 GRID	554350	4197850	2.6	10
RECEPTOR 4063 GRID	554400	4197850	2.96	10
RECEPTOR 4064 GRID	554450	4197850	3.01	10
RECEPTOR 4065 GRID	554500	4197850	3.02	10
RECEPTOR 4066 GRID	554550	4197850	2.75	10
RECEPTOR 4067 GRID	554600	4197850	2.87	10
RECEPTOR 4068 GRID	555850	4197850	3.23	10
RECEPTOR 4069 GRID	555900	4197850	2.95	10
RECEPTOR 4070 GRID	555950	4197850	3.55	10
RECEPTOR 4071 GRID	556000	4197850	3.81	10
RECEPTOR 4072 GRID	556050	4197850	4.01	10
RECEPTOR 4073 GRID	556100	4197850	4.31	10
RECEPTOR 4074 GRID	556150	4197850	4.29	10
RECEPTOR 4075 GRID	556200	4197850	4.76	10
RECEPTOR 4076 GRID	556250	4197850	4.21	10
RECEPTOR 4077 GRID	556300	4197850	4.88	10
RECEPTOR 4078 GRID	556350	4197850	5.44	10
RECEPTOR 4079 GRID	556400	4197850	5.4	10
RECEPTOR 4080 GRID	556450	4197850	5.22	10
RECEPTOR 4081 GRID	556500	4197850	5.12	10
RECEPTOR 4082 GRID	556550	4197850	5.11	10
RECEPTOR 4083 GRID	556600	4197850	4.99	10
RECEPTOR 4084 GRID	553300	4197900	1.07	10
RECEPTOR 4085 GRID	553350	4197900	17.54	10
RECEPTOR 4086 GRID	553400	4197900	16.82	10
RECEPTOR 4087 GRID	553450	4197900	12.37	10
RECEPTOR 4088 GRID	553500	4197900	15.85	10
RECEPTOR 4089 GRID	553550	4197900	21.27	10
RECEPTOR 4090 GRID	553600	4197900	32.8	10
RECEPTOR 4091 GRID	553650	4197900	45.89	10

RECEPTOR 4092 GRID	553700	4197900	44.8	10
RECEPTOR 4093 GRID	553750	4197900	39.66	10
RECEPTOR 4094 GRID	553800	4197900	24.33	10
RECEPTOR 4095 GRID	553850	4197900	18.69	10
RECEPTOR 4096 GRID	553900	4197900	14.53	10
RECEPTOR 4097 GRID	553950	4197900	11.73	10
RECEPTOR 4098 GRID	554000	4197900	8.8	10
RECEPTOR 4099 GRID	554050	4197900	5.06	10
RECEPTOR 4100 GRID	554100	4197900	4.49	10
RECEPTOR 4101 GRID	554150	4197900	3.87	10
RECEPTOR 4102 GRID	555750	4197900	3.08	10
RECEPTOR 4103 GRID	555800	4197900	3.11	10
RECEPTOR 4104 GRID	555850	4197900	3.7	10
RECEPTOR 4105 GRID	555900	4197900	3.27	10
RECEPTOR 4106 GRID	555950	4197900	3.91	10
RECEPTOR 4107 GRID	556000	4197900	3.91	10
RECEPTOR 4108 GRID	556050	4197900	4.07	10
RECEPTOR 4109 GRID	556100	4197900	4.64	10
RECEPTOR 4110 GRID	556150	4197900	4.35	10
RECEPTOR 4111 GRID	556200	4197900	4.99	10
RECEPTOR 4112 GRID	556250	4197900	4.33	10
RECEPTOR 4113 GRID	556300	4197900	5.51	10
RECEPTOR 4114 GRID	556350	4197900	5.12	10
RECEPTOR 4115 GRID	556400	4197900	5.42	10
RECEPTOR 4116 GRID	556450	4197900	5.28	10
RECEPTOR 4117 GRID	556500	4197900	5.09	10
RECEPTOR 4118 GRID	556550	4197900	5.23	10
RECEPTOR 4119 GRID	556600	4197900	5.16	10
RECEPTOR 4120 GRID	553300	4197950	11.69	10
RECEPTOR 4121 GRID	553350	4197950	28.43	10
RECEPTOR 4122 GRID	553400	4197950	29.39	10
RECEPTOR 4123 GRID	553450	4197950	20.81	10
RECEPTOR 4124 GRID	553500	4197950	21.15	10
RECEPTOR 4125 GRID	553550	4197950	23.83	10
RECEPTOR 4126 GRID	553600	4197950	38.27	10
RECEPTOR 4127 GRID	553650	4197950	42.22	10
RECEPTOR 4128 GRID	553700	4197950	32.1	10
RECEPTOR 4129 GRID	553750	4197950	35.08	10
RECEPTOR 4130 GRID	553800	4197950	21.01	10
RECEPTOR 4131 GRID	553850	4197950	16.86	10
RECEPTOR 4132 GRID	553900	4197950	22.16	10
RECEPTOR 4133 GRID	553950	4197950	17.14	10
RECEPTOR 4134 GRID	554000	4197950	11.91	10
RECEPTOR 4135 GRID	554050	4197950	8.09	10
RECEPTOR 4136 GRID	554100	4197950	4.27	10

RECEPTOR 4137 GRID	554150	4197950	3.54	10
RECEPTOR 4138 GRID	555600	4197950	3.4	10
RECEPTOR 4139 GRID	555650	4197950	3.37	10
RECEPTOR 4140 GRID	555700	4197950	3.38	10
RECEPTOR 4141 GRID	555750	4197950	3.52	10
RECEPTOR 4142 GRID	555800	4197950	3.3	10
RECEPTOR 4143 GRID	555850	4197950	3.17	10
RECEPTOR 4144 GRID	555900	4197950	3.29	10
RECEPTOR 4145 GRID	555950	4197950	3.95	10
RECEPTOR 4146 GRID	556000	4197950	3.91	10
RECEPTOR 4147 GRID	556050	4197950	4.54	10
RECEPTOR 4148 GRID	556100	4197950	4.82	10
RECEPTOR 4149 GRID	556150	4197950	4.41	10
RECEPTOR 4150 GRID	556200	4197950	5.17	10
RECEPTOR 4151 GRID	556250	4197950	4.44	10
RECEPTOR 4152 GRID	556300	4197950	5.42	10
RECEPTOR 4153 GRID	556350	4197950	5.31	10
RECEPTOR 4154 GRID	556400	4197950	5.43	10
RECEPTOR 4155 GRID	556450	4197950	5.68	10
RECEPTOR 4156 GRID	556500	4197950	5.24	10
RECEPTOR 4157 GRID	556550	4197950	5.35	10
RECEPTOR 4158 GRID	556600	4197950	5.35	10
RECEPTOR 4159 GRID	553200	4198000	1.08	10
RECEPTOR 4160 GRID	553250	4198000	4.91	10
RECEPTOR 4161 GRID	553300	4198000	13.8	10
RECEPTOR 4162 GRID	553350	4198000	23.38	10
RECEPTOR 4163 GRID	553400	4198000	33	10
RECEPTOR 4164 GRID	553450	4198000	33.83	10
RECEPTOR 4165 GRID	553500	4198000	32.09	10
RECEPTOR 4166 GRID	553550	4198000	33.23	10
RECEPTOR 4167 GRID	553600	4198000	39.6	10
RECEPTOR 4168 GRID	553650	4198000	36.7	10
RECEPTOR 4169 GRID	553700	4198000	27.73	10
RECEPTOR 4170 GRID	553750	4198000	18.76	10
RECEPTOR 4171 GRID	553800	4198000	12.93	10
RECEPTOR 4172 GRID	553850	4198000	11.69	10
RECEPTOR 4173 GRID	553900	4198000	16.44	10
RECEPTOR 4174 GRID	553950	4198000	13.49	10
RECEPTOR 4175 GRID	554000	4198000	8.12	10
RECEPTOR 4176 GRID	554050	4198000	4.68	10
RECEPTOR 4177 GRID	554100	4198000	4.06	10
RECEPTOR 4178 GRID	555450	4198000	3.54	10
RECEPTOR 4179 GRID	555500	4198000	3.27	10
RECEPTOR 4180 GRID	555550	4198000	3.04	10
RECEPTOR 4181 GRID	555600	4198000	3.62	10

RECEPTOR 4182 GRID	555650	4198000	3.46	10
RECEPTOR 4183 GRID	555700	4198000	3.64	10
RECEPTOR 4184 GRID	555750	4198000	3.58	10
RECEPTOR 4185 GRID	555800	4198000	3.49	10
RECEPTOR 4186 GRID	555850	4198000	3.45	10
RECEPTOR 4187 GRID	555900	4198000	3.39	10
RECEPTOR 4188 GRID	555950	4198000	3.91	10
RECEPTOR 4189 GRID	556000	4198000	4.13	10
RECEPTOR 4190 GRID	556050	4198000	4.28	10
RECEPTOR 4191 GRID	556100	4198000	4.77	10
RECEPTOR 4192 GRID	556150	4198000	4.48	10
RECEPTOR 4193 GRID	556200	4198000	4.95	10
RECEPTOR 4194 GRID	556250	4198000	4.59	10
RECEPTOR 4195 GRID	556300	4198000	5.86	10
RECEPTOR 4196 GRID	556350	4198000	6.16	10
RECEPTOR 4197 GRID	556400	4198000	6.03	10
RECEPTOR 4198 GRID	556450	4198000	5.64	10
RECEPTOR 4199 GRID	556500	4198000	5.46	10
RECEPTOR 4200 GRID	556550	4198000	5.78	10
RECEPTOR 4201 GRID	556600	4198000	5.62	10
RECEPTOR 4202 GRID	553150	4198050	1.02	10
RECEPTOR 4203 GRID	553200	4198050	7.62	10
RECEPTOR 4204 GRID	553250	4198050	11.97	10
RECEPTOR 4205 GRID	553300	4198050	16.78	10
RECEPTOR 4206 GRID	553350	4198050	24.67	10
RECEPTOR 4207 GRID	553400	4198050	36.44	10
RECEPTOR 4208 GRID	553450	4198050	44.99	10
RECEPTOR 4209 GRID	553500	4198050	45.92	10
RECEPTOR 4210 GRID	553550	4198050	41.11	10
RECEPTOR 4211 GRID	553600	4198050	42.33	10
RECEPTOR 4212 GRID	553650	4198050	41.42	10
RECEPTOR 4213 GRID	553700	4198050	29.65	10
RECEPTOR 4214 GRID	553750	4198050	18.19	10
RECEPTOR 4215 GRID	553800	4198050	9.95	10
RECEPTOR 4216 GRID	553850	4198050	8.1	10
RECEPTOR 4217 GRID	553900	4198050	5.42	10
RECEPTOR 4218 GRID	553950	4198050	4.37	10
RECEPTOR 4219 GRID	554000	4198050	3.91	10
RECEPTOR 4220 GRID	555450	4198050	3.69	10
RECEPTOR 4221 GRID	555500	4198050	3.61	10
RECEPTOR 4222 GRID	555550	4198050	3.16	10
RECEPTOR 4223 GRID	555600	4198050	3.59	10
RECEPTOR 4224 GRID	555650	4198050	3.6	10
RECEPTOR 4225 GRID	555700	4198050	3.76	10
RECEPTOR 4226 GRID	555750	4198050	3.8	10

RECEPTOR 4227 GRID	555800	4198050	3.76	10
RECEPTOR 4228 GRID	555850	4198050	3.76	10
RECEPTOR 4229 GRID	555900	4198050	3.57	10
RECEPTOR 4230 GRID	555950	4198050	4.03	10
RECEPTOR 4231 GRID	556000	4198050	4.29	10
RECEPTOR 4232 GRID	556050	4198050	4.44	10
RECEPTOR 4233 GRID	556100	4198050	4.67	10
RECEPTOR 4234 GRID	556150	4198050	4.68	10
RECEPTOR 4235 GRID	556200	4198050	5.04	10
RECEPTOR 4236 GRID	556250	4198050	4.74	10
RECEPTOR 4237 GRID	556300	4198050	5.5	10
RECEPTOR 4238 GRID	556350	4198050	5.91	10
RECEPTOR 4239 GRID	556400	4198050	6.08	10
RECEPTOR 4240 GRID	556450	4198050	5.88	10
RECEPTOR 4241 GRID	556500	4198050	5.7	10
RECEPTOR 4242 GRID	556550	4198050	5.83	10
RECEPTOR 4243 GRID	556600	4198050	5.79	10
RECEPTOR 4244 GRID	553100	4198100	1.26	10
RECEPTOR 4245 GRID	553150	4198100	10.82	10
RECEPTOR 4246 GRID	553200	4198100	11.47	10
RECEPTOR 4247 GRID	553250	4198100	16.26	10
RECEPTOR 4248 GRID	553300	4198100	23.5	10
RECEPTOR 4249 GRID	553350	4198100	31.7	10
RECEPTOR 4250 GRID	553400	4198100	43.03	10
RECEPTOR 4251 GRID	553450	4198100	40.59	10
RECEPTOR 4252 GRID	553500	4198100	37.02	10
RECEPTOR 4253 GRID	553550	4198100	28.06	10
RECEPTOR 4254 GRID	553600	4198100	30.82	10
RECEPTOR 4255 GRID	553650	4198100	38.33	10
RECEPTOR 4256 GRID	553700	4198100	27.66	10
RECEPTOR 4257 GRID	553750	4198100	17.01	10
RECEPTOR 4258 GRID	555450	4198100	3.55	10
RECEPTOR 4259 GRID	555500	4198100	3.56	10
RECEPTOR 4260 GRID	555550	4198100	3.2	10
RECEPTOR 4261 GRID	555600	4198100	3.74	10
RECEPTOR 4262 GRID	555650	4198100	3.85	10
RECEPTOR 4263 GRID	555700	4198100	3.8	10
RECEPTOR 4264 GRID	555750	4198100	3.92	10
RECEPTOR 4265 GRID	555800	4198100	3.88	10
RECEPTOR 4266 GRID	555850	4198100	3.94	10
RECEPTOR 4267 GRID	555900	4198100	3.69	10
RECEPTOR 4268 GRID	555950	4198100	4.41	10
RECEPTOR 4269 GRID	556000	4198100	4.44	10
RECEPTOR 4270 GRID	556050	4198100	4.67	10
RECEPTOR 4271 GRID	556100	4198100	4.84	10

RECEPTOR 4272 GRID	556150	4198100	4.76	10
RECEPTOR 4273 GRID	556200	4198100	5.11	10
RECEPTOR 4274 GRID	556250	4198100	4.9	10
RECEPTOR 4275 GRID	556300	4198100	5.91	10
RECEPTOR 4276 GRID	556350	4198100	5.77	10
RECEPTOR 4277 GRID	556400	4198100	5.99	10
RECEPTOR 4278 GRID	556450	4198100	6.24	10
RECEPTOR 4279 GRID	556500	4198100	6.1	10
RECEPTOR 4280 GRID	556550	4198100	6.11	10
RECEPTOR 4281 GRID	556600	4198100	6.13	10
RECEPTOR 4282 GRID	553150	4198150	18.9	10
RECEPTOR 4283 GRID	553200	4198150	19.1	10
RECEPTOR 4284 GRID	553250	4198150	21.75	10
RECEPTOR 4285 GRID	553300	4198150	36.02	10
RECEPTOR 4286 GRID	553350	4198150	34.84	10
RECEPTOR 4287 GRID	553400	4198150	35.55	10
RECEPTOR 4288 GRID	553450	4198150	28.07	10
RECEPTOR 4289 GRID	553500	4198150	22.81	10
RECEPTOR 4290 GRID	553550	4198150	18.08	10
RECEPTOR 4291 GRID	553600	4198150	17.82	10
RECEPTOR 4292 GRID	553650	4198150	26.97	10
RECEPTOR 4293 GRID	553700	4198150	25.39	10
RECEPTOR 4294 GRID	553750	4198150	12.29	10
RECEPTOR 4295 GRID	555450	4198150	4.03	10
RECEPTOR 4296 GRID	555500	4198150	3.84	10
RECEPTOR 4297 GRID	555550	4198150	3.26	10
RECEPTOR 4298 GRID	555600	4198150	3.8	10
RECEPTOR 4299 GRID	555650	4198150	3.94	10
RECEPTOR 4300 GRID	555700	4198150	4.03	10
RECEPTOR 4301 GRID	555750	4198150	4.27	10
RECEPTOR 4302 GRID	555800	4198150	4.06	10
RECEPTOR 4303 GRID	555850	4198150	4.45	10
RECEPTOR 4304 GRID	555900	4198150	3.97	10
RECEPTOR 4305 GRID	555950	4198150	4.44	10
RECEPTOR 4306 GRID	556000	4198150	4.68	10
RECEPTOR 4307 GRID	556050	4198150	4.76	10
RECEPTOR 4308 GRID	556100	4198150	4.82	10
RECEPTOR 4309 GRID	556150	4198150	4.91	10
RECEPTOR 4310 GRID	556200	4198150	5.27	10
RECEPTOR 4311 GRID	556250	4198150	5.09	10
RECEPTOR 4312 GRID	556300	4198150	6.03	10
RECEPTOR 4313 GRID	556350	4198150	5.87	10
RECEPTOR 4314 GRID	556400	4198150	6.13	10
RECEPTOR 4315 GRID	556450	4198150	6.5	10
RECEPTOR 4316 GRID	556500	4198150	6.57	10

RECEPTOR 4317 GRID	556550	4198150	6.62	10
RECEPTOR 4318 GRID	556600	4198150	6.44	10
RECEPTOR 4319 GRID	553150	4198200	26.51	10
RECEPTOR 4320 GRID	553200	4198200	28.55	10
RECEPTOR 4321 GRID	553250	4198200	32.25	10
RECEPTOR 4322 GRID	553300	4198200	41.7	10
RECEPTOR 4323 GRID	553350	4198200	38.28	10
RECEPTOR 4324 GRID	553400	4198200	27.13	10
RECEPTOR 4325 GRID	553450	4198200	24.76	10
RECEPTOR 4326 GRID	553500	4198200	15.23	10
RECEPTOR 4327 GRID	553900	4198200	3.21	10
RECEPTOR 4328 GRID	553950	4198200	2.92	10
RECEPTOR 4329 GRID	555450	4198200	3.9	10
RECEPTOR 4330 GRID	555500	4198200	3.89	10
RECEPTOR 4331 GRID	555550	4198200	3.47	10
RECEPTOR 4332 GRID	555600	4198200	4.05	10
RECEPTOR 4333 GRID	555650	4198200	4.14	10
RECEPTOR 4334 GRID	555700	4198200	4.14	10
RECEPTOR 4335 GRID	555750	4198200	4.34	10
RECEPTOR 4336 GRID	555800	4198200	4.26	10
RECEPTOR 4337 GRID	555850	4198200	4.51	10
RECEPTOR 4338 GRID	555900	4198200	4.13	10
RECEPTOR 4339 GRID	555950	4198200	4.6	10
RECEPTOR 4340 GRID	556000	4198200	4.74	10
RECEPTOR 4341 GRID	556050	4198200	4.91	10
RECEPTOR 4342 GRID	556100	4198200	5.28	10
RECEPTOR 4343 GRID	556150	4198200	5.07	10
RECEPTOR 4344 GRID	556200	4198200	5.41	10
RECEPTOR 4345 GRID	556250	4198200	5.28	10
RECEPTOR 4346 GRID	556300	4198200	5.97	10
RECEPTOR 4347 GRID	556350	4198200	6.06	10
RECEPTOR 4348 GRID	556400	4198200	6.64	10
RECEPTOR 4349 GRID	556450	4198200	6.54	10
RECEPTOR 4350 GRID	556500	4198200	6.74	10
RECEPTOR 4351 GRID	556550	4198200	6.73	10
RECEPTOR 4352 GRID	556600	4198200	6.73	10
RECEPTOR 4353 GRID	553250	4198250	42.29	10
RECEPTOR 4354 GRID	553300	4198250	46.94	10
RECEPTOR 4355 GRID	553350	4198250	35.34	10
RECEPTOR 4356 GRID	553800	4198250	4.89	10
RECEPTOR 4357 GRID	553850	4198250	4.28	10
RECEPTOR 4358 GRID	553900	4198250	3.58	10
RECEPTOR 4359 GRID	553950	4198250	2.78	10
RECEPTOR 4360 GRID	554000	4198250	3.12	10
RECEPTOR 4361 GRID	555450	4198250	3.94	10

RECEPTOR 4362 GRID	555500	4198250	4.08	10
RECEPTOR 4363 GRID	555550	4198250	3.77	10
RECEPTOR 4364 GRID	555600	4198250	4.24	10
RECEPTOR 4365 GRID	555650	4198250	4.3	10
RECEPTOR 4366 GRID	555700	4198250	4.29	10
RECEPTOR 4367 GRID	555750	4198250	4.42	10
RECEPTOR 4368 GRID	555800	4198250	4.34	10
RECEPTOR 4369 GRID	555850	4198250	4.62	10
RECEPTOR 4370 GRID	555900	4198250	4.39	10
RECEPTOR 4371 GRID	555950	4198250	4.8	10
RECEPTOR 4372 GRID	556000	4198250	5.04	10
RECEPTOR 4373 GRID	556050	4198250	5.06	10
RECEPTOR 4374 GRID	556100	4198250	5.35	10
RECEPTOR 4375 GRID	556150	4198250	5.27	10
RECEPTOR 4376 GRID	556200	4198250	5.67	10
RECEPTOR 4377 GRID	556250	4198250	5.57	10
RECEPTOR 4378 GRID	556300	4198250	6.2	10
RECEPTOR 4379 GRID	556350	4198250	6.45	10
RECEPTOR 4380 GRID	556400	4198250	6.71	10
RECEPTOR 4381 GRID	556450	4198250	6.68	10
RECEPTOR 4382 GRID	556500	4198250	6.82	10
RECEPTOR 4383 GRID	556550	4198250	7.07	10
RECEPTOR 4384 GRID	556600	4198250	6.98	10
RECEPTOR 4385 GRID	553650	4198300	3.75	10
RECEPTOR 4386 GRID	553700	4198300	3.34	10
RECEPTOR 4387 GRID	553750	4198300	3.28	10
RECEPTOR 4388 GRID	553800	4198300	3.31	10
RECEPTOR 4389 GRID	553850	4198300	3.53	10
RECEPTOR 4390 GRID	553900	4198300	3.53	10
RECEPTOR 4391 GRID	553950	4198300	3.18	10
RECEPTOR 4392 GRID	555450	4198300	4.34	10
RECEPTOR 4393 GRID	555500	4198300	4.34	10
RECEPTOR 4394 GRID	555550	4198300	4.17	10
RECEPTOR 4395 GRID	555600	4198300	4.33	10
RECEPTOR 4396 GRID	555650	4198300	4.59	10
RECEPTOR 4397 GRID	555700	4198300	4.43	10
RECEPTOR 4398 GRID	555750	4198300	4.65	10
RECEPTOR 4399 GRID	555800	4198300	4.5	10
RECEPTOR 4400 GRID	555850	4198300	4.91	10
RECEPTOR 4401 GRID	555900	4198300	4.56	10
RECEPTOR 4402 GRID	555950	4198300	4.92	10
RECEPTOR 4403 GRID	556000	4198300	5.04	10
RECEPTOR 4404 GRID	556050	4198300	5.32	10
RECEPTOR 4405 GRID	556100	4198300	5.4	10
RECEPTOR 4406 GRID	556150	4198300	5.39	10

RECEPTOR 4407 GRID	556200	4198300	5.93	10
RECEPTOR 4408 GRID	556250	4198300	5.92	10
RECEPTOR 4409 GRID	556300	4198300	6.42	10
RECEPTOR 4410 GRID	556350	4198300	6.65	10
RECEPTOR 4411 GRID	556400	4198300	6.76	10
RECEPTOR 4412 GRID	556450	4198300	6.99	10
RECEPTOR 4413 GRID	556500	4198300	7.01	10
RECEPTOR 4414 GRID	556550	4198300	7.34	10
RECEPTOR 4415 GRID	556600	4198300	7.16	10
RECEPTOR 4416 GRID	553550	4198350	3.55	10
RECEPTOR 4417 GRID	553600	4198350	3.97	10
RECEPTOR 4418 GRID	553650	4198350	2.9	10
RECEPTOR 4419 GRID	553700	4198350	3.05	10
RECEPTOR 4420 GRID	553750	4198350	3.25	10
RECEPTOR 4421 GRID	553800	4198350	3.38	10
RECEPTOR 4422 GRID	553850	4198350	3.37	10
RECEPTOR 4423 GRID	553900	4198350	3.01	10
RECEPTOR 4424 GRID	555450	4198350	4.2	10
RECEPTOR 4425 GRID	555500	4198350	4.32	10
RECEPTOR 4426 GRID	555550	4198350	4.34	10
RECEPTOR 4427 GRID	555600	4198350	4.52	10
RECEPTOR 4428 GRID	555650	4198350	4.51	10
RECEPTOR 4429 GRID	555700	4198350	4.73	10
RECEPTOR 4430 GRID	555750	4198350	4.76	10
RECEPTOR 4431 GRID	555800	4198350	5.03	10
RECEPTOR 4432 GRID	555850	4198350	5.06	10
RECEPTOR 4433 GRID	555900	4198350	4.99	10
RECEPTOR 4434 GRID	555950	4198350	5.26	10
RECEPTOR 4435 GRID	556000	4198350	5.22	10
RECEPTOR 4436 GRID	556050	4198350	5.39	10
RECEPTOR 4437 GRID	556100	4198350	5.56	10
RECEPTOR 4438 GRID	556150	4198350	5.82	10
RECEPTOR 4439 GRID	556200	4198350	6.04	10
RECEPTOR 4440 GRID	556250	4198350	6.37	10
RECEPTOR 4441 GRID	556300	4198350	6.85	10
RECEPTOR 4442 GRID	556350	4198350	6.67	10
RECEPTOR 4443 GRID	556400	4198350	6.93	10
RECEPTOR 4444 GRID	556450	4198350	7.15	10
RECEPTOR 4445 GRID	556500	4198350	7.25	10
RECEPTOR 4446 GRID	556550	4198350	7.37	10
RECEPTOR 4447 GRID	556600	4198350	7.3	10
RECEPTOR 4448 GRID	553500	4198400	3.81	10
RECEPTOR 4449 GRID	553550	4198400	3.65	10
RECEPTOR 4450 GRID	553600	4198400	2.94	10
RECEPTOR 4451 GRID	553650	4198400	2.76	10

RECEPTOR 4452 GRID	553700	4198400	3.08	10
RECEPTOR 4453 GRID	553750	4198400	3.42	10
RECEPTOR 4454 GRID	553800	4198400	3.15	10
RECEPTOR 4455 GRID	553850	4198400	2.92	10
RECEPTOR 4456 GRID	553900	4198400	4.31	10
RECEPTOR 4457 GRID	553950	4198400	2.97	10
RECEPTOR 4458 GRID	554950	4198400	2.39	10
RECEPTOR 4459 GRID	555000	4198400	3.63	10
RECEPTOR 4460 GRID	555050	4198400	3.71	10
RECEPTOR 4461 GRID	555100	4198400	3.61	10
RECEPTOR 4462 GRID	555150	4198400	3.59	10
RECEPTOR 4463 GRID	555200	4198400	3.79	10
RECEPTOR 4464 GRID	555250	4198400	3.72	10
RECEPTOR 4465 GRID	555300	4198400	4.08	10
RECEPTOR 4466 GRID	555350	4198400	4.26	10
RECEPTOR 4467 GRID	555400	4198400	4.25	10
RECEPTOR 4468 GRID	555450	4198400	4.56	10
RECEPTOR 4469 GRID	555500	4198400	4.61	10
RECEPTOR 4470 GRID	555550	4198400	4.69	10
RECEPTOR 4471 GRID	555600	4198400	4.81	10
RECEPTOR 4472 GRID	555650	4198400	5	10
RECEPTOR 4473 GRID	555700	4198400	5.09	10
RECEPTOR 4474 GRID	555750	4198400	5.01	10
RECEPTOR 4475 GRID	555800	4198400	5.02	10
RECEPTOR 4476 GRID	555850	4198400	5.4	10
RECEPTOR 4477 GRID	555900	4198400	5.43	10
RECEPTOR 4478 GRID	555950	4198400	5.72	10
RECEPTOR 4479 GRID	556000	4198400	5.37	10
RECEPTOR 4480 GRID	556050	4198400	5.67	10
RECEPTOR 4481 GRID	556100	4198400	5.93	10
RECEPTOR 4482 GRID	556150	4198400	5.67	10
RECEPTOR 4483 GRID	556200	4198400	6.17	10
RECEPTOR 4484 GRID	556250	4198400	6.76	10
RECEPTOR 4485 GRID	556300	4198400	6.97	10
RECEPTOR 4486 GRID	556350	4198400	7.08	10
RECEPTOR 4487 GRID	556400	4198400	6.9	10
RECEPTOR 4488 GRID	556450	4198400	7.06	10
RECEPTOR 4489 GRID	556500	4198400	7.32	10
RECEPTOR 4490 GRID	556550	4198400	7.69	10
RECEPTOR 4491 GRID	556600	4198400	9.21	10
RECEPTOR 4492 GRID	553650	4198450	2.94	10
RECEPTOR 4493 GRID	553700	4198450	3.03	10
RECEPTOR 4494 GRID	553750	4198450	3.04	10
RECEPTOR 4495 GRID	553800	4198450	3.11	10
RECEPTOR 4496 GRID	553850	4198450	3.28	10

RECEPTOR 4497 GRID	553900	4198450	3.23	10
RECEPTOR 4498 GRID	553950	4198450	3.14	10
RECEPTOR 4499 GRID	554900	4198450	3.74	10
RECEPTOR 4500 GRID	554950	4198450	3.69	10
RECEPTOR 4501 GRID	555000	4198450	3.34	10
RECEPTOR 4502 GRID	555050	4198450	3.31	10
RECEPTOR 4503 GRID	555100	4198450	3.45	10
RECEPTOR 4504 GRID	555150	4198450	3.5	10
RECEPTOR 4505 GRID	555200	4198450	3.35	10
RECEPTOR 4506 GRID	555250	4198450	3.54	10
RECEPTOR 4507 GRID	555300	4198450	3.72	10
RECEPTOR 4508 GRID	555350	4198450	3.85	10
RECEPTOR 4509 GRID	555400	4198450	3.78	10
RECEPTOR 4510 GRID	555450	4198450	4.71	10
RECEPTOR 4511 GRID	555500	4198450	4.7	10
RECEPTOR 4512 GRID	555550	4198450	4.81	10
RECEPTOR 4513 GRID	555600	4198450	4.7	10
RECEPTOR 4514 GRID	555650	4198450	4.94	10
RECEPTOR 4515 GRID	555700	4198450	5.07	10
RECEPTOR 4516 GRID	555750	4198450	5	10
RECEPTOR 4517 GRID	555800	4198450	5.42	10
RECEPTOR 4518 GRID	555850	4198450	5.63	10
RECEPTOR 4519 GRID	555900	4198450	5.73	10
RECEPTOR 4520 GRID	555950	4198450	5.75	10
RECEPTOR 4521 GRID	556000	4198450	5.63	10
RECEPTOR 4522 GRID	556050	4198450	6.03	10
RECEPTOR 4523 GRID	556100	4198450	6.43	10
RECEPTOR 4524 GRID	556150	4198450	6.66	10
RECEPTOR 4525 GRID	556200	4198450	6.31	10
RECEPTOR 4526 GRID	556250	4198450	6.36	10
RECEPTOR 4527 GRID	556300	4198450	6.8	10
RECEPTOR 4528 GRID	556350	4198450	7.27	10
RECEPTOR 4529 GRID	556400	4198450	7.27	10
RECEPTOR 4530 GRID	556450	4198450	7.55	10
RECEPTOR 4531 GRID	556500	4198450	7.43	10
RECEPTOR 4532 GRID	556550	4198450	7.66	10
RECEPTOR 4533 GRID	556600	4198450	7.7	10
RECEPTOR 4534 GRID	553700	4198500	3.19	10
RECEPTOR 4535 GRID	553850	4198500	3.34	10
RECEPTOR 4536 GRID	553900	4198500	3.09	10
RECEPTOR 4537 GRID	554850	4198500	3.59	10
RECEPTOR 4538 GRID	554900	4198500	3.68	10
RECEPTOR 4539 GRID	554950	4198500	3.63	10
RECEPTOR 4540 GRID	555000	4198500	3.21	10
RECEPTOR 4541 GRID	555050	4198500	3.01	10

RECEPTOR 4542 GRID	555100	4198500	2.86	10
RECEPTOR 4543 GRID	555150	4198500	3.32	10
RECEPTOR 4544 GRID	555200	4198500	3.55	10
RECEPTOR 4545 GRID	555250	4198500	3.4	10
RECEPTOR 4546 GRID	555300	4198500	3.7	10
RECEPTOR 4547 GRID	555350	4198500	3.86	10
RECEPTOR 4548 GRID	555400	4198500	3.6	10
RECEPTOR 4549 GRID	555450	4198500	4.38	10
RECEPTOR 4550 GRID	555500	4198500	4.66	10
RECEPTOR 4551 GRID	555550	4198500	4.95	10
RECEPTOR 4552 GRID	555600	4198500	5.06	10
RECEPTOR 4553 GRID	555650	4198500	4.96	10
RECEPTOR 4554 GRID	555700	4198500	5.09	10
RECEPTOR 4555 GRID	555750	4198500	5.16	10
RECEPTOR 4556 GRID	555800	4198500	5.38	10
RECEPTOR 4557 GRID	555850	4198500	5.66	10
RECEPTOR 4558 GRID	555900	4198500	5.76	10
RECEPTOR 4559 GRID	555950	4198500	5.84	10
RECEPTOR 4560 GRID	556000	4198500	5.94	10
RECEPTOR 4561 GRID	556050	4198500	6.07	10
RECEPTOR 4562 GRID	556100	4198500	6.23	10
RECEPTOR 4563 GRID	556150	4198500	6.29	10
RECEPTOR 4564 GRID	556200	4198500	6.57	10
RECEPTOR 4565 GRID	556250	4198500	6.48	10
RECEPTOR 4566 GRID	556300	4198500	6.89	10
RECEPTOR 4567 GRID	556350	4198500	7.33	10
RECEPTOR 4568 GRID	556400	4198500	7.53	10
RECEPTOR 4569 GRID	556450	4198500	7.73	10
RECEPTOR 4570 GRID	556500	4198500	7.84	10
RECEPTOR 4571 GRID	556550	4198500	7.83	10
RECEPTOR 4572 GRID	556600	4198500	7.94	10
RECEPTOR 4573 GRID	554850	4198550	3.47	10
RECEPTOR 4574 GRID	554900	4198550	3.69	10
RECEPTOR 4575 GRID	554950	4198550	3.43	10
RECEPTOR 4576 GRID	555000	4198550	2.98	10
RECEPTOR 4577 GRID	555050	4198550	3.04	10
RECEPTOR 4578 GRID	555100	4198550	3.28	10
RECEPTOR 4579 GRID	555150	4198550	3.59	10
RECEPTOR 4580 GRID	555200	4198550	3.78	10
RECEPTOR 4581 GRID	555250	4198550	3.5	10
RECEPTOR 4582 GRID	555300	4198550	3.94	10
RECEPTOR 4583 GRID	555350	4198550	4.13	10
RECEPTOR 4584 GRID	555400	4198550	3.74	10
RECEPTOR 4585 GRID	555450	4198550	4.73	10
RECEPTOR 4586 GRID	555500	4198550	4.89	10

RECEPTOR 4587 GRID	555550	4198550	5.32	10
RECEPTOR 4588 GRID	555600	4198550	5.37	10
RECEPTOR 4589 GRID	555650	4198550	5.12	10
RECEPTOR 4590 GRID	555700	4198550	5.27	10
RECEPTOR 4591 GRID	555750	4198550	5.37	10
RECEPTOR 4592 GRID	555800	4198550	5.51	10
RECEPTOR 4593 GRID	555850	4198550	5.91	10
RECEPTOR 4594 GRID	555900	4198550	5.96	10
RECEPTOR 4595 GRID	555950	4198550	6.18	10
RECEPTOR 4596 GRID	556000	4198550	6.12	10
RECEPTOR 4597 GRID	556050	4198550	6.59	10
RECEPTOR 4598 GRID	556100	4198550	6.5	10
RECEPTOR 4599 GRID	556150	4198550	6.46	10
RECEPTOR 4600 GRID	556200	4198550	6.5	10
RECEPTOR 4601 GRID	556250	4198550	6.44	10
RECEPTOR 4602 GRID	556300	4198550	7.08	10
RECEPTOR 4603 GRID	556350	4198550	7.34	10
RECEPTOR 4604 GRID	556400	4198550	7.6	10
RECEPTOR 4605 GRID	556450	4198550	7.93	10
RECEPTOR 4606 GRID	556500	4198550	7.89	10
RECEPTOR 4607 GRID	556550	4198550	8.11	10
RECEPTOR 4608 GRID	556600	4198550	8.26	10
RECEPTOR 4609 GRID	554900	4198600	3.73	10
RECEPTOR 4610 GRID	554950	4198600	3.64	10
RECEPTOR 4611 GRID	555000	4198600	3.39	10
RECEPTOR 4612 GRID	555050	4198600	3.27	10
RECEPTOR 4613 GRID	555100	4198600	3.43	10
RECEPTOR 4614 GRID	555150	4198600	3.74	10
RECEPTOR 4615 GRID	555200	4198600	3.91	10
RECEPTOR 4616 GRID	555250	4198600	3.69	10
RECEPTOR 4617 GRID	555300	4198600	4.19	10
RECEPTOR 4618 GRID	555350	4198600	4.34	10
RECEPTOR 4619 GRID	555400	4198600	3.82	10
RECEPTOR 4620 GRID	555450	4198600	5.25	10
RECEPTOR 4621 GRID	555500	4198600	5.23	10
RECEPTOR 4622 GRID	555550	4198600	5.57	10
RECEPTOR 4623 GRID	555600	4198600	5.5	10
RECEPTOR 4624 GRID	555650	4198600	5.56	10
RECEPTOR 4625 GRID	555700	4198600	6.01	10
RECEPTOR 4626 GRID	555750	4198600	5.77	10
RECEPTOR 4627 GRID	555800	4198600	5.8	10
RECEPTOR 4628 GRID	555850	4198600	5.96	10
RECEPTOR 4629 GRID	555900	4198600	6.2	10
RECEPTOR 4630 GRID	555950	4198600	6.3	10
RECEPTOR 4631 GRID	556000	4198600	6.46	10

RECEPTOR 4632 GRID	556050	4198600	6.63	10
RECEPTOR 4633 GRID	556100	4198600	6.88	10
RECEPTOR 4634 GRID	556150	4198600	6.65	10
RECEPTOR 4635 GRID	556200	4198600	6.81	10
RECEPTOR 4636 GRID	556250	4198600	6.71	10
RECEPTOR 4637 GRID	556300	4198600	6.95	10
RECEPTOR 4638 GRID	556350	4198600	7.62	10
RECEPTOR 4639 GRID	556400	4198600	7.66	10
RECEPTOR 4640 GRID	556450	4198600	8.17	10
RECEPTOR 4641 GRID	556500	4198600	8.13	10
RECEPTOR 4642 GRID	556550	4198600	8.11	10
RECEPTOR 4643 GRID	556600	4198600	8.77	10
RECEPTOR 4644 GRID	554950	4198650	3.73	10
RECEPTOR 4645 GRID	555000	4198650	3.74	10
RECEPTOR 4646 GRID	555050	4198650	3.8	10
RECEPTOR 4647 GRID	555100	4198650	3.52	10
RECEPTOR 4648 GRID	555150	4198650	3.62	10
RECEPTOR 4649 GRID	555200	4198650	4.06	10
RECEPTOR 4650 GRID	555250	4198650	4.16	10
RECEPTOR 4651 GRID	555300	4198650	4.16	10
RECEPTOR 4652 GRID	555350	4198650	4.05	10
RECEPTOR 4653 GRID	555400	4198650	4.58	10
RECEPTOR 4654 GRID	555450	4198650	5.37	10
RECEPTOR 4655 GRID	555500	4198650	5.6	10
RECEPTOR 4656 GRID	555550	4198650	5.84	10
RECEPTOR 4657 GRID	555600	4198650	5.97	10
RECEPTOR 4658 GRID	555650	4198650	5.98	10
RECEPTOR 4659 GRID	555700	4198650	6.29	10
RECEPTOR 4660 GRID	555750	4198650	6.09	10
RECEPTOR 4661 GRID	555800	4198650	6.28	10
RECEPTOR 4662 GRID	555850	4198650	6.33	10
RECEPTOR 4663 GRID	555900	4198650	6.56	10
RECEPTOR 4664 GRID	555950	4198650	7.06	10
RECEPTOR 4665 GRID	556000	4198650	6.83	10
RECEPTOR 4666 GRID	556050	4198650	7.06	10
RECEPTOR 4667 GRID	556100	4198650	7.03	10
RECEPTOR 4668 GRID	556150	4198650	6.84	10
RECEPTOR 4669 GRID	556200	4198650	7.14	10
RECEPTOR 4670 GRID	556250	4198650	6.9	10
RECEPTOR 4671 GRID	556300	4198650	7.38	10
RECEPTOR 4672 GRID	556350	4198650	7.43	10
RECEPTOR 4673 GRID	556400	4198650	7.76	10
RECEPTOR 4674 GRID	556450	4198650	8.42	10
RECEPTOR 4675 GRID	556500	4198650	8.31	10
RECEPTOR 4676 GRID	556550	4198650	8.61	10

RECEPTOR 4677 GRID	556600	4198650	8.83	10
RECEPTOR 4678 GRID	555000	4198700	4.23	10
RECEPTOR 4679 GRID	555050	4198700	4.15	10
RECEPTOR 4680 GRID	555100	4198700	3.69	10
RECEPTOR 4681 GRID	555150	4198700	3.95	10
RECEPTOR 4682 GRID	555200	4198700	4.35	10
RECEPTOR 4683 GRID	555250	4198700	4.34	10
RECEPTOR 4684 GRID	555300	4198700	4.34	10
RECEPTOR 4685 GRID	555350	4198700	4.77	10
RECEPTOR 4686 GRID	555400	4198700	4.98	10
RECEPTOR 4687 GRID	555450	4198700	5.35	10
RECEPTOR 4688 GRID	555500	4198700	5.7	10
RECEPTOR 4689 GRID	555550	4198700	5.87	10
RECEPTOR 4690 GRID	555600	4198700	6.06	10
RECEPTOR 4691 GRID	555650	4198700	6.25	10
RECEPTOR 4692 GRID	555700	4198700	6.35	10
RECEPTOR 4693 GRID	555750	4198700	6.44	10
RECEPTOR 4694 GRID	555800	4198700	6.53	10
RECEPTOR 4695 GRID	555850	4198700	6.6	10
RECEPTOR 4696 GRID	555900	4198700	6.72	10
RECEPTOR 4697 GRID	555950	4198700	6.91	10
RECEPTOR 4698 GRID	556000	4198700	6.89	10
RECEPTOR 4699 GRID	556050	4198700	7.13	10
RECEPTOR 4700 GRID	556100	4198700	7.05	10
RECEPTOR 4701 GRID	556150	4198700	6.89	10
RECEPTOR 4702 GRID	556200	4198700	6.88	10
RECEPTOR 4703 GRID	556250	4198700	7.07	10
RECEPTOR 4704 GRID	556300	4198700	7.15	10
RECEPTOR 4705 GRID	556350	4198700	7.34	10
RECEPTOR 4706 GRID	556400	4198700	7.65	10
RECEPTOR 4707 GRID	556450	4198700	8.01	10
RECEPTOR 4708 GRID	556500	4198700	8.28	10
RECEPTOR 4709 GRID	556550	4198700	8.55	10
RECEPTOR 4710 GRID	556600	4198700	8.81	10
RECEPTOR 4711 GRID	555050	4198750	4.07	10
RECEPTOR 4712 GRID	555100	4198750	4.26	10
RECEPTOR 4713 GRID	555150	4198750	4.45	10
RECEPTOR 4714 GRID	555200	4198750	4.1	10
RECEPTOR 4715 GRID	555250	4198750	4.72	10
RECEPTOR 4716 GRID	555300	4198750	4.32	10
RECEPTOR 4717 GRID	555350	4198750	4.78	10
RECEPTOR 4718 GRID	555400	4198750	5.29	10
RECEPTOR 4719 GRID	555450	4198750	5.17	10
RECEPTOR 4720 GRID	555500	4198750	5.69	10
RECEPTOR 4721 GRID	555550	4198750	5.84	10

RECEPTOR 4722 GRID	555600	4198750	5.95	10
RECEPTOR 4723 GRID	555650	4198750	6.18	10
RECEPTOR 4724 GRID	555700	4198750	6.31	10
RECEPTOR 4725 GRID	555750	4198750	6.54	10
RECEPTOR 4726 GRID	555800	4198750	6.72	10
RECEPTOR 4727 GRID	555850	4198750	6.95	10
RECEPTOR 4728 GRID	555900	4198750	6.96	10
RECEPTOR 4729 GRID	555950	4198750	7.51	10
RECEPTOR 4730 GRID	556000	4198750	7.16	10
RECEPTOR 4731 GRID	556050	4198750	7.91	10
RECEPTOR 4732 GRID	556100	4198750	7.64	10
RECEPTOR 4733 GRID	556150	4198750	7.4	10
RECEPTOR 4734 GRID	556200	4198750	7.5	10
RECEPTOR 4735 GRID	556250	4198750	7.3	10
RECEPTOR 4736 GRID	556300	4198750	8.13	10
RECEPTOR 4737 GRID	556350	4198750	8.08	10
RECEPTOR 4738 GRID	556400	4198750	8.27	10
RECEPTOR 4739 GRID	556450	4198750	8.55	10
RECEPTOR 4740 GRID	556500	4198750	8.77	10
RECEPTOR 4741 GRID	556550	4198750	9.17	10
RECEPTOR 4742 GRID	556600	4198750	9.07	10
RECEPTOR 4743 GRID	555050	4198800	4.08	10
RECEPTOR 4744 GRID	555100	4198800	4.36	10
RECEPTOR 4745 GRID	555150	4198800	4.4	10
RECEPTOR 4746 GRID	555200	4198800	4.42	10
RECEPTOR 4747 GRID	555250	4198800	4.46	10
RECEPTOR 4748 GRID	555300	4198800	4.68	10
RECEPTOR 4749 GRID	555350	4198800	4.52	10
RECEPTOR 4750 GRID	555400	4198800	4.94	10
RECEPTOR 4751 GRID	555450	4198800	5.2	10
RECEPTOR 4752 GRID	555500	4198800	5.48	10
RECEPTOR 4753 GRID	555550	4198800	5.39	10
RECEPTOR 4754 GRID	555600	4198800	5.96	10
RECEPTOR 4755 GRID	555650	4198800	6.15	10
RECEPTOR 4756 GRID	555700	4198800	6.35	10
RECEPTOR 4757 GRID	555750	4198800	6.62	10
RECEPTOR 4758 GRID	555800	4198800	7.25	10
RECEPTOR 4759 GRID	555850	4198800	6.87	10
RECEPTOR 4760 GRID	555900	4198800	7.17	10
RECEPTOR 4761 GRID	555950	4198800	7.75	10
RECEPTOR 4762 GRID	556000	4198800	7.32	10
RECEPTOR 4763 GRID	556050	4198800	8.2	10
RECEPTOR 4764 GRID	556100	4198800	7.86	10
RECEPTOR 4765 GRID	556150	4198800	7.84	10
RECEPTOR 4766 GRID	556200	4198800	7.88	10

RECEPTOR 4767 GRID	556250	4198800	7.62	10
RECEPTOR 4768 GRID	556300	4198800	7.8	10
RECEPTOR 4769 GRID	556350	4198800	8.28	10
RECEPTOR 4770 GRID	556400	4198800	8.43	10
RECEPTOR 4771 GRID	556450	4198800	8.46	10
RECEPTOR 4772 GRID	556500	4198800	8.63	10
RECEPTOR 4773 GRID	556550	4198800	8.83	10
RECEPTOR 4774 GRID	556600	4198800	9.05	10
RECEPTOR 4775 GRID	555100	4198850	4.15	10
RECEPTOR 4776 GRID	555150	4198850	4.31	10
RECEPTOR 4777 GRID	555200	4198850	4.53	10
RECEPTOR 4778 GRID	555250	4198850	4.61	10
RECEPTOR 4779 GRID	555300	4198850	4.81	10
RECEPTOR 4780 GRID	555350	4198850	4.87	10
RECEPTOR 4781 GRID	555400	4198850	5.14	10
RECEPTOR 4782 GRID	555450	4198850	5.22	10
RECEPTOR 4783 GRID	555500	4198850	5.31	10
RECEPTOR 4784 GRID	555550	4198850	5.59	10
RECEPTOR 4785 GRID	555600	4198850	5.83	10
RECEPTOR 4786 GRID	555650	4198850	6.04	10
RECEPTOR 4787 GRID	555700	4198850	6.28	10
RECEPTOR 4788 GRID	555750	4198850	6.7	10
RECEPTOR 4789 GRID	555800	4198850	6.91	10
RECEPTOR 4790 GRID	555850	4198850	7.08	10
RECEPTOR 4791 GRID	555900	4198850	7.27	10
RECEPTOR 4792 GRID	555950	4198850	7.89	10
RECEPTOR 4793 GRID	556000	4198850	7.55	10
RECEPTOR 4794 GRID	556050	4198850	8.34	10
RECEPTOR 4795 GRID	556100	4198850	8.3	10
RECEPTOR 4796 GRID	556150	4198850	8.22	10
RECEPTOR 4797 GRID	556200	4198850	8.39	10
RECEPTOR 4798 GRID	556250	4198850	7.88	10
RECEPTOR 4799 GRID	556300	4198850	8.06	10
RECEPTOR 4800 GRID	556350	4198850	8.17	10
RECEPTOR 4801 GRID	556400	4198850	8.29	10
RECEPTOR 4802 GRID	556450	4198850	8.6	10
RECEPTOR 4803 GRID	556500	4198850	8.59	10
RECEPTOR 4804 GRID	556550	4198850	8.65	10
RECEPTOR 4805 GRID	556600	4198850	9.26	10
RECEPTOR 4806 GRID	555150	4198900	4.49	10
RECEPTOR 4807 GRID	555200	4198900	4.67	10
RECEPTOR 4808 GRID	555250	4198900	4.67	10
RECEPTOR 4809 GRID	555300	4198900	4.86	10
RECEPTOR 4810 GRID	555350	4198900	4.55	10
RECEPTOR 4811 GRID	555400	4198900	5.1	10

RECEPTOR 4812 GRID	555450	4198900	5.76	10
RECEPTOR 4813 GRID	555500	4198900	5.45	10
RECEPTOR 4814 GRID	555550	4198900	5.43	10
RECEPTOR 4815 GRID	555600	4198900	5.93	10
RECEPTOR 4816 GRID	555650	4198900	5.99	10
RECEPTOR 4817 GRID	555700	4198900	6.58	10
RECEPTOR 4818 GRID	555750	4198900	6.4	10
RECEPTOR 4819 GRID	555800	4198900	6.98	10
RECEPTOR 4820 GRID	555850	4198900	7.15	10
RECEPTOR 4821 GRID	555900	4198900	7.17	10
RECEPTOR 4822 GRID	555950	4198900	7.9	10
RECEPTOR 4823 GRID	556000	4198900	7.61	10
RECEPTOR 4824 GRID	556050	4198900	7.94	10
RECEPTOR 4825 GRID	556100	4198900	8.4	10
RECEPTOR 4826 GRID	556150	4198900	8.47	10
RECEPTOR 4827 GRID	556200	4198900	8.46	10
RECEPTOR 4828 GRID	556250	4198900	8.33	10
RECEPTOR 4829 GRID	556300	4198900	8.29	10
RECEPTOR 4830 GRID	556350	4198900	8.4	10
RECEPTOR 4831 GRID	556400	4198900	8.32	10
RECEPTOR 4832 GRID	556450	4198900	8.41	10
RECEPTOR 4833 GRID	556500	4198900	8.7	10
RECEPTOR 4834 GRID	556550	4198900	8.8	10
RECEPTOR 4835 GRID	556600	4198900	9.21	10
RECEPTOR 4836 GRID	555200	4198950	4.49	10
RECEPTOR 4837 GRID	555250	4198950	4.61	10
RECEPTOR 4838 GRID	555300	4198950	4.47	10
RECEPTOR 4839 GRID	555350	4198950	4.75	10
RECEPTOR 4840 GRID	555400	4198950	4.92	10
RECEPTOR 4841 GRID	555450	4198950	4.96	10
RECEPTOR 4842 GRID	555500	4198950	5.34	10
RECEPTOR 4843 GRID	555550	4198950	5.96	10
RECEPTOR 4844 GRID	555600	4198950	5.7	10
RECEPTOR 4845 GRID	555650	4198950	5.91	10
RECEPTOR 4846 GRID	555700	4198950	6.41	10
RECEPTOR 4847 GRID	555750	4198950	6.26	10
RECEPTOR 4848 GRID	555800	4198950	6.77	10
RECEPTOR 4849 GRID	555850	4198950	6.83	10
RECEPTOR 4850 GRID	555900	4198950	6.86	10
RECEPTOR 4851 GRID	555950	4198950	7.62	10
RECEPTOR 4852 GRID	556000	4198950	7.5	10
RECEPTOR 4853 GRID	556050	4198950	8.11	10
RECEPTOR 4854 GRID	556100	4198950	8.19	10
RECEPTOR 4855 GRID	556150	4198950	8.45	10
RECEPTOR 4856 GRID	556200	4198950	8.83	10

RECEPTOR 4857 GRID	556250	4198950	8.63	10
RECEPTOR 4858 GRID	556300	4198950	8.55	10
RECEPTOR 4859 GRID	556350	4198950	8.46	10
RECEPTOR 4860 GRID	556400	4198950	8.81	10
RECEPTOR 4861 GRID	556450	4198950	8.98	10
RECEPTOR 4862 GRID	556500	4198950	9.09	10
RECEPTOR 4863 GRID	556550	4198950	9.21	10
RECEPTOR 4864 GRID	556600	4198950	10.18	10
RECEPTOR 4865 GRID	555250	4199000	4.29	10
RECEPTOR 4866 GRID	555300	4199000	4.38	10
RECEPTOR 4867 GRID	555350	4199000	4.51	10
RECEPTOR 4868 GRID	555400	4199000	4.63	10
RECEPTOR 4869 GRID	555450	4199000	5	10
RECEPTOR 4870 GRID	555500	4199000	5.17	10
RECEPTOR 4871 GRID	555550	4199000	5.44	10
RECEPTOR 4872 GRID	555600	4199000	5.64	10
RECEPTOR 4873 GRID	555650	4199000	5.9	10
RECEPTOR 4874 GRID	555700	4199000	5.96	10
RECEPTOR 4875 GRID	555750	4199000	6.04	10
RECEPTOR 4876 GRID	555800	4199000	6.25	10
RECEPTOR 4877 GRID	555850	4199000	6.47	10
RECEPTOR 4878 GRID	555900	4199000	6.51	10
RECEPTOR 4879 GRID	555950	4199000	6.94	10
RECEPTOR 4880 GRID	556000	4199000	7.36	10
RECEPTOR 4881 GRID	556050	4199000	7.72	10
RECEPTOR 4882 GRID	556100	4199000	8.73	10
RECEPTOR 4883 GRID	556150	4199000	8.46	10
RECEPTOR 4884 GRID	556200	4199000	8.44	10
RECEPTOR 4885 GRID	556250	4199000	8.71	10
RECEPTOR 4886 GRID	556300	4199000	8.85	10
RECEPTOR 4887 GRID	556350	4199000	9	10
RECEPTOR 4888 GRID	556400	4199000	9.18	10
RECEPTOR 4889 GRID	556450	4199000	9.31	10
RECEPTOR 4890 GRID	556500	4199000	9.57	10
RECEPTOR 4891 GRID	556550	4199000	10.19	10
RECEPTOR 4892 GRID	556600	4199000	10.31	10
RECEPTOR 4893 GRID	555250	4199050	4.28	10
RECEPTOR 4894 GRID	555300	4199050	4.44	10
RECEPTOR 4895 GRID	555350	4199050	4.54	10
RECEPTOR 4896 GRID	555400	4199050	4.63	10
RECEPTOR 4897 GRID	555450	4199050	4.8	10
RECEPTOR 4898 GRID	555500	4199050	5.04	10
RECEPTOR 4899 GRID	555550	4199050	5.21	10
RECEPTOR 4900 GRID	555600	4199050	5.86	10
RECEPTOR 4901 GRID	555650	4199050	5.59	10

RECEPTOR 4902 GRID	555700	4199050	5.96	10
RECEPTOR 4903 GRID	555750	4199050	6.05	10
RECEPTOR 4904 GRID	555800	4199050	6.42	10
RECEPTOR 4905 GRID	555850	4199050	6.87	10
RECEPTOR 4906 GRID	555900	4199050	6.83	10
RECEPTOR 4907 GRID	555950	4199050	6.54	10
RECEPTOR 4908 GRID	556000	4199050	7.82	10
RECEPTOR 4909 GRID	556050	4199050	8.22	10
RECEPTOR 4910 GRID	556100	4199050	8.39	10
RECEPTOR 4911 GRID	556150	4199050	9.07	10
RECEPTOR 4912 GRID	556200	4199050	9.11	10
RECEPTOR 4913 GRID	556250	4199050	8.92	10
RECEPTOR 4914 GRID	556300	4199050	9.23	10
RECEPTOR 4915 GRID	556350	4199050	9.79	10
RECEPTOR 4916 GRID	556400	4199050	10.1	10
RECEPTOR 4917 GRID	556450	4199050	10.77	10
RECEPTOR 4918 GRID	556500	4199050	10.89	10
RECEPTOR 4919 GRID	556550	4199050	10.84	10
RECEPTOR 4920 GRID	556600	4199050	10.88	10
RECEPTOR 4921 GRID	555250	4199100	3.99	10
RECEPTOR 4922 GRID	555300	4199100	4.3	10
RECEPTOR 4923 GRID	555350	4199100	4.18	10
RECEPTOR 4924 GRID	555400	4199100	4.34	10
RECEPTOR 4925 GRID	555450	4199100	4.69	10
RECEPTOR 4926 GRID	555500	4199100	5.13	10
RECEPTOR 4927 GRID	555550	4199100	5.04	10
RECEPTOR 4928 GRID	555600	4199100	5.25	10
RECEPTOR 4929 GRID	555650	4199100	5.38	10
RECEPTOR 4930 GRID	555700	4199100	5.5	10
RECEPTOR 4931 GRID	555750	4199100	5.84	10
RECEPTOR 4932 GRID	555800	4199100	6.32	10
RECEPTOR 4933 GRID	555850	4199100	6.74	10
RECEPTOR 4934 GRID	555900	4199100	6.68	10
RECEPTOR 4935 GRID	555950	4199100	6.91	10
RECEPTOR 4936 GRID	556000	4199100	7.26	10
RECEPTOR 4937 GRID	556050	4199100	8.37	10
RECEPTOR 4938 GRID	556100	4199100	8.71	10
RECEPTOR 4939 GRID	556150	4199100	8.91	10
RECEPTOR 4940 GRID	556200	4199100	9.12	10
RECEPTOR 4941 GRID	556250	4199100	9.1	10
RECEPTOR 4942 GRID	556300	4199100	9.41	10
RECEPTOR 4943 GRID	556350	4199100	9.68	10
RECEPTOR 4944 GRID	556400	4199100	10.04	10
RECEPTOR 4945 GRID	556450	4199100	10.82	10
RECEPTOR 4946 GRID	556500	4199100	10.96	10

RECEPTOR 4947 GRID	556550	4199100	10.79	10
RECEPTOR 4948 GRID	556600	4199100	10.92	10
RECEPTOR 4949 GRID	555250	4199150	3.92	10
RECEPTOR 4950 GRID	555300	4199150	4.04	10
RECEPTOR 4951 GRID	555350	4199150	4.15	10
RECEPTOR 4952 GRID	555400	4199150	4.25	10
RECEPTOR 4953 GRID	555450	4199150	4.45	10
RECEPTOR 4954 GRID	555500	4199150	4.75	10
RECEPTOR 4955 GRID	555550	4199150	4.98	10
RECEPTOR 4956 GRID	555600	4199150	4.94	10
RECEPTOR 4957 GRID	555650	4199150	5.11	10
RECEPTOR 4958 GRID	555700	4199150	5.35	10
RECEPTOR 4959 GRID	555750	4199150	5.74	10
RECEPTOR 4960 GRID	555800	4199150	6.05	10
RECEPTOR 4961 GRID	555850	4199150	6.45	10
RECEPTOR 4962 GRID	555900	4199150	6.67	10
RECEPTOR 4963 GRID	555950	4199150	6.86	10
RECEPTOR 4964 GRID	556000	4199150	7.41	10
RECEPTOR 4965 GRID	556050	4199150	7.72	10
RECEPTOR 4966 GRID	556100	4199150	8.03	10
RECEPTOR 4967 GRID	556150	4199150	8.66	10
RECEPTOR 4968 GRID	556200	4199150	9.09	10
RECEPTOR 4969 GRID	556250	4199150	8.96	10
RECEPTOR 4970 GRID	556300	4199150	9.21	10
RECEPTOR 4971 GRID	556350	4199150	9.51	10
RECEPTOR 4972 GRID	556400	4199150	9.69	10
RECEPTOR 4973 GRID	556450	4199150	10.77	10
RECEPTOR 4974 GRID	556500	4199150	10.9	10
RECEPTOR 4975 GRID	556550	4199150	10.97	10
RECEPTOR 4976 GRID	556600	4199150	10.91	10
RECEPTOR 4977 GRID	555300	4199200	3.78	10
RECEPTOR 4978 GRID	555350	4199200	3.88	10
RECEPTOR 4979 GRID	555400	4199200	4.04	10
RECEPTOR 4980 GRID	555450	4199200	4.5	10
RECEPTOR 4981 GRID	555500	4199200	4.79	10
RECEPTOR 4982 GRID	555550	4199200	5.06	10
RECEPTOR 4983 GRID	555600	4199200	4.98	10
RECEPTOR 4984 GRID	555650	4199200	4.88	10
RECEPTOR 4985 GRID	555700	4199200	5.32	10
RECEPTOR 4986 GRID	555750	4199200	5.88	10
RECEPTOR 4987 GRID	555800	4199200	6.05	10
RECEPTOR 4988 GRID	555850	4199200	6.29	10
RECEPTOR 4989 GRID	555900	4199200	7.26	10
RECEPTOR 4990 GRID	555950	4199200	6.74	10
RECEPTOR 4991 GRID	556000	4199200	7.35	10

RECEPTOR 4992 GRID	556050	4199200	7.43	10
RECEPTOR 4993 GRID	556100	4199200	8.09	10
RECEPTOR 4994 GRID	556150	4199200	8.48	10
RECEPTOR 4995 GRID	556200	4199200	8.97	10
RECEPTOR 4996 GRID	556250	4199200	8.84	10
RECEPTOR 4997 GRID	556300	4199200	9.3	10
RECEPTOR 4998 GRID	556350	4199200	9.77	10
RECEPTOR 4999 GRID	556400	4199200	9.71	10
RECEPTOR 5000 GRID	556450	4199200	10.39	10
RECEPTOR 5001 GRID	556500	4199200	10.38	10
RECEPTOR 5002 GRID	556550	4199200	11.15	10
RECEPTOR 5003 GRID	556600	4199200	10.8	10
RECEPTOR 5004 GRID	555300	4199250	3.9	10
RECEPTOR 5005 GRID	555350	4199250	3.76	10
RECEPTOR 5006 GRID	555400	4199250	4.22	10
RECEPTOR 5007 GRID	555450	4199250	4.65	10
RECEPTOR 5008 GRID	555500	4199250	4.99	10
RECEPTOR 5009 GRID	555550	4199250	4.84	10
RECEPTOR 5010 GRID	555600	4199250	5.03	10
RECEPTOR 5011 GRID	555650	4199250	5.06	10
RECEPTOR 5012 GRID	555700	4199250	5.56	10
RECEPTOR 5013 GRID	555750	4199250	5.68	10
RECEPTOR 5014 GRID	555800	4199250	6.04	10
RECEPTOR 5015 GRID	555850	4199250	6.65	10
RECEPTOR 5016 GRID	555900	4199250	6.85	10
RECEPTOR 5017 GRID	555950	4199250	6.97	10
RECEPTOR 5018 GRID	556000	4199250	7.16	10
RECEPTOR 5019 GRID	556050	4199250	7.5	10
RECEPTOR 5020 GRID	556100	4199250	7.73	10
RECEPTOR 5021 GRID	556150	4199250	8.24	10
RECEPTOR 5022 GRID	556200	4199250	8.55	10
RECEPTOR 5023 GRID	556250	4199250	8.84	10
RECEPTOR 5024 GRID	556300	4199250	9.21	10
RECEPTOR 5025 GRID	556350	4199250	9.58	10
RECEPTOR 5026 GRID	556400	4199250	9.83	10
RECEPTOR 5027 GRID	556450	4199250	10.48	10
RECEPTOR 5028 GRID	556500	4199250	10.64	10
RECEPTOR 5029 GRID	556550	4199250	11.48	10
RECEPTOR 5030 GRID	556600	4199250	11.56	10
RECEPTOR 5031 GRID	555350	4199300	4.21	10
RECEPTOR 5032 GRID	555400	4199300	4.21	10
RECEPTOR 5033 GRID	555450	4199300	4.67	10
RECEPTOR 5034 GRID	555500	4199300	4.94	10
RECEPTOR 5035 GRID	555550	4199300	4.65	10
RECEPTOR 5036 GRID	555600	4199300	5.12	10

RECEPTOR 5037 GRID	555650	4199300	5.06	10
RECEPTOR 5038 GRID	555700	4199300	5.48	10
RECEPTOR 5039 GRID	555750	4199300	5.86	10
RECEPTOR 5040 GRID	555800	4199300	6.02	10
RECEPTOR 5041 GRID	555850	4199300	6.29	10
RECEPTOR 5042 GRID	555900	4199300	6.38	10
RECEPTOR 5043 GRID	555950	4199300	6.69	10
RECEPTOR 5044 GRID	556000	4199300	6.97	10
RECEPTOR 5045 GRID	556050	4199300	7.37	10
RECEPTOR 5046 GRID	556100	4199300	7.78	10
RECEPTOR 5047 GRID	556150	4199300	8.13	10
RECEPTOR 5048 GRID	556200	4199300	8.53	10
RECEPTOR 5049 GRID	556250	4199300	8.75	10
RECEPTOR 5050 GRID	556300	4199300	9.33	10
RECEPTOR 5051 GRID	556350	4199300	9.42	10
RECEPTOR 5052 GRID	556400	4199300	9.77	10
RECEPTOR 5053 GRID	556450	4199300	10.26	10
RECEPTOR 5054 GRID	556500	4199300	10.63	10
RECEPTOR 5055 GRID	556550	4199300	11.32	10
RECEPTOR 5056 GRID	556600	4199300	12.12	10
RECEPTOR 5057 GRID	555400	4199350	4.06	10
RECEPTOR 5058 GRID	555450	4199350	4.31	10
RECEPTOR 5059 GRID	555500	4199350	4.62	10
RECEPTOR 5060 GRID	555550	4199350	4.52	10
RECEPTOR 5061 GRID	555600	4199350	4.96	10
RECEPTOR 5062 GRID	555650	4199350	5.05	10
RECEPTOR 5063 GRID	555700	4199350	5.69	10
RECEPTOR 5064 GRID	555750	4199350	5.77	10
RECEPTOR 5065 GRID	555800	4199350	5.9	10
RECEPTOR 5066 GRID	555850	4199350	6.13	10
RECEPTOR 5067 GRID	555900	4199350	6.46	10
RECEPTOR 5068 GRID	555950	4199350	6.5	10
RECEPTOR 5069 GRID	556000	4199350	6.87	10
RECEPTOR 5070 GRID	556050	4199350	7.46	10
RECEPTOR 5071 GRID	556100	4199350	7.57	10
RECEPTOR 5072 GRID	556150	4199350	8	10
RECEPTOR 5073 GRID	556200	4199350	8.39	10
RECEPTOR 5074 GRID	556250	4199350	8.55	10
RECEPTOR 5075 GRID	556300	4199350	9.06	10
RECEPTOR 5076 GRID	556350	4199350	9.34	10
RECEPTOR 5077 GRID	556400	4199350	9.83	10
RECEPTOR 5078 GRID	556450	4199350	10.25	10
RECEPTOR 5079 GRID	556500	4199350	10.63	10
RECEPTOR 5080 GRID	556550	4199350	11.45	10
RECEPTOR 5081 GRID	556600	4199350	11.24	10

RECEPTOR 5082 GRID	555450	4199400	3.94	10
RECEPTOR 5083 GRID	555500	4199400	4.02	10
RECEPTOR 5084 GRID	555550	4199400	4.53	10
RECEPTOR 5085 GRID	555600	4199400	4.86	10
RECEPTOR 5086 GRID	555650	4199400	4.93	10
RECEPTOR 5087 GRID	555700	4199400	5.47	10
RECEPTOR 5088 GRID	555750	4199400	5.64	10
RECEPTOR 5089 GRID	555800	4199400	5.96	10
RECEPTOR 5090 GRID	555850	4199400	6.15	10
RECEPTOR 5091 GRID	555900	4199400	6.35	10
RECEPTOR 5092 GRID	555950	4199400	6.59	10
RECEPTOR 5093 GRID	556000	4199400	6.87	10
RECEPTOR 5094 GRID	556050	4199400	7.45	10
RECEPTOR 5095 GRID	556100	4199400	7.6	10
RECEPTOR 5096 GRID	556150	4199400	7.99	10
RECEPTOR 5097 GRID	556200	4199400	8.25	10
RECEPTOR 5098 GRID	556250	4199400	8.68	10
RECEPTOR 5099 GRID	556300	4199400	9.2	10
RECEPTOR 5100 GRID	556350	4199400	9.49	10
RECEPTOR 5101 GRID	556400	4199400	9.77	10
RECEPTOR 5102 GRID	556450	4199400	10.35	10
RECEPTOR 5103 GRID	556500	4199400	10.7	10
RECEPTOR 5104 GRID	556550	4199400	12.02	10
RECEPTOR 5105 GRID	556600	4199400	11.2	10
RECEPTOR 5106 GRID	555500	4199450	4.09	10
RECEPTOR 5107 GRID	555550	4199450	4.7	10
RECEPTOR 5108 GRID	555600	4199450	4.92	10
RECEPTOR 5109 GRID	555650	4199450	5.04	10
RECEPTOR 5110 GRID	555700	4199450	5.48	10
RECEPTOR 5111 GRID	555750	4199450	5.76	10
RECEPTOR 5112 GRID	555800	4199450	5.93	10
RECEPTOR 5113 GRID	555850	4199450	6.24	10
RECEPTOR 5114 GRID	555900	4199450	6.47	10
RECEPTOR 5115 GRID	555950	4199450	6.82	10
RECEPTOR 5116 GRID	556000	4199450	6.91	10
RECEPTOR 5117 GRID	556050	4199450	7.03	10
RECEPTOR 5118 GRID	556100	4199450	7.64	10
RECEPTOR 5119 GRID	556150	4199450	7.99	10
RECEPTOR 5120 GRID	556200	4199450	8.43	10
RECEPTOR 5121 GRID	556250	4199450	8.82	10
RECEPTOR 5122 GRID	556300	4199450	9.18	10
RECEPTOR 5123 GRID	556350	4199450	9.59	10
RECEPTOR 5124 GRID	556400	4199450	9.87	10
RECEPTOR 5125 GRID	556450	4199450	10.57	10
RECEPTOR 5126 GRID	556500	4199450	10.58	10

RECEPTOR 5127 GRID	556550	4199450	11.14	10
RECEPTOR 5128 GRID	556600	4199450	11.73	10
RECEPTOR 5129 GRID	555500	4199500	4.22	10
RECEPTOR 5130 GRID	555550	4199500	4.61	10
RECEPTOR 5131 GRID	555600	4199500	4.87	10
RECEPTOR 5132 GRID	555650	4199500	5.02	10
RECEPTOR 5133 GRID	555700	4199500	5.39	10
RECEPTOR 5134 GRID	555750	4199500	5.71	10
RECEPTOR 5135 GRID	555800	4199500	6.18	10
RECEPTOR 5136 GRID	555850	4199500	6.38	10
RECEPTOR 5137 GRID	555900	4199500	6.61	10
RECEPTOR 5138 GRID	555950	4199500	6.84	10
RECEPTOR 5139 GRID	556000	4199500	7.02	10
RECEPTOR 5140 GRID	556050	4199500	7.46	10
RECEPTOR 5141 GRID	556100	4199500	7.69	10
RECEPTOR 5142 GRID	556150	4199500	8.08	10
RECEPTOR 5143 GRID	556200	4199500	8.79	10
RECEPTOR 5144 GRID	556250	4199500	8.94	10
RECEPTOR 5145 GRID	556300	4199500	9.28	10
RECEPTOR 5146 GRID	556350	4199500	9.52	10
RECEPTOR 5147 GRID	556400	4199500	9.99	10
RECEPTOR 5148 GRID	556450	4199500	10.69	10
RECEPTOR 5149 GRID	556500	4199500	11.74	10
RECEPTOR 5150 GRID	556550	4199500	11.19	10
RECEPTOR 5151 GRID	556600	4199500	12.05	10
RECEPTOR 5152 GRID	555550	4199550	4.76	10
RECEPTOR 5153 GRID	555600	4199550	4.9	10
RECEPTOR 5154 GRID	555650	4199550	4.9	10
RECEPTOR 5155 GRID	555700	4199550	5.45	10
RECEPTOR 5156 GRID	555750	4199550	5.74	10
RECEPTOR 5157 GRID	555800	4199550	6	10
RECEPTOR 5158 GRID	555850	4199550	6.34	10
RECEPTOR 5159 GRID	555900	4199550	6.73	10
RECEPTOR 5160 GRID	555950	4199550	6.92	10
RECEPTOR 5161 GRID	556000	4199550	7.17	10
RECEPTOR 5162 GRID	556050	4199550	7.65	10
RECEPTOR 5163 GRID	556100	4199550	7.93	10
RECEPTOR 5164 GRID	556150	4199550	8.17	10
RECEPTOR 5165 GRID	556200	4199550	8.77	10
RECEPTOR 5166 GRID	556250	4199550	8.97	10
RECEPTOR 5167 GRID	556300	4199550	9.5	10
RECEPTOR 5168 GRID	556350	4199550	9.56	10
RECEPTOR 5169 GRID	556400	4199550	10	10
RECEPTOR 5170 GRID	556450	4199550	11.29	10
RECEPTOR 5171 GRID	556500	4199550	11.31	10

RECEPTOR 5172 GRID	556550	4199550	11.37	10
RECEPTOR 5173 GRID	556600	4199550	12.16	10
RECEPTOR 5174 GRID	555600	4199600	4.8	10
RECEPTOR 5175 GRID	555650	4199600	4.76	10
RECEPTOR 5176 GRID	555700	4199600	5.18	10
RECEPTOR 5177 GRID	555750	4199600	5.62	10
RECEPTOR 5178 GRID	555800	4199600	6.19	10
RECEPTOR 5179 GRID	555850	4199600	6.17	10
RECEPTOR 5180 GRID	555900	4199600	6.68	10
RECEPTOR 5181 GRID	555950	4199600	6.96	10
RECEPTOR 5182 GRID	556000	4199600	7.24	10
RECEPTOR 5183 GRID	556050	4199600	7.97	10
RECEPTOR 5184 GRID	556100	4199600	7.94	10
RECEPTOR 5185 GRID	556150	4199600	8.27	10
RECEPTOR 5186 GRID	556200	4199600	8.94	10
RECEPTOR 5187 GRID	556250	4199600	8.97	10
RECEPTOR 5188 GRID	556300	4199600	9.25	10
RECEPTOR 5189 GRID	556350	4199600	9.63	10
RECEPTOR 5190 GRID	556400	4199600	9.94	10
RECEPTOR 5191 GRID	556450	4199600	11.52	10
RECEPTOR 5192 GRID	556500	4199600	11.38	10
RECEPTOR 5193 GRID	556550	4199600	11.34	10
RECEPTOR 5194 GRID	556600	4199600	11.94	10
RECEPTOR 5195 GRID	555650	4199650	5.05	10
RECEPTOR 5196 GRID	555700	4199650	5.34	10
RECEPTOR 5197 GRID	555750	4199650	5.86	10
RECEPTOR 5198 GRID	555800	4199650	6.08	10
RECEPTOR 5199 GRID	555850	4199650	6	10
RECEPTOR 5200 GRID	555900	4199650	6.69	10
RECEPTOR 5201 GRID	555950	4199650	6.92	10
RECEPTOR 5202 GRID	556000	4199650	7.16	10
RECEPTOR 5203 GRID	556050	4199650	7.68	10
RECEPTOR 5204 GRID	556100	4199650	8	10
RECEPTOR 5205 GRID	556150	4199650	8.34	10
RECEPTOR 5206 GRID	556200	4199650	8.53	10
RECEPTOR 5207 GRID	556250	4199650	9.21	10
RECEPTOR 5208 GRID	556300	4199650	11.36	10
RECEPTOR 5209 GRID	556350	4199650	9.78	10
RECEPTOR 5210 GRID	556400	4199650	10.13	10
RECEPTOR 5211 GRID	556450	4199650	10.97	10
RECEPTOR 5212 GRID	556500	4199650	10.85	10
RECEPTOR 5213 GRID	556550	4199650	11.51	10
RECEPTOR 5214 GRID	556600	4199650	12.09	10
RECEPTOR 5215 GRID	555700	4199700	5.41	10
RECEPTOR 5216 GRID	555750	4199700	5.9	10

RECEPTOR 5217 GRID	555800	4199700	6.27	10
RECEPTOR 5218 GRID	555850	4199700	6.23	10
RECEPTOR 5219 GRID	555900	4199700	6.61	10
RECEPTOR 5220 GRID	555950	4199700	6.9	10
RECEPTOR 5221 GRID	556000	4199700	7.34	10
RECEPTOR 5222 GRID	556050	4199700	7.82	10
RECEPTOR 5223 GRID	556100	4199700	8.19	10
RECEPTOR 5224 GRID	556150	4199700	8.37	10
RECEPTOR 5225 GRID	556200	4199700	8.73	10
RECEPTOR 5226 GRID	556250	4199700	9.72	10
RECEPTOR 5227 GRID	556300	4199700	9.71	10
RECEPTOR 5228 GRID	556350	4199700	10.36	10
RECEPTOR 5229 GRID	556400	4199700	10.64	10
RECEPTOR 5230 GRID	556450	4199700	11.37	10
RECEPTOR 5231 GRID	556500	4199700	11.3	10
RECEPTOR 5232 GRID	556550	4199700	11.69	10
RECEPTOR 5233 GRID	556600	4199700	12.37	10
RECEPTOR 5234 GRID	555700	4199750	5.5	10
RECEPTOR 5235 GRID	555750	4199750	5.96	10
RECEPTOR 5236 GRID	555800	4199750	6.48	10
RECEPTOR 5237 GRID	555850	4199750	6.27	10
RECEPTOR 5238 GRID	555900	4199750	6.77	10
RECEPTOR 5239 GRID	555950	4199750	7.05	10
RECEPTOR 5240 GRID	556000	4199750	7.52	10
RECEPTOR 5241 GRID	556050	4199750	7.76	10
RECEPTOR 5242 GRID	556100	4199750	8.19	10
RECEPTOR 5243 GRID	556150	4199750	8.58	10
RECEPTOR 5244 GRID	556200	4199750	8.87	10
RECEPTOR 5245 GRID	556250	4199750	9.49	10
RECEPTOR 5246 GRID	556300	4199750	9.56	10
RECEPTOR 5247 GRID	556350	4199750	10.3	10
RECEPTOR 5248 GRID	556400	4199750	10.84	10
RECEPTOR 5249 GRID	556450	4199750	11	10
RECEPTOR 5250 GRID	556500	4199750	11.36	10
RECEPTOR 5251 GRID	556550	4199750	12.35	10
RECEPTOR 5252 GRID	556600	4199750	12.81	10
RECEPTOR 5253 GRID	555750	4199800	6.01	10
RECEPTOR 5254 GRID	555800	4199800	6.24	10
RECEPTOR 5255 GRID	555850	4199800	6.35	10
RECEPTOR 5256 GRID	555900	4199800	6.99	10
RECEPTOR 5257 GRID	555950	4199800	7.1	10
RECEPTOR 5258 GRID	556000	4199800	7.44	10
RECEPTOR 5259 GRID	556050	4199800	7.53	10
RECEPTOR 5260 GRID	556100	4199800	7.99	10
RECEPTOR 5261 GRID	556150	4199800	8.52	10

RECEPTOR 5262 GRID	556200	4199800	9.94	10
RECEPTOR 5263 GRID	556250	4199800	9.51	10
RECEPTOR 5264 GRID	556300	4199800	10.08	10
RECEPTOR 5265 GRID	556350	4199800	10.73	10
RECEPTOR 5266 GRID	556400	4199800	11.23	10
RECEPTOR 5267 GRID	556450	4199800	10.74	10
RECEPTOR 5268 GRID	556500	4199800	11.53	10
RECEPTOR 5269 GRID	556550	4199800	12.09	10
RECEPTOR 5270 GRID	556600	4199800	12.56	10
RECEPTOR 5271 GRID	555800	4199850	6.09	10
RECEPTOR 5272 GRID	555850	4199850	6.5	10
RECEPTOR 5273 GRID	555900	4199850	6.79	10
RECEPTOR 5274 GRID	555950	4199850	6.95	10
RECEPTOR 5275 GRID	556000	4199850	7.34	10
RECEPTOR 5276 GRID	556050	4199850	7.6	10
RECEPTOR 5277 GRID	556100	4199850	7.94	10
RECEPTOR 5278 GRID	556150	4199850	8.58	10
RECEPTOR 5279 GRID	556200	4199850	8.94	10
RECEPTOR 5280 GRID	556250	4199850	9.44	10
RECEPTOR 5281 GRID	556300	4199850	10.12	10
RECEPTOR 5282 GRID	556350	4199850	10.97	10
RECEPTOR 5283 GRID	556400	4199850	11.13	10
RECEPTOR 5284 GRID	556450	4199850	11.06	10
RECEPTOR 5285 GRID	556500	4199850	11.13	10
RECEPTOR 5286 GRID	556550	4199850	11.61	10
RECEPTOR 5287 GRID	556600	4199850	12.02	10
RECEPTOR 5288 GRID	555800	4199900	6.48	10
RECEPTOR 5289 GRID	555850	4199900	6	10
RECEPTOR 5290 GRID	555900	4199900	7.01	10
RECEPTOR 5291 GRID	555950	4199900	7.11	10
RECEPTOR 5292 GRID	556000	4199900	7.33	10
RECEPTOR 5293 GRID	556050	4199900	8.06	10
RECEPTOR 5294 GRID	556100	4199900	8.35	10
RECEPTOR 5295 GRID	556150	4199900	8.74	10
RECEPTOR 5296 GRID	556200	4199900	9.1	10
RECEPTOR 5297 GRID	556250	4199900	9.4	10
RECEPTOR 5298 GRID	556300	4199900	9.94	10
RECEPTOR 5299 GRID	556350	4199900	10.53	10
RECEPTOR 5300 GRID	556400	4199900	11.36	10
RECEPTOR 5301 GRID	556450	4199900	12.01	10
RECEPTOR 5302 GRID	556500	4199900	11.59	10
RECEPTOR 5303 GRID	556550	4199900	11.83	10
RECEPTOR 5304 GRID	556600	4199900	12.67	10
RECEPTOR 5305 GRID	555800	4199950	8.6	10
RECEPTOR 5306 GRID	555850	4199950	6.6	10

RECEPTOR 5307 GRID	555900	4199950	7.17	10
RECEPTOR 5308 GRID	555950	4199950	7.48	10
RECEPTOR 5309 GRID	556000	4199950	7.55	10
RECEPTOR 5310 GRID	556050	4199950	7.91	10
RECEPTOR 5311 GRID	556100	4199950	8.32	10
RECEPTOR 5312 GRID	556150	4199950	8.8	10
RECEPTOR 5313 GRID	556200	4199950	8.99	10
RECEPTOR 5314 GRID	556250	4199950	9.09	10
RECEPTOR 5315 GRID	556300	4199950	10.1	10
RECEPTOR 5316 GRID	556350	4199950	10.26	10
RECEPTOR 5317 GRID	556400	4199950	11.12	10
RECEPTOR 5318 GRID	556450	4199950	11.73	10
RECEPTOR 5319 GRID	556500	4199950	12.36	10
RECEPTOR 5320 GRID	556550	4199950	12.2	10
RECEPTOR 5321 GRID	556600	4199950	12.41	10
RECEPTOR 5322 GRID	555800	4200000	9.71	10
RECEPTOR 5323 GRID	555850	4200000	4.9	10
RECEPTOR 5324 GRID	555900	4200000	7.25	10
RECEPTOR 5325 GRID	555950	4200000	7.45	10
RECEPTOR 5326 GRID	556000	4200000	7.61	10
RECEPTOR 5327 GRID	556050	4200000	7.99	10
RECEPTOR 5328 GRID	556100	4200000	8.25	10
RECEPTOR 5329 GRID	556150	4200000	8.81	10
RECEPTOR 5330 GRID	556200	4200000	8.84	10
RECEPTOR 5331 GRID	556250	4200000	9.36	10
RECEPTOR 5332 GRID	556300	4200000	10.15	10
RECEPTOR 5333 GRID	556350	4200000	11.15	10
RECEPTOR 5334 GRID	556400	4200000	11.42	10
RECEPTOR 5335 GRID	556450	4200000	11.45	10
RECEPTOR 5336 GRID	556500	4200000	11.93	10
RECEPTOR 5337 GRID	556550	4200000	12.45	10
RECEPTOR 5338 GRID	556600	4200000	12.69	10
RECEPTOR 5339 GRID	555750	4200050	6.49	10
RECEPTOR 5340 GRID	555800	4200050	6.48	10
RECEPTOR 5341 GRID	555850	4200050	12.12	10
RECEPTOR 5342 GRID	555900	4200050	6.96	10
RECEPTOR 5343 GRID	555950	4200050	7.63	10
RECEPTOR 5344 GRID	556000	4200050	7.87	10
RECEPTOR 5345 GRID	556050	4200050	8.32	10
RECEPTOR 5346 GRID	556100	4200050	8.94	10
RECEPTOR 5347 GRID	556150	4200050	8.92	10
RECEPTOR 5348 GRID	556200	4200050	9.56	10
RECEPTOR 5349 GRID	556250	4200050	9.8	10
RECEPTOR 5350 GRID	556300	4200050	11.13	10
RECEPTOR 5351 GRID	556350	4200050	11.44	10

RECEPTOR 5352 GRID	556400	4200050	11.36	10
RECEPTOR 5353 GRID	556450	4200050	11.41	10
RECEPTOR 5354 GRID	556500	4200050	12.06	10
RECEPTOR 5355 GRID	556550	4200050	12.06	10
RECEPTOR 5356 GRID	556600	4200050	12.75	10
RECEPTOR 5357 GRID	555700	4200100	5.9	10
RECEPTOR 5358 GRID	555750	4200100	6.15	10
RECEPTOR 5359 GRID	555800	4200100	6.72	10
RECEPTOR 5360 GRID	555850	4200100	7.04	10
RECEPTOR 5361 GRID	555900	4200100	12.87	10
RECEPTOR 5362 GRID	555950	4200100	7.81	10
RECEPTOR 5363 GRID	556000	4200100	8.27	10
RECEPTOR 5364 GRID	556050	4200100	8.55	10
RECEPTOR 5365 GRID	556100	4200100	9.59	10
RECEPTOR 5366 GRID	556150	4200100	9.65	10
RECEPTOR 5367 GRID	556200	4200100	9.94	10
RECEPTOR 5368 GRID	556250	4200100	10.76	10
RECEPTOR 5369 GRID	556300	4200100	10.27	10
RECEPTOR 5370 GRID	556350	4200100	11.5	10
RECEPTOR 5371 GRID	556400	4200100	11.69	10
RECEPTOR 5372 GRID	556450	4200100	11.45	10
RECEPTOR 5373 GRID	556500	4200100	11.65	10
RECEPTOR 5374 GRID	556550	4200100	12.13	10
RECEPTOR 5375 GRID	556600	4200100	12.53	10
RECEPTOR 5376 GRID	555650	4200150	5.88	10
RECEPTOR 5377 GRID	555700	4200150	6.49	10
RECEPTOR 5378 GRID	555750	4200150	6.06	10
RECEPTOR 5379 GRID	555800	4200150	6.7	10
RECEPTOR 5380 GRID	555850	4200150	6.76	10
RECEPTOR 5381 GRID	555900	4200150	8.36	10
RECEPTOR 5382 GRID	555950	4200150	13.83	10
RECEPTOR 5383 GRID	556000	4200150	8.62	10
RECEPTOR 5384 GRID	556050	4200150	8.66	10
RECEPTOR 5385 GRID	556100	4200150	9.88	10
RECEPTOR 5386 GRID	556150	4200150	10.26	10
RECEPTOR 5387 GRID	556200	4200150	10.11	10
RECEPTOR 5388 GRID	556250	4200150	10.25	10
RECEPTOR 5389 GRID	556300	4200150	11.1	10
RECEPTOR 5390 GRID	556350	4200150	11.42	10
RECEPTOR 5391 GRID	556400	4200150	11.57	10
RECEPTOR 5392 GRID	556450	4200150	11.41	10
RECEPTOR 5393 GRID	556500	4200150	12.35	10
RECEPTOR 5394 GRID	556550	4200150	13.22	10
RECEPTOR 5395 GRID	556600	4200150	13.63	10
RECEPTOR 5396 GRID	555600	4200200	4.76	10

RECEPTOR 5397 GRID	555650	4200200	4.44	10
RECEPTOR 5398 GRID	555700	4200200	5.76	10
RECEPTOR 5399 GRID	555750	4200200	6.32	10
RECEPTOR 5400 GRID	555800	4200200	6.28	10
RECEPTOR 5401 GRID	555850	4200200	7.17	10
RECEPTOR 5402 GRID	555900	4200200	7.63	10
RECEPTOR 5403 GRID	555950	4200200	8.24	10
RECEPTOR 5404 GRID	556000	4200200	10.43	10
RECEPTOR 5405 GRID	556050	4200200	9.79	10
RECEPTOR 5406 GRID	556100	4200200	10.16	10
RECEPTOR 5407 GRID	556150	4200200	10.31	10
RECEPTOR 5408 GRID	556200	4200200	10.27	10
RECEPTOR 5409 GRID	556250	4200200	10.11	10
RECEPTOR 5410 GRID	556300	4200200	11.5	10
RECEPTOR 5411 GRID	556350	4200200	11.19	10
RECEPTOR 5412 GRID	556400	4200200	11.56	10
RECEPTOR 5413 GRID	556450	4200200	11.7	10
RECEPTOR 5414 GRID	556500	4200200	12.19	10
RECEPTOR 5415 GRID	556550	4200200	12.63	10
RECEPTOR 5416 GRID	556600	4200200	12.81	10
RECEPTOR 5417 GRID	555500	4200250	10.36	10
RECEPTOR 5418 GRID	555550	4200250	4.64	10
RECEPTOR 5419 GRID	555600	4200250	4.85	10
RECEPTOR 5420 GRID	555650	4200250	4.74	10
RECEPTOR 5421 GRID	555700	4200250	5.07	10
RECEPTOR 5422 GRID	555750	4200250	6.19	10
RECEPTOR 5423 GRID	555800	4200250	6.24	10
RECEPTOR 5424 GRID	555850	4200250	6.24	10
RECEPTOR 5425 GRID	555900	4200250	7.71	10
RECEPTOR 5426 GRID	555950	4200250	8.26	10
RECEPTOR 5427 GRID	556000	4200250	7.37	10
RECEPTOR 5428 GRID	556050	4200250	9.27	10
RECEPTOR 5429 GRID	556100	4200250	9.79	10
RECEPTOR 5430 GRID	556150	4200250	9.97	10
RECEPTOR 5431 GRID	556200	4200250	10.43	10
RECEPTOR 5432 GRID	556250	4200250	10.46	10
RECEPTOR 5433 GRID	556300	4200250	11.5	10
RECEPTOR 5434 GRID	556350	4200250	11.14	10
RECEPTOR 5435 GRID	556400	4200250	11.28	10
RECEPTOR 5436 GRID	556450	4200250	11.35	10
RECEPTOR 5437 GRID	556500	4200250	11.72	10
RECEPTOR 5438 GRID	556550	4200250	12.12	10
RECEPTOR 5439 GRID	556600	4200250	12.48	10
RECEPTOR 5440 GRID	555450	4200300	8.55	10
RECEPTOR 5441 GRID	555500	4200300	4	10

RECEPTOR 5442 GRID	555550	4200300	4.54	10
RECEPTOR 5443 GRID	555600	4200300	4.36	10
RECEPTOR 5444 GRID	555650	4200300	4.7	10
RECEPTOR 5445 GRID	555700	4200300	5.47	10
RECEPTOR 5446 GRID	555750	4200300	6.03	10
RECEPTOR 5447 GRID	555800	4200300	5.68	10
RECEPTOR 5448 GRID	555850	4200300	6.26	10
RECEPTOR 5449 GRID	555900	4200300	6.38	10
RECEPTOR 5450 GRID	555950	4200300	7.83	10
RECEPTOR 5451 GRID	556000	4200300	8.66	10
RECEPTOR 5452 GRID	556050	4200300	10.27	10
RECEPTOR 5453 GRID	556100	4200300	9.42	10
RECEPTOR 5454 GRID	556150	4200300	10.47	10
RECEPTOR 5455 GRID	556200	4200300	10.91	10
RECEPTOR 5456 GRID	556250	4200300	10.84	10
RECEPTOR 5457 GRID	556300	4200300	11.49	10
RECEPTOR 5458 GRID	556350	4200300	11.26	10
RECEPTOR 5459 GRID	556400	4200300	11.1	10
RECEPTOR 5460 GRID	556450	4200300	11.54	10
RECEPTOR 5461 GRID	556500	4200300	11.84	10
RECEPTOR 5462 GRID	556550	4200300	12.2	10
RECEPTOR 5463 GRID	556600	4200300	13.03	10
RECEPTOR 5464 GRID	555400	4200350	4.43	10
RECEPTOR 5465 GRID	555450	4200350	4.64	10
RECEPTOR 5466 GRID	555500	4200350	4.53	10
RECEPTOR 5467 GRID	555550	4200350	4.23	10
RECEPTOR 5468 GRID	555600	4200350	3.88	10
RECEPTOR 5469 GRID	555650	4200350	4.95	10
RECEPTOR 5470 GRID	555700	4200350	5.28	10
RECEPTOR 5471 GRID	555750	4200350	5.42	10
RECEPTOR 5472 GRID	555800	4200350	6.44	10
RECEPTOR 5473 GRID	555850	4200350	7.07	10
RECEPTOR 5474 GRID	555900	4200350	7.17	10
RECEPTOR 5475 GRID	555950	4200350	7.76	10
RECEPTOR 5476 GRID	556000	4200350	7.44	10
RECEPTOR 5477 GRID	556050	4200350	8.36	10
RECEPTOR 5478 GRID	556100	4200350	15	10
RECEPTOR 5479 GRID	556150	4200350	9.79	10
RECEPTOR 5480 GRID	556200	4200350	9.96	10
RECEPTOR 5481 GRID	556250	4200350	10.57	10
RECEPTOR 5482 GRID	556300	4200350	11.5	10
RECEPTOR 5483 GRID	556350	4200350	11.74	10
RECEPTOR 5484 GRID	556400	4200350	11.09	10
RECEPTOR 5485 GRID	556450	4200350	11.97	10
RECEPTOR 5486 GRID	556500	4200350	12.33	10

RECEPTOR 5487 GRID	556550	4200350	12.43	10
RECEPTOR 5488 GRID	556600	4200350	12.98	10
RECEPTOR 5489 GRID	555400	4200400	3.56	10
RECEPTOR 5490 GRID	555450	4200400	3.81	10
RECEPTOR 5491 GRID	555500	4200400	4.12	10
RECEPTOR 5492 GRID	555550	4200400	4.31	10
RECEPTOR 5493 GRID	555600	4200400	4.54	10
RECEPTOR 5494 GRID	555650	4200400	5.26	10
RECEPTOR 5495 GRID	555700	4200400	5.05	10
RECEPTOR 5496 GRID	555750	4200400	5.74	10
RECEPTOR 5497 GRID	555800	4200400	5.79	10
RECEPTOR 5498 GRID	555850	4200400	6.31	10
RECEPTOR 5499 GRID	555900	4200400	7.35	10
RECEPTOR 5500 GRID	555950	4200400	7.2	10
RECEPTOR 5501 GRID	556000	4200400	7.29	10
RECEPTOR 5502 GRID	556050	4200400	8.4	10
RECEPTOR 5503 GRID	556100	4200400	8.78	10
RECEPTOR 5504 GRID	556150	4200400	16.05	10
RECEPTOR 5505 GRID	556200	4200400	9.52	10
RECEPTOR 5506 GRID	556250	4200400	10.89	10
RECEPTOR 5507 GRID	556300	4200400	11.46	10
RECEPTOR 5508 GRID	556350	4200400	11.8	10
RECEPTOR 5509 GRID	556400	4200400	11.05	10
RECEPTOR 5510 GRID	556450	4200400	12.42	10
RECEPTOR 5511 GRID	556500	4200400	12.24	10
RECEPTOR 5512 GRID	556550	4200400	12.55	10
RECEPTOR 5513 GRID	556600	4200400	12.97	10
RECEPTOR 5514 GRID	555400	4200450	2.32	10
RECEPTOR 5515 GRID	555450	4200450	4.34	10
RECEPTOR 5516 GRID	555500	4200450	4.58	10
RECEPTOR 5517 GRID	555550	4200450	4.3	10
RECEPTOR 5518 GRID	555600	4200450	4.8	10
RECEPTOR 5519 GRID	555650	4200450	5.62	10
RECEPTOR 5520 GRID	555700	4200450	5.72	10
RECEPTOR 5521 GRID	555750	4200450	5.97	10
RECEPTOR 5522 GRID	555800	4200450	5.86	10
RECEPTOR 5523 GRID	555850	4200450	6.43	10
RECEPTOR 5524 GRID	555900	4200450	7.05	10
RECEPTOR 5525 GRID	555950	4200450	7.82	10
RECEPTOR 5526 GRID	556000	4200450	7.46	10
RECEPTOR 5527 GRID	556050	4200450	8.09	10
RECEPTOR 5528 GRID	556100	4200450	9.81	10
RECEPTOR 5529 GRID	556150	4200450	9.41	10
RECEPTOR 5530 GRID	556200	4200450	12.25	10
RECEPTOR 5531 GRID	556250	4200450	10.63	10

RECEPTOR 5532 GRID	556300	4200450	11.53	10
RECEPTOR 5533 GRID	556350	4200450	11.68	10
RECEPTOR 5534 GRID	556400	4200450	11.14	10
RECEPTOR 5535 GRID	556450	4200450	12.8	10
RECEPTOR 5536 GRID	556500	4200450	12.76	10
RECEPTOR 5537 GRID	556550	4200450	12.85	10
RECEPTOR 5538 GRID	556600	4200450	13.28	10
RECEPTOR 5539 GRID	555300	4200500	5.38	10
RECEPTOR 5540 GRID	555350	4200500	2.19	10
RECEPTOR 5541 GRID	555400	4200500	3.14	10
RECEPTOR 5542 GRID	555450	4200500	4.13	10
RECEPTOR 5543 GRID	555500	4200500	4.7	10
RECEPTOR 5544 GRID	555550	4200500	5.12	10
RECEPTOR 5545 GRID	555600	4200500	4.63	10
RECEPTOR 5546 GRID	555650	4200500	5.04	10
RECEPTOR 5547 GRID	555700	4200500	6.33	10
RECEPTOR 5548 GRID	555750	4200500	6.81	10
RECEPTOR 5549 GRID	555800	4200500	6.32	10
RECEPTOR 5550 GRID	555850	4200500	7.12	10
RECEPTOR 5551 GRID	555900	4200500	7.25	10
RECEPTOR 5552 GRID	555950	4200500	7.58	10
RECEPTOR 5553 GRID	556000	4200500	8.22	10
RECEPTOR 5554 GRID	556050	4200500	8.84	10
RECEPTOR 5555 GRID	556100	4200500	9.72	10
RECEPTOR 5556 GRID	556150	4200500	9.26	10
RECEPTOR 5557 GRID	556200	4200500	9.82	10
RECEPTOR 5558 GRID	556250	4200500	11.84	10
RECEPTOR 5559 GRID	556300	4200500	11.45	10
RECEPTOR 5560 GRID	556350	4200500	11.4	10
RECEPTOR 5561 GRID	556400	4200500	11.38	10
RECEPTOR 5562 GRID	556450	4200500	13.23	10
RECEPTOR 5563 GRID	556500	4200500	12.84	10
RECEPTOR 5564 GRID	556550	4200500	13.12	10
RECEPTOR 5565 GRID	556600	4200500	13.34	10
RECEPTOR 5566 GRID	555250	4200550	2.8	10
RECEPTOR 5567 GRID	555300	4200550	2.48	10
RECEPTOR 5568 GRID	555350	4200550	2.8	10
RECEPTOR 5569 GRID	555400	4200550	3.22	10
RECEPTOR 5570 GRID	555450	4200550	3.52	10
RECEPTOR 5571 GRID	555500	4200550	4.28	10
RECEPTOR 5572 GRID	555550	4200550	4.17	10
RECEPTOR 5573 GRID	555600	4200550	4.67	10
RECEPTOR 5574 GRID	555650	4200550	5.31	10
RECEPTOR 5575 GRID	555700	4200550	5.77	10
RECEPTOR 5576 GRID	555750	4200550	6.43	10

RECEPTOR 5577 GRID	555800	4200550	6.71	10
RECEPTOR 5578 GRID	555850	4200550	7.22	10
RECEPTOR 5579 GRID	555900	4200550	7.57	10
RECEPTOR 5580 GRID	555950	4200550	8.18	10
RECEPTOR 5581 GRID	556000	4200550	9	10
RECEPTOR 5582 GRID	556050	4200550	8.64	10
RECEPTOR 5583 GRID	556100	4200550	9.23	10
RECEPTOR 5584 GRID	556150	4200550	9.06	10
RECEPTOR 5585 GRID	556200	4200550	10.06	10
RECEPTOR 5586 GRID	556250	4200550	12.37	10
RECEPTOR 5587 GRID	556300	4200550	11.3	10
RECEPTOR 5588 GRID	556350	4200550	11.75	10
RECEPTOR 5589 GRID	556400	4200550	12.29	10
RECEPTOR 5590 GRID	556450	4200550	12.89	10
RECEPTOR 5591 GRID	556500	4200550	13.33	10
RECEPTOR 5592 GRID	556550	4200550	13.87	10
RECEPTOR 5593 GRID	556600	4200550	14.28	10
RECEPTOR 5594 GRID	555250	4200600	2.47	10
RECEPTOR 5595 GRID	555300	4200600	2.4	10
RECEPTOR 5596 GRID	555350	4200600	2.85	10
RECEPTOR 5597 GRID	555400	4200600	3.47	10
RECEPTOR 5598 GRID	555450	4200600	3.76	10
RECEPTOR 5599 GRID	555500	4200600	4.2	10
RECEPTOR 5600 GRID	555550	4200600	4.54	10
RECEPTOR 5601 GRID	555600	4200600	4.74	10
RECEPTOR 5602 GRID	555650	4200600	5.18	10
RECEPTOR 5603 GRID	555700	4200600	5.61	10
RECEPTOR 5604 GRID	555750	4200600	6.23	10
RECEPTOR 5605 GRID	555800	4200600	6.7	10
RECEPTOR 5606 GRID	555850	4200600	7.29	10
RECEPTOR 5607 GRID	555900	4200600	8.11	10
RECEPTOR 5608 GRID	555950	4200600	8.73	10
RECEPTOR 5609 GRID	556000	4200600	8.78	10
RECEPTOR 5610 GRID	556050	4200600	8.63	10
RECEPTOR 5611 GRID	556100	4200600	9.27	10
RECEPTOR 5612 GRID	556150	4200600	9.51	10
RECEPTOR 5613 GRID	556200	4200600	9.88	10
RECEPTOR 5614 GRID	556250	4200600	10.67	10
RECEPTOR 5615 GRID	556300	4200600	17.07	10
RECEPTOR 5616 GRID	556350	4200600	11.49	10
RECEPTOR 5617 GRID	556400	4200600	11.98	10
RECEPTOR 5618 GRID	556450	4200600	12.43	10
RECEPTOR 5619 GRID	556500	4200600	13.08	10
RECEPTOR 5620 GRID	556550	4200600	13.92	10
RECEPTOR 5621 GRID	556600	4200600	14.52	10

RECEPTOR 5622 GRID	555250	4200650	2.69	10
RECEPTOR 5623 GRID	555300	4200650	2.59	10
RECEPTOR 5624 GRID	555350	4200650	2.92	10
RECEPTOR 5625 GRID	555400	4200650	3.37	10
RECEPTOR 5626 GRID	555450	4200650	3.55	10
RECEPTOR 5627 GRID	555500	4200650	4.15	10
RECEPTOR 5628 GRID	555550	4200650	5.07	10
RECEPTOR 5629 GRID	555600	4200650	5.24	10
RECEPTOR 5630 GRID	555650	4200650	5.84	10
RECEPTOR 5631 GRID	555700	4200650	5.94	10
RECEPTOR 5632 GRID	555750	4200650	6.42	10
RECEPTOR 5633 GRID	555800	4200650	7.26	10
RECEPTOR 5634 GRID	555850	4200650	7.87	10
RECEPTOR 5635 GRID	555900	4200650	7.84	10
RECEPTOR 5636 GRID	555950	4200650	8.07	10
RECEPTOR 5637 GRID	556000	4200650	8.83	10
RECEPTOR 5638 GRID	556050	4200650	8.9	10
RECEPTOR 5639 GRID	556100	4200650	8.73	10
RECEPTOR 5640 GRID	556150	4200650	9.64	10
RECEPTOR 5641 GRID	556200	4200650	10.25	10
RECEPTOR 5642 GRID	556250	4200650	10.38	10
RECEPTOR 5643 GRID	556300	4200650	10.97	10
RECEPTOR 5644 GRID	556350	4200650	11.14	10
RECEPTOR 5645 GRID	556400	4200650	11.94	10
RECEPTOR 5646 GRID	556450	4200650	12.36	10
RECEPTOR 5647 GRID	556500	4200650	13.07	10
RECEPTOR 5648 GRID	556550	4200650	13.33	10
RECEPTOR 5649 GRID	556600	4200650	13.7	10
RECEPTOR 5650 GRID	555250	4200700	2.69	10
RECEPTOR 5651 GRID	555300	4200700	2.74	10
RECEPTOR 5652 GRID	555350	4200700	2.69	10
RECEPTOR 5653 GRID	555400	4200700	3.19	10
RECEPTOR 5654 GRID	555450	4200700	3.35	10
RECEPTOR 5655 GRID	555500	4200700	3.98	10
RECEPTOR 5656 GRID	555550	4200700	4.68	10
RECEPTOR 5657 GRID	555600	4200700	5.14	10
RECEPTOR 5658 GRID	555650	4200700	5.53	10
RECEPTOR 5659 GRID	555700	4200700	5.78	10
RECEPTOR 5660 GRID	555750	4200700	6.31	10
RECEPTOR 5661 GRID	555800	4200700	7.36	10
RECEPTOR 5662 GRID	555850	4200700	7.38	10
RECEPTOR 5663 GRID	555900	4200700	8.08	10
RECEPTOR 5664 GRID	555950	4200700	8.08	10
RECEPTOR 5665 GRID	556000	4200700	8.52	10
RECEPTOR 5666 GRID	556050	4200700	8.51	10

RECEPTOR 5667 GRID	556100	4200700	9.56	10
RECEPTOR 5668 GRID	556150	4200700	9.7	10
RECEPTOR 5669 GRID	556200	4200700	10.05	10
RECEPTOR 5670 GRID	556250	4200700	11.1	10
RECEPTOR 5671 GRID	556300	4200700	12.02	10
RECEPTOR 5672 GRID	556350	4200700	15.93	10
RECEPTOR 5673 GRID	556400	4200700	12.06	10
RECEPTOR 5674 GRID	556450	4200700	12.47	10
RECEPTOR 5675 GRID	556500	4200700	13.45	10
RECEPTOR 5676 GRID	556550	4200700	13.86	10
RECEPTOR 5677 GRID	556600	4200700	13.93	10
RECEPTOR 5678 GRID	555250	4200750	3.3	10
RECEPTOR 5679 GRID	555300	4200750	2.39	10
RECEPTOR 5680 GRID	555350	4200750	2.63	10
RECEPTOR 5681 GRID	555400	4200750	2.91	10
RECEPTOR 5682 GRID	555450	4200750	3.41	10
RECEPTOR 5683 GRID	555500	4200750	3.82	10
RECEPTOR 5684 GRID	555550	4200750	4.23	10
RECEPTOR 5685 GRID	555600	4200750	4.65	10
RECEPTOR 5686 GRID	555650	4200750	5	10
RECEPTOR 5687 GRID	555700	4200750	5.5	10
RECEPTOR 5688 GRID	555750	4200750	6.21	10
RECEPTOR 5689 GRID	555800	4200750	6.8	10
RECEPTOR 5690 GRID	555850	4200750	6.98	10
RECEPTOR 5691 GRID	555900	4200750	7.24	10
RECEPTOR 5692 GRID	555950	4200750	7.48	10
RECEPTOR 5693 GRID	556000	4200750	7.97	10
RECEPTOR 5694 GRID	556050	4200750	8.44	10
RECEPTOR 5695 GRID	556100	4200750	8.92	10
RECEPTOR 5696 GRID	556150	4200750	9.73	10
RECEPTOR 5697 GRID	556200	4200750	9.97	10
RECEPTOR 5698 GRID	556250	4200750	9.98	10
RECEPTOR 5699 GRID	556300	4200750	12.64	10
RECEPTOR 5700 GRID	556350	4200750	12.39	10
RECEPTOR 5701 GRID	556400	4200750	12.5	10
RECEPTOR 5702 GRID	556450	4200750	13.23	10
RECEPTOR 5703 GRID	556500	4200750	13.52	10
RECEPTOR 5704 GRID	556550	4200750	14.13	10
RECEPTOR 5705 GRID	556600	4200750	14.08	10
RECEPTOR 5706 GRID	555250	4200800	3.38	10
RECEPTOR 5707 GRID	555300	4200800	2.76	10
RECEPTOR 5708 GRID	555350	4200800	3.08	10
RECEPTOR 5709 GRID	555400	4200800	3.26	10
RECEPTOR 5710 GRID	555450	4200800	3.45	10
RECEPTOR 5711 GRID	555500	4200800	3.87	10

RECEPTOR 5712 GRID	555550	4200800	4.29	10
RECEPTOR 5713 GRID	555600	4200800	4.79	10
RECEPTOR 5714 GRID	555650	4200800	5.29	10
RECEPTOR 5715 GRID	555700	4200800	5.77	10
RECEPTOR 5716 GRID	555750	4200800	6.33	10
RECEPTOR 5717 GRID	555800	4200800	6.48	10
RECEPTOR 5718 GRID	555850	4200800	6.5	10
RECEPTOR 5719 GRID	555900	4200800	7.03	10
RECEPTOR 5720 GRID	555950	4200800	7.66	10
RECEPTOR 5721 GRID	556000	4200800	7.89	10
RECEPTOR 5722 GRID	556050	4200800	8.71	10
RECEPTOR 5723 GRID	556100	4200800	8.94	10
RECEPTOR 5724 GRID	556150	4200800	9.68	10
RECEPTOR 5725 GRID	556200	4200800	10.08	10
RECEPTOR 5726 GRID	556250	4200800	11.01	10
RECEPTOR 5727 GRID	556300	4200800	11.26	10
RECEPTOR 5728 GRID	556350	4200800	11.86	10
RECEPTOR 5729 GRID	556400	4200800	12.35	10
RECEPTOR 5730 GRID	556450	4200800	12.79	10
RECEPTOR 5731 GRID	556500	4200800	13.04	10
RECEPTOR 5732 GRID	556550	4200800	13.49	10
RECEPTOR 5733 GRID	556600	4200800	13.87	10
RECEPTOR 5734 GRID	555250	4200850	3.39	10
RECEPTOR 5735 GRID	555300	4200850	3.5	10
RECEPTOR 5736 GRID	555350	4200850	3.13	10
RECEPTOR 5737 GRID	555400	4200850	3.15	10
RECEPTOR 5738 GRID	555450	4200850	3.22	10
RECEPTOR 5739 GRID	555500	4200850	3.78	10
RECEPTOR 5740 GRID	555550	4200850	3.99	10
RECEPTOR 5741 GRID	555600	4200850	4.62	10
RECEPTOR 5742 GRID	555650	4200850	5.17	10
RECEPTOR 5743 GRID	555700	4200850	5.48	10
RECEPTOR 5744 GRID	555750	4200850	6.12	10
RECEPTOR 5745 GRID	555800	4200850	6.3	10
RECEPTOR 5746 GRID	555850	4200850	6.37	10
RECEPTOR 5747 GRID	555900	4200850	6.82	10
RECEPTOR 5748 GRID	555950	4200850	7.21	10
RECEPTOR 5749 GRID	556000	4200850	7.91	10
RECEPTOR 5750 GRID	556050	4200850	8.33	10
RECEPTOR 5751 GRID	556100	4200850	8.99	10
RECEPTOR 5752 GRID	556150	4200850	9.64	10
RECEPTOR 5753 GRID	556200	4200850	9.93	10
RECEPTOR 5754 GRID	556250	4200850	10.84	10
RECEPTOR 5755 GRID	556300	4200850	12.3	10
RECEPTOR 5756 GRID	556350	4200850	11.35	10

RECEPTOR 5757 GRID	556400	4200850	11.8	10
RECEPTOR 5758 GRID	556450	4200850	12.08	10
RECEPTOR 5759 GRID	556500	4200850	12.6	10
RECEPTOR 5760 GRID	556550	4200850	13.13	10
RECEPTOR 5761 GRID	556600	4200850	13.38	10
RECEPTOR 5762 GRID	555250	4200900	2.66	10
RECEPTOR 5763 GRID	555300	4200900	2.97	10
RECEPTOR 5764 GRID	555350	4200900	3.14	10
RECEPTOR 5765 GRID	555400	4200900	3.24	10
RECEPTOR 5766 GRID	555450	4200900	3.07	10
RECEPTOR 5767 GRID	555500	4200900	3.33	10
RECEPTOR 5768 GRID	555550	4200900	3.68	10
RECEPTOR 5769 GRID	555600	4200900	4.09	10
RECEPTOR 5770 GRID	555650	4200900	4.6	10
RECEPTOR 5771 GRID	555700	4200900	5.06	10
RECEPTOR 5772 GRID	555750	4200900	5.56	10
RECEPTOR 5773 GRID	555800	4200900	6.04	10
RECEPTOR 5774 GRID	555850	4200900	6.14	10
RECEPTOR 5775 GRID	555900	4200900	6.85	10
RECEPTOR 5776 GRID	555950	4200900	7.31	10
RECEPTOR 5777 GRID	556000	4200900	7.84	10
RECEPTOR 5778 GRID	556050	4200900	8.41	10
RECEPTOR 5779 GRID	556100	4200900	8.64	10
RECEPTOR 5780 GRID	556150	4200900	9.36	10
RECEPTOR 5781 GRID	556200	4200900	10.16	10
RECEPTOR 5782 GRID	556250	4200900	10.73	10
RECEPTOR 5783 GRID	556300	4200900	11.36	10
RECEPTOR 5784 GRID	556350	4200900	11.03	10
RECEPTOR 5785 GRID	556400	4200900	11.44	10
RECEPTOR 5786 GRID	556450	4200900	11.57	10
RECEPTOR 5787 GRID	556500	4200900	12.23	10
RECEPTOR 5788 GRID	556550	4200900	12.75	10
RECEPTOR 5789 GRID	556600	4200900	12.56	10
RECEPTOR 5790 GRID	555100	4200950	3.89	10
RECEPTOR 5791 GRID	555150	4200950	3.56	10
RECEPTOR 5792 GRID	555200	4200950	3.96	10
RECEPTOR 5793 GRID	555250	4200950	3.63	10
RECEPTOR 5794 GRID	555300	4200950	3.77	10
RECEPTOR 5795 GRID	555350	4200950	3.26	10
RECEPTOR 5796 GRID	555400	4200950	3.47	10
RECEPTOR 5797 GRID	555450	4200950	3.05	10
RECEPTOR 5798 GRID	555500	4200950	3.47	10
RECEPTOR 5799 GRID	555550	4200950	3.85	10
RECEPTOR 5800 GRID	555600	4200950	4.24	10
RECEPTOR 5801 GRID	555650	4200950	4.59	10

RECEPTOR 5802 GRID	555700	4200950	5.3	10
RECEPTOR 5803 GRID	555750	4200950	5.71	10
RECEPTOR 5804 GRID	555800	4200950	6.03	10
RECEPTOR 5805 GRID	555850	4200950	6.17	10
RECEPTOR 5806 GRID	555900	4200950	6.63	10
RECEPTOR 5807 GRID	555950	4200950	7.06	10
RECEPTOR 5808 GRID	556000	4200950	7.54	10
RECEPTOR 5809 GRID	556050	4200950	8.07	10
RECEPTOR 5810 GRID	556100	4200950	8.52	10
RECEPTOR 5811 GRID	556150	4200950	9.16	10
RECEPTOR 5812 GRID	556200	4200950	9.51	10
RECEPTOR 5813 GRID	556250	4200950	10.37	10
RECEPTOR 5814 GRID	556300	4200950	10.4	10
RECEPTOR 5815 GRID	556350	4200950	10.27	10
RECEPTOR 5816 GRID	556400	4200950	10.95	10
RECEPTOR 5817 GRID	556450	4200950	11.26	10
RECEPTOR 5818 GRID	556500	4200950	11.89	10
RECEPTOR 5819 GRID	556550	4200950	12.21	10
RECEPTOR 5820 GRID	556600	4200950	12.64	10
RECEPTOR 5821 GRID	555100	4201000	3.95	10
RECEPTOR 5822 GRID	555150	4201000	4.01	10
RECEPTOR 5823 GRID	555200	4201000	4.51	10
RECEPTOR 5824 GRID	555250	4201000	3.93	10
RECEPTOR 5825 GRID	555300	4201000	3.76	10
RECEPTOR 5826 GRID	555350	4201000	3.56	10
RECEPTOR 5827 GRID	555400	4201000	3.48	10
RECEPTOR 5828 GRID	555450	4201000	3.41	10
RECEPTOR 5829 GRID	555500	4201000	3.66	10
RECEPTOR 5830 GRID	555550	4201000	3.82	10
RECEPTOR 5831 GRID	555600	4201000	4.09	10
RECEPTOR 5832 GRID	555650	4201000	4.91	10
RECEPTOR 5833 GRID	555700	4201000	4.77	10
RECEPTOR 5834 GRID	555750	4201000	5.74	10
RECEPTOR 5835 GRID	555800	4201000	5.6	10
RECEPTOR 5836 GRID	555850	4201000	5.84	10
RECEPTOR 5837 GRID	555900	4201000	6.7	10
RECEPTOR 5838 GRID	555950	4201000	7.1	10
RECEPTOR 5839 GRID	556000	4201000	7.61	10
RECEPTOR 5840 GRID	556050	4201000	7.95	10
RECEPTOR 5841 GRID	556100	4201000	8.58	10
RECEPTOR 5842 GRID	556150	4201000	9.07	10
RECEPTOR 5843 GRID	556200	4201000	9.62	10
RECEPTOR 5844 GRID	556250	4201000	9.65	10
RECEPTOR 5845 GRID	556300	4201000	9.96	10
RECEPTOR 5846 GRID	556350	4201000	10.5	10

RECEPTOR 5847 GRID	556400	4201000	11.54	10
RECEPTOR 5848 GRID	556450	4201000	11.2	10
RECEPTOR 5849 GRID	556500	4201000	11.59	10
RECEPTOR 5850 GRID	556550	4201000	11.85	10
RECEPTOR 5851 GRID	556600	4201000	11.65	10
RECEPTOR 5852 GRID	555100	4201050	4.35	10
RECEPTOR 5853 GRID	555150	4201050	4.05	10
RECEPTOR 5854 GRID	555200	4201050	4.28	10
RECEPTOR 5855 GRID	555250	4201050	4.56	10
RECEPTOR 5856 GRID	555300	4201050	4.38	10
RECEPTOR 5857 GRID	555350	4201050	3.05	10
RECEPTOR 5858 GRID	555400	4201050	3.48	10
RECEPTOR 5859 GRID	555450	4201050	3.52	10
RECEPTOR 5860 GRID	555500	4201050	3.96	10
RECEPTOR 5861 GRID	555550	4201050	3.94	10
RECEPTOR 5862 GRID	555600	4201050	4.07	10
RECEPTOR 5863 GRID	555650	4201050	4.52	10
RECEPTOR 5864 GRID	555700	4201050	4.37	10
RECEPTOR 5865 GRID	555750	4201050	5.09	10
RECEPTOR 5866 GRID	555800	4201050	5.47	10
RECEPTOR 5867 GRID	555850	4201050	5.74	10
RECEPTOR 5868 GRID	555900	4201050	6.81	10
RECEPTOR 5869 GRID	555950	4201050	6.96	10
RECEPTOR 5870 GRID	556000	4201050	7.6	10
RECEPTOR 5871 GRID	556050	4201050	8.05	10
RECEPTOR 5872 GRID	556100	4201050	8.28	10
RECEPTOR 5873 GRID	556150	4201050	9.08	10
RECEPTOR 5874 GRID	556200	4201050	9.18	10
RECEPTOR 5875 GRID	556250	4201050	9.27	10
RECEPTOR 5876 GRID	556300	4201050	9.69	10
RECEPTOR 5877 GRID	556350	4201050	9.93	10
RECEPTOR 5878 GRID	556400	4201050	11.13	10
RECEPTOR 5879 GRID	556450	4201050	10.79	10
RECEPTOR 5880 GRID	556500	4201050	11.22	10
RECEPTOR 5881 GRID	556550	4201050	11.44	10
RECEPTOR 5882 GRID	556600	4201050	11.15	10
RECEPTOR 5883 GRID	555100	4201100	4.21	10
RECEPTOR 5884 GRID	555150	4201100	4.1	10
RECEPTOR 5885 GRID	555200	4201100	4	10
RECEPTOR 5886 GRID	555250	4201100	3.94	10
RECEPTOR 5887 GRID	555300	4201100	3.03	10
RECEPTOR 5888 GRID	555350	4201100	3.34	10
RECEPTOR 5889 GRID	555400	4201100	3.45	10
RECEPTOR 5890 GRID	555450	4201100	3.65	10
RECEPTOR 5891 GRID	555500	4201100	3.94	10

RECEPTOR 5892 GRID	555550	4201100	4.05	10
RECEPTOR 5893 GRID	555600	4201100	4.08	10
RECEPTOR 5894 GRID	555650	4201100	4.39	10
RECEPTOR 5895 GRID	555700	4201100	4.19	10
RECEPTOR 5896 GRID	555750	4201100	5.06	10
RECEPTOR 5897 GRID	555800	4201100	5.31	10
RECEPTOR 5898 GRID	555850	4201100	5.47	10
RECEPTOR 5899 GRID	555900	4201100	6.37	10
RECEPTOR 5900 GRID	555950	4201100	6.72	10
RECEPTOR 5901 GRID	556000	4201100	7.5	10
RECEPTOR 5902 GRID	556050	4201100	8.02	10
RECEPTOR 5903 GRID	556100	4201100	8.06	10
RECEPTOR 5904 GRID	556150	4201100	9.07	10
RECEPTOR 5905 GRID	556200	4201100	9.12	10
RECEPTOR 5906 GRID	556250	4201100	9.08	10
RECEPTOR 5907 GRID	556300	4201100	9.61	10
RECEPTOR 5908 GRID	556350	4201100	12.73	10
RECEPTOR 5909 GRID	556400	4201100	10.79	10
RECEPTOR 5910 GRID	556450	4201100	10.5	10
RECEPTOR 5911 GRID	556500	4201100	10.88	10
RECEPTOR 5912 GRID	556550	4201100	10.92	10
RECEPTOR 5913 GRID	556600	4201100	11	10
RECEPTOR 5914 GRID	555100	4201150	4.01	10
RECEPTOR 5915 GRID	555150	4201150	3.88	10
RECEPTOR 5916 GRID	555200	4201150	3.92	10
RECEPTOR 5917 GRID	555250	4201150	3.91	10
RECEPTOR 5918 GRID	555300	4201150	3.1	10
RECEPTOR 5919 GRID	555350	4201150	3.5	10
RECEPTOR 5920 GRID	555400	4201150	3.65	10
RECEPTOR 5921 GRID	555450	4201150	3.65	10
RECEPTOR 5922 GRID	555500	4201150	4.15	10
RECEPTOR 5923 GRID	555550	4201150	4.05	10
RECEPTOR 5924 GRID	555600	4201150	4.05	10
RECEPTOR 5925 GRID	555650	4201150	4.22	10
RECEPTOR 5926 GRID	555700	4201150	4.04	10
RECEPTOR 5927 GRID	555750	4201150	4.43	10
RECEPTOR 5928 GRID	555800	4201150	5.09	10
RECEPTOR 5929 GRID	555850	4201150	5.32	10
RECEPTOR 5930 GRID	555900	4201150	5.83	10
RECEPTOR 5931 GRID	555950	4201150	6.44	10
RECEPTOR 5932 GRID	556000	4201150	7.09	10
RECEPTOR 5933 GRID	556050	4201150	7.54	10
RECEPTOR 5934 GRID	556100	4201150	7.85	10
RECEPTOR 5935 GRID	556150	4201150	8.55	10
RECEPTOR 5936 GRID	556200	4201150	9.11	10

RECEPTOR 5937 GRID	556250	4201150	8.55	10
RECEPTOR 5938 GRID	556300	4201150	8.79	10
RECEPTOR 5939 GRID	556350	4201150	9.62	10
RECEPTOR 5940 GRID	556400	4201150	10.08	10
RECEPTOR 5941 GRID	556450	4201150	10.74	10
RECEPTOR 5942 GRID	556500	4201150	10.65	10
RECEPTOR 5943 GRID	556550	4201150	10.43	10
RECEPTOR 5944 GRID	556600	4201150	10.48	10
RECEPTOR 5945 GRID	555100	4201200	3.79	10
RECEPTOR 5946 GRID	555150	4201200	3.95	10
RECEPTOR 5947 GRID	555200	4201200	3.89	10
RECEPTOR 5948 GRID	555250	4201200	4.04	10
RECEPTOR 5949 GRID	555300	4201200	3.19	10
RECEPTOR 5950 GRID	555350	4201200	3.68	10
RECEPTOR 5951 GRID	555400	4201200	3.65	10
RECEPTOR 5952 GRID	555450	4201200	3.83	10
RECEPTOR 5953 GRID	555500	4201200	4.06	10
RECEPTOR 5954 GRID	555550	4201200	4.12	10
RECEPTOR 5955 GRID	555600	4201200	4.21	10
RECEPTOR 5956 GRID	555650	4201200	4.27	10
RECEPTOR 5957 GRID	555700	4201200	4.12	10
RECEPTOR 5958 GRID	555750	4201200	4.72	10
RECEPTOR 5959 GRID	555800	4201200	5.08	10
RECEPTOR 5960 GRID	555850	4201200	5.57	10
RECEPTOR 5961 GRID	555900	4201200	6.58	10
RECEPTOR 5962 GRID	555950	4201200	6.95	10
RECEPTOR 5963 GRID	556000	4201200	7.19	10
RECEPTOR 5964 GRID	556050	4201200	7.53	10
RECEPTOR 5965 GRID	556100	4201200	7.72	10
RECEPTOR 5966 GRID	556150	4201200	8.2	10
RECEPTOR 5967 GRID	556200	4201200	8.99	10
RECEPTOR 5968 GRID	556250	4201200	8.61	10
RECEPTOR 5969 GRID	556300	4201200	8.52	10
RECEPTOR 5970 GRID	556350	4201200	8.89	10
RECEPTOR 5971 GRID	556400	4201200	10.76	10
RECEPTOR 5972 GRID	556450	4201200	10.32	10
RECEPTOR 5973 GRID	556500	4201200	10.54	10
RECEPTOR 5974 GRID	556550	4201200	10.61	10
RECEPTOR 5975 GRID	556600	4201200	10.18	10
RECEPTOR 5976 GRID	555100	4201250	4.06	10
RECEPTOR 5977 GRID	555150	4201250	3.95	10
RECEPTOR 5978 GRID	555200	4201250	3.85	10
RECEPTOR 5979 GRID	555250	4201250	4.24	10
RECEPTOR 5980 GRID	555300	4201250	3.26	10
RECEPTOR 5981 GRID	555350	4201250	3.74	10

RECEPTOR 5982 GRID	555400	4201250	3.74	10
RECEPTOR 5983 GRID	555450	4201250	3.78	10
RECEPTOR 5984 GRID	555500	4201250	4.16	10
RECEPTOR 5985 GRID	555550	4201250	4.39	10
RECEPTOR 5986 GRID	555600	4201250	4.42	10
RECEPTOR 5987 GRID	555650	4201250	4.49	10
RECEPTOR 5988 GRID	555700	4201250	4.29	10
RECEPTOR 5989 GRID	555750	4201250	4.72	10
RECEPTOR 5990 GRID	555800	4201250	5.6	10
RECEPTOR 5991 GRID	555850	4201250	5.72	10
RECEPTOR 5992 GRID	555900	4201250	6.26	10
RECEPTOR 5993 GRID	555950	4201250	7.17	10
RECEPTOR 5994 GRID	556000	4201250	6.86	10
RECEPTOR 5995 GRID	556050	4201250	7.34	10
RECEPTOR 5996 GRID	556100	4201250	7.92	10
RECEPTOR 5997 GRID	556150	4201250	7.93	10
RECEPTOR 5998 GRID	556200	4201250	9.24	10
RECEPTOR 5999 GRID	556250	4201250	8.97	10
RECEPTOR 6000 GRID	556300	4201250	8.81	10
RECEPTOR 6001 GRID	556350	4201250	9.48	10
RECEPTOR 6002 GRID	556400	4201250	11.1	10
RECEPTOR 6003 GRID	556450	4201250	10.07	10
RECEPTOR 6004 GRID	556500	4201250	10.34	10
RECEPTOR 6005 GRID	556550	4201250	10.34	10
RECEPTOR 6006 GRID	556600	4201250	9.83	10
RECEPTOR 6007 GRID	555100	4201300	3.71	10
RECEPTOR 6008 GRID	555150	4201300	3.9	10
RECEPTOR 6009 GRID	555200	4201300	3.93	10
RECEPTOR 6010 GRID	555250	4201300	4.45	10
RECEPTOR 6011 GRID	555300	4201300	3.84	10
RECEPTOR 6012 GRID	555350	4201300	3.8	10
RECEPTOR 6013 GRID	555400	4201300	4.03	10
RECEPTOR 6014 GRID	555450	4201300	3.94	10
RECEPTOR 6015 GRID	555500	4201300	4.16	10
RECEPTOR 6016 GRID	555550	4201300	4.39	10
RECEPTOR 6017 GRID	555600	4201300	4.46	10
RECEPTOR 6018 GRID	555650	4201300	4.76	10
RECEPTOR 6019 GRID	555700	4201300	4.44	10
RECEPTOR 6020 GRID	555750	4201300	5.2	10
RECEPTOR 6021 GRID	555800	4201300	5.51	10
RECEPTOR 6022 GRID	555850	4201300	5.71	10
RECEPTOR 6023 GRID	555900	4201300	6.47	10
RECEPTOR 6024 GRID	555950	4201300	7.03	10
RECEPTOR 6025 GRID	556000	4201300	6.94	10
RECEPTOR 6026 GRID	556050	4201300	7.25	10

RECEPTOR 6027 GRID	556100	4201300	7.74	10
RECEPTOR 6028 GRID	556150	4201300	8.01	10
RECEPTOR 6029 GRID	556200	4201300	9.27	10
RECEPTOR 6030 GRID	556250	4201300	9.09	10
RECEPTOR 6031 GRID	556300	4201300	9.21	10
RECEPTOR 6032 GRID	556350	4201300	9.76	10
RECEPTOR 6033 GRID	556400	4201300	10.82	10
RECEPTOR 6034 GRID	556450	4201300	10.05	10
RECEPTOR 6035 GRID	556500	4201300	10.17	10
RECEPTOR 6036 GRID	556550	4201300	10.29	10
RECEPTOR 6037 GRID	556600	4201300	9.97	10
RECEPTOR 6038 GRID	555100	4201350	4.47	10
RECEPTOR 6039 GRID	555150	4201350	3.85	10
RECEPTOR 6040 GRID	555200	4201350	4.39	10
RECEPTOR 6041 GRID	555250	4201350	4.17	10
RECEPTOR 6042 GRID	555300	4201350	4.06	10
RECEPTOR 6043 GRID	555350	4201350	4.15	10
RECEPTOR 6044 GRID	555400	4201350	4.23	10
RECEPTOR 6045 GRID	555450	4201350	4.03	10
RECEPTOR 6046 GRID	555500	4201350	4.26	10
RECEPTOR 6047 GRID	555550	4201350	4.37	10
RECEPTOR 6048 GRID	555600	4201350	4.64	10
RECEPTOR 6049 GRID	555650	4201350	4.81	10
RECEPTOR 6050 GRID	555700	4201350	4.59	10
RECEPTOR 6051 GRID	555750	4201350	5.19	10
RECEPTOR 6052 GRID	555800	4201350	5.43	10
RECEPTOR 6053 GRID	555850	4201350	5.89	10
RECEPTOR 6054 GRID	555900	4201350	6.7	10
RECEPTOR 6055 GRID	555950	4201350	6.84	10
RECEPTOR 6056 GRID	556000	4201350	6.78	10
RECEPTOR 6057 GRID	556050	4201350	7.16	10
RECEPTOR 6058 GRID	556100	4201350	7.44	10
RECEPTOR 6059 GRID	556150	4201350	7.87	10
RECEPTOR 6060 GRID	556200	4201350	8.42	10
RECEPTOR 6061 GRID	556250	4201350	9.14	10
RECEPTOR 6062 GRID	556300	4201350	9.82	10
RECEPTOR 6063 GRID	556350	4201350	10.94	10
RECEPTOR 6064 GRID	556400	4201350	10.39	10
RECEPTOR 6065 GRID	556450	4201350	10.65	10
RECEPTOR 6066 GRID	556500	4201350	10.02	10
RECEPTOR 6067 GRID	556550	4201350	10.09	10
RECEPTOR 6068 GRID	556600	4201350	10.17	10
RECEPTOR 6069 GRID	555100	4201400	3.03	10
RECEPTOR 6070 GRID	555150	4201400	4.82	10
RECEPTOR 6071 GRID	555200	4201400	4.32	10

RECEPTOR 6072 GRID	555250	4201400	4.11	10
RECEPTOR 6073 GRID	555300	4201400	4.32	10
RECEPTOR 6074 GRID	555350	4201400	4.46	10
RECEPTOR 6075 GRID	555400	4201400	4.58	10
RECEPTOR 6076 GRID	555450	4201400	4.11	10
RECEPTOR 6077 GRID	555500	4201400	4.46	10
RECEPTOR 6078 GRID	555550	4201400	4.79	10
RECEPTOR 6079 GRID	555600	4201400	4.74	10
RECEPTOR 6080 GRID	555650	4201400	4.94	10
RECEPTOR 6081 GRID	555700	4201400	4.77	10
RECEPTOR 6082 GRID	555750	4201400	5.56	10
RECEPTOR 6083 GRID	555800	4201400	5.95	10
RECEPTOR 6084 GRID	555850	4201400	6.03	10
RECEPTOR 6085 GRID	555900	4201400	6.46	10
RECEPTOR 6086 GRID	555950	4201400	6.69	10
RECEPTOR 6087 GRID	556000	4201400	6.79	10
RECEPTOR 6088 GRID	556050	4201400	6.89	10
RECEPTOR 6089 GRID	556100	4201400	7.18	10
RECEPTOR 6090 GRID	556150	4201400	7.62	10
RECEPTOR 6091 GRID	556200	4201400	8.34	10
RECEPTOR 6092 GRID	556250	4201400	9.31	10
RECEPTOR 6093 GRID	556300	4201400	9.46	10
RECEPTOR 6094 GRID	556350	4201400	9.92	10
RECEPTOR 6095 GRID	556400	4201400	10.06	10
RECEPTOR 6096 GRID	556450	4201400	10.68	10
RECEPTOR 6097 GRID	556500	4201400	10.21	10
RECEPTOR 6098 GRID	556550	4201400	10.25	10
RECEPTOR 6099 GRID	556600	4201400	10.38	10
RECEPTOR 6100 GRID	555100	4201450	5.36	10
RECEPTOR 6101 GRID	555150	4201450	3.6	10
RECEPTOR 6102 GRID	555200	4201450	2.74	10
RECEPTOR 6103 GRID	555250	4201450	4.93	10
RECEPTOR 6104 GRID	555300	4201450	4.5	10
RECEPTOR 6105 GRID	555350	4201450	4.62	10
RECEPTOR 6106 GRID	555400	4201450	4.69	10
RECEPTOR 6107 GRID	555450	4201450	4.25	10
RECEPTOR 6108 GRID	555500	4201450	4.48	10
RECEPTOR 6109 GRID	555550	4201450	4.55	10
RECEPTOR 6110 GRID	555600	4201450	4.76	10
RECEPTOR 6111 GRID	555650	4201450	5	10
RECEPTOR 6112 GRID	555700	4201450	5.02	10
RECEPTOR 6113 GRID	555750	4201450	5.47	10
RECEPTOR 6114 GRID	555800	4201450	6.09	10
RECEPTOR 6115 GRID	555850	4201450	5.87	10
RECEPTOR 6116 GRID	555900	4201450	6.38	10

RECEPTOR 6117 GRID	555950	4201450	6.36	10
RECEPTOR 6118 GRID	556000	4201450	6.49	10
RECEPTOR 6119 GRID	556050	4201450	6.72	10
RECEPTOR 6120 GRID	556100	4201450	7.12	10
RECEPTOR 6121 GRID	556150	4201450	7.53	10
RECEPTOR 6122 GRID	556200	4201450	7.8	10
RECEPTOR 6123 GRID	556250	4201450	9.28	10
RECEPTOR 6124 GRID	556300	4201450	9.29	10
RECEPTOR 6125 GRID	556350	4201450	9.49	10
RECEPTOR 6126 GRID	556400	4201450	9.15	10
RECEPTOR 6127 GRID	556450	4201450	10.36	10
RECEPTOR 6128 GRID	556500	4201450	10.07	10
RECEPTOR 6129 GRID	556550	4201450	10.23	10
RECEPTOR 6130 GRID	556600	4201450	10.42	10
RECEPTOR 6131 GRID	551150	4201500	47.29	10
RECEPTOR 6132 GRID	555100	4201500	7.07	10
RECEPTOR 6133 GRID	555150	4201500	7.25	10
RECEPTOR 6134 GRID	555200	4201500	6.04	10
RECEPTOR 6135 GRID	555250	4201500	3.09	10
RECEPTOR 6136 GRID	555300	4201500	3.74	10
RECEPTOR 6137 GRID	555350	4201500	4.89	10
RECEPTOR 6138 GRID	555400	4201500	4.95	10
RECEPTOR 6139 GRID	555450	4201500	4.35	10
RECEPTOR 6140 GRID	555500	4201500	4.9	10
RECEPTOR 6141 GRID	555550	4201500	4.77	10
RECEPTOR 6142 GRID	555600	4201500	4.88	10
RECEPTOR 6143 GRID	555650	4201500	5.15	10
RECEPTOR 6144 GRID	555700	4201500	5.23	10
RECEPTOR 6145 GRID	555750	4201500	5.48	10
RECEPTOR 6146 GRID	555800	4201500	5.99	10
RECEPTOR 6147 GRID	555850	4201500	5.63	10
RECEPTOR 6148 GRID	555900	4201500	6.18	10
RECEPTOR 6149 GRID	555950	4201500	6.26	10
RECEPTOR 6150 GRID	556000	4201500	6.16	10
RECEPTOR 6151 GRID	556050	4201500	7	10
RECEPTOR 6152 GRID	556100	4201500	6.85	10
RECEPTOR 6153 GRID	556150	4201500	7.48	10
RECEPTOR 6154 GRID	556200	4201500	8.06	10
RECEPTOR 6155 GRID	556250	4201500	9.24	10
RECEPTOR 6156 GRID	556300	4201500	9.2	10
RECEPTOR 6157 GRID	556350	4201500	9.2	10
RECEPTOR 6158 GRID	556400	4201500	9.28	10
RECEPTOR 6159 GRID	556450	4201500	9.66	10
RECEPTOR 6160 GRID	556500	4201500	10.08	10
RECEPTOR 6161 GRID	556550	4201500	10.18	10

RECEPTOR 6162 GRID	556600	4201500	10.35	10
RECEPTOR 6163 GRID	551000	4201550	27.84	10
RECEPTOR 6164 GRID	551050	4201550	31.13	10
RECEPTOR 6165 GRID	551100	4201550	22.51	10
RECEPTOR 6166 GRID	551150	4201550	31.17	10
RECEPTOR 6167 GRID	555100	4201550	6.98	10
RECEPTOR 6168 GRID	555150	4201550	7.18	10
RECEPTOR 6169 GRID	555200	4201550	7.64	10
RECEPTOR 6170 GRID	555250	4201550	8.04	10
RECEPTOR 6171 GRID	555300	4201550	4.22	10
RECEPTOR 6172 GRID	555350	4201550	3.03	10
RECEPTOR 6173 GRID	555400	4201550	5.1	10
RECEPTOR 6174 GRID	555450	4201550	4.71	10
RECEPTOR 6175 GRID	555500	4201550	4.91	10
RECEPTOR 6176 GRID	555550	4201550	5.08	10
RECEPTOR 6177 GRID	555600	4201550	5.03	10
RECEPTOR 6178 GRID	555650	4201550	5.54	10
RECEPTOR 6179 GRID	555700	4201550	5.47	10
RECEPTOR 6180 GRID	555750	4201550	5.81	10
RECEPTOR 6181 GRID	555800	4201550	5.72	10
RECEPTOR 6182 GRID	555850	4201550	5.66	10
RECEPTOR 6183 GRID	555900	4201550	5.78	10
RECEPTOR 6184 GRID	555950	4201550	6.29	10
RECEPTOR 6185 GRID	556000	4201550	6.29	10
RECEPTOR 6186 GRID	556050	4201550	6.73	10
RECEPTOR 6187 GRID	556100	4201550	6.95	10
RECEPTOR 6188 GRID	556150	4201550	7.44	10
RECEPTOR 6189 GRID	556200	4201550	7.94	10
RECEPTOR 6190 GRID	556250	4201550	8.98	10
RECEPTOR 6191 GRID	556300	4201550	9.23	10
RECEPTOR 6192 GRID	556350	4201550	9.55	10
RECEPTOR 6193 GRID	556400	4201550	9.43	10
RECEPTOR 6194 GRID	556450	4201550	9.75	10
RECEPTOR 6195 GRID	556500	4201550	10.06	10
RECEPTOR 6196 GRID	556550	4201550	10.36	10
RECEPTOR 6197 GRID	556600	4201550	10.5	10
RECEPTOR 6198 GRID	550950	4201600	55.3	10
RECEPTOR 6199 GRID	551000	4201600	34.45	10
RECEPTOR 6200 GRID	551050	4201600	17.83	10
RECEPTOR 6201 GRID	551100	4201600	14.05	10
RECEPTOR 6202 GRID	551150	4201600	30.09	10
RECEPTOR 6203 GRID	555100	4201600	3.38	10
RECEPTOR 6204 GRID	555150	4201600	7.57	10
RECEPTOR 6205 GRID	555200	4201600	7.23	10
RECEPTOR 6206 GRID	555250	4201600	7.38	10

RECEPTOR 6207 GRID	555300	4201600	7.15	10
RECEPTOR 6208 GRID	555350	4201600	4.48	10
RECEPTOR 6209 GRID	555400	4201600	3.22	10
RECEPTOR 6210 GRID	555450	4201600	3.62	10
RECEPTOR 6211 GRID	555500	4201600	3.42	10
RECEPTOR 6212 GRID	555550	4201600	3.03	10
RECEPTOR 6213 GRID	555600	4201600	2.95	10
RECEPTOR 6214 GRID	555650	4201600	4.71	10
RECEPTOR 6215 GRID	555700	4201600	6.31	10
RECEPTOR 6216 GRID	555750	4201600	5.76	10
RECEPTOR 6217 GRID	555800	4201600	5.98	10
RECEPTOR 6218 GRID	555850	4201600	5.74	10
RECEPTOR 6219 GRID	555900	4201600	6.45	10
RECEPTOR 6220 GRID	555950	4201600	6.48	10
RECEPTOR 6221 GRID	556000	4201600	6.4	10
RECEPTOR 6222 GRID	556050	4201600	7.01	10
RECEPTOR 6223 GRID	556100	4201600	7.18	10
RECEPTOR 6224 GRID	556150	4201600	7.75	10
RECEPTOR 6225 GRID	556200	4201600	8.12	10
RECEPTOR 6226 GRID	556250	4201600	8.87	10
RECEPTOR 6227 GRID	556300	4201600	8.95	10
RECEPTOR 6228 GRID	556350	4201600	9.41	10
RECEPTOR 6229 GRID	556400	4201600	9.83	10
RECEPTOR 6230 GRID	556450	4201600	10.78	10
RECEPTOR 6231 GRID	556500	4201600	10.91	10
RECEPTOR 6232 GRID	556550	4201600	10.42	10
RECEPTOR 6233 GRID	556600	4201600	10.67	10
RECEPTOR 6234 GRID	551000	4201650	33.65	10
RECEPTOR 6235 GRID	551050	4201650	12.92	10
RECEPTOR 6236 GRID	551100	4201650	8.69	10
RECEPTOR 6237 GRID	551150	4201650	29.47	10
RECEPTOR 6238 GRID	551200	4201650	47.81	10
RECEPTOR 6239 GRID	555100	4201650	3.36	10
RECEPTOR 6240 GRID	555150	4201650	7.33	10
RECEPTOR 6241 GRID	555200	4201650	7.17	10
RECEPTOR 6242 GRID	555250	4201650	6.35	10
RECEPTOR 6243 GRID	555300	4201650	4.94	10
RECEPTOR 6244 GRID	555350	4201650	4.42	10
RECEPTOR 6245 GRID	555400	4201650	4.86	10
RECEPTOR 6246 GRID	555450	4201650	7.83	10
RECEPTOR 6247 GRID	555500	4201650	8.46	10
RECEPTOR 6248 GRID	555550	4201650	7.3	10
RECEPTOR 6249 GRID	555600	4201650	5.75	10
RECEPTOR 6250 GRID	555650	4201650	5.63	10
RECEPTOR 6251 GRID	555700	4201650	4.41	10

RECEPTOR 6252 GRID	555750	4201650	3.71	10
RECEPTOR 6253 GRID	555800	4201650	4.33	10
RECEPTOR 6254 GRID	555850	4201650	3.98	10
RECEPTOR 6255 GRID	555900	4201650	3.47	10
RECEPTOR 6256 GRID	555950	4201650	5.66	10
RECEPTOR 6257 GRID	556000	4201650	6.64	10
RECEPTOR 6258 GRID	556050	4201650	7.04	10
RECEPTOR 6259 GRID	556100	4201650	7.24	10
RECEPTOR 6260 GRID	556150	4201650	7.61	10
RECEPTOR 6261 GRID	556200	4201650	8.16	10
RECEPTOR 6262 GRID	556250	4201650	8.81	10
RECEPTOR 6263 GRID	556300	4201650	9.17	10
RECEPTOR 6264 GRID	556350	4201650	9.15	10
RECEPTOR 6265 GRID	556400	4201650	9.58	10
RECEPTOR 6266 GRID	556450	4201650	10.8	10
RECEPTOR 6267 GRID	556500	4201650	10.51	10
RECEPTOR 6268 GRID	556550	4201650	11.04	10
RECEPTOR 6269 GRID	556600	4201650	11.19	10
RECEPTOR 6270 GRID	551000	4201700	20.71	10
RECEPTOR 6271 GRID	551050	4201700	6.32	10
RECEPTOR 6272 GRID	551100	4201700	4.98	10
RECEPTOR 6273 GRID	551150	4201700	20.92	10
RECEPTOR 6274 GRID	551200	4201700	38.92	10
RECEPTOR 6275 GRID	555100	4201700	3.34	10
RECEPTOR 6276 GRID	555150	4201700	3.11	10
RECEPTOR 6277 GRID	555200	4201700	3.47	10
RECEPTOR 6278 GRID	555250	4201700	3.77	10
RECEPTOR 6279 GRID	555300	4201700	4.74	10
RECEPTOR 6280 GRID	555350	4201700	4.49	10
RECEPTOR 6281 GRID	555400	4201700	4.97	10
RECEPTOR 6282 GRID	555450	4201700	5.08	10
RECEPTOR 6283 GRID	555500	4201700	5.66	10
RECEPTOR 6284 GRID	555550	4201700	5.75	10
RECEPTOR 6285 GRID	555600	4201700	5.57	10
RECEPTOR 6286 GRID	555650	4201700	5.18	10
RECEPTOR 6287 GRID	555700	4201700	5.47	10
RECEPTOR 6288 GRID	555750	4201700	5.28	10
RECEPTOR 6289 GRID	555800	4201700	5.88	10
RECEPTOR 6290 GRID	555850	4201700	6.13	10
RECEPTOR 6291 GRID	555900	4201700	6.99	10
RECEPTOR 6292 GRID	555950	4201700	6.85	10
RECEPTOR 6293 GRID	556000	4201700	6.85	10
RECEPTOR 6294 GRID	556050	4201700	4.25	10
RECEPTOR 6295 GRID	556100	4201700	6.58	10
RECEPTOR 6296 GRID	556150	4201700	8.02	10

RECEPTOR 6297 GRID	556200	4201700	7.61	10
RECEPTOR 6298 GRID	556250	4201700	5.76	10
RECEPTOR 6299 GRID	556300	4201700	6.55	10
RECEPTOR 6300 GRID	556350	4201700	8.23	10
RECEPTOR 6301 GRID	556400	4201700	10.17	10
RECEPTOR 6302 GRID	556450	4201700	7.77	10
RECEPTOR 6303 GRID	556500	4201700	10.52	10
RECEPTOR 6304 GRID	556550	4201700	11.25	10
RECEPTOR 6305 GRID	556600	4201700	11.3	10
RECEPTOR 6306 GRID	551000	4201750	7.8	10
RECEPTOR 6307 GRID	551050	4201750	3.56	10
RECEPTOR 6308 GRID	551100	4201750	3.45	10
RECEPTOR 6309 GRID	551150	4201750	10.43	10
RECEPTOR 6310 GRID	551200	4201750	29.23	10
RECEPTOR 6311 GRID	555100	4201750	3.29	10
RECEPTOR 6312 GRID	555150	4201750	3.4	10
RECEPTOR 6313 GRID	555200	4201750	3.39	10
RECEPTOR 6314 GRID	555250	4201750	3.55	10
RECEPTOR 6315 GRID	555300	4201750	4.57	10
RECEPTOR 6316 GRID	555350	4201750	4.48	10
RECEPTOR 6317 GRID	555400	4201750	4.78	10
RECEPTOR 6318 GRID	555450	4201750	4.95	10
RECEPTOR 6319 GRID	555500	4201750	6.35	10
RECEPTOR 6320 GRID	555550	4201750	6.85	10
RECEPTOR 6321 GRID	555600	4201750	5.44	10
RECEPTOR 6322 GRID	555650	4201750	4.98	10
RECEPTOR 6323 GRID	555700	4201750	5.03	10
RECEPTOR 6324 GRID	555750	4201750	5.63	10
RECEPTOR 6325 GRID	555800	4201750	5.82	10
RECEPTOR 6326 GRID	555850	4201750	6.26	10
RECEPTOR 6327 GRID	555900	4201750	6.29	10
RECEPTOR 6328 GRID	555950	4201750	6.97	10
RECEPTOR 6329 GRID	556000	4201750	6.94	10
RECEPTOR 6330 GRID	556050	4201750	5.16	10
RECEPTOR 6331 GRID	556100	4201750	3.75	10
RECEPTOR 6332 GRID	556150	4201750	4.65	10
RECEPTOR 6333 GRID	556200	4201750	4.82	10
RECEPTOR 6334 GRID	556250	4201750	8.81	10
RECEPTOR 6335 GRID	556300	4201750	8.95	10
RECEPTOR 6336 GRID	556350	4201750	9.19	10
RECEPTOR 6337 GRID	556400	4201750	9.78	10
RECEPTOR 6338 GRID	556450	4201750	10.57	10
RECEPTOR 6339 GRID	556500	4201750	7.93	10
RECEPTOR 6340 GRID	556550	4201750	11.29	10
RECEPTOR 6341 GRID	556600	4201750	11.25	10

RECEPTOR 6342 GRID	551000	4201800	2.89	10
RECEPTOR 6343 GRID	551050	4201800	0.63	10
RECEPTOR 6344 GRID	551100	4201800	1.1	10
RECEPTOR 6345 GRID	551150	4201800	4.54	10
RECEPTOR 6346 GRID	551200	4201800	9.82	10
RECEPTOR 6347 GRID	555100	4201800	3.05	10
RECEPTOR 6348 GRID	555150	4201800	3.17	10
RECEPTOR 6349 GRID	555200	4201800	3.3	10
RECEPTOR 6350 GRID	555250	4201800	3.45	10
RECEPTOR 6351 GRID	555300	4201800	4.85	10
RECEPTOR 6352 GRID	555350	4201800	4.3	10
RECEPTOR 6353 GRID	555400	4201800	4.68	10
RECEPTOR 6354 GRID	555450	4201800	5.31	10
RECEPTOR 6355 GRID	555500	4201800	7.47	10
RECEPTOR 6356 GRID	555550	4201800	7.02	10
RECEPTOR 6357 GRID	555600	4201800	5.21	10
RECEPTOR 6358 GRID	555650	4201800	5.68	10
RECEPTOR 6359 GRID	555700	4201800	5.93	10
RECEPTOR 6360 GRID	555750	4201800	6.18	10
RECEPTOR 6361 GRID	555800	4201800	6.18	10
RECEPTOR 6362 GRID	555850	4201800	6.17	10
RECEPTOR 6363 GRID	555900	4201800	6.23	10
RECEPTOR 6364 GRID	555950	4201800	6.54	10
RECEPTOR 6365 GRID	556000	4201800	6.54	10
RECEPTOR 6366 GRID	556050	4201800	7.46	10
RECEPTOR 6367 GRID	556100	4201800	7.23	10
RECEPTOR 6368 GRID	556150	4201800	6.77	10
RECEPTOR 6369 GRID	556200	4201800	7.84	10
RECEPTOR 6370 GRID	556250	4201800	7.92	10
RECEPTOR 6371 GRID	556300	4201800	8.87	10
RECEPTOR 6372 GRID	556350	4201800	8.95	10
RECEPTOR 6373 GRID	556400	4201800	9.64	10
RECEPTOR 6374 GRID	556450	4201800	10.28	10
RECEPTOR 6375 GRID	556500	4201800	11.15	10
RECEPTOR 6376 GRID	556550	4201800	9.45	10
RECEPTOR 6377 GRID	556600	4201800	11.3	10
RECEPTOR 6378 GRID	551000	4201850	2.67	10
RECEPTOR 6379 GRID	551050	4201850	0.55	10
RECEPTOR 6380 GRID	551100	4201850	0.54	10
RECEPTOR 6381 GRID	551150	4201850	0.52	10
RECEPTOR 6382 GRID	551200	4201850	0.85	10
RECEPTOR 6383 GRID	551250	4201850	2.28	10
RECEPTOR 6384 GRID	555100	4201850	3.13	10
RECEPTOR 6385 GRID	555150	4201850	3.19	10
RECEPTOR 6386 GRID	555200	4201850	3.38	10

RECEPTOR 6387 GRID	555250	4201850	3.86	10
RECEPTOR 6388 GRID	555300	4201850	4.65	10
RECEPTOR 6389 GRID	555350	4201850	4.47	10
RECEPTOR 6390 GRID	555400	4201850	4.57	10
RECEPTOR 6391 GRID	555450	4201850	4.98	10
RECEPTOR 6392 GRID	555500	4201850	5.02	10
RECEPTOR 6393 GRID	555550	4201850	6.47	10
RECEPTOR 6394 GRID	555600	4201850	5.36	10
RECEPTOR 6395 GRID	555650	4201850	5.56	10
RECEPTOR 6396 GRID	555700	4201850	5.47	10
RECEPTOR 6397 GRID	555750	4201850	5.52	10
RECEPTOR 6398 GRID	555800	4201850	5.89	10
RECEPTOR 6399 GRID	555850	4201850	5.95	10
RECEPTOR 6400 GRID	555900	4201850	6.21	10
RECEPTOR 6401 GRID	555950	4201850	6.3	10
RECEPTOR 6402 GRID	556000	4201850	6.57	10
RECEPTOR 6403 GRID	556050	4201850	6.89	10
RECEPTOR 6404 GRID	556100	4201850	9.24	10
RECEPTOR 6405 GRID	556150	4201850	8.59	10
RECEPTOR 6406 GRID	556200	4201850	7.59	10
RECEPTOR 6407 GRID	556250	4201850	8.41	10
RECEPTOR 6408 GRID	556300	4201850	8.84	10
RECEPTOR 6409 GRID	556350	4201850	8.97	10
RECEPTOR 6410 GRID	556400	4201850	9.08	10
RECEPTOR 6411 GRID	556450	4201850	10.39	10
RECEPTOR 6412 GRID	556500	4201850	11.24	10
RECEPTOR 6413 GRID	556550	4201850	11.17	10
RECEPTOR 6414 GRID	556600	4201850	10.54	10
RECEPTOR 6415 GRID	551000	4201900	2.64	10
RECEPTOR 6416 GRID	551050	4201900	0.52	10
RECEPTOR 6417 GRID	551100	4201900	0.72	10
RECEPTOR 6418 GRID	551150	4201900	0.49	10
RECEPTOR 6419 GRID	551200	4201900	0.62	10
RECEPTOR 6420 GRID	551250	4201900	1.14	10
RECEPTOR 6421 GRID	551300	4201900	0.44	10
RECEPTOR 6422 GRID	555100	4201900	3.05	10
RECEPTOR 6423 GRID	555150	4201900	3.52	10
RECEPTOR 6424 GRID	555200	4201900	4.03	10
RECEPTOR 6425 GRID	555250	4201900	4.13	10
RECEPTOR 6426 GRID	555300	4201900	4.45	10
RECEPTOR 6427 GRID	555350	4201900	4.75	10
RECEPTOR 6428 GRID	555400	4201900	4.63	10
RECEPTOR 6429 GRID	555450	4201900	4.48	10
RECEPTOR 6430 GRID	555500	4201900	4.39	10
RECEPTOR 6431 GRID	555550	4201900	4.67	10

RECEPTOR 6432 GRID	555600	4201900	5.7	10
RECEPTOR 6433 GRID	555650	4201900	5.38	10
RECEPTOR 6434 GRID	555700	4201900	5.33	10
RECEPTOR 6435 GRID	555750	4201900	5.43	10
RECEPTOR 6436 GRID	555800	4201900	5.89	10
RECEPTOR 6437 GRID	555850	4201900	5.87	10
RECEPTOR 6438 GRID	555900	4201900	6.1	10
RECEPTOR 6439 GRID	555950	4201900	6.07	10
RECEPTOR 6440 GRID	556000	4201900	6.54	10
RECEPTOR 6441 GRID	556050	4201900	6.78	10
RECEPTOR 6442 GRID	556100	4201900	8.44	10
RECEPTOR 6443 GRID	556150	4201900	7.41	10
RECEPTOR 6444 GRID	556200	4201900	10.62	10
RECEPTOR 6445 GRID	556250	4201900	8.23	10
RECEPTOR 6446 GRID	556300	4201900	7.55	10
RECEPTOR 6447 GRID	556350	4201900	8.77	10
RECEPTOR 6448 GRID	556400	4201900	8.96	10
RECEPTOR 6449 GRID	556450	4201900	9.13	10
RECEPTOR 6450 GRID	556500	4201900	10.57	10
RECEPTOR 6451 GRID	556550	4201900	10.67	10
RECEPTOR 6452 GRID	556600	4201900	10.89	10
RECEPTOR 6453 GRID	551000	4201950	2.45	10
RECEPTOR 6454 GRID	551050	4201950	0.48	10
RECEPTOR 6455 GRID	551100	4201950	0.53	10
RECEPTOR 6456 GRID	551150	4201950	0.49	10
RECEPTOR 6457 GRID	551200	4201950	1.97	10
RECEPTOR 6458 GRID	555100	4201950	3.85	10
RECEPTOR 6459 GRID	555150	4201950	4.16	10
RECEPTOR 6460 GRID	555200	4201950	4.35	10
RECEPTOR 6461 GRID	555250	4201950	4.44	10
RECEPTOR 6462 GRID	555300	4201950	4.39	10
RECEPTOR 6463 GRID	555350	4201950	4.38	10
RECEPTOR 6464 GRID	555400	4201950	4.35	10
RECEPTOR 6465 GRID	555450	4201950	4.89	10
RECEPTOR 6466 GRID	555500	4201950	5.04	10
RECEPTOR 6467 GRID	555550	4201950	5.42	10
RECEPTOR 6468 GRID	555600	4201950	5.36	10
RECEPTOR 6469 GRID	555650	4201950	5.58	10
RECEPTOR 6470 GRID	555700	4201950	5.65	10
RECEPTOR 6471 GRID	555750	4201950	5.43	10
RECEPTOR 6472 GRID	555800	4201950	5.65	10
RECEPTOR 6473 GRID	555850	4201950	5.81	10
RECEPTOR 6474 GRID	555900	4201950	5.83	10
RECEPTOR 6475 GRID	555950	4201950	6.12	10
RECEPTOR 6476 GRID	556000	4201950	6.15	10

RECEPTOR 6477 GRID	556050	4201950	6.8	10
RECEPTOR 6478 GRID	556100	4201950	7.01	10
RECEPTOR 6479 GRID	556150	4201950	7.26	10
RECEPTOR 6480 GRID	556200	4201950	7.32	10
RECEPTOR 6481 GRID	556250	4201950	8.2	10
RECEPTOR 6482 GRID	556300	4201950	8.72	10
RECEPTOR 6483 GRID	556350	4201950	8.29	10
RECEPTOR 6484 GRID	556400	4201950	8.79	10
RECEPTOR 6485 GRID	556450	4201950	8.91	10
RECEPTOR 6486 GRID	556500	4201950	10.84	10
RECEPTOR 6487 GRID	556550	4201950	10.81	10
RECEPTOR 6488 GRID	556600	4201950	11.3	10
RECEPTOR 6489 GRID	551000	4202000	2.57	10
RECEPTOR 6490 GRID	551050	4202000	0.85	10
RECEPTOR 6491 GRID	551100	4202000	0.84	10
RECEPTOR 6492 GRID	551150	4202000	0.42	10
RECEPTOR 6493 GRID	551200	4202000	2.01	10
RECEPTOR 6494 GRID	555100	4202000	4.18	10
RECEPTOR 6495 GRID	555150	4202000	4.25	10
RECEPTOR 6496 GRID	555200	4202000	4.6	10
RECEPTOR 6497 GRID	555250	4202000	4.61	10
RECEPTOR 6498 GRID	555300	4202000	4.76	10
RECEPTOR 6499 GRID	555350	4202000	4.58	10
RECEPTOR 6500 GRID	555400	4202000	4.53	10
RECEPTOR 6501 GRID	555450	4202000	4.61	10
RECEPTOR 6502 GRID	555500	4202000	5.06	10
RECEPTOR 6503 GRID	555550	4202000	5.42	10
RECEPTOR 6504 GRID	555600	4202000	5.27	10
RECEPTOR 6505 GRID	555650	4202000	5.42	10
RECEPTOR 6506 GRID	555700	4202000	5.51	10
RECEPTOR 6507 GRID	555750	4202000	5.43	10
RECEPTOR 6508 GRID	555800	4202000	5.52	10
RECEPTOR 6509 GRID	555850	4202000	5.57	10
RECEPTOR 6510 GRID	555900	4202000	5.61	10
RECEPTOR 6511 GRID	555950	4202000	5.8	10
RECEPTOR 6512 GRID	556000	4202000	6	10
RECEPTOR 6513 GRID	556050	4202000	6.36	10
RECEPTOR 6514 GRID	556100	4202000	6.71	10
RECEPTOR 6515 GRID	556150	4202000	6.84	10
RECEPTOR 6516 GRID	556200	4202000	7.16	10
RECEPTOR 6517 GRID	556250	4202000	7.23	10
RECEPTOR 6518 GRID	556300	4202000	7.79	10
RECEPTOR 6519 GRID	556350	4202000	8.12	10
RECEPTOR 6520 GRID	556400	4202000	8.4	10
RECEPTOR 6521 GRID	556450	4202000	10.44	10

RECEPTOR 6522 GRID	556500	4202000	11.18	10
RECEPTOR 6523 GRID	556550	4202000	10.02	10
RECEPTOR 6524 GRID	556600	4202000	11.17	10
RECEPTOR 6525 GRID	551050	4202050	2.42	10
RECEPTOR 6526 GRID	551100	4202050	0.45	10
RECEPTOR 6527 GRID	551150	4202050	0.45	10
RECEPTOR 6528 GRID	551200	4202050	0.52	10
RECEPTOR 6529 GRID	555100	4202050	4.33	10
RECEPTOR 6530 GRID	555150	4202050	4.45	10
RECEPTOR 6531 GRID	555200	4202050	4.81	10
RECEPTOR 6532 GRID	555250	4202050	4.69	10
RECEPTOR 6533 GRID	555300	4202050	4.81	10
RECEPTOR 6534 GRID	555350	4202050	4.48	10
RECEPTOR 6535 GRID	555400	4202050	4.52	10
RECEPTOR 6536 GRID	555450	4202050	4.67	10
RECEPTOR 6537 GRID	555500	4202050	5.03	10
RECEPTOR 6538 GRID	555550	4202050	5.48	10
RECEPTOR 6539 GRID	555600	4202050	5.25	10
RECEPTOR 6540 GRID	555650	4202050	5.48	10
RECEPTOR 6541 GRID	555700	4202050	5.58	10
RECEPTOR 6542 GRID	555750	4202050	5.26	10
RECEPTOR 6543 GRID	555800	4202050	5.44	10
RECEPTOR 6544 GRID	555850	4202050	5.56	10
RECEPTOR 6545 GRID	555900	4202050	5.32	10
RECEPTOR 6546 GRID	555950	4202050	5.53	10
RECEPTOR 6547 GRID	556000	4202050	6.07	10
RECEPTOR 6548 GRID	556050	4202050	6.16	10
RECEPTOR 6549 GRID	556100	4202050	6.6	10
RECEPTOR 6550 GRID	556150	4202050	6.95	10
RECEPTOR 6551 GRID	556200	4202050	7.38	10
RECEPTOR 6552 GRID	556250	4202050	7.8	10
RECEPTOR 6553 GRID	556300	4202050	8.09	10
RECEPTOR 6554 GRID	556350	4202050	8.2	10
RECEPTOR 6555 GRID	556400	4202050	8.46	10
RECEPTOR 6556 GRID	556450	4202050	9.15	10
RECEPTOR 6557 GRID	556500	4202050	10.95	10
RECEPTOR 6558 GRID	556550	4202050	9.92	10
RECEPTOR 6559 GRID	556600	4202050	8.07	10
RECEPTOR 6560 GRID	551100	4202100	0.44	10
RECEPTOR 6561 GRID	551150	4202100	0.41	10
RECEPTOR 6562 GRID	551200	4202100	0.52	10
RECEPTOR 6563 GRID	555100	4202100	4.75	10
RECEPTOR 6564 GRID	555150	4202100	4.68	10
RECEPTOR 6565 GRID	555200	4202100	4.78	10
RECEPTOR 6566 GRID	555250	4202100	4.59	10

RECEPTOR 6567 GRID	555300	4202100	4.92	10
RECEPTOR 6568 GRID	555350	4202100	4.5	10
RECEPTOR 6569 GRID	555400	4202100	4.8	10
RECEPTOR 6570 GRID	555450	4202100	4.76	10
RECEPTOR 6571 GRID	555500	4202100	4.98	10
RECEPTOR 6572 GRID	555550	4202100	5.37	10
RECEPTOR 6573 GRID	555600	4202100	5.15	10
RECEPTOR 6574 GRID	555650	4202100	5.4	10
RECEPTOR 6575 GRID	555700	4202100	5.48	10
RECEPTOR 6576 GRID	555750	4202100	5.23	10
RECEPTOR 6577 GRID	555800	4202100	5.39	10
RECEPTOR 6578 GRID	555850	4202100	5.21	10
RECEPTOR 6579 GRID	555900	4202100	5.4	10
RECEPTOR 6580 GRID	555950	4202100	5.59	10
RECEPTOR 6581 GRID	556000	4202100	5.82	10
RECEPTOR 6582 GRID	556050	4202100	6.07	10
RECEPTOR 6583 GRID	556100	4202100	6.56	10
RECEPTOR 6584 GRID	556150	4202100	6.72	10
RECEPTOR 6585 GRID	556200	4202100	7.3	10
RECEPTOR 6586 GRID	556250	4202100	7.27	10
RECEPTOR 6587 GRID	556300	4202100	7.78	10
RECEPTOR 6588 GRID	556350	4202100	8	10
RECEPTOR 6589 GRID	556400	4202100	8.37	10
RECEPTOR 6590 GRID	556450	4202100	9.92	10
RECEPTOR 6591 GRID	556500	4202100	9.25	10
RECEPTOR 6592 GRID	556550	4202100	10.03	10
RECEPTOR 6593 GRID	556600	4202100	10.09	10
RECEPTOR 6594 GRID	555100	4202150	4.09	10
RECEPTOR 6595 GRID	555150	4202150	4.15	10
RECEPTOR 6596 GRID	555200	4202150	4.24	10
RECEPTOR 6597 GRID	555250	4202150	4.11	10
RECEPTOR 6598 GRID	555300	4202150	5.01	10
RECEPTOR 6599 GRID	555350	4202150	4.83	10
RECEPTOR 6600 GRID	555400	4202150	5.67	10
RECEPTOR 6601 GRID	555450	4202150	5.26	10
RECEPTOR 6602 GRID	555500	4202150	5.27	10
RECEPTOR 6603 GRID	555550	4202150	5.16	10
RECEPTOR 6604 GRID	555600	4202150	5.52	10
RECEPTOR 6605 GRID	555650	4202150	5.49	10
RECEPTOR 6606 GRID	555700	4202150	5.76	10
RECEPTOR 6607 GRID	555750	4202150	5.26	10
RECEPTOR 6608 GRID	555800	4202150	5.55	10
RECEPTOR 6609 GRID	555850	4202150	5.63	10
RECEPTOR 6610 GRID	555900	4202150	5.35	10
RECEPTOR 6611 GRID	555950	4202150	5.6	10

RECEPTOR 6612 GRID	556000	4202150	5.59	10
RECEPTOR 6613 GRID	556050	4202150	6.18	10
RECEPTOR 6614 GRID	556100	4202150	6.54	10
RECEPTOR 6615 GRID	556150	4202150	6.53	10
RECEPTOR 6616 GRID	556200	4202150	7.29	10
RECEPTOR 6617 GRID	556250	4202150	7.25	10
RECEPTOR 6618 GRID	556300	4202150	8.73	10
RECEPTOR 6619 GRID	556350	4202150	8.03	10
RECEPTOR 6620 GRID	556400	4202150	8.27	10
RECEPTOR 6621 GRID	556450	4202150	7.96	10
RECEPTOR 6622 GRID	556500	4202150	8.84	10
RECEPTOR 6623 GRID	556550	4202150	9.48	10
RECEPTOR 6624 GRID	556600	4202150	11.84	10
RECEPTOR 6625 GRID	555100	4202200	4.17	10
RECEPTOR 6626 GRID	555150	4202200	4.22	10
RECEPTOR 6627 GRID	555200	4202200	4.09	10
RECEPTOR 6628 GRID	555250	4202200	4.22	10
RECEPTOR 6629 GRID	555300	4202200	4.8	10
RECEPTOR 6630 GRID	555350	4202200	4.97	10
RECEPTOR 6631 GRID	555400	4202200	6.31	10
RECEPTOR 6632 GRID	555450	4202200	5.69	10
RECEPTOR 6633 GRID	555500	4202200	5.43	10
RECEPTOR 6634 GRID	555550	4202200	5.39	10
RECEPTOR 6635 GRID	555600	4202200	5.42	10
RECEPTOR 6636 GRID	555650	4202200	5.71	10
RECEPTOR 6637 GRID	555700	4202200	5.66	10
RECEPTOR 6638 GRID	555750	4202200	5.05	10
RECEPTOR 6639 GRID	555800	4202200	4.86	10
RECEPTOR 6640 GRID	555850	4202200	5.05	10
RECEPTOR 6641 GRID	555900	4202200	5.19	10
RECEPTOR 6642 GRID	555950	4202200	5.76	10
RECEPTOR 6643 GRID	556000	4202200	5.94	10
RECEPTOR 6644 GRID	556050	4202200	6.53	10
RECEPTOR 6645 GRID	556100	4202200	6.62	10
RECEPTOR 6646 GRID	556150	4202200	6.44	10
RECEPTOR 6647 GRID	556200	4202200	6.91	10
RECEPTOR 6648 GRID	556250	4202200	8.01	10
RECEPTOR 6649 GRID	556300	4202200	8.86	10
RECEPTOR 6650 GRID	556350	4202200	8.18	10
RECEPTOR 6651 GRID	556400	4202200	8.44	10
RECEPTOR 6652 GRID	556450	4202200	8.65	10
RECEPTOR 6653 GRID	556500	4202200	9	10
RECEPTOR 6654 GRID	556550	4202200	9.3	10
RECEPTOR 6655 GRID	556600	4202200	10.3	10
RECEPTOR 6656 GRID	555100	4202250	4.37	10

RECEPTOR 6657 GRID	555150	4202250	4.53	10
RECEPTOR 6658 GRID	555200	4202250	4.58	10
RECEPTOR 6659 GRID	555250	4202250	4.66	10
RECEPTOR 6660 GRID	555300	4202250	4.85	10
RECEPTOR 6661 GRID	555350	4202250	4.71	10
RECEPTOR 6662 GRID	555400	4202250	6.05	10
RECEPTOR 6663 GRID	555450	4202250	6.11	10
RECEPTOR 6664 GRID	555500	4202250	5.51	10
RECEPTOR 6665 GRID	555550	4202250	5.61	10
RECEPTOR 6666 GRID	555600	4202250	5.65	10
RECEPTOR 6667 GRID	555650	4202250	5.76	10
RECEPTOR 6668 GRID	555700	4202250	5.59	10
RECEPTOR 6669 GRID	555750	4202250	4.95	10
RECEPTOR 6670 GRID	555800	4202250	4.92	10
RECEPTOR 6671 GRID	555850	4202250	5.15	10
RECEPTOR 6672 GRID	555900	4202250	5.28	10
RECEPTOR 6673 GRID	555950	4202250	6.02	10
RECEPTOR 6674 GRID	556000	4202250	5.69	10
RECEPTOR 6675 GRID	556050	4202250	6.51	10
RECEPTOR 6676 GRID	556100	4202250	6.27	10
RECEPTOR 6677 GRID	556150	4202250	6.56	10
RECEPTOR 6678 GRID	556200	4202250	8.27	10
RECEPTOR 6679 GRID	556250	4202250	8.03	10
RECEPTOR 6680 GRID	556300	4202250	8.82	10
RECEPTOR 6681 GRID	556350	4202250	8.05	10
RECEPTOR 6682 GRID	556400	4202250	8.46	10
RECEPTOR 6683 GRID	556450	4202250	9.44	10
RECEPTOR 6684 GRID	556500	4202250	9.64	10
RECEPTOR 6685 GRID	556550	4202250	10.11	10
RECEPTOR 6686 GRID	556600	4202250	10.01	10
RECEPTOR 6687 GRID	555100	4202300	2.18	10
RECEPTOR 6688 GRID	555150	4202300	1.96	10
RECEPTOR 6689 GRID	555200	4202300	2.08	10
RECEPTOR 6690 GRID	555250	4202300	2.21	10
RECEPTOR 6691 GRID	555300	4202300	2.45	10
RECEPTOR 6692 GRID	555350	4202300	2.18	10
RECEPTOR 6693 GRID	555400	4202300	2.89	10
RECEPTOR 6694 GRID	555450	4202300	5.44	10
RECEPTOR 6695 GRID	555500	4202300	5.72	10
RECEPTOR 6696 GRID	555550	4202300	5.18	10
RECEPTOR 6697 GRID	555600	4202300	6.01	10
RECEPTOR 6698 GRID	555650	4202300	5.95	10
RECEPTOR 6699 GRID	555700	4202300	5.97	10
RECEPTOR 6700 GRID	555750	4202300	5.1	10
RECEPTOR 6701 GRID	555800	4202300	5.17	10

RECEPTOR 6702 GRID	555850	4202300	5.41	10
RECEPTOR 6703 GRID	555900	4202300	5.54	10
RECEPTOR 6704 GRID	555950	4202300	5.94	10
RECEPTOR 6705 GRID	556000	4202300	6.29	10
RECEPTOR 6706 GRID	556050	4202300	6.78	10
RECEPTOR 6707 GRID	556100	4202300	6.59	10
RECEPTOR 6708 GRID	556150	4202300	6.88	10
RECEPTOR 6709 GRID	556200	4202300	7.75	10
RECEPTOR 6710 GRID	556250	4202300	7.9	10
RECEPTOR 6711 GRID	556300	4202300	8.63	10
RECEPTOR 6712 GRID	556350	4202300	3.79	10
RECEPTOR 6713 GRID	556400	4202300	8.87	10
RECEPTOR 6714 GRID	556450	4202300	9.13	10
RECEPTOR 6715 GRID	556500	4202300	10.04	10
RECEPTOR 6716 GRID	556550	4202300	6.42	10
RECEPTOR 6717 GRID	556600	4202300	9.82	10
RECEPTOR 6718 GRID	555100	4202350	3.42	10
RECEPTOR 6719 GRID	555150	4202350	3.75	10
RECEPTOR 6720 GRID	555200	4202350	4.12	10
RECEPTOR 6721 GRID	555250	4202350	4.31	10
RECEPTOR 6722 GRID	555300	4202350	4.66	10
RECEPTOR 6723 GRID	555350	4202350	5.39	10
RECEPTOR 6724 GRID	555400	4202350	3.75	10
RECEPTOR 6725 GRID	555450	4202350	2.01	10
RECEPTOR 6726 GRID	555500	4202350	3.36	10
RECEPTOR 6727 GRID	555550	4202350	3.21	10
RECEPTOR 6728 GRID	555600	4202350	5.68	10
RECEPTOR 6729 GRID	555650	4202350	5.83	10
RECEPTOR 6730 GRID	555700	4202350	6.16	10
RECEPTOR 6731 GRID	555750	4202350	5.5	10
RECEPTOR 6732 GRID	555800	4202350	5.76	10
RECEPTOR 6733 GRID	555850	4202350	5.82	10
RECEPTOR 6734 GRID	555900	4202350	6.37	10
RECEPTOR 6735 GRID	555950	4202350	6.58	10
RECEPTOR 6736 GRID	556000	4202350	6.43	10
RECEPTOR 6737 GRID	556050	4202350	7	10
RECEPTOR 6738 GRID	556100	4202350	6.95	10
RECEPTOR 6739 GRID	556150	4202350	7.51	10
RECEPTOR 6740 GRID	556200	4202350	10.01	10
RECEPTOR 6741 GRID	556250	4202350	6.9	10
RECEPTOR 6742 GRID	556300	4202350	8.52	10
RECEPTOR 6743 GRID	556350	4202350	8.89	10
RECEPTOR 6744 GRID	556400	4202350	9.15	10
RECEPTOR 6745 GRID	556450	4202350	3.69	10
RECEPTOR 6746 GRID	556500	4202350	6.28	10

RECEPTOR 6747 GRID	556550	4202350	10.19	10
RECEPTOR 6748 GRID	556600	4202350	8.79	10
RECEPTOR 6749 GRID	555100	4202400	3.21	10
RECEPTOR 6750 GRID	555150	4202400	3.34	10
RECEPTOR 6751 GRID	555200	4202400	3.63	10
RECEPTOR 6752 GRID	555250	4202400	4.27	10
RECEPTOR 6753 GRID	555300	4202400	4.05	10
RECEPTOR 6754 GRID	555350	4202400	4.37	10
RECEPTOR 6755 GRID	555400	4202400	4.21	10
RECEPTOR 6756 GRID	555450	4202400	4.86	10
RECEPTOR 6757 GRID	555500	4202400	5.45	10
RECEPTOR 6758 GRID	555550	4202400	4.06	10
RECEPTOR 6759 GRID	555600	4202400	5.26	10
RECEPTOR 6760 GRID	555650	4202400	4.25	10
RECEPTOR 6761 GRID	555700	4202400	2.32	10
RECEPTOR 6762 GRID	555750	4202400	2.67	10
RECEPTOR 6763 GRID	555800	4202400	2.47	10
RECEPTOR 6764 GRID	555850	4202400	3.31	10
RECEPTOR 6765 GRID	555900	4202400	5.3	10
RECEPTOR 6766 GRID	555950	4202400	6.91	10
RECEPTOR 6767 GRID	556000	4202400	7.31	10
RECEPTOR 6768 GRID	556050	4202400	7.16	10
RECEPTOR 6769 GRID	556100	4202400	7.41	10
RECEPTOR 6770 GRID	556150	4202400	4.1	10
RECEPTOR 6771 GRID	556200	4202400	3.6	10
RECEPTOR 6772 GRID	556250	4202400	6.39	10
RECEPTOR 6773 GRID	556300	4202400	8.77	10
RECEPTOR 6774 GRID	556350	4202400	8.84	10
RECEPTOR 6775 GRID	556400	4202400	8.77	10
RECEPTOR 6776 GRID	556450	4202400	8.97	10
RECEPTOR 6777 GRID	556500	4202400	9.16	10
RECEPTOR 6778 GRID	556550	4202400	9.69	10
RECEPTOR 6779 GRID	556600	4202400	8.07	10
RECEPTOR 6780 GRID	554439	4197648	2.67	10
RECEPTOR 6781 GRID	554439	4197648	2.67	10
RECEPTOR 6782 GRID	554439	4197648	2.67	10
RECEPTOR 6783 GRID	554961	4196985	4.53	10
RECEPTOR 6784 GRID	555373	4201175	3.62	10
RECEPTOR 6785 GRID	555373	4201175	3.62	10
RECEPTOR 6786 GRID	555752	4198581	5.68	10
RECEPTOR 6787 GRID	555839	4199848	6.42	10
RECEPTOR 6788 GRID	555839	4199848	6.42	10
RECEPTOR 6789 GRID	555848	4199677	6.16	10
RECEPTOR 6790 GRID	555848	4199677	6.16	10
RECEPTOR 6791 GRID	555864	4200773	6.9	10

RECEPTOR 6792 GRID	555864	4200773	6.9	10
RECEPTOR 6793 GRID	555909	4198423	5.4	10
RECEPTOR 6794 GRID	555909	4198423	5.4	10
RECEPTOR 6795 GRID	555936	4201656	3.57	10
RECEPTOR 6796 GRID	555936	4201656	3.57	10
RECEPTOR 6797 GRID	555936	4201656	3.57	10
RECEPTOR 6798 GRID	556012	4198519	5.9	10
RECEPTOR 6799 GRID	556012	4198519	5.9	10
RECEPTOR 6800 GRID	556039	4198685	7.05	10
RECEPTOR 6801 GRID	556071	4199075	7.82	10
RECEPTOR 6802 GRID	556071	4199075	7.82	10
RECEPTOR 6803 GRID	556073	4199832	7.77	10
RECEPTOR 6804 GRID	556139	4198868	8.19	10
RECEPTOR 6805 GRID	556157	4198615	6.59	10
RECEPTOR 6806 GRID	556157	4198615	6.59	10
RECEPTOR 6807 GRID	556168	4198587	6.47	10
RECEPTOR 6808 GRID	556201	4199005	8.63	10
RECEPTOR 6809 GRID	556201	4199005	8.63	10
RECEPTOR 6810 GRID	556232	4199726	8.94	10
RECEPTOR 6811 GRID	556248	4198749	7.34	10
RECEPTOR 6812 GRID	556253	4199006	8.81	10
RECEPTOR 6813 GRID	556267	4198993	8.73	10
RECEPTOR 6814 GRID	556323	4198606	7.01	10
RECEPTOR 6815 GRID	556329	4199445	9.27	10
RECEPTOR 6816 GRID	556401	4199005	9.21	10
RECEPTOR 6817 GRID	556846	4200082	14.68	10
RECEPTOR 6818 GRID	556289	4198041	5.47	10
RECEPTOR 6819 GRID	556279	4197900	5.39	10
RECEPTOR 6820 GRID	555894	4198971	6.94	10
RECEPTOR 6821 GRID	554032	4197846	5.21	10
RECEPTOR 6822 GRID	555890	4200868	6.89	10
RECEPTOR 6823 GRID	555937	4200908	6.92	10
RECEPTOR 6824 GRID	556302	4199802	10.15	10
RECEPTOR 6825 GRID	555714	4201694	5.36	10
RECEPTOR 6826 GRID	554273	4196633	20.54	10
RECEPTOR 6827 GRID	556457	4198803	8.37	10
RECEPTOR 6828 GRID	555826	4198935	6.75	10
RECEPTOR 6829 GRID	556054	4199440	7.36	10
RECEPTOR 6830 GRID	555692	4199207	5.36	10
RECEPTOR 6831 GRID	554235	4197643	3.38	10
RECEPTOR 6832 GRID	556413	4197826	4.93	10
RECEPTOR 6833 GRID	555243	4198689	4.27	10
RECEPTOR 6834 GRID	551749	4199663	4.92	10
RECEPTOR 6835 GRID	556699	4200136	13.76	10
RECEPTOR 6836 GRID	556367	4198914	8.35	10

RECEPTOR 6837 GRID	556371	4198729	7.89	10
RECEPTOR 6838 GRID	554018	4197818	5.55	10
RECEPTOR 6839 GRID	553876	4197753	17.36	10
RECEPTOR 6840 GRID	555846	4197900	3.69	10
RECEPTOR 6841 GRID	555873	4197850	3.64	10
RECEPTOR 6842 GRID	554907	4198399	2.61	10
RECEPTOR 6843 GRID	555109	4198399	3.55	10
RECEPTOR 6844 GRID	555297	4198399	4.07	10
RECEPTOR 6845 GRID	555502	4198395	4.35	10
RECEPTOR 6846 GRID	555691	4198392	5.26	10
RECEPTOR 6847 GRID	555906	4198389	5.95	10
RECEPTOR 6848 GRID	556104	4198392	6.44	10
RECEPTOR 6849 GRID	556299	4198392	7.3	10
RECEPTOR 6850 GRID	556501	4198395	7.42	10
RECEPTOR 6851 GRID	556928	4199151	12.53	10
RECEPTOR 6852 GRID	556925	4199611	13.77	10
RECEPTOR 6853 GRID	555240	4198745	4.56	10
RECEPTOR 6854 GRID	555248	4198745	4.69	10
RECEPTOR 6855 GRID	555891	4200852	6.88	10
RECEPTOR 6856 GRID	552150	4198870	33.14	10
RECEPTOR 6857 GRID	552200	4198870	33.22	10
RECEPTOR 6858 GRID	552250	4198870	33.44	10
RECEPTOR 6859 GRID	552150	4198920	33.96	10
RECEPTOR 6860 GRID	552200	4198920	33.94	10
RECEPTOR 6861 GRID	552250	4198920	37.75	10
RECEPTOR 6862 GRID	552300	4198920	38.15	10
RECEPTOR 6863 GRID	552350	4198920	34.49	10
RECEPTOR 6864 GRID	552050	4198970	30.82	10
RECEPTOR 6865 GRID	552100	4198970	31.52	10
RECEPTOR 6866 GRID	552150	4198970	33.79	10
RECEPTOR 6867 GRID	552200	4198970	34.37	10
RECEPTOR 6868 GRID	552250	4198970	34.75	10
RECEPTOR 6869 GRID	552300	4198970	34.02	10
RECEPTOR 6870 GRID	552350	4198970	34.65	10
RECEPTOR 6871 GRID	552400	4198970	34.47	10
RECEPTOR 6872 GRID	552050	4199020	32.47	10
RECEPTOR 6873 GRID	552100	4199020	34.58	10
RECEPTOR 6874 GRID	552150	4199020	34.16	10
RECEPTOR 6875 GRID	552200	4199020	34.71	10
RECEPTOR 6876 GRID	552250	4199020	34.77	10
RECEPTOR 6877 GRID	552300	4199020	39.01	10
RECEPTOR 6878 GRID	552350	4199020	34.99	10
RECEPTOR 6879 GRID	552400	4199020	35.22	10
RECEPTOR 6880 GRID	552450	4199020	41.35	10
RECEPTOR 6881 GRID	552500	4199020	104.47	10

RECEPTOR 6882 GRID	552050	4199070	33.01	10
RECEPTOR 6883 GRID	552100	4199070	34.57	10
RECEPTOR 6884 GRID	552150	4199070	34.43	10
RECEPTOR 6885 GRID	552200	4199070	35.54	10
RECEPTOR 6886 GRID	552250	4199070	35.81	10
RECEPTOR 6887 GRID	552300	4199070	35.78	10
RECEPTOR 6888 GRID	552350	4199070	35.54	10
RECEPTOR 6889 GRID	552400	4199070	38.78	10
RECEPTOR 6890 GRID	552450	4199070	55.78	10
RECEPTOR 6891 GRID	552500	4199070	102.95	10
RECEPTOR 6892 GRID	551950	4199120	34.48	10
RECEPTOR 6893 GRID	552000	4199120	37.26	10
RECEPTOR 6894 GRID	552050	4199120	36.26	10
RECEPTOR 6895 GRID	552100	4199120	40.66	10
RECEPTOR 6896 GRID	552150	4199120	44.73	10
RECEPTOR 6897 GRID	552200	4199120	44.46	10
RECEPTOR 6898 GRID	552250	4199120	41.94	10
RECEPTOR 6899 GRID	552300	4199120	36.55	10
RECEPTOR 6900 GRID	552350	4199120	36.07	10
RECEPTOR 6901 GRID	552400	4199120	62.14	10
RECEPTOR 6902 GRID	552450	4199120	88.3	10
RECEPTOR 6903 GRID	552500	4199120	110.19	10
RECEPTOR 6904 GRID	551950	4199170	41.91	10
RECEPTOR 6905 GRID	552000	4199170	39.14	10
RECEPTOR 6906 GRID	552050	4199170	48.85	10
RECEPTOR 6907 GRID	552100	4199170	48.75	10
RECEPTOR 6908 GRID	552150	4199170	52.82	10
RECEPTOR 6909 GRID	552200	4199170	61.07	10
RECEPTOR 6910 GRID	552250	4199170	58.29	10
RECEPTOR 6911 GRID	552300	4199170	40.43	10
RECEPTOR 6912 GRID	552350	4199170	43.98	10
RECEPTOR 6913 GRID	552400	4199170	76.89	10
RECEPTOR 6914 GRID	552450	4199170	109.26	10
RECEPTOR 6915 GRID	551950	4199220	36.45	10
RECEPTOR 6916 GRID	552000	4199220	41.21	10
RECEPTOR 6917 GRID	552050	4199220	53.37	10
RECEPTOR 6918 GRID	552100	4199220	50.34	10
RECEPTOR 6919 GRID	552150	4199220	60.73	10
RECEPTOR 6920 GRID	552200	4199220	60.02	10
RECEPTOR 6921 GRID	552250	4199220	48.17	10
RECEPTOR 6922 GRID	552300	4199220	37.78	10
RECEPTOR 6923 GRID	552350	4199220	59.68	10
RECEPTOR 6924 GRID	552400	4199220	91.35	10
RECEPTOR 6925 GRID	552450	4199220	122.07	10
RECEPTOR 6926 GRID	552000	4199270	38.42	10

RECEPTOR 6927 GRID	552050	4199270	45.8	10
RECEPTOR 6928 GRID	552100	4199270	51.95	10
RECEPTOR 6929 GRID	552150	4199270	50.55	10
RECEPTOR 6930 GRID	552200	4199270	46.96	10
RECEPTOR 6931 GRID	552250	4199270	37.93	10
RECEPTOR 6932 GRID	552300	4199270	53.59	10
RECEPTOR 6933 GRID	552350	4199270	76.35	10
RECEPTOR 6934 GRID	552400	4199270	104.87	10
RECEPTOR 6935 GRID	552450	4199270	135.6	10
RECEPTOR 6936 GRID	552100	4199320	45.9	10
RECEPTOR 6937 GRID	552150	4199320	41.61	10
RECEPTOR 6938 GRID	552200	4199320	41.55	10
RECEPTOR 6939 GRID	552250	4199320	56.58	10
RECEPTOR 6940 GRID	552300	4199320	79.6	10
RECEPTOR 6941 GRID	552350	4199320	102.85	10
RECEPTOR 6942 GRID	552400	4199320	125.29	10
RECEPTOR 6943 GRID	554952	4199839	3.58	10
RECEPTOR 6944 GRID	555002	4199839	3.76	10
RECEPTOR 6945 GRID	554702	4199789	2.8	10
RECEPTOR 6946 GRID	554752	4199789	2.62	10
RECEPTOR 6947 GRID	554802	4199789	1.52	10
RECEPTOR 6948 GRID	554852	4199789	3.05	10
RECEPTOR 6949 GRID	554902	4199789	1.44	10
RECEPTOR 6950 GRID	554952	4199789	1.51	10
RECEPTOR 6951 GRID	555002	4199789	3.13	10
RECEPTOR 6952 GRID	554652	4199739	3.34	10
RECEPTOR 6953 GRID	554702	4199739	3.32	10
RECEPTOR 6954 GRID	554752	4199739	3.46	10
RECEPTOR 6955 GRID	554802	4199739	3.28	10
RECEPTOR 6956 GRID	554852	4199739	3.5	10
RECEPTOR 6957 GRID	554902	4199739	3.42	10
RECEPTOR 6958 GRID	554952	4199739	1.62	10
RECEPTOR 6959 GRID	554652	4199689	3.27	10
RECEPTOR 6960 GRID	554702	4199689	3.33	10
RECEPTOR 6961 GRID	554752	4199689	3.45	10
RECEPTOR 6962 GRID	554802	4199689	3.51	10
RECEPTOR 6963 GRID	554852	4199689	3.37	10
RECEPTOR 6964 GRID	554902	4199689	3.35	10
RECEPTOR 6965 GRID	554602	4199639	3.13	10
RECEPTOR 6966 GRID	554652	4199639	3.16	10
RECEPTOR 6967 GRID	554702	4199639	3.27	10
RECEPTOR 6968 GRID	554752	4199639	3.34	10
RECEPTOR 6969 GRID	554802	4199639	3.44	10
RECEPTOR 6970 GRID	554852	4199639	2.95	10
RECEPTOR 6971 GRID	554902	4199639	3.41	10

RECEPTOR 6972 GRID	554602	4199589	3.22	10
RECEPTOR 6973 GRID	554652	4199589	3.23	10
RECEPTOR 6974 GRID	554702	4199589	3.22	10
RECEPTOR 6975 GRID	554752	4199589	3.54	10
RECEPTOR 6976 GRID	554802	4199589	3.14	10
RECEPTOR 6977 GRID	554852	4199589	2.84	10
RECEPTOR 6978 GRID	554552	4199539	3.46	10
RECEPTOR 6979 GRID	554602	4199539	3.36	10
RECEPTOR 6980 GRID	554652	4199539	3.3	10
RECEPTOR 6981 GRID	554702	4199539	3.35	10
RECEPTOR 6982 GRID	554752	4199539	3.39	10
RECEPTOR 6983 GRID	554802	4199539	3.3	10
RECEPTOR 6984 GRID	554852	4199539	3.31	10
RECEPTOR 6985 GRID	554552	4199489	2.59	10
RECEPTOR 6986 GRID	554602	4199489	3.18	10
RECEPTOR 6987 GRID	554652	4199489	3.15	10
RECEPTOR 6988 GRID	554702	4199489	3.23	10
RECEPTOR 6989 GRID	554752	4199489	3	10
RECEPTOR 6990 GRID	554802	4199489	2.92	10
RECEPTOR 6991 GRID	554552	4199439	2.97	10
RECEPTOR 6992 GRID	554602	4199439	3.06	10
RECEPTOR 6993 GRID	554652	4199439	3.18	10
RECEPTOR 6994 GRID	554702	4199439	3.19	10
RECEPTOR 6995 GRID	554752	4199439	2.8	10
RECEPTOR 6996 GRID	554802	4199439	2.69	10
RECEPTOR 6997 GRID	554552	4199389	2.79	10
RECEPTOR 6998 GRID	554602	4199389	3.02	10
RECEPTOR 6999 GRID	554652	4199389	3.22	10
RECEPTOR 7000 GRID	554702	4199389	3.45	10
RECEPTOR 7001 GRID	554752	4199389	3.38	10
RECEPTOR 7002 GRID	554552	4199339	2.96	10
RECEPTOR 7003 GRID	554602	4199339	2.99	10
RECEPTOR 7004 GRID	554652	4199339	3.41	10
RECEPTOR 7005 GRID	554702	4199339	3.64	10
RECEPTOR 7006 GRID	554752	4199339	2.99	10
RECEPTOR 7007 GRID	554552	4199289	3.12	10
RECEPTOR 7008 GRID	554602	4199289	3.6	10
RECEPTOR 7009 GRID	554652	4199289	3.52	10
RECEPTOR 7010 GRID	554702	4199289	3.36	10
RECEPTOR 7011 GRID	553050	4198150	7.47	10
RECEPTOR 7012 GRID	553100	4198150	14.39	10
RECEPTOR 7013 GRID	552950	4198200	3.5	10
RECEPTOR 7014 GRID	553000	4198200	6.13	10
RECEPTOR 7015 GRID	553050	4198200	10.52	10
RECEPTOR 7016 GRID	553100	4198200	20.51	10

RECEPTOR 7017 GRID	552950	4198250	19.6	10
RECEPTOR 7018 GRID	553000	4198250	13.54	10
RECEPTOR 7019 GRID	553050	4198250	16.96	10
RECEPTOR 7020 GRID	553100	4198250	24.08	10
RECEPTOR 7021 GRID	552589.3	4200716.7	1.87	10
RECEPTOR 7022 GRID	552598.1	4200679.4	2.44	10
RECEPTOR 7023 GRID	552614.3	4200667.8	1.7	10
RECEPTOR 7024 GRID	552637.5	4200674	2.97	10
RECEPTOR 7025 GRID	552647.8	4200688.4	2.93	10
RECEPTOR 7026 GRID	552658.4	4200703.4	2.74	10
RECEPTOR 7027 GRID	552683.2	4200734.4	2.8	10
RECEPTOR 7028 GRID	552704.8	4200763	2.77	10
RECEPTOR 7029 GRID	552709	4200767.4	2.89	10
RECEPTOR 7030 GRID	552735.8	4200795.5	2.96	10
RECEPTOR 7031 GRID	552793.6	4200815.7	3.18	10
RECEPTOR 7032 GRID	552831	4200828.8	2.55	10
RECEPTOR 7033 GRID	552887.7	4200849.5	2.31	10
RECEPTOR 7034 GRID	552951.7	4200872.9	2.21	10
RECEPTOR 7035 GRID	552982	4200882.6	2.63	10
RECEPTOR 7036 GRID	553077.2	4200913.3	2.89	10
RECEPTOR 7037 GRID	553172.4	4200943.9	2.78	10
RECEPTOR 7038 GRID	553267.6	4200974.6	2.56	10
RECEPTOR 7039 GRID	553362.8	4201005.3	2.44	10
RECEPTOR 7040 GRID	553404.3	4201018.6	3.17	10
RECEPTOR 7041 GRID	553460.1	4201010.5	1.24	10
RECEPTOR 7042 GRID	553546.7	4200998	0.42	10
RECEPTOR 7043 GRID	553556.6	4200990.3	0.42	10
RECEPTOR 7044 GRID	553635.6	4200929.1	1.16	10
RECEPTOR 7045 GRID	553714.7	4200867.9	1.61	10
RECEPTOR 7046 GRID	553793.7	4200806.6	1.21	10
RECEPTOR 7047 GRID	553872.8	4200745.4	1.6	10
RECEPTOR 7048 GRID	553951.9	4200684.2	1.69	10
RECEPTOR 7049 GRID	553963.2	4200675.4	1.65	10
RECEPTOR 7050 GRID	554048.8	4200676.9	1.18	10
RECEPTOR 7051 GRID	554148.8	4200678.7	1.68	10
RECEPTOR 7052 GRID	554198.2	4200679.6	1.57	10
RECEPTOR 7053 GRID	554198.2	4200730.2	1.97	10
RECEPTOR 7054 GRID	554198.2	4200751.6	1.89	10
RECEPTOR 7055 GRID	554119.5	4200750.2	0.73	10
RECEPTOR 7056 GRID	554019.5	4200748.5	1.46	10
RECEPTOR 7057 GRID	553952.6	4200747.3	0.48	10
RECEPTOR 7058 GRID	553983.3	4200759.8	0.38	10
RECEPTOR 7059 GRID	554075.9	4200797.4	1.75	10
RECEPTOR 7060 GRID	554088.1	4200802.4	1.82	10
RECEPTOR 7061 GRID	554174.9	4200805.6	1.7	10

RECEPTOR 7062 GRID	554200.3	4200806.6	1.47	10
RECEPTOR 7063 GRID	554196.1	4200836.2	2.12	10
RECEPTOR 7064 GRID	554151.4	4200836.8	1.94	10
RECEPTOR 7065 GRID	554051.4	4200838	1.69	10
RECEPTOR 7066 GRID	554020.4	4200838.3	1.68	10
RECEPTOR 7067 GRID	553973.2	4200888.7	1.99	10
RECEPTOR 7068 GRID	553904.9	4200961.7	1.91	10
RECEPTOR 7069 GRID	553895.5	4200971.7	1.91	10
RECEPTOR 7070 GRID	553823.5	4201019.3	1.89	10
RECEPTOR 7071 GRID	553740.1	4201074.4	1.84	10
RECEPTOR 7072 GRID	553656.7	4201129.6	1.86	10
RECEPTOR 7073 GRID	553573.3	4201184.7	1.79	10
RECEPTOR 7074 GRID	553508.1	4201227.8	1.85	10
RECEPTOR 7075 GRID	553490.8	4201241.2	1.85	10
RECEPTOR 7076 GRID	553411.6	4201302.2	1.71	10
RECEPTOR 7077 GRID	553332.5	4201363.3	1.44	10
RECEPTOR 7078 GRID	553332.4	4201363.3	1.44	10
RECEPTOR 7079 GRID	553265.5	4201437.6	1.5	10
RECEPTOR 7080 GRID	553199.1	4201511.4	1.91	10
RECEPTOR 7081 GRID	553198.8	4201512.1	1.91	10
RECEPTOR 7082 GRID	553150.9	4201599.9	2.8	10
RECEPTOR 7083 GRID	553148.2	4201604.8	2.65	10
RECEPTOR 7084 GRID	553241.4	4201619	2.24	10
RECEPTOR 7085 GRID	553288.2	4201626	2.42	10
RECEPTOR 7086 GRID	553340.9	4201626.1	2.35	10
RECEPTOR 7087 GRID	553440.9	4201626.3	2.24	10
RECEPTOR 7088 GRID	553471.3	4201626.4	1.92	10
RECEPTOR 7089 GRID	553506.7	4201686.3	2.4	10
RECEPTOR 7090 GRID	553542.8	4201747.1	2.58	10
RECEPTOR 7091 GRID	553570.8	4201738.6	2.24	10
RECEPTOR 7092 GRID	553603.9	4201728.5	1.86	10
RECEPTOR 7093 GRID	553668	4201741.7	2.08	10
RECEPTOR 7094 GRID	553765.9	4201761.8	2.63	10
RECEPTOR 7095 GRID	553833	4201775.6	2.6	10
RECEPTOR 7096 GRID	553856.5	4201796.5	2.66	10
RECEPTOR 7097 GRID	553931.3	4201863	2.52	10
RECEPTOR 7098 GRID	554006	4201929.5	2.34	10
RECEPTOR 7099 GRID	554080.7	4201995.9	2.68	10
RECEPTOR 7100 GRID	554094.6	4202008.3	2.7	10
RECEPTOR 7101 GRID	554139.4	4202076.2	3.03	10
RECEPTOR 7102 GRID	554194.4	4202159.7	3.01	10
RECEPTOR 7103 GRID	554225.1	4202206.4	2.58	10
RECEPTOR 7104 GRID	554269.3	4202207.1	1.74	10
RECEPTOR 7105 GRID	554369.3	4202208.9	1.6	10
RECEPTOR 7106 GRID	554433.7	4202210	3.07	10

RECEPTOR 7107 GRID	554434	4202185.5	1.89	10
RECEPTOR 7108 GRID	554434.1	4202174.4	1.72	10
RECEPTOR 7109 GRID	554434.4	4202136.5	1.77	10
RECEPTOR 7110 GRID	554434.6	4202111.9	1.67	10
RECEPTOR 7111 GRID	554434.9	4202087.4	1.79	10
RECEPTOR 7112 GRID	554435	4202074.4	1.83	10
RECEPTOR 7113 GRID	554435.3	4202038.4	1.96	10
RECEPTOR 7114 GRID	554435.6	4202013.9	1.9	10
RECEPTOR 7115 GRID	554435.9	4201974.4	1.94	10
RECEPTOR 7116 GRID	554436.2	4201940.4	1.92	10
RECEPTOR 7117 GRID	554436.5	4201915.8	1.94	10
RECEPTOR 7118 GRID	554436.8	4201874.4	1.84	10
RECEPTOR 7119 GRID	554437.1	4201842.3	1.93	10
RECEPTOR 7120 GRID	554437.4	4201817.8	1.92	10
RECEPTOR 7121 GRID	554437.7	4201774.4	1.93	10
RECEPTOR 7122 GRID	554437.8	4201768.8	1.93	10
RECEPTOR 7123 GRID	554438.1	4201744.3	1.92	10
RECEPTOR 7124 GRID	554438.3	4201719.8	1.94	10
RECEPTOR 7125 GRID	554438.5	4201695.2	1.95	10
RECEPTOR 7126 GRID	554438.7	4201674.4	1.94	10
RECEPTOR 7127 GRID	554438.7	4201670.7	1.93	10
RECEPTOR 7128 GRID	554439	4201646.2	1.89	10
RECEPTOR 7129 GRID	554439.4	4201597.2	2.14	10
RECEPTOR 7130 GRID	554439.7	4201574.4	2.3	10
RECEPTOR 7131 GRID	554439.7	4201572.7	2.28	10
RECEPTOR 7132 GRID	554440.3	4201499.2	2.33	10
RECEPTOR 7133 GRID	554440.6	4201474.6	2.44	10
RECEPTOR 7134 GRID	554440.6	4201474.4	2.44	10
RECEPTOR 7135 GRID	554441.2	4201401.1	2.34	10
RECEPTOR 7136 GRID	554441.5	4201376.6	2.33	10
RECEPTOR 7137 GRID	554441.5	4201374.4	2.26	10
RECEPTOR 7138 GRID	554441.9	4201327.6	3.05	10
RECEPTOR 7139 GRID	554442.2	4201303.1	1.98	10
RECEPTOR 7140 GRID	554442.4	4201278.5	1.95	10
RECEPTOR 7141 GRID	554442.4	4201274.4	1.85	10
RECEPTOR 7142 GRID	554442.6	4201254	2.28	10
RECEPTOR 7143 GRID	554435.3	4201238.3	3.23	10
RECEPTOR 7144 GRID	554409.4	4201204	2.21	10
RECEPTOR 7145 GRID	554412.4	4201184.9	2.72	10
RECEPTOR 7146 GRID	554417.9	4201150.4	2.85	10
RECEPTOR 7147 GRID	554451.6	4201143.2	2.98	10
RECEPTOR 7148 GRID	554482	4201146.3	2.98	10
RECEPTOR 7149 GRID	554486.5	4201146.8	2.92	10
RECEPTOR 7150 GRID	554530.5	4201149.8	3.01	10
RECEPTOR 7151 GRID	554558.8	4201157.6	3.12	10

RECEPTOR 7152 GRID	554580.8	4201158.3	3.08	10
RECEPTOR 7153 GRID	554598	4201158.8	3.09	10
RECEPTOR 7154 GRID	554671.6	4201167.4	3.64	10
RECEPTOR 7155 GRID	554671.6	4201158.7	3.52	10
RECEPTOR 7156 GRID	554672.1	4201058.7	3.65	10
RECEPTOR 7157 GRID	554672.5	4200958.7	3.49	10
RECEPTOR 7158 GRID	554672.8	4200908.3	2.35	10
RECEPTOR 7159 GRID	554623.2	4200907.8	1.83	10
RECEPTOR 7160 GRID	554610.9	4200907.7	1.81	10
RECEPTOR 7161 GRID	554523.2	4200907.4	1.86	10
RECEPTOR 7162 GRID	554427.2	4200907.1	1.69	10
RECEPTOR 7163 GRID	554423.2	4200907	1.62	10
RECEPTOR 7164 GRID	554323.2	4200904.1	1.55	10
RECEPTOR 7165 GRID	554323.1	4200904	1.55	10
RECEPTOR 7166 GRID	554322.3	4200886.9	2.32	10
RECEPTOR 7167 GRID	554405	4200887.3	2.36	10
RECEPTOR 7168 GRID	554505	4200887.8	2.79	10
RECEPTOR 7169 GRID	554605	4200888.3	3.24	10
RECEPTOR 7170 GRID	554699.1	4200888.7	3.06	10
RECEPTOR 7171 GRID	554699.2	4200882.8	3.53	10
RECEPTOR 7172 GRID	554700.5	4200782.9	3.99	10
RECEPTOR 7173 GRID	554701	4200744.2	3.99	10
RECEPTOR 7174 GRID	554640.5	4200734.1	3.84	10
RECEPTOR 7175 GRID	554601.7	4200727.7	3.75	10
RECEPTOR 7176 GRID	554599.8	4200666.9	3.89	10
RECEPTOR 7177 GRID	554598.1	4200613.7	3.89	10
RECEPTOR 7178 GRID	554551.3	4200612.5	3.04	10
RECEPTOR 7179 GRID	554482.9	4200610.7	2.3	10
RECEPTOR 7180 GRID	554482.6	4200642.3	2.97	10
RECEPTOR 7181 GRID	554482.3	4200675	2.98	10
RECEPTOR 7182 GRID	554415.1	4200671.7	2.61	10
RECEPTOR 7183 GRID	554382.5	4200670.1	2.29	10
RECEPTOR 7184 GRID	554383.4	4200602.8	2.89	10
RECEPTOR 7185 GRID	554383.7	4200584.7	2.73	10
RECEPTOR 7186 GRID	554465.7	4200586	0.93	10
RECEPTOR 7187 GRID	554478.3	4200586.2	1.9	10
RECEPTOR 7188 GRID	554482.7	4200541.1	2.21	10
RECEPTOR 7189 GRID	554478.2	4200499.3	2.1	10
RECEPTOR 7190 GRID	554476.9	4200487.1	2.14	10
RECEPTOR 7191 GRID	554459.9	4200447.3	1.71	10
RECEPTOR 7192 GRID	554457.4	4200411.8	1.76	10
RECEPTOR 7193 GRID	554456.9	4200402.9	1.66	10
RECEPTOR 7194 GRID	554455	4200370	1.65	10
RECEPTOR 7195 GRID	554454	4200330.7	1.7	10
RECEPTOR 7196 GRID	554456.8	4200303.1	1.76	10

RECEPTOR 7197 GRID	554457.9	4200292.3	1.71	10
RECEPTOR 7198 GRID	554465.7	4200266.5	1.81	10
RECEPTOR 7199 GRID	554471.1	4200239.8	2.08	10
RECEPTOR 7200 GRID	554478.7	4200205.7	2.43	10
RECEPTOR 7201 GRID	554480	4200200.3	2.56	10
RECEPTOR 7202 GRID	554504.5	4200198.8	3.02	10
RECEPTOR 7203 GRID	554529.1	4200197.4	2.92	10
RECEPTOR 7204 GRID	554574.2	4200194.8	2.43	10
RECEPTOR 7205 GRID	554578.1	4200194.6	2.49	10
RECEPTOR 7206 GRID	554615.9	4200167.8	2.86	10
RECEPTOR 7207 GRID	554640.2	4200168.1	2.96	10
RECEPTOR 7208 GRID	554664.5	4200168.3	2.88	10
RECEPTOR 7209 GRID	554665.7	4200168.3	2.88	10
RECEPTOR 7210 GRID	554688.8	4200168.5	3.17	10
RECEPTOR 7211 GRID	554713.1	4200168.7	3.26	10
RECEPTOR 7212 GRID	554737.5	4200168.9	3.33	10
RECEPTOR 7213 GRID	554765.7	4200169.1	3.08	10
RECEPTOR 7214 GRID	554834.7	4200169.7	3.85	10
RECEPTOR 7215 GRID	554835.5	4200145.1	2.83	10
RECEPTOR 7216 GRID	554835.7	4200138.7	2.69	10
RECEPTOR 7217 GRID	554837.6	4200071	2.51	10
RECEPTOR 7218 GRID	554838.4	4200046.4	2.57	10
RECEPTOR 7219 GRID	554838.6	4200038.7	2.57	10
RECEPTOR 7220 GRID	554840.5	4199972.3	2.57	10
RECEPTOR 7221 GRID	554841.3	4199947.7	2.57	10
RECEPTOR 7222 GRID	554841.5	4199938.8	2.66	10
RECEPTOR 7223 GRID	554843.4	4199873.6	2.67	10
RECEPTOR 7224 GRID	554844.2	4199849	3.13	10
RECEPTOR 7225 GRID	554843.2	4199838.9	2.43	10
RECEPTOR 7226 GRID	554840.4	4199811.2	1.31	10
RECEPTOR 7227 GRID	554822.6	4199806	1.62	10
RECEPTOR 7228 GRID	554804.9	4199800.7	1.52	10
RECEPTOR 7229 GRID	554787.1	4199795.5	1.61	10
RECEPTOR 7230 GRID	554770.5	4199795.2	2	10
RECEPTOR 7231 GRID	554745.1	4199794.7	2.05	10
RECEPTOR 7232 GRID	554724.2	4199794.3	2.12	10
RECEPTOR 7233 GRID	554703.2	4199793.9	2.88	10
RECEPTOR 7234 GRID	554682.2	4199793.5	2.79	10
RECEPTOR 7235 GRID	554676.4	4199783.3	2.59	10
RECEPTOR 7236 GRID	554670.6	4199773.1	2.83	10
RECEPTOR 7237 GRID	554658.9	4199752.8	3.22	10
RECEPTOR 7238 GRID	554647.3	4199732.4	3.13	10
RECEPTOR 7239 GRID	554635.7	4199712	2.71	10
RECEPTOR 7240 GRID	554626.7	4199696.5	2.98	10
RECEPTOR 7241 GRID	554624	4199691.7	2.87	10

RECEPTOR 7242 GRID	554612.4	4199671.3	2.8	10
RECEPTOR 7243 GRID	554600.7	4199651	2.92	10
RECEPTOR 7244 GRID	554589.1	4199630.6	2.9	10
RECEPTOR 7245 GRID	554577.5	4199610.2	3.02	10
RECEPTOR 7246 GRID	554577.2	4199609.7	3.01	10
RECEPTOR 7247 GRID	554565.8	4199589.9	3.11	10
RECEPTOR 7248 GRID	554532.3	4199553	2.72	10
RECEPTOR 7249 GRID	554534.1	4199525.7	2.63	10
RECEPTOR 7250 GRID	554537.6	4199471.9	2.58	10
RECEPTOR 7251 GRID	554542.4	4199426.1	2.72	10
RECEPTOR 7252 GRID	554544	4199411.1	2.55	10
RECEPTOR 7253 GRID	554546.9	4199345.5	2.61	10
RECEPTOR 7254 GRID	554548.3	4199326.3	2.56	10
RECEPTOR 7255 GRID	554548.8	4199318.8	2.76	10
RECEPTOR 7256 GRID	554548.3	4199287.2	3.09	10
RECEPTOR 7257 GRID	554552.5	4199247.5	2.87	10
RECEPTOR 7258 GRID	554573.4	4199248.7	2.83	10
RECEPTOR 7259 GRID	554673.2	4199254.6	3.19	10
RECEPTOR 7260 GRID	554701.6	4199256.2	3.29	10
RECEPTOR 7261 GRID	554690	4199226.6	4.07	10
RECEPTOR 7262 GRID	554669.9	4199192.2	5.14	10
RECEPTOR 7263 GRID	554652.6	4199162.6	6.62	10
RECEPTOR 7264 GRID	554620.2	4199105.4	8.31	10
RECEPTOR 7265 GRID	554607.7	4199083.4	7.49	10
RECEPTOR 7266 GRID	554586.5	4199042.6	2.66	10
RECEPTOR 7267 GRID	554557.9	4199039.9	2.69	10
RECEPTOR 7268 GRID	554483.2	4199032.7	2.83	10
RECEPTOR 7269 GRID	554484.2	4199007.8	1.98	10
RECEPTOR 7270 GRID	554485.2	4198983.4	2.17	10
RECEPTOR 7271 GRID	554473.9	4198938	1.91	10
RECEPTOR 7272 GRID	554460.3	4198912.6	1.9	10
RECEPTOR 7273 GRID	554445	4198884	2.29	10
RECEPTOR 7274 GRID	554413.4	4198824.3	2.55	10
RECEPTOR 7275 GRID	554401.2	4198801.2	2.58	10
RECEPTOR 7276 GRID	554370.7	4198737.7	2.61	10
RECEPTOR 7277 GRID	554369.5	4198734.5	2.63	10
RECEPTOR 7278 GRID	554358	4198704.5	2.69	10
RECEPTOR 7279 GRID	554367.5	4198693.1	2.85	10
RECEPTOR 7280 GRID	554384.8	4198688.2	3.18	10
RECEPTOR 7281 GRID	554366.9	4198658.1	3.26	10
RECEPTOR 7282 GRID	554362.3	4198650.5	3.34	10
RECEPTOR 7283 GRID	554308.8	4198576.8	3.18	10
RECEPTOR 7284 GRID	554254.5	4198502	3.13	10
RECEPTOR 7285 GRID	554250.1	4198495.8	3.08	10
RECEPTOR 7286 GRID	554192	4198414.5	3.17	10

RECEPTOR 7287 GRID	554166.6	4198378.9	3.11	10
RECEPTOR 7288 GRID	554125.1	4198340.7	3.57	10
RECEPTOR 7289 GRID	554051.6	4198273	3.07	10
RECEPTOR 7290 GRID	554043.5	4198265.5	2.76	10
RECEPTOR 7291 GRID	553961.9	4198300.9	2.91	10
RECEPTOR 7292 GRID	553961	4198301.3	2.91	10
RECEPTOR 7293 GRID	553910.4	4198350.4	2.98	10
RECEPTOR 7294 GRID	553928.9	4198372.2	3	10
RECEPTOR 7295 GRID	553985.8	4198439.6	3.19	10
RECEPTOR 7296 GRID	553976.9	4198447.4	3.03	10
RECEPTOR 7297 GRID	553901.9	4198513.6	3.36	10
RECEPTOR 7298 GRID	553861.1	4198549.7	3.19	10
RECEPTOR 7299 GRID	553830.3	4198516.2	3.14	10
RECEPTOR 7300 GRID	553775.6	4198456.7	3.01	10
RECEPTOR 7301 GRID	553761.4	4198469.6	2.7	10
RECEPTOR 7302 GRID	553692.5	4198532.2	2.98	10
RECEPTOR 7303 GRID	553687.9	4198527	3.08	10
RECEPTOR 7304 GRID	553639.1	4198471.9	3.03	10
RECEPTOR 7305 GRID	553627.5	4198482	3.05	10
RECEPTOR 7306 GRID	553620.5	4198473.6	2.99	10
RECEPTOR 7307 GRID	553569.5	4198411.4	3	10
RECEPTOR 7308 GRID	553554.7	4198424.3	3.23	10
RECEPTOR 7309 GRID	553523.6	4198451.3	3.83	10
RECEPTOR 7310 GRID	553489.8	4198417.9	3.59	10
RECEPTOR 7311 GRID	553478.5	4198417.9	3.65	10
RECEPTOR 7312 GRID	553472.4	4198417.9	3.72	10
RECEPTOR 7313 GRID	553470.1	4198380.6	5.71	10
RECEPTOR 7314 GRID	553463.3	4198399.1	8.48	10
RECEPTOR 7315 GRID	553448.9	4198408.5	10.28	10
RECEPTOR 7316 GRID	553429.2	4198409.5	10.74	10
RECEPTOR 7317 GRID	553422.3	4198409.9	11.11	10
RECEPTOR 7318 GRID	553340.5	4198452.9	18.97	10
RECEPTOR 7319 GRID	553339.9	4198453.2	18.95	10
RECEPTOR 7320 GRID	553288.5	4198484.1	20.69	10
RECEPTOR 7321 GRID	553251.6	4198499.8	21.64	10
RECEPTOR 7322 GRID	553239.2	4198505	22.97	10
RECEPTOR 7323 GRID	553154.9	4198524.3	19.8	10
RECEPTOR 7324 GRID	553151.6	4198525.1	19.08	10
RECEPTOR 7325 GRID	553090.6	4198532.1	20.7	10
RECEPTOR 7326 GRID	553055.5	4198529.6	24.83	10
RECEPTOR 7327 GRID	552976.6	4198524	23.55	10
RECEPTOR 7328 GRID	552956.5	4198518	21.14	10
RECEPTOR 7329 GRID	552860.7	4198489.4	16.28	10
RECEPTOR 7330 GRID	552800.8	4198471.5	12.89	10
RECEPTOR 7331 GRID	552764.3	4198463.2	16.72	10

RECEPTOR 7332 GRID 552757.8 4198461.7 16.89 10
RECEPTOR 7333 GRID 552684.4 4198461.9 15.3 10
RECEPTOR 7334 GRID 552665 4198466.6 14.14 10
RECEPTOR 7335 GRID 552583.7 4198486.2 11.65 10
RECEPTOR 7336 GRID 552571.9 4198497.6 12.5 10
RECEPTOR 7337 GRID 552535.9 4198532.3 11.49 10
RECEPTOR 7338 GRID 552500 4198567.1 13.07 10
RECEPTOR 7339 GRID 552464 4198602.1 15.56 10
RECEPTOR 7340 GRID 552450.8 4198610.2 15.46 10
RECEPTOR 7341 GRID 552428.4 4198584.3 13.49 10
RECEPTOR 7342 GRID 552421.4 4198576.2 12.44 10
RECEPTOR 7343 GRID 552404.8 4198519.3 11.37 10
RECEPTOR 7344 GRID 552375 4198515.8 11.4 10
RECEPTOR 7345 GRID 552362.6 4198514.3 11.51 10
RECEPTOR 7346 GRID 552275.1 4198510.3 12.74 10
RECEPTOR 7347 GRID 552259.7 4198509.6 10.4 10
RECEPTOR 7348 GRID 552203.9 4198505.3 4.44 10
RECEPTOR 7349 GRID 552175.4 4198507.1 5.97 10
RECEPTOR 7350 GRID 552075.6 4198513.4 5.78 10
RECEPTOR 7351 GRID 551975.8 4198519.6 5.69 10
RECEPTOR 7352 GRID 551876 4198525.9 1.38 10
RECEPTOR 7353 GRID 551870.3 4198526.3 1.03 10
RECEPTOR 7354 GRID 551859.9 4198547.7 1.12 10
RECEPTOR 7355 GRID 551844.5 4198564.2 1.08 10
RECEPTOR 7356 GRID 551819.8 4198576.2 0.87 10
RECEPTOR 7357 GRID 551814.5 4198592 0.57 10
RECEPTOR 7358 GRID 551813.2 4198595.6 0.62 10
RECEPTOR 7359 GRID 551808.5 4198609.5 0.93 10
RECEPTOR 7360 GRID 551803.5 4198635.5 1.06 10
RECEPTOR 7361 GRID 551796.7 4198658.5 1.07 10
RECEPTOR 7362 GRID 551787.4 4198669.5 0.53 10
RECEPTOR 7363 GRID 551778 4198680.5 0.36 10
RECEPTOR 7364 GRID 551774.3 4198685.2 0.46 10
RECEPTOR 7365 GRID 551748.6 4198718.5 1.08 10
RECEPTOR 7366 GRID 551698.8 4198743.5 1.04 10
RECEPTOR 7367 GRID 551696.7 4198742.8 0.89 10
RECEPTOR 7368 GRID 551684.8 4198738.3 0.72 10
RECEPTOR 7369 GRID 551653.9 4198750.4 0.9 10
RECEPTOR 7370 GRID 551637.4 4198772.4 0.93 10
RECEPTOR 7371 GRID 551621.3 4198793.5 1.14 10
RECEPTOR 7372 GRID 551612.1 4198805.5 0.97 10
RECEPTOR 7373 GRID 551585.6 4198836.3 0.66 10
RECEPTOR 7374 GRID 551566.9 4198876 1.95 10
RECEPTOR 7375 GRID 551566.7 4198876.3 1.95 10
RECEPTOR 7376 GRID 551540.5 4198924.4 0.47 10

RECEPTOR 7377 GRID	551565.8	4198956.4	0.53	10
RECEPTOR 7378 GRID	551565.3	4198960.8	0.36	10
RECEPTOR 7379 GRID	551554.6	4199060.2	1.13	10
RECEPTOR 7380 GRID	551553.4	4199071	1.18	10
RECEPTOR 7381 GRID	551544.8	4199102.1	0.28	10
RECEPTOR 7382 GRID	551552.8	4199125.9	0.99	10
RECEPTOR 7383 GRID	551570	4199133.9	1.15	10
RECEPTOR 7384 GRID	551582.1	4199137.8	1.1	10
RECEPTOR 7385 GRID	551590.5	4199140.5	0.94	10
RECEPTOR 7386 GRID	551613	4199139.8	1.28	10
RECEPTOR 7387 GRID	551630.2	4199138.5	1.6	10
RECEPTOR 7388 GRID	551638.1	4199130.6	1.61	10
RECEPTOR 7389 GRID	551638.8	4199106.1	1.6	10
RECEPTOR 7390 GRID	551638.4	4199090.3	1.84	10
RECEPTOR 7391 GRID	551638.1	4199073.7	1.61	10
RECEPTOR 7392 GRID	551635.4	4199045.9	1.74	10
RECEPTOR 7393 GRID	551638.1	4199030.7	1.95	10
RECEPTOR 7394 GRID	551648	4199030.7	1.7	10
RECEPTOR 7395 GRID	551661.9	4199038	1.66	10
RECEPTOR 7396 GRID	551673.6	4199046.4	1.64	10
RECEPTOR 7397 GRID	551673.8	4199046.6	1.66	10
RECEPTOR 7398 GRID	551691.7	4199069.1	1.73	10
RECEPTOR 7399 GRID	551702.4	4199082.5	1.55	10
RECEPTOR 7400 GRID	551703.6	4199098.5	1.02	10
RECEPTOR 7401 GRID	551715.5	4199105.5	1.01	10
RECEPTOR 7402 GRID	551732.4	4199116.5	1.1	10
RECEPTOR 7403 GRID	551735.6	4199118.6	1.24	10
RECEPTOR 7404 GRID	551749.3	4199127.5	3.15	10
RECEPTOR 7405 GRID	551757.7	4199142.5	4.92	10
RECEPTOR 7406 GRID	551766.2	4199157.5	6.62	10
RECEPTOR 7407 GRID	551767.5	4199177	2.13	10
RECEPTOR 7408 GRID	551768.7	4199196.5	1.79	10
RECEPTOR 7409 GRID	551760.7	4199202.8	1.23	10
RECEPTOR 7410 GRID	551756.7	4199205.9	0.85	10
RECEPTOR 7411 GRID	551743.9	4199239.6	0.42	10
RECEPTOR 7412 GRID	551791.2	4199255	3.32	10
RECEPTOR 7413 GRID	551797.7	4199261.4	3	10
RECEPTOR 7414 GRID	551800.6	4199264.2	3.14	10
RECEPTOR 7415 GRID	551815.3	4199278.5	4.16	10
RECEPTOR 7416 GRID	551814.7	4199302.2	2.77	10
RECEPTOR 7417 GRID	551814.2	4199325.8	2.32	10
RECEPTOR 7418 GRID	551813.6	4199349.5	2.54	10
RECEPTOR 7419 GRID	551816.3	4199353	2.58	10
RECEPTOR 7420 GRID	551818.4	4199355.5	2.58	10
RECEPTOR 7421 GRID	551839.1	4199357.8	7.09	10

RECEPTOR 7422 GRID	551859.8	4199360.2	11.51	10
RECEPTOR 7423 GRID	551880.5	4199362.5	15.15	10
RECEPTOR 7424 GRID	551907.7	4199383.2	19.77	10
RECEPTOR 7425 GRID	551939	4199406.9	24.77	10
RECEPTOR 7426 GRID	551958.5	4199421.7	30.85	10
RECEPTOR 7427 GRID	551987.4	4199443.7	43.72	10
RECEPTOR 7428 GRID	551997.5	4199451.3	46.78	10
RECEPTOR 7429 GRID	552017.1	4199466.2	49.88	10
RECEPTOR 7430 GRID	552036.6	4199481	49.62	10
RECEPTOR 7431 GRID	552067	4199504.2	42.76	10
RECEPTOR 7432 GRID	552075.6	4199510.6	39.18	10
RECEPTOR 7433 GRID	552095.1	4199525.4	31.86	10
RECEPTOR 7434 GRID	552134.1	4199555	29.26	10
RECEPTOR 7435 GRID	552146.7	4199564.6	30.69	10
RECEPTOR 7436 GRID	552153.6	4199569.8	31.29	10
RECEPTOR 7437 GRID	552173.1	4199584.6	33.2	10
RECEPTOR 7438 GRID	552192.6	4199599.4	36.02	10
RECEPTOR 7439 GRID	552212.1	4199614.2	39.88	10
RECEPTOR 7440 GRID	552226.4	4199625.1	42.75	10
RECEPTOR 7441 GRID	552231.6	4199629	44.2	10
RECEPTOR 7442 GRID	552251.1	4199643.8	48.41	10
RECEPTOR 7443 GRID	552270.7	4199658.7	55	10
RECEPTOR 7444 GRID	552290.2	4199673.5	65.24	10
RECEPTOR 7445 GRID	552306	4199685.5	74	10
RECEPTOR 7446 GRID	552309.7	4199688.3	76.43	10
RECEPTOR 7447 GRID	552348.7	4199717.9	97.31	10
RECEPTOR 7448 GRID	552368.2	4199732.7	106.52	10
RECEPTOR 7449 GRID	552385.7	4199746	115.8	10
RECEPTOR 7450 GRID	552387.7	4199747.5	117.03	10
RECEPTOR 7451 GRID	552374	4199767.5	112.23	10
RECEPTOR 7452 GRID	552360.2	4199787.5	114.46	10
RECEPTOR 7453 GRID	552346.5	4199807.5	114.07	10
RECEPTOR 7454 GRID	552332.7	4199827.5	115.91	10
RECEPTOR 7455 GRID	552332.4	4199827.8	115.9	10
RECEPTOR 7456 GRID	552319	4199847.5	116.34	10
RECEPTOR 7457 GRID	552305.2	4199867.5	116.76	10
RECEPTOR 7458 GRID	552291.5	4199887.5	114.7	10
RECEPTOR 7459 GRID	552277.7	4199907.5	112.5	10
RECEPTOR 7460 GRID	552275.8	4199910.3	111.67	10
RECEPTOR 7461 GRID	552264	4199927.5	104.97	10
RECEPTOR 7462 GRID	552250.2	4199947.5	106.3	10
RECEPTOR 7463 GRID	552236.5	4199967.5	112.65	10
RECEPTOR 7464 GRID	552222.7	4199987.5	118.82	10
RECEPTOR 7465 GRID	552219.2	4199992.7	119.47	10
RECEPTOR 7466 GRID	552209	4200007.5	117.15	10

RECEPTOR 7467 GRID	552195.2	4200027.5	110.91	10
RECEPTOR 7468 GRID	552181.5	4200047.5	100.38	10
RECEPTOR 7469 GRID	552167.7	4200067.5	106.66	10
RECEPTOR 7470 GRID	552162.5	4200075.1	109.3	10
RECEPTOR 7471 GRID	552154	4200087.5	112.66	10
RECEPTOR 7472 GRID	552140.2	4200107.5	113.88	10
RECEPTOR 7473 GRID	552126.5	4200127.5	113.27	10
RECEPTOR 7474 GRID	552112.7	4200147.5	111.82	10
RECEPTOR 7475 GRID	552105.9	4200157.5	111.1	10
RECEPTOR 7476 GRID	552099	4200167.5	110.55	10
RECEPTOR 7477 GRID	552085.2	4200187.5	110.43	10
RECEPTOR 7478 GRID	552071.5	4200207.5	109.91	10
RECEPTOR 7479 GRID	552057.7	4200227.5	110.08	10
RECEPTOR 7480 GRID	552049.2	4200239.9	108.64	10
RECEPTOR 7481 GRID	552044	4200247.5	107.52	10
RECEPTOR 7482 GRID	552030.2	4200267.5	104.18	10
RECEPTOR 7483 GRID	552016.5	4200287.5	107.98	10
RECEPTOR 7484 GRID	552002.7	4200307.5	112.14	10
RECEPTOR 7485 GRID	551992.6	4200322.3	117.74	10
RECEPTOR 7486 GRID	551989	4200327.5	119.3	10
RECEPTOR 7487 GRID	551969.1	4200341	120.05	10
RECEPTOR 7488 GRID	551949.3	4200354.5	119.14	10
RECEPTOR 7489 GRID	551929.4	4200368	118.7	10
RECEPTOR 7490 GRID	551911.5	4200380.1	121.46	10
RECEPTOR 7491 GRID	551909.5	4200381.5	121.71	10
RECEPTOR 7492 GRID	551889.7	4200395	123.22	10
RECEPTOR 7493 GRID	551849.9	4200422	118.33	10
RECEPTOR 7494 GRID	551830	4200435.5	113.31	10
RECEPTOR 7495 GRID	551828.8	4200436.3	112.86	10
RECEPTOR 7496 GRID	551810.2	4200449	114.71	10
RECEPTOR 7497 GRID	551790.3	4200462.5	116.63	10
RECEPTOR 7498 GRID	551774	4200481.2	119.97	10
RECEPTOR 7499 GRID	551757.8	4200499.8	123.7	10
RECEPTOR 7500 GRID	551755.2	4200502.8	124.11	10
RECEPTOR 7501 GRID	551741.5	4200518.5	126.25	10
RECEPTOR 7502 GRID	551725.3	4200537.2	127.19	10
RECEPTOR 7503 GRID	551709	4200555.8	125.42	10
RECEPTOR 7504 GRID	551692.8	4200574.5	122.04	10
RECEPTOR 7505 GRID	551689.5	4200578.2	121.11	10
RECEPTOR 7506 GRID	551676.5	4200593.2	117.8	10
RECEPTOR 7507 GRID	551660.2	4200611.8	111.6	10
RECEPTOR 7508 GRID	551644	4200630.5	103.55	10
RECEPTOR 7509 GRID	551627.7	4200649.2	105.67	10
RECEPTOR 7510 GRID	551623.8	4200653.6	105.74	10
RECEPTOR 7511 GRID	551611.5	4200667.8	106.73	10

RECEPTOR 7512 GRID	551595.2	4200686.5	103.99	10
RECEPTOR 7513 GRID	551579	4200705.2	104.76	10
RECEPTOR 7514 GRID	551562.7	4200723.8	98.69	10
RECEPTOR 7515 GRID	551558.1	4200729	97.09	10
RECEPTOR 7516 GRID	551546.4	4200742.5	95.08	10
RECEPTOR 7517 GRID	551530.2	4200761.2	91.56	10
RECEPTOR 7518 GRID	551513.9	4200779.8	87.25	10
RECEPTOR 7519 GRID	551497.7	4200798.5	91.94	10
RECEPTOR 7520 GRID	551492.5	4200804.5	93.37	10
RECEPTOR 7521 GRID	551481.4	4200817.2	95.72	10
RECEPTOR 7522 GRID	551465.2	4200835.8	93.99	10
RECEPTOR 7523 GRID	551448.9	4200854.5	92.96	10
RECEPTOR 7524 GRID	551432.7	4200873.2	91.59	10
RECEPTOR 7525 GRID	551426.8	4200879.9	91.08	10
RECEPTOR 7526 GRID	551416.4	4200891.8	89.88	10
RECEPTOR 7527 GRID	551400.1	4200910.5	86.75	10
RECEPTOR 7528 GRID	551383.9	4200929.2	85.75	10
RECEPTOR 7529 GRID	551367.6	4200947.8	87.33	10
RECEPTOR 7530 GRID	551361.1	4200955.3	87.03	10
RECEPTOR 7531 GRID	551351.4	4200966.5	85.86	10
RECEPTOR 7532 GRID	551335.1	4200985.2	82.43	10
RECEPTOR 7533 GRID	551318.9	4201003.8	80.09	10
RECEPTOR 7534 GRID	551302.6	4201022.5	80.79	10
RECEPTOR 7535 GRID	551297.8	4201012.8	75.92	10
RECEPTOR 7536 GRID	551291.6	4201000.2	68.71	10
RECEPTOR 7537 GRID	551280.7	4200977.8	56.55	10
RECEPTOR 7538 GRID	551258.7	4200933.2	52.86	10
RECEPTOR 7539 GRID	551253.7	4200923	55.28	10
RECEPTOR 7540 GRID	551247.8	4200910.8	56.58	10
RECEPTOR 7541 GRID	551236.8	4200888.5	51.79	10
RECEPTOR 7542 GRID	551215.4	4200882	43.17	10
RECEPTOR 7543 GRID	551194.1	4200875.5	35.99	10
RECEPTOR 7544 GRID	551177.9	4200870.6	31.49	10
RECEPTOR 7545 GRID	551172.7	4200869	30.25	10
RECEPTOR 7546 GRID	551151.4	4200862.5	23.42	10
RECEPTOR 7547 GRID	551130	4200856	18.05	10
RECEPTOR 7548 GRID	551108.7	4200849.5	14.82	10
RECEPTOR 7549 GRID	551092.3	4200855.5	12	10
RECEPTOR 7550 GRID	551082.7	4200859	10.96	10
RECEPTOR 7551 GRID	551075.9	4200861.5	10.42	10
RECEPTOR 7552 GRID	551053.5	4200852.8	9.91	10
RECEPTOR 7553 GRID	551031.2	4200844.2	8.93	10
RECEPTOR 7554 GRID	551008.8	4200835.5	5	10
RECEPTOR 7555 GRID	550995.7	4200824.5	1.46	10
RECEPTOR 7556 GRID	550992.9	4200822.2	1.14	10

RECEPTOR 7557 GRID	550982.7	4200813.5	0.72	10
RECEPTOR 7558 GRID	550980.4	4200833.2	0.49	10
RECEPTOR 7559 GRID	550978.2	4200852.8	0.52	10
RECEPTOR 7560 GRID	550975.9	4200872.5	0.52	10
RECEPTOR 7561 GRID	550965.7	4200887.5	0.49	10
RECEPTOR 7562 GRID	550962.3	4200896	0.44	10
RECEPTOR 7563 GRID	550948.9	4200929.5	1.32	10
RECEPTOR 7564 GRID	550938.7	4200939	1.11	10
RECEPTOR 7565 GRID	550928.5	4200948.5	0.9	10
RECEPTOR 7566 GRID	550907.6	4200952.5	0.53	10
RECEPTOR 7567 GRID	550893.1	4200955.3	0.55	10
RECEPTOR 7568 GRID	550886.8	4200956.5	0.56	10
RECEPTOR 7569 GRID	550865.9	4200960.5	1.59	10
RECEPTOR 7570 GRID	550825.3	4200967.5	8.87	10
RECEPTOR 7571 GRID	550800.3	4200986	1.02	10
RECEPTOR 7572 GRID	550791.5	4200992.5	0.47	10
RECEPTOR 7573 GRID	550776.3	4201010	0.53	10
RECEPTOR 7574 GRID	550761	4201027.5	0.55	10
RECEPTOR 7575 GRID	550732.8	4201059.5	0.57	10
RECEPTOR 7576 GRID	550732.8	4201059.5	0.57	10
RECEPTOR 7577 GRID	550718.7	4201075.5	0.9	10
RECEPTOR 7578 GRID	550698.7	4201079.9	0.61	10
RECEPTOR 7579 GRID	550678.8	4201084.3	0.59	10
RECEPTOR 7580 GRID	550658.8	4201088.7	0.6	10
RECEPTOR 7581 GRID	550641.9	4201092.5	0.86	10
RECEPTOR 7582 GRID	550638.9	4201093.1	0.95	10
RECEPTOR 7583 GRID	550618.9	4201097.5	1.25	10
RECEPTOR 7584 GRID	550576.5	4201117.5	0.61	10
RECEPTOR 7585 GRID	550568.6	4201136.8	0.61	10
RECEPTOR 7586 GRID	550565.3	4201144.9	0.62	10
RECEPTOR 7587 GRID	550560.8	4201156.2	0.64	10
RECEPTOR 7588 GRID	550552.9	4201175.5	0.64	10
RECEPTOR 7589 GRID	550542.3	4201196.5	0.62	10
RECEPTOR 7590 GRID	550522.7	4201235.3	0.62	10
RECEPTOR 7591 GRID	550521.1	4201238.5	0.62	10
RECEPTOR 7592 GRID	550510.5	4201259.5	0.62	10
RECEPTOR 7593 GRID	550504.7	4201280.9	0.61	10
RECEPTOR 7594 GRID	550499	4201302.3	0.6	10
RECEPTOR 7595 GRID	550493.2	4201323.7	0.6	10
RECEPTOR 7596 GRID	550491.6	4201329.8	0.56	10
RECEPTOR 7597 GRID	550487.5	4201345.1	0.63	10
RECEPTOR 7598 GRID	550481.7	4201366.5	0.6	10
RECEPTOR 7599 GRID	550473.3	4201387.3	0.61	10
RECEPTOR 7600 GRID	550464.8	4201408	0.49	10
RECEPTOR 7601 GRID	550458.3	4201424	0.53	10

RECEPTOR 7602 GRID	550456.4	4201428.7	0.4	10
RECEPTOR 7603 GRID	550447.9	4201449.5	0.42	10
RECEPTOR 7604 GRID	550443.2	4201472.1	0.34	10
RECEPTOR 7605 GRID	550438.4	4201494.7	0.37	10
RECEPTOR 7606 GRID	550433.7	4201517.3	0.4	10
RECEPTOR 7607 GRID	550433	4201520.4	0.35	10
RECEPTOR 7608 GRID	550428.9	4201539.9	0.43	10
RECEPTOR 7609 GRID	550424.2	4201562.5	0.59	10
RECEPTOR 7610 GRID	550428.2	4201580	1.48	10
RECEPTOR 7611 GRID	550432.1	4201597.5	3.98	10
RECEPTOR 7612 GRID	550436.5	4201601.9	4.71	10
RECEPTOR 7613 GRID	550431.9	4201616	4.94	10
RECEPTOR 7614 GRID	550423.7	4201641.4	4.96	10
RECEPTOR 7615 GRID	550400.4	4201692.2	4.17	10
RECEPTOR 7616 GRID	550414.4	4201702.8	11.49	10
RECEPTOR 7617 GRID	550429.4	4201714.1	26.46	10
RECEPTOR 7618 GRID	550463.9	4201666.8	15.67	10
RECEPTOR 7619 GRID	550463.9	4201649.9	11.61	10
RECEPTOR 7620 GRID	550469.2	4201652	12.55	10
RECEPTOR 7621 GRID	550472.4	4201653.3	13.14	10
RECEPTOR 7622 GRID	550496.6	4201652	15.59	10
RECEPTOR 7623 GRID	550513.9	4201664.1	20.84	10
RECEPTOR 7624 GRID	550541.5	4201671	26.46	10
RECEPTOR 7625 GRID	550563.9	4201672.7	30.4	10
RECEPTOR 7626 GRID	550564.2	4201672.8	30.47	10
RECEPTOR 7627 GRID	550579.4	4201676.2	33.78	10
RECEPTOR 7628 GRID	550562.2	4201715.8	39.75	10
RECEPTOR 7629 GRID	550560.4	4201750.3	42.83	10
RECEPTOR 7630 GRID	550560.4	4201756.9	42.27	10
RECEPTOR 7631 GRID	550560.4	4201856.9	47.13	10
RECEPTOR 7632 GRID	550560.4	4201857.3	47.15	10
RECEPTOR 7633 GRID	550577.7	4201865.9	45.94	10
RECEPTOR 7634 GRID	550595.3	4201877.1	43.43	10
RECEPTOR 7635 GRID	550610.1	4201890.5	40.2	10
RECEPTOR 7636 GRID	550627.9	4201901.3	38.41	10
RECEPTOR 7637 GRID	550642.9	4201910.5	36.04	10
RECEPTOR 7638 GRID	550643.8	4201911.1	35.79	10
RECEPTOR 7639 GRID	550657.7	4201920.8	32.87	10
RECEPTOR 7640 GRID	550673.3	4201935.8	30.88	10
RECEPTOR 7641 GRID	550689.4	4201950.6	31.66	10
RECEPTOR 7642 GRID	550705.9	4201955.3	31.48	10
RECEPTOR 7643 GRID	550719.3	4201964	29	10
RECEPTOR 7644 GRID	550724.8	4201967.5	29.43	10
RECEPTOR 7645 GRID	550732.7	4201972.5	20.25	10
RECEPTOR 7646 GRID	550746.7	4201986.5	6.03	10

RECEPTOR 7647 GRID	550764.2	4201992	4.41	10
RECEPTOR 7648 GRID	550781.8	4201997.5	0.49	10
RECEPTOR 7649 GRID	550791.2	4201983.7	0.49	10
RECEPTOR 7650 GRID	550800.6	4201969.8	0.62	10
RECEPTOR 7651 GRID	550800.9	4201969.4	0.63	10
RECEPTOR 7652 GRID	550810.1	4201956	0.85	10
RECEPTOR 7653 GRID	550822.6	4201944	0.94	10
RECEPTOR 7654 GRID	550835.2	4201932.1	1.22	10
RECEPTOR 7655 GRID	550847.8	4201920.1	1.34	10
RECEPTOR 7656 GRID	550861.6	4201905.7	2.06	10
RECEPTOR 7657 GRID	550869.7	4201897.2	1.78	10
RECEPTOR 7658 GRID	550875.5	4201891.2	3	10
RECEPTOR 7659 GRID	550889.3	4201876.7	5.15	10
RECEPTOR 7660 GRID	550906.3	4201881.5	2.21	10
RECEPTOR 7661 GRID	550923.3	4201886.2	1.85	10
RECEPTOR 7662 GRID	550944.7	4201897.2	1.12	10
RECEPTOR 7663 GRID	550955.9	4201902.2	0.95	10
RECEPTOR 7664 GRID	550986.4	4201915.7	1.07	10
RECEPTOR 7665 GRID	550984.2	4201849.1	1.99	10
RECEPTOR 7666 GRID	550983	4201813.5	2.23	10
RECEPTOR 7667 GRID	550983	4201749.1	8.69	10
RECEPTOR 7668 GRID	550983	4201742.2	11.05	10
RECEPTOR 7669 GRID	550977.7	4201719.8	18.09	10
RECEPTOR 7670 GRID	550967.1	4201675.2	32.75	10
RECEPTOR 7671 GRID	550961.8	4201652.8	41.45	10
RECEPTOR 7672 GRID	550961.5	4201651.6	41.95	10
RECEPTOR 7673 GRID	550956.4	4201630.5	49.07	10
RECEPTOR 7674 GRID	550951.1	4201608.2	54.16	10
RECEPTOR 7675 GRID	550945.8	4201585.8	57.08	10
RECEPTOR 7676 GRID	550940.5	4201563.5	57.82	10
RECEPTOR 7677 GRID	550949.5	4201560.8	53.14	10
RECEPTOR 7678 GRID	550985.1	4201549.9	32.04	10
RECEPTOR 7679 GRID	551007.4	4201543.1	29.76	10
RECEPTOR 7680 GRID	551029.7	4201536.3	37.57	10
RECEPTOR 7681 GRID	551045.1	4201531.6	40.37	10
RECEPTOR 7682 GRID	551052	4201529.5	40.88	10
RECEPTOR 7683 GRID	551074.4	4201522.7	37.49	10
RECEPTOR 7684 GRID	551096.7	4201515.9	31.02	10
RECEPTOR 7685 GRID	551119	4201509.1	35.95	10
RECEPTOR 7686 GRID	551140.8	4201502.5	43.67	10
RECEPTOR 7687 GRID	551141.3	4201502.3	43.81	10
RECEPTOR 7688 GRID	551163.6	4201495.5	53	10
RECEPTOR 7689 GRID	551169.5	4201519.1	47.81	10
RECEPTOR 7690 GRID	551175.5	4201542.7	41.44	10
RECEPTOR 7691 GRID	551181.4	4201566.4	38.58	10

RECEPTOR 7692 GRID	551182.1	4201569.4	38.69	10
RECEPTOR 7693 GRID	551187.4	4201590	43.89	10
RECEPTOR 7694 GRID	551193.3	4201613.6	48.13	10
RECEPTOR 7695 GRID	551199.3	4201637.3	49.26	10
RECEPTOR 7696 GRID	551205.2	4201660.9	46.74	10
RECEPTOR 7697 GRID	551206.6	4201666.4	45.74	10
RECEPTOR 7698 GRID	551211.2	4201684.5	42.05	10
RECEPTOR 7699 GRID	551223	4201731.7	28.39	10
RECEPTOR 7700 GRID	551229	4201755.4	17.19	10
RECEPTOR 7701 GRID	551231	4201763.3	14.75	10
RECEPTOR 7702 GRID	551234.9	4201779	9.87	10
RECEPTOR 7703 GRID	551240.9	4201802.6	5.29	10
RECEPTOR 7704 GRID	551246.8	4201826.3	4.17	10
RECEPTOR 7705 GRID	551252.8	4201849.9	2.63	10
RECEPTOR 7706 GRID	551262.8	4201853.7	2.69	10
RECEPTOR 7707 GRID	551281.3	4201860.7	3.88	10
RECEPTOR 7708 GRID	551312.3	4201874.5	4.75	10
RECEPTOR 7709 GRID	551341.7	4201890	3.05	10
RECEPTOR 7710 GRID	551354.2	4201893.6	3.07	10
RECEPTOR 7711 GRID	551377.9	4201900.4	4.52	10
RECEPTOR 7712 GRID	551408.9	4201905.5	2.82	10
RECEPTOR 7713 GRID	551440	4201905.5	4.82	10
RECEPTOR 7714 GRID	551452.5	4201902.6	4.73	10
RECEPTOR 7715 GRID	551498.6	4201891.7	2.87	10
RECEPTOR 7716 GRID	551541.1	4201860.6	4.31	10
RECEPTOR 7717 GRID	551550.3	4201853.8	5.63	10
RECEPTOR 7718 GRID	551572.8	4201862.4	4.98	10
RECEPTOR 7719 GRID	551602.9	4201805.4	1.66	10
RECEPTOR 7720 GRID	551611.4	4201789.3	1.65	10
RECEPTOR 7721 GRID	551623.6	4201768.6	1.55	10
RECEPTOR 7722 GRID	551635.9	4201747.8	1.59	10
RECEPTOR 7723 GRID	551651.9	4201729.4	1.58	10
RECEPTOR 7724 GRID	551658	4201722.5	1.6	10
RECEPTOR 7725 GRID	551668	4201711	1.74	10
RECEPTOR 7726 GRID	551684	4201692.6	1.7	10
RECEPTOR 7727 GRID	551700	4201674.2	1.71	10
RECEPTOR 7728 GRID	551711.4	4201658.7	0.73	10
RECEPTOR 7729 GRID	551721.2	4201645.1	0.62	10
RECEPTOR 7730 GRID	551734	4201627.5	0.73	10
RECEPTOR 7731 GRID	551745.3	4201612	0.52	10
RECEPTOR 7732 GRID	551752.2	4201595.6	0.72	10
RECEPTOR 7733 GRID	551759.2	4201579.2	0.83	10
RECEPTOR 7734 GRID	551766.1	4201562.9	0.79	10
RECEPTOR 7735 GRID	551765.8	4201557.2	0.77	10
RECEPTOR 7736 GRID	551765.1	4201540.3	0.7	10

RECEPTOR 7737 GRID	551764.2	4201517.6	0.73	10
RECEPTOR 7738 GRID	551756.6	4201500	0.48	10
RECEPTOR 7739 GRID	551749.1	4201482.4	0.5	10
RECEPTOR 7740 GRID	551741.5	4201464.8	0.42	10
RECEPTOR 7741 GRID	551740.4	4201462.1	0.42	10
RECEPTOR 7742 GRID	551734	4201445.4	0.47	10
RECEPTOR 7743 GRID	551726.5	4201426.1	0.45	10
RECEPTOR 7744 GRID	551718.9	4201406.8	0.76	10
RECEPTOR 7745 GRID	551734.9	4201400.3	0.59	10
RECEPTOR 7746 GRID	551755.1	4201388.5	0.47	10
RECEPTOR 7747 GRID	551755.6	4201388.2	0.47	10
RECEPTOR 7748 GRID	551781.4	4201379.6	0.45	10
RECEPTOR 7749 GRID	551817.3	4201381.8	0.43	10
RECEPTOR 7750 GRID	551818.6	4201398.7	0.45	10
RECEPTOR 7751 GRID	551819.8	4201415.7	0.35	10
RECEPTOR 7752 GRID	551819.9	4201418	0.36	10
RECEPTOR 7753 GRID	551822.4	4201453.5	0.33	10
RECEPTOR 7754 GRID	551823.6	4201472.3	0.4	10
RECEPTOR 7755 GRID	551825.5	4201493.1	0.46	10
RECEPTOR 7756 GRID	551827.4	4201513.8	0.43	10
RECEPTOR 7757 GRID	551827.1	4201517.7	0.42	10
RECEPTOR 7758 GRID	551826.1	4201531.5	0.5	10
RECEPTOR 7759 GRID	551824.9	4201549.1	0.36	10
RECEPTOR 7760 GRID	551823.6	4201566.7	0.31	10
RECEPTOR 7761 GRID	551819.8	4201578.9	0.47	10
RECEPTOR 7762 GRID	551816.1	4201591.2	0.54	10
RECEPTOR 7763 GRID	551806.2	4201610	0.48	10
RECEPTOR 7764 GRID	551804.3	4201613.5	0.46	10
RECEPTOR 7765 GRID	551796.4	4201628.7	0.38	10
RECEPTOR 7766 GRID	551786.5	4201647.5	1.26	10
RECEPTOR 7767 GRID	551772.5	4201665.8	1.65	10
RECEPTOR 7768 GRID	551758.4	4201684.2	1.39	10
RECEPTOR 7769 GRID	551749.1	4201696.5	1.62	10
RECEPTOR 7770 GRID	551709.4	4201749	1.56	10
RECEPTOR 7771 GRID	551694.3	4201779.6	1.59	10
RECEPTOR 7772 GRID	551684.3	4201800	1.82	10
RECEPTOR 7773 GRID	551665.7	4201840.3	1.6	10
RECEPTOR 7774 GRID	551667.7	4201853.5	0	10
RECEPTOR 7775 GRID	551683.6	4201852.9	0	10
RECEPTOR 7776 GRID	551684.9	4201849.5	0	10
RECEPTOR 7777 GRID	551694.8	4201823.8	1.56	10
RECEPTOR 7778 GRID	551717.3	4201777.5	1.45	10
RECEPTOR 7779 GRID	551729.9	4201770.2	1.43	10
RECEPTOR 7780 GRID	551733.3	4201764.7	1.41	10
RECEPTOR 7781 GRID	551743.1	4201748.4	1.65	10

RECEPTOR 7782 GRID	551756.4	4201731.2	1.59	10
RECEPTOR 7783 GRID	551765	4201719.3	1.67	10
RECEPTOR 7784 GRID	551778.1	4201712.9	1.3	10
RECEPTOR 7785 GRID	551784.1	4201697.4	1.53	10
RECEPTOR 7786 GRID	551793.8	4201688.2	1.4	10
RECEPTOR 7787 GRID	551797.5	4201684.7	1.33	10
RECEPTOR 7788 GRID	551801.8	4201660	1.66	10
RECEPTOR 7789 GRID	551818.1	4201642.3	1.42	10
RECEPTOR 7790 GRID	551830.4	4201620.5	0.63	10
RECEPTOR 7791 GRID	551842.4	4201603.6	0.53	10
RECEPTOR 7792 GRID	551846.8	4201597.4	0.57	10
RECEPTOR 7793 GRID	551852.2	4201574.2	1.02	10
RECEPTOR 7794 GRID	551853.6	4201546.9	0.38	10
RECEPTOR 7795 GRID	551850.8	4201519.7	0.65	10
RECEPTOR 7796 GRID	551852.3	4201505.9	0.43	10
RECEPTOR 7797 GRID	551853.6	4201493.8	0.48	10
RECEPTOR 7798 GRID	551846.8	4201469.2	1.3	10
RECEPTOR 7799 GRID	551842.7	4201440.6	0.75	10
RECEPTOR 7800 GRID	551841.2	4201409.6	0.46	10
RECEPTOR 7801 GRID	551841	4201407.2	0.44	10
RECEPTOR 7802 GRID	551839.8	4201389.6	0.47	10
RECEPTOR 7803 GRID	551838.7	4201365.3	0.45	10
RECEPTOR 7804 GRID	551840.9	4201349.9	0.47	10
RECEPTOR 7805 GRID	551842.6	4201331.9	0.65	10
RECEPTOR 7806 GRID	551853.8	4201310.2	0.7	10
RECEPTOR 7807 GRID	551854.5	4201309	0.7	10
RECEPTOR 7808 GRID	551862.3	4201290.7	0.66	10
RECEPTOR 7809 GRID	551881.3	4201268.3	0.77	10
RECEPTOR 7810 GRID	551894.4	4201255.2	1.45	10
RECEPTOR 7811 GRID	551911.4	4201240.8	1.3	10
RECEPTOR 7812 GRID	551918.3	4201235.8	1.08	10
RECEPTOR 7813 GRID	551928.4	4201228.4	1.02	10
RECEPTOR 7814 GRID	551944.5	4201211.1	1.72	10
RECEPTOR 7815 GRID	551962.2	4201201.1	0.83	10
RECEPTOR 7816 GRID	551974.4	4201194.1	0.57	10
RECEPTOR 7817 GRID	551986	4201177.8	1.67	10
RECEPTOR 7818 GRID	551993.6	4201172.2	1.47	10
RECEPTOR 7819 GRID	552005.8	4201163.1	0.79	10
RECEPTOR 7820 GRID	552069.6	4201107.2	1.89	10
RECEPTOR 7821 GRID	552126	4201057.6	2.39	10
RECEPTOR 7822 GRID	552144.8	4201041.3	2.37	10
RECEPTOR 7823 GRID	552170.1	4201019.1	3.23	10
RECEPTOR 7824 GRID	552173.4	4200997.1	3.24	10
RECEPTOR 7825 GRID	552211	4200974.2	7.89	10
RECEPTOR 7826 GRID	552254.1	4200948	3.32	10

RECEPTOR 7827 GRID	552277	4200904.1	3.4	10
RECEPTOR 7828 GRID	552281.6	4200895.3	3.31	10
RECEPTOR 7829 GRID	552355.9	4200882.9	2.63	10
RECEPTOR 7830 GRID	552368	4200874.5	3.47	10
RECEPTOR 7831 GRID	552450.1	4200817.3	2.31	10
RECEPTOR 7832 GRID	552460.3	4200810.2	2.54	10
RECEPTOR 7833 GRID	552531.2	4200758.8	2.8	10
RECEPTOR 7834 GRID	554621.5	4199048.5	2.64	10
RECEPTOR 7835 GRID	554682.2	4199049.8	2.58	10
RECEPTOR 7836 GRID	554649.2	4199028.5	2.51	10
RECEPTOR 7837 GRID	554636.8	4199020.6	2.51	10
RECEPTOR 7838 GRID	554619.7	4199003.1	2.46	10
RECEPTOR 7839 GRID	554599.9	4198969	2.37	10
RECEPTOR 7840 GRID	554595	4198949.6	2.43	10
RECEPTOR 7841 GRID	554594.9	4198948.2	2.44	10
RECEPTOR 7842 GRID	554590.8	4198886	2.52	10
RECEPTOR 7843 GRID	554589.6	4198848.4	2.72	10
RECEPTOR 7844 GRID	554587.7	4198789	2.86	10
RECEPTOR 7845 GRID	554566.7	4198754.3	2.64	10
RECEPTOR 7846 GRID	554514.9	4198668.7	2.54	10
RECEPTOR 7847 GRID	554463.1	4198583.2	3.1	10
RECEPTOR 7848 GRID	554459.2	4198576.7	3.4	10
RECEPTOR 7849 GRID	554430.3	4198529	3.75	10
RECEPTOR 7850 GRID	554400	4198520.8	2.95	10
RECEPTOR 7851 GRID	554397.3	4198516.3	3.03	10
RECEPTOR 7852 GRID	554344.7	4198431.2	2.15	10
RECEPTOR 7853 GRID	554326.5	4198401.8	2.15	10
RECEPTOR 7854 GRID	554293.9	4198345.1	2.35	10
RECEPTOR 7855 GRID	554265.6	4198295.8	2.38	10
RECEPTOR 7856 GRID	554244.6	4198258.1	2.34	10
RECEPTOR 7857 GRID	554195.9	4198170.8	2.35	10
RECEPTOR 7858 GRID	554168.1	4198121.1	2.26	10
RECEPTOR 7859 GRID	554184.7	4198100.8	3.01	10
RECEPTOR 7860 GRID	554180.7	4198089.4	3.28	10
RECEPTOR 7861 GRID	554176.7	4198092.3	5.16	10
RECEPTOR 7862 GRID	554146.8	4198113.8	8.29	10
RECEPTOR 7863 GRID	554134.5	4198134.4	7.07	10
RECEPTOR 7864 GRID	554127.4	4198163.7	6.31	10
RECEPTOR 7865 GRID	554125.4	4198172.5	6.13	10
RECEPTOR 7866 GRID	554122	4198187.6	5.96	10
RECEPTOR 7867 GRID	554113.6	4198209.5	5.22	10
RECEPTOR 7868 GRID	554092.2	4198233.1	4.17	10
RECEPTOR 7869 GRID	554079.3	4198257.3	3.37	10
RECEPTOR 7870 GRID	554080.6	4198258.5	3.37	10
RECEPTOR 7871 GRID	554149.7	4198320.3	3.38	10

RECEPTOR 7872 GRID	554154.6	4198325.7	3.35	10
RECEPTOR 7873 GRID	554192.3	4198367.2	3.42	10
RECEPTOR 7874 GRID	554217.5	4198403.2	3.22	10
RECEPTOR 7875 GRID	554275	4198485	2.73	10
RECEPTOR 7876 GRID	554275.6	4198486	2.74	10
RECEPTOR 7877 GRID	554333.5	4198566.1	3.01	10
RECEPTOR 7878 GRID	554387.3	4198640.7	3.22	10
RECEPTOR 7879 GRID	554391.3	4198647.6	3.19	10
RECEPTOR 7880 GRID	554416.3	4198690.3	3.48	10
RECEPTOR 7881 GRID	554444.4	4198732.3	3.66	10
RECEPTOR 7882 GRID	554500	4198815.5	4.7	10
RECEPTOR 7883 GRID	554503.7	4198821.1	4.81	10
RECEPTOR 7884 GRID	554546.6	4198903.9	9.11	10
RECEPTOR 7885 GRID	554592.6	4198992.7	11.08	10
RECEPTOR 7886 GRID	552026.4	4198484.6	1.46	10
RECEPTOR 7887 GRID	552017	4198473.2	1.18	10
RECEPTOR 7888 GRID	552012.3	4198460.3	1.05	10
RECEPTOR 7889 GRID	551998.7	4198451.9	1.41	10
RECEPTOR 7890 GRID	551980	4198447.5	1.36	10
RECEPTOR 7891 GRID	551959.5	4198444.6	1.18	10
RECEPTOR 7892 GRID	551944.9	4198440.1	1.07	10
RECEPTOR 7893 GRID	551944.6	4198439.9	1.07	10
RECEPTOR 7894 GRID	551935.2	4198434.7	1.09	10
RECEPTOR 7895 GRID	551928.2	4198423.3	1.14	10
RECEPTOR 7896 GRID	551916.5	4198420.7	1.1	10
RECEPTOR 7897 GRID	551905.1	4198414.8	1.1	10
RECEPTOR 7898 GRID	551895.2	4198416.3	1.1	10
RECEPTOR 7899 GRID	551890.4	4198422.9	1.07	10
RECEPTOR 7900 GRID	551890.4	4198430.6	1.09	10
RECEPTOR 7901 GRID	551895.5	4198438.3	1.12	10
RECEPTOR 7902 GRID	551906.3	4198450.1	1.15	10
RECEPTOR 7903 GRID	551907.7	4198451.5	1.14	10
RECEPTOR 7904 GRID	551907.7	4198458.9	1.08	10
RECEPTOR 7905 GRID	551904	4198476.1	1.11	10
RECEPTOR 7906 GRID	551890.7	4198494.3	2.17	10
RECEPTOR 7907 GRID	551878.5	4198505.9	1.04	10
RECEPTOR 7908 GRID	551910.2	4198506.4	5.26	10
RECEPTOR 7909 GRID	551912.2	4198506.3	5.29	10
RECEPTOR 7910 GRID	552011.9	4198498.1	4.83	10
RECEPTOR 7911 GRID	552026.1	4198496.9	4.51	10
RECEPTOR 7912 GRID	552096.3	4198482.2	2.11	10
RECEPTOR 7913 GRID	552110.2	4198480.1	2.18	10
RECEPTOR 7914 GRID	552196.3	4198467.2	0.47	10
RECEPTOR 7915 GRID	552209.1	4198466	0.77	10
RECEPTOR 7916 GRID	552249.4	4198462	7.64	10

RECEPTOR 7917 GRID	552307.1	4198447.3	11.18	10
RECEPTOR 7918 GRID	552320.3	4198444	10.88	10
RECEPTOR 7919 GRID	552389.1	4198423.9	11.06	10
RECEPTOR 7920 GRID	552403.6	4198421.5	11.54	10
RECEPTOR 7921 GRID	552471.6	4198410.1	11.22	10
RECEPTOR 7922 GRID	552502.6	4198411.9	10.95	10
RECEPTOR 7923 GRID	552518.4	4198412.8	11.21	10
RECEPTOR 7924 GRID	552548	4198413.8	11.52	10
RECEPTOR 7925 GRID	552579.2	4198415.4	11.84	10
RECEPTOR 7926 GRID	552602.5	4198416.3	12.45	10
RECEPTOR 7927 GRID	552634.3	4198417.5	12.93	10
RECEPTOR 7928 GRID	552685.1	4198417	13.88	10
RECEPTOR 7929 GRID	552702.5	4198418	14.7	10
RECEPTOR 7930 GRID	552717.8	4198419	13.45	10
RECEPTOR 7931 GRID	552768.6	4198419	10.36	10
RECEPTOR 7932 GRID	552801.3	4198427.6	11.78	10
RECEPTOR 7933 GRID	552880.8	4198448.6	25.61	10
RECEPTOR 7934 GRID	552896.8	4198456.5	25.98	10
RECEPTOR 7935 GRID	552912.4	4198464.2	27.32	10
RECEPTOR 7936 GRID	552978.7	4198488	24.42	10
RECEPTOR 7937 GRID	552990.7	4198489.5	25.7	10
RECEPTOR 7938 GRID	553058.6	4198498.3	24.46	10
RECEPTOR 7939 GRID	553089.8	4198493.5	26.3	10
RECEPTOR 7940 GRID	553151.4	4198484.1	21.89	10
RECEPTOR 7941 GRID	553187.8	4198474.5	20.82	10
RECEPTOR 7942 GRID	553231.9	4198462.9	19.53	10
RECEPTOR 7943 GRID	553281.6	4198440.8	18.09	10
RECEPTOR 7944 GRID	553294.4	4198435.2	17.79	10
RECEPTOR 7945 GRID	553342.7	4198406.2	16.27	10
RECEPTOR 7946 GRID	553369.1	4198392.5	15.69	10
RECEPTOR 7947 GRID	553377.5	4198388.1	15.54	10
RECEPTOR 7948 GRID	553414.2	4198367.5	14.59	10
RECEPTOR 7949 GRID	553455.5	4198342.3	8.72	10
RECEPTOR 7950 GRID	553463.8	4198337.3	6.49	10
RECEPTOR 7951 GRID	553446.4	4198305	9.33	10
RECEPTOR 7952 GRID	553433.5	4198275.4	11.2	10
RECEPTOR 7953 GRID	553425.5	4198255.6	12.14	10
RECEPTOR 7954 GRID	553423.9	4198251.6	12.51	10
RECEPTOR 7955 GRID	553405.8	4198247.1	21.74	10
RECEPTOR 7956 GRID	553388.4	4198236.8	23.45	10
RECEPTOR 7957 GRID	553370.5	4198238.8	26.88	10
RECEPTOR 7958 GRID	553338.3	4198260.4	40.53	10
RECEPTOR 7959 GRID	553334.8	4198262.8	42.01	10
RECEPTOR 7960 GRID	553325.9	4198269.1	43.66	10
RECEPTOR 7961 GRID	553314.5	4198264.8	46.19	10

RECEPTOR 7962 GRID	553295.1	4198291.5	43.6	10
RECEPTOR 7963 GRID	553263.5	4198267.6	46.95	10
RECEPTOR 7964 GRID	553231.8	4198243.6	38.8	10
RECEPTOR 7965 GRID	553217.6	4198261.9	42.19	10
RECEPTOR 7966 GRID	553213.6	4198254.3	40.36	10
RECEPTOR 7967 GRID	553194.5	4198233.9	34.32	10
RECEPTOR 7968 GRID	553194.2	4198233.4	34.1	10
RECEPTOR 7969 GRID	553180.9	4198215.8	30.35	10
RECEPTOR 7970 GRID	553169.1	4198227.2	31.15	10
RECEPTOR 7971 GRID	553154.2	4198210.6	28.43	10
RECEPTOR 7972 GRID	553140.1	4198223.1	28.87	10
RECEPTOR 7973 GRID	553126.4	4198208.1	24.66	10
RECEPTOR 7974 GRID	553116.9	4198197.6	22.32	10
RECEPTOR 7975 GRID	553068.8	4198242.6	17.57	10
RECEPTOR 7976 GRID	553053.2	4198255	17.04	10
RECEPTOR 7977 GRID	553049.1	4198258.2	16.85	10
RECEPTOR 7978 GRID	553026.9	4198266.4	16.51	10
RECEPTOR 7979 GRID	553002.9	4198267.3	16.36	10
RECEPTOR 7980 GRID	552984.7	4198266	16.12	10
RECEPTOR 7981 GRID	552956.8	4198258.4	18.72	10
RECEPTOR 7982 GRID	552953.5	4198257.5	19.25	10
RECEPTOR 7983 GRID	552936.8	4198198.2	3.03	10
RECEPTOR 7984 GRID	552902.8	4198206.5	2.76	10
RECEPTOR 7985 GRID	552869.5	4198214.7	2.9	10
RECEPTOR 7986 GRID	552834.7	4198213.3	3.99	10
RECEPTOR 7987 GRID	552836.2	4198194.7	3.39	10
RECEPTOR 7988 GRID	552833.1	4198182.9	3.64	10
RECEPTOR 7989 GRID	552829.8	4198170.6	3.51	10
RECEPTOR 7990 GRID	552823.5	4198163.6	3.08	10
RECEPTOR 7991 GRID	552788.3	4198151.9	3.36	10
RECEPTOR 7992 GRID	552778.3	4198138.8	2.93	10
RECEPTOR 7993 GRID	552774	4198127	2.08	10
RECEPTOR 7994 GRID	552762.6	4198129.2	1.23	10
RECEPTOR 7995 GRID	552757.5	4198130.1	1.09	10
RECEPTOR 7996 GRID	552750.3	4198145.2	2.4	10
RECEPTOR 7997 GRID	552742.1	4198147.5	1.98	10
RECEPTOR 7998 GRID	552726.1	4198138.3	1.15	10
RECEPTOR 7999 GRID	552690.7	4198147.4	1.12	10
RECEPTOR 8000 GRID	552694.8	4198161.5	1.04	10
RECEPTOR 8001 GRID	552697.9	4198172.6	0.46	10
RECEPTOR 8002 GRID	552690.2	4198179.5	0.99	10
RECEPTOR 8003 GRID	552692.7	4198201	0.61	10
RECEPTOR 8004 GRID	552703.2	4198222.9	1.01	10
RECEPTOR 8005 GRID	552714.5	4198232.5	0.67	10
RECEPTOR 8006 GRID	552719.9	4198248.9	1.06	10

RECEPTOR 8007 GRID	552723.6	4198260	0.62	10
RECEPTOR 8008 GRID	552704.1	4198284.1	0.58	10
RECEPTOR 8009 GRID	552653.2	4198310.7	0.63	10
RECEPTOR 8010 GRID	552652.5	4198311.1	0.6	10
RECEPTOR 8011 GRID	552641.3	4198314	0.45	10
RECEPTOR 8012 GRID	552630.6	4198309.7	0.53	10
RECEPTOR 8013 GRID	552628.2	4198314	0.45	10
RECEPTOR 8014 GRID	552628.2	4198328.2	0.43	10
RECEPTOR 8015 GRID	552621.6	4198343.2	0.7	10
RECEPTOR 8016 GRID	552616.7	4198360.2	0.82	10
RECEPTOR 8017 GRID	552610.2	4198371.2	0.41	10
RECEPTOR 8018 GRID	552603.7	4198378.9	0.61	10
RECEPTOR 8019 GRID	552602	4198381	0.66	10
RECEPTOR 8020 GRID	552589.4	4198389.7	0.86	10
RECEPTOR 8021 GRID	552507.6	4198395.3	2.63	10
RECEPTOR 8022 GRID	552501.9	4198395.7	2.52	10
RECEPTOR 8023 GRID	552449.6	4198390	0.86	10
RECEPTOR 8024 GRID	552409	4198399.2	1.76	10
RECEPTOR 8025 GRID	552362.8	4198409.6	1.25	10
RECEPTOR 8026 GRID	552328.5	4198414.9	0.6	10
RECEPTOR 8027 GRID	552314.8	4198413.3	0.53	10
RECEPTOR 8028 GRID	552310.9	4198414.7	0.61	10
RECEPTOR 8029 GRID	552300	4198418.6	0.39	10
RECEPTOR 8030 GRID	552273.5	4198428.6	0.8	10
RECEPTOR 8031 GRID	552249.7	4198441.9	2.18	10
RECEPTOR 8032 GRID	552232.7	4198457.7	1.04	10
RECEPTOR 8033 GRID	552223.2	4198458.7	1.07	10
RECEPTOR 8034 GRID	552152.1	4198466.2	0.77	10
RECEPTOR 8035 GRID	552123.8	4198470.3	0.66	10
RECEPTOR 8036 GRID	552078.5	4198476.8	1.05	10
RECEPTOR 8037 GRID	552992.6	4198243.4	12.1	10
RECEPTOR 8038 GRID	552984.6	4198255.3	15.28	10
RECEPTOR 8039 GRID	553002.9	4198259.3	15.99	10
RECEPTOR 8040 GRID	553026.7	4198256.1	15.82	10
RECEPTOR 8041 GRID	553052.9	4198244.2	16.81	10
RECEPTOR 8042 GRID	553063.4	4198234.6	16.88	10
RECEPTOR 8043 GRID	553137	4198167.2	21.51	10
RECEPTOR 8044 GRID	553136.9	4198167.1	21.47	10
RECEPTOR 8045 GRID	553110.8	4198139.4	13.82	10
RECEPTOR 8046 GRID	553064.3	4198180.4	11.79	10

SRC	REC	UNUSED	AVERAGE	1HR_MAX	4HR_MAX	6HR_MAX	7HR_MAX	30DAY_MAX
1	1	0.0000000E+00	4.0415000E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	2	0.0000000E+00	4.2467000E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	3	0.0000000E+00	4.6059800E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	4	0.0000000E+00	4.8497900E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	5	0.0000000E+00	4.8884000E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	6	0.0000000E+00	4.8485200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	7	0.0000000E+00	5.0282500E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	8	0.0000000E+00	5.6356400E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	9	0.0000000E+00	6.5920100E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	10	0.0000000E+00	7.4924900E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	11	0.0000000E+00	8.2704100E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	12	0.0000000E+00	9.0902200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	13	0.0000000E+00	9.9973700E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	14	0.0000000E+00	1.0755400E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	15	0.0000000E+00	1.1233800E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	16	0.0000000E+00	1.1597000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	17	0.0000000E+00	1.2173700E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	18	0.0000000E+00	1.2662500E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	19	0.0000000E+00	1.2948300E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	20	0.0000000E+00	1.3102300E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	21	0.0000000E+00	1.3186100E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	22	0.0000000E+00	1.3110700E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	23	0.0000000E+00	1.2734400E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	24	0.0000000E+00	1.2144700E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	25	0.0000000E+00	1.1357900E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	26	0.0000000E+00	1.0603500E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	27	0.0000000E+00	1.0019900E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	28	0.0000000E+00	9.4309700E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	29	0.0000000E+00	8.8390500E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	30	0.0000000E+00	8.2746200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	31	0.0000000E+00	7.7379200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	32	0.0000000E+00	7.2742800E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	33	0.0000000E+00	6.9132700E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	34	0.0000000E+00	6.6558300E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	35	0.0000000E+00	6.4765200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	36	0.0000000E+00	6.3337600E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	37	0.0000000E+00	6.1932400E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	38	0.0000000E+00	6.0355500E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	39	0.0000000E+00	5.8519500E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	40	0.0000000E+00	5.6391800E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	41	0.0000000E+00	5.4003200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	42	0.0000000E+00	5.1476200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	43	0.0000000E+00	4.8991700E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00
1	44	0.0000000E+00	4.6696400E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00

SRC	REC	UNUSED	AVERAGE	1HR_MAX	4HR_MAX	6HR_MAX	7HR_MAX	30DAY_MAX
1	45	0.0000000E+00	4.4645200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	46	0.0000000E+00	4.2811000E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	47	0.0000000E+00	4.1127700E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	48	0.0000000E+00	3.9530200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	49	0.0000000E+00	3.7981000E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	50	0.0000000E+00	3.6481100E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	51	0.0000000E+00	3.5061900E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	52	0.0000000E+00	3.3762900E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	53	0.0000000E+00	3.1410300E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	54	0.0000000E+00	3.1608100E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	55	0.0000000E+00	3.0573500E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	56	0.0000000E+00	2.9743300E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	57	0.0000000E+00	2.4306900E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	58	0.0000000E+00	2.8318300E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	59	0.0000000E+00	2.7614500E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	60	0.0000000E+00	2.5176300E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	61	0.0000000E+00	7.9565800E-02	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	62	0.0000000E+00	4.2559700E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	63	0.0000000E+00	4.3931300E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	64	0.0000000E+00	4.7292000E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	65	0.0000000E+00	5.0676100E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	66	0.0000000E+00	5.1859100E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	67	0.0000000E+00	5.1711700E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	68	0.0000000E+00	5.3022000E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	69	0.0000000E+00	5.9067000E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	70	0.0000000E+00	6.9822400E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	71	0.0000000E+00	7.9678700E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	72	0.0000000E+00	8.8031600E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	73	0.0000000E+00	9.7298200E-01	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	74	0.0000000E+00	1.0747900E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	75	0.0000000E+00	1.1614000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	76	0.0000000E+00	1.2167100E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	77	0.0000000E+00	1.2655700E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	78	0.0000000E+00	1.3259800E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	79	0.0000000E+00	1.3706600E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	80	0.0000000E+00	1.3957600E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	81	0.0000000E+00	1.4040800E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	82	0.0000000E+00	1.4037700E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	83	0.0000000E+00	1.3764800E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	84	0.0000000E+00	1.3189000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	85	0.0000000E+00	1.2401800E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	86	0.0000000E+00	1.1515500E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	87	0.0000000E+00	1.0816900E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00
1	88	0.0000000E+00	1.0173200E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.0000000E+00	0.00

This file: U:\Chevron Renewal\ENVIRON Files\Air Quality\Risk\Shipping\HARP Analysis\Chronic-HI_MNTUG.xls

Created by HARP Version 1.4f Build 23.11.01

Uses ISC Version 99155

Uses BPIP (Dated: 04112)

Creation date: 2/24/2014 3:19:03 AM

EXCEPTION REPORT

(there have been no changes or exceptions)

INPUT FILES:

Source-Receptor file: U:\Chevron Renewal\ENVIRON Files\Air Quality\Risk\Shipping\HARP Analysis\Source-Specific\MNTUG\MNTUG.SRC

Averaging period adjustment factors file: not applicable

Emission rates file: MNTUG-HI.EMS

Site parameters file: U:\Chevron Renewal\ENVIRON Files\Air Quality\Risk\Shipping\HARP Analysis\project.sit

Coordinate system: UTM NAD83

Screening mode is OFF

Exposure duration: resident

Analysis method: Derived (OEHHA) Method

Health effect: Chronic HI

Receptor(s): 7013

Sources(s): All

Chemicals(s): All

SITE PARAMETERS

DEPOSITION

Deposition rate (m/s) 0.05

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

*** Pathway disabled ***

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway disabled ***

SOIL INGESTION

*** Pathway disabled ***

MOTHER'S MILK

*** Pathway disabled ***

CHEMICAL CROSS-REFERENCE TABLE AND BACKGROUND CONCENTRATIONS

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	9901	DieselExhPM	Diesel engine exhaust, particulate matter (Diesel PM)	0.000E+00

CHEMICAL HEALTH VALUES

CHEM	CAS	ABBREVIATION	CancerPF(Inh) (mg/kg-d)^-1	CancerPF(Oral) (mg/kg-d)^-1	ChronicREL(Inh) ug/m^3	ChronicREL(Oral) mg/kg-d	AcuteREL ug/m^3
0001	9901	DieselExhPM	1.10E+00	*	5.00E+00	*	*

EMISSIONS DATA SOURCE: Emission rates loaded from file: C:\Project\Emeryville\Chevron Renewal\Current\Shipping\HARP\ChronicHI\MNTUG\MNTUG-HI.EMS

CHEMICALS ADDED OR DELETED: none

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=MNTUG EMS (lbs/yr)

SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1	0	2.12E+03	2.42E-01

CHRONIC HI REPORT

DOMINANT PATHWAYS, Receptor 7013

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG
0001	YES	-	-	-	-	-	-	-	-	-	-	-

INHALATION CONCENTRATION (ug/m^3) AND DERIVED DOSE BY PATHWAY (mg/(kg-d) FOR CHRONIC CALCULATIONS, RECEPTOR 7013

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG
0001	4.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

DERIVED CHRONIC HI, RECEPTOR 7013

CHEM	CV	CNS	BONE	DEVEL	ENDO	EYE	GILV	IMMUN	KIDN	REPRO	RESP	SKIN	BLOOD	MAX
0001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.39E-03	0.00E+00	0.00E+00
SUM	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.39E-03	0.00E+00	0.00E+00

APPENDIX 4.3 - HRA

Attachment 6

File: Demo.src

SCREENINGMODE OFF C:\HARP\PROJECTS\DEMO\san8589.met

COORDINATES UTMNAD83

UTMZONE 11

SOURCE 1 S001 "ABC CHEMICAL" 3002 37 SD SD 1 474920.450 3633522.299 220.500 11

SOURCE 2 S002 "ABC CHEMICAL" 3002 37 SD SD 2 474950.450 3633457.299 274.100 11

RECEPTOR 1 PATHWAY WATER "WATER SOURCE" 474700 3633000 208.00 11

RECEPTOR 2 PATHWAY PASTURE "PASTURE" 474750 3632950 214.60 11

RECEPTOR 3 PATHWAY FISH "FISH" 474800 3633050 235.40 11

GRIDDIMENSIONS 11 11

RECEPTOR 4 GRID 473920.450384086 3634497.29912785 0.00 11

RECEPTOR 5 GRID 474120.450384086 3634497.29912785 33.80 11

RECEPTOR 6 GRID 474320.450384086 3634497.29912785 79.90 11

RECEPTOR 7 GRID 474520.450384086 3634497.29912785 110.50 11

RECEPTOR 8 GRID 474720.450384086 3634497.29912785 118.80 11

RECEPTOR 9 GRID 474920.450384086 3634497.29912785 114.40 11

RECEPTOR 10 GRID 475120.450384086 3634497.29912785 110.40 11

RECEPTOR 11 GRID 475320.450384086 3634497.29912785 93.60 11

RECEPTOR 12 GRID 475520.450384086 3634497.29912785 160.60 11

RECEPTOR 13 GRID 475720.450384086 3634497.29912785 161.10 11

RECEPTOR 14 GRID 475920.450384086 3634497.29912785 187.80 11

RECEPTOR 15 GRID 473920.450384086 3634297.29912785 21.00 11

RECEPTOR 16 GRID 474120.450384086 3634297.29912785 73.10 11

RECEPTOR 17 GRID 474320.450384086 3634297.29912785 105.30 11

RECEPTOR 18 GRID 474520.450384086 3634297.29912785 120.30 11

RECEPTOR 19 GRID 474720.450384086 3634297.29912785 148.40 11

RECEPTOR 20 GRID 474920.450384086 3634297.29912785 169.90 11

RECEPTOR 21 GRID 475120.450384086 3634297.29912785 203.30 11

RECEPTOR 22 GRID 475320.450384086 3634297.29912785 182.10 11

RECEPTOR 23 GRID 475520.450384086 3634297.29912785 204.00 11

RECEPTOR 24 GRID 475720.450384086 3634297.29912785 248.10 11

RECEPTOR 25 GRID 475920.450384086 3634297.29912785 303.30 11

RECEPTOR 26 GRID 473920.450384086 3634097.29912785 42.90 11

RECEPTOR 27 GRID 474120.450384086 3634097.29912785 94.10 11

RECEPTOR 28 GRID 474320.450384086 3634097.29912785 109.40 11

RECEPTOR 29 GRID 474520.450384086 3634097.29912785 124.70 11

RECEPTOR 30 GRID 474720.450384086 3634097.29912785 155.40 11

RECEPTOR 31 GRID 474920.450384086 3634097.29912785 195.80 11

RECEPTOR 32 GRID 475120.450384086 3634097.29912785 236.60 11

RECEPTOR 33 GRID 475320.450384086 3634097.29912785 356.70 11

RECEPTOR 34 GRID 475520.450384086 3634097.29912785 400.70 11

RECEPTOR 35 GRID 475720.450384086 3634097.29912785 433.30 11

RECEPTOR 36 GRID 475920.450384086 3634097.29912785 427.40 11

RECEPTOR 37 GRID 473920.450384086 3633897.29912785 80.90 11

RECEPTOR 38 GRID 474120.450384086 3633897.29912785 93.70 11

RECEPTOR 39 GRID 474320.450384086 3633897.29912785 99.60 11

File: Demo.src

RECEPTOR 40 GRID	474520.450384086	3633897.29912785	112.70	11
RECEPTOR 41 GRID	474720.450384086	3633897.29912785	139.30	11
RECEPTOR 42 GRID	474920.450384086	3633897.29912785	275.30	11
RECEPTOR 43 GRID	475120.450384086	3633897.29912785	312.80	11
RECEPTOR 44 GRID	475320.450384086	3633897.29912785	321.90	11
RECEPTOR 45 GRID	475520.450384086	3633897.29912785	468.40	11
RECEPTOR 46 GRID	475720.450384086	3633897.29912785	611.90	11
RECEPTOR 47 GRID	475920.450384086	3633897.29912785	606.20	11
RECEPTOR 48 GRID	473920.450384086	3633697.29912785	77.60	11
RECEPTOR 49 GRID	474120.450384086	3633697.29912785	85.30	11
RECEPTOR 50 GRID	474320.450384086	3633697.29912785	102.10	11
RECEPTOR 51 GRID	474520.450384086	3633697.29912785	115.90	11
RECEPTOR 52 GRID	474720.450384086	3633697.29912785	139.00	11
RECEPTOR 53 GRID	474920.450384086	3633697.29912785	232.90	11
RECEPTOR 54 GRID	475120.450384086	3633697.29912785	308.40	11
RECEPTOR 55 GRID	475320.450384086	3633697.29912785	369.10	11
RECEPTOR 56 GRID	475520.450384086	3633697.29912785	478.90	11
RECEPTOR 57 GRID	475720.450384086	3633697.29912785	641.10	11
RECEPTOR 58 GRID	475920.450384086	3633697.29912785	712.00	11
RECEPTOR 59 GRID	473920.450384086	3633497.29912785	68.90	11
RECEPTOR 60 GRID	474120.450384086	3633497.29912785	97.40	11
RECEPTOR 61 GRID	474320.450384086	3633497.29912785	119.20	11
RECEPTOR 62 GRID	474520.450384086	3633497.29912785	141.00	11
RECEPTOR 63 GRID	474720.450384086	3633497.29912785	152.10	11
RECEPTOR 64 GRID	474920.450384086	3633497.29912785	239.40	11
RECEPTOR 65 GRID	475120.450384086	3633497.29912785	301.90	11
RECEPTOR 66 GRID	475320.450384086	3633497.29912785	365.50	11
RECEPTOR 67 GRID	475520.450384086	3633497.29912785	486.60	11
RECEPTOR 68 GRID	475720.450384086	3633497.29912785	492.10	11
RECEPTOR 69 GRID	475920.450384086	3633497.29912785	667.00	11
RECEPTOR 70 GRID	473920.450384086	3633297.29912785	69.00	11
RECEPTOR 71 GRID	474120.450384086	3633297.29912785	96.30	11
RECEPTOR 72 GRID	474320.450384086	3633297.29912785	129.10	11
RECEPTOR 73 GRID	474520.450384086	3633297.29912785	158.60	11
RECEPTOR 74 GRID	474720.450384086	3633297.29912785	221.80	11
RECEPTOR 75 GRID	474920.450384086	3633297.29912785	274.50	11
RECEPTOR 76 GRID	475120.450384086	3633297.29912785	305.20	11
RECEPTOR 77 GRID	475320.450384086	3633297.29912785	343.40	11
RECEPTOR 78 GRID	475520.450384086	3633297.29912785	424.40	11
RECEPTOR 79 GRID	475720.450384086	3633297.29912785	522.80	11
RECEPTOR 80 GRID	475920.450384086	3633297.29912785	531.80	11
RECEPTOR 81 GRID	473920.450384086	3633097.29912785	65.60	11
RECEPTOR 82 GRID	474120.450384086	3633097.29912785	93.10	11
RECEPTOR 83 GRID	474320.450384086	3633097.29912785	124.70	11
RECEPTOR 84 GRID	474520.450384086	3633097.29912785	155.60	11

EmissionsReport.txt

Average Emissions (lbs/yr)

Src	fac	dev	pro	stk	Mult
-----	-----	-----	-----	-----	------

	CAS						75070		107028
9901		71432		106990	100414	50000		110543	
67561	78933		91203		115071	100425	108883		
1330207	108383		95476		7664417	7440382	56553		50328
	205992	207089		7440417	7440439	75150		7782505	
67663	218019		7440508		1319773	53703	111422		106934
	7647010	7783064		193395	7439921	7439965		7439976	
1634044	7440020		127184		108952	1086	1080		
7782492	7664939		57125		18540299				
	Abbrev.						Acetaldehyde		
Acrolein	DieselExhPM	Benzene		1,3-ButadieneEthyl	BenzeneFormaldehyde Hexane				
	Methanol MEK	Naphthalene		Propylene	Styrene Toluene				
Xylenes	m-Xylene	o-Xylene NH3		Arsenic	B[a]anthracenB[a]P				
	B[b]fluoranthB[k]fluoranth	Beryllium		Cadmium	CS2 Chlorine				
Chloroform	Chrysene	Copper		Cresols	D[a,h]anthracDiethanolaminEDB				
	HCl H2S	In[1,2,3-cd]pLead			Manganese Mercury				
Me t-ButylEthNickel		Perc		Phenol	Dioxins-w/o				
DiBenFurans(CSelenium		Sulfuric AcidCyanide cmpdsCr(VI)							
	Backgrou						1		1
1		1		1		1		1	1
	1		1		1		1		1
1		1		1		1		1	1
	1		1		1		1		1
1		1		1		1		1	1
	1		1		1		1		1
1		1		1		1		1	1
	1		1		1		1		1
1		1		1		1		1	1
	Multipli						1		1
1		1		1		1		1	1
	1		1		1		1		1
1		1		1		1		1	1
	1		1		1		1		1
1		1		1		1		1	1
	1		1		1		1		1
1		1		1		1		1	1
	1		1		1		1		1
1		1		1		1		1	1
	ABC CHEM3002								
1		1		1		1			

2	ABC	CHEM3002	1	2	2	1
---	-----	----------	---	---	---	---

EmissionsReport.txt

Maximum Emission Rate (lbs/hr)

Src	fac	dev	pro	stk	Mult
-----	-----	-----	-----	-----	------

[illegible]

2	ABC CHEM3002	1	EmissionsReport.txt		
			2	2	1

File: Site Parameters Inhalation Only.sit

[SITEPARAMETERS]

fractiondrinkingwater=1.0

fractionfish=1.0

fractionbeef=1.0

fractiondairy=1.0

fractionbeefwater=1.0

fractiondairywater=1.0

fractioncowgrazing=1.0

fractionpig=1.0

fractionchicken=1.0

fractionegg=1.0

fractionleafy=0.15

fractionexposed=0.15

fractionprotected=0.15

fractionroot=0.15

fractionpigfeed=.10

fractionchickenfeed=0.05

fractionpignotcontainer=0.1

fractionchickennotcontainer=0.05

fractionpigexposed=0.25

fractionpigleafy=0.25

fractionpigprotected=0.25

fractionpigroot=0.25

fractionchickenexposed=0.25

fractionchickenleafy=0.25

fractionchickenprotected=0.25

fractionchickenroot=0.25

DRINKINGPATHWAYENABLED=0

HOMEGROWNPATHWAYENABLED=99

HOMEGROWNPRODUCEPATHWAYENABLED=0

PIGSANDCHICKENPATHWAYENABLED=0

FISHPATHWAYENABLED=0

PASTUREPATHWAYENABLED=0

DEPOSITIONOPTION=2

DERMALPATHWAYENABLED=0

SOILPATHWAYENABLED=0

MOTHERSMILKPATHWAYENABLED=0

HOMEGROWNOPT=1

File: Site Parameters without Fish Consumption.sit

[SITEPARAMETERS]

fractiondrinkingwater=1.0

fractionfish=1.0

fractionbeef=1.0

fractiondairy=1.0

fractionbeefwater=1.0

fractiondairywater=1.0

fractioncowgrazing=1.0

fractionpig=1.0

fractionchicken=1.0

fractionegg=1.0

fractionleafy=0.15

fractionexposed=0.15

fractionprotected=0.15

fractionroot=0.15

fractionpigfeed=.10

fractionchickenfeed=0.05

fractionpignotcontainer=0.1

fractionchickennotcontainer=0.05

fractionpigexposed=0.25

fractionpigleafy=0.25

fractionpigprotected=0.25

fractionpigroot=0.25

fractionchickenexposed=0.25

fractionchickenleafy=0.25

fractionchickenprotected=0.25

fractionchickenroot=0.25

DRINKINGPATHWAYENABLED=0

HOMEGROWNPATHWAYENABLED=99

HOMEGROWNPRODUCEPATHWAYENABLED=1

PIGSANDCHICKENPATHWAYENABLED=0

FISHPATHWAYENABLED=0

PASTUREPATHWAYENABLED=0

DEPOSITIONOPTION=2

DERMALPATHWAYENABLED=1

SOILPATHWAYENABLED=1

MOTHERSMILKPATHWAYENABLED=1

HOMEGROWNOPT=3

File: CancerRisk_Resident_All

Created by HARP Version 1.4f Build 23.11.01

Uses ISC Version 99155

Uses BPIP (Dated: 04112)

Creation date: 2/13/2014 4:00:42 PM

EXCEPTION REPORT

(there have been no changes or exceptions)

INPUT FILES:

Source-Receptor file: C:\HARP\PROJECTS\DEMO\Demo.src

Averaging period adjustment factors file: not applicable

Emission rates file: Emission Input.ems

Site parameters file: U:\Chevron Renewal\ENVIRON Files\Air Quality\Risk\Health Tables\HARP\QA\Site Paramet

Coordinate system: UTM NAD83

Screening mode is OFF

Exposure duration: 70 year (adult resident)

Analysis method: Derived (Adjusted) Method

Health effect: Cancer Risk

Receptor(s): 1

Source(s): 1

Chemicals(s): All

SITE PARAMETERS

DEPOSITION

Deposition rate (m/s) 0.02

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

HUMAN INGESTION

Fraction of ingested leafy vegetable
from home grown source 0.052
Fraction of ingested exposed vegetable
from home grown source 0.052
Fraction of ingested protected vegetable
from home grown source 0.052
Fraction of ingested root vegetable
from home grown source 0.052

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway enabled ***

SOIL INGESTION

*** Pathway enabled ***

MOTHER'S MILK

*** Pathway enabled ***

CHEMICAL CROSS-REFERENCE TABLE AND BACKGROUND CONCENTRATIONS

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	75070	Acetaldehyde	Acetaldehyde	1.000E+00
0002	107028	Acrolein	Acrolein	1.000E+00
0003	9901	DieselExhPM	Diesel engine exhaust, particulate matter (Diesel PM)	1.000E+00
0004	71432	Benzene	Benzene	1.000E+00
0005	106990	1,3-Butadiene	1,3-Butadiene	1.000E+00
0006	100414	Ethyl Benzene	Ethyl benzene	1.000E+00
0007	50000	Formaldehyde	Formaldehyde	1.000E+00
0008	110543	Hexane	Hexane	1.000E+00
0009	67561	Methanol	Methanol	1.000E+00
0010	78933	MEK	Methyl ethyl ketone {2-Butanone}	1.000E+00
0011	91203	Naphthalene	Naphthalene	1.000E+00
0012	115071	Propylene	Propylene	1.000E+00
0013	100425	Styrene	Styrene	1.000E+00
0014	108883	Toluene	Toluene	1.000E+00

File: CancerRisk_Resident_InhOnly

Created by HARP Version 1.4f Build 23.11.01

Uses ISC Version 99155

Uses BPIP (Dated: 04112)

Creation date: 2/13/2014 3:59:04 PM

EXCEPTION REPORT

(there have been no changes or exceptions)

INPUT FILES:

Source-Receptor file: C:\HARP\PROJECTS\DEMO\Demo.src

Averaging period adjustment factors file: not applicable

Emission rates file: Emission Input.ems

Site parameters file: none

Coordinate system: UTM NAD83

Screening mode is OFF

Exposure duration: 70 year (adult resident)

Analysis method: Derived (Adjusted) Method

Health effect: Cancer Risk

Receptor(s): 1

Source(s): 1

Chemicals(s): All

SITE PARAMETERS

DEPOSITION

Deposition rate (m/s) 0.02

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

*** Pathway disabled ***

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway disabled ***

SOIL INGESTION

*** Pathway disabled ***

MOTHER'S MILK

*** Pathway disabled ***

CHEMICAL CROSS-REFERENCE TABLE AND BACKGROUND CONCENTRATIONS

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	75070	Acetaldehyde	Acetaldehyde	1.000E+00
0002	107028	Acrolein	Acrolein	1.000E+00
0003	9901	DieselExhPM	Diesel engine exhaust, particulate matter (Diesel PM)	1.000E+00
0004	71432	Benzene	Benzene	1.000E+00
0005	106990	1,3-Butadiene	1,3-Butadiene	1.000E+00
0006	100414	Ethyl Benzene	Ethyl benzene	1.000E+00
0007	50000	Formaldehyde	Formaldehyde	1.000E+00
0008	110543	Hexane	Hexane	1.000E+00

0009	67561	Methanol	Methanol	1.000E+00	
0010	78933	MEK	Methyl ethyl ketone {2-Butanone}	1.000E+00	
0011	91203	Naphthalene	Naphthalene	1.000E+00	
0012	115071	Propylene	Propylene	1.000E+00	
0013	100425	Styrene	Styrene	1.000E+00	
0014	108883	Toluene	Toluene	1.000E+00	
0015	1330207	Xylenes	Xylenes (mixed)	1.000E+00	
0016	108383	m-Xylene	m-Xylene	1.000E+00	
0017	95476	o-Xylene	o-Xylene	1.000E+00	
0018	7664417	NH3	Ammonia	1.000E+00	
0019	7440382	Arsenic	Arsenic	1.000E+00	
0020	56553	B[a]anthracene	Benz[a]anthracene	1.000E+00	
0021	50328	B[a]P	Benzo[a]pyrene	1.000E+00	
0022	205992	B[b]fluoranthene	Benzo[b]fluoranthene	1.000E+00	
0023	207089	B[k]fluoranthene	Benzo[k]fluoranthene	1.000E+00	
0024	7440417	Beryllium	Beryllium	1.000E+00	
0025	7440439	Cadmium	Cadmium	1.000E+00	
0026	75150	CS2	Carbon disulfide	1.000E+00	
0027	7782505	Chlorine	Chlorine	1.000E+00	
0028	67663	Chloroform	Chloroform	1.000E+00	
0029	218019	Chrysene	Chrysene	1.000E+00	
0030	7440508	Copper	Copper	1.000E+00	
0031	1319773	Cresols	Cresols (mixtures of) {Cresylic acid}	1.000E+00	
0032	53703	D[a,h]anthracene	Dibenz[a,h]anthracene	1.000E+00	
0033	111422	Diethanolamine	Diethanolamine	1.000E+00	
0034	106934	EDB	Ethylene dibromide {EDB}	1.000E+00	
0035	7647010	HCl	Hydrochloric acid	1.000E+00	
0036	7783064	H2S	Hydrogen sulfide	1.000E+00	
0037	193395	In[1,2,3-cd]pyr	Indeno[1,2,3-cd]pyrene	1.000E+00	
0038	7439921	Lead	Lead	1.000E+00	
0039	7439965	Manganese	Manganese	1.000E+00	
0040	7439976	Mercury	Mercury	1.000E+00	
0041	1634044	Me t-ButylEther	Methyl tert-butyl ether	1.000E+00	
0042	7440020	Nickel	Nickel	1.000E+00	
0043	127184	Perc	Perchloroethylene {Tetrachloroethene}	1.000E+00	
0044	108952	Phenol	Phenol	1.000E+00	
0045	1086	Dioxins-w/o	Dioxins, total, w/o individ. isomers reported {PCDDs} [Treat as 2378TCDD for HRA	1.000E+00	
0046	1080	DiBenFurans(Cl)	Dibenzofurans (chlorinated) {PCDFs} [Treated as 2378TCDD for HRA]	1.000E+00	
0047	7782492	Selenium	Selenium	1.000E+00	
0048	7664939	Sulfuric Acid	Sulfuric acid	1.000E+00	
0049	57125	Cyanide cmpds	Cyanide compounds (inorganic)	1.000E+00	
0050	18540299	Cr(VI)	Chromium, hexavalent (& compounds)	1.000E+00	

CHEMICAL HEALTH VALUES

CHEM	CAS	ABBREVIATION	CancerPF(Inh) (mg/kg-d)^-1	CancerPF(Oral) (mg/kg-d)^-1	ChronicREL(Inh) ug/m^3	ChronicREL(Oral) ug/m^3	AcuteREL
0001	75070	Acetaldehyde	1.00E-02	*	1.40E+02	*	4.70E+02
0002	107028	Acrolein	*	*	3.50E-01	*	2.50E+00
0003	9901	DieselExhPM	1.10E+00	*	5.00E+00	*	*
0004	71432	Benzene	1.00E-01	*	6.00E+01	*	1.30E+03
0005	106990	1,3-Butadiene	6.00E-01	*	2.00E+00	*	6.60E+02
0006	100414	Ethyl Benzene	8.70E-03	*	2.00E+03	*	*
0007	50000	Formaldehyde	2.10E-02	*	9.00E+00	*	5.50E+01
0008	110543	Hexane	*	*	7.00E+03	*	*
0009	67561	Methanol	*	*	4.00E+03	*	2.80E+04
0010	78933	MEK	*	*	*	1.30E+04	*
0011	91203	Naphthalene	1.20E-01	*	9.00E+00	*	*
0012	115071	Propylene	*	*	3.00E+03	*	*
0013	100425	Styrene	*	*	9.00E+02	*	2.10E+04
0014	108883	Toluene	*	*	3.00E+02	*	3.70E+04
0015	1330207	Xylenes	*	*	7.00E+02	*	2.20E+04
0016	108383	m-Xylene	*	*	7.00E+02	*	2.20E+04
0017	95476	o-Xylene	*	*	7.00E+02	*	2.20E+04
0018	7664417	NH3	*	*	2.00E+02	*	3.20E+03
0019	7440382	Arsenic	1.20E+01	1.50E+00	1.50E-02	3.50E-06	2.00E-01
0020	56553	B[a]anthracene	3.90E-01	1.20E+00	*	*	*
0021	50328	B[a]P	3.90E+00	1.20E+01	*	*	*
0022	205992	B[b]fluoranthene	3.90E-01	1.20E+00	*	*	*
0023	207089	B[k]fluoranthene	3.90E-01	1.20E+00	*	*	*
0024	7440417	Beryllium	8.40E+00	*	7.00E-03	2.00E-03	*
0025	7440439	Cadmium	1.50E+01	*	2.00E-02	5.00E-04	*
0026	75150	CS2	*	*	8.00E+02	*	6.20E+03
0027	7782505	Chlorine	*	*	2.00E-01	*	2.10E+02
0028	67663	Chloroform	1.90E-02	*	3.00E+02	*	1.50E+02
0029	218019	Chrysene	3.90E-02	1.20E-01	*	*	*

File: CancerRisk_Resident_InhOnly

0030	7440508	Copper	*	*	*	*	1.00E+02
0031	1319773	Cresols	*	*	6.00E+02	*	*
0032	53703	D[a,h]anthracen	4.10E+00	4.10E+00	*	*	*
0033	111422	Diethanolamine	*	*	3.00E+00	*	*
0034	106934	EDB	2.50E-01	*	8.00E-01	*	*
0035	7647010	HCl	*	*	9.00E+00	*	2.10E+03
0036	7783064	H2S	*	*	1.00E+01	*	4.20E+01
0037	193395	In[1,2,3-cd]pyr	3.90E-01	1.20E+00	*	*	*
0038	7439921	Lead	4.20E-02	8.50E-03	*	*	*
0039	7439965	Manganese	*	*	9.00E-02	*	*
0040	7439976	Mercury	*	*	3.00E-02	1.60E-04	6.00E-01
0041	1634044	Me t-ButylEther	1.80E-03	*	8.00E+03	*	*
0042	7440020	Nickel	9.10E-01	*	1.40E-02	1.10E-02	2.00E-01
0043	127184	Perc	2.10E-02	*	3.50E+01	*	2.00E+04
0044	108952	Phenol	*	*	2.00E+02	*	5.80E+03
0045	1086	Dioxins-w/o	1.30E+05	1.30E+05	4.00E-05	1.00E-08	*
0046	1080	DiBenFurans(Cl)	1.30E+05	1.30E+05	4.00E-05	1.00E-08	*
0047	7782492	Selenium	*	*	2.00E+01	*	*
0048	7664939	Sulfuric Acid	*	*	1.00E+00	*	1.20E+02
0049	57125	Cyanide cmpds	*	*	9.00E+00	*	3.40E+02
0050	18540299	Cr(VI)	5.10E+02	5.00E-01	2.00E-01	2.00E-02	*

EMISSIONS DATA SOURCE: Emission rates loaded from file: U:\Chevron Renewal\ENVIRON Files\Air Quality\Risk\Health Tables\HARP\HARP_Input_Files\Emission Input.ems
CHEMICALS ADDED OR DELETED: none

EMISSIONS FOR FACILITY FAC=3002 DEV=1 PRO=1 STK=1 NAME=ABC CHEMICAL STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
75070	Acetaldehyde	1	1		
107028	Acrolein	1	1		
9901	DieselExhPM	1	1		
71432	Benzene	1	1		
106990	1,3-Butadiene	1	1		
100414	Ethyl Benzene	1	1		
50000	Formaldehyde	1	1		
110543	Hexane	1	1		
67561	Methanol	1	1		
78933	MEK	1	1		
91203	Naphthalene	1	1		
115071	Propylene	1	1		
100425	Styrene	1	1		
108883	Toluene	1	1		
1330207	Xylenes	1	1		
108383	m-Xylene	1	1		
95476	o-Xylene	1	1		
7664417	NH3	1	1		
7440382	Arsenic	1	1		
56553	B[a]anthracene	1	1		
50328	B[a]P	1	1		
205992	B[b]fluoranthen	1	1		
207089	B[k]fluoranthen	1	1		
7440417	Beryllium	1	1		
7440439	Cadmium	1	1		
75150	CS2	1	1		
7782505	Chlorine	1	1		
67663	Chloroform	1	1		
218019	Chrysene	1	1		
7440508	Copper	1	1		
1319773	Cresols	1	1		
53703	D[a,h]anthracen	1	1		
111422	Diethanolamine	1	1		
106934	EDB	1	1		
7647010	HCl	1	1		
7783064	H2S	1	1		
193395	In[1,2,3-cd]pyr	1	1		
7439921	Lead	1	1		
7439965	Manganese	1	1		
7439976	Mercury	1	1		
1634044	Me t-ButylEther	1	1		
7440020	Nickel	1	1		
127184	Perc	1	1		
108952	Phenol	1	1		
1086	Dioxins-w/o	1	1		
1080	DiBenFurans(Cl)	1	1		
7782492	Selenium	1	1		
7664939	Sulfuric Acid	1	1		

File: CancerRisk_Resident_InhOnly

57125 Cyanide cmpds 1 1
18540299 Cr(VI) 1 1

EMISSIONS FOR FACILITY FAC=3002 DEV=1 PRO=2 STK=2 NAME=ABC CHEMICAL STACK 2 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
75070	Acetaldehyde	1	1		
107028	Acrolein	1	1		
9901	DieselExhPM	1	1		
71432	Benzene	1	1		
106990	1,3-Butadiene	1	1		
100414	Ethyl Benzene	1	1		
50000	Formaldehyde	1	1		
110543	Hexane	1	1		
67561	Methanol	1	1		
78933	MEK	1	1		
91203	Naphthalene	1	1		
115071	Propylene	1	1		
100425	Styrene	1	1		
108883	Toluene	1	1		
1330207	Xylenes	1	1		
108383	m-Xylene	1	1		
95476	o-Xylene	1	1		
7664417	NH3	1	1		
7440382	Arsenic	1	1		
56553	B[a]anthracene	1	1		
50328	B[a]P	1	1		
205992	B[b]fluoranthen	1	1		
207089	B[k]fluoranthen	1	1		
7440417	Beryllium	1	1		
7440439	Cadmium	1	1		
75150	CS2	1	1		
7782505	Chlorine	1	1		
67663	Chloroform	1	1		
218019	Chrysene	1	1		
7440508	Copper	1	1		
1319773	Cresols	1	1		
53703	D[a,h]anthracen	1	1		
111422	Diethanolamine	1	1		
106934	EDB	1	1		
7647010	HCl	1	1		
7783064	H2S	1	1		
193395	In[1,2,3-cd]pyr	1	1		
7439921	Lead	1	1		
7439965	Manganese	1	1		
7439976	Mercury	1	1		
1634044	Me t-ButylEther	1	1		
7440020	Nickel	1	1		
127184	Perc	1	1		
108952	Phenol	1	1		
1086	Dioxins-w/o	1	1		
1080	DiBenFurans(Cl)	1	1		
7782492	Selenium	1	1		
7664939	Sulfuric Acid	1	1		
57125	Cyanide cmpds	1	1		
18540299	Cr(VI)	1	1		

CANCER RISK REPORT

DOMINANT PATHWAYS, Receptor 1

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG
0001	A	-	-	-	-	-	-	-	-	-	-	-
0002	-	-	-	-	-	-	-	-	-	-	-	-
0003	A	-	-	-	-	-	-	-	-	-	-	-
0004	A	-	-	-	-	-	-	-	-	-	-	-
0005	A	-	-	-	-	-	-	-	-	-	-	-
0006	A	-	-	-	-	-	-	-	-	-	-	-
0007	A	-	-	-	-	-	-	-	-	-	-	-
0008	-	-	-	-	-	-	-	-	-	-	-	-
0009	-	-	-	-	-	-	-	-	-	-	-	-
0010	-	-	-	-	-	-	-	-	-	-	-	-
0011	A	-	-	-	-	-	-	-	-	-	-	-
0012	-	-	-	-	-	-	-	-	-	-	-	-
0013	-	-	-	-	-	-	-	-	-	-	-	-
0014	-	-	-	-	-	-	-	-	-	-	-	-
0015	-	-	-	-	-	-	-	-	-	-	-	-

[illegible]

[illegible]

CHEM INHAL DERM SOIL MOTHER FISH WATER VEG DAIRY BEEF CHICK PIG EGG MEAT ORAL TOTAL

Page 6 of 6

File: ChronicHI_Resident_All

Created by HARP Version 1.4f Build 23.11.01

Uses ISC Version 99155

Uses BPIP (Dated: 04112)

Creation date: 2/13/2014 4:07:36 PM

EXCEPTION REPORT

(there have been no changes or exceptions)

INPUT FILES:

Source-Receptor file: C:\HARP\PROJECTS\DEMO\Demo.src

Averaging period adjustment factors file: not applicable

Emission rates file: Emission Input.ems

Site parameters file: U:\Chevron Renewal\ENVIRON Files\Air Quality\Risk\Health Tables\HARP\QA\Site Paramet

Coordinate system: UTM NAD83

Screening mode is OFF

Exposure duration: resident

Analysis method: Derived (OEHHA) Method

Health effect: Chronic HI

Receptor(s): 1

Source(s): 1

Chemicals(s): All

SITE PARAMETERS

DEPOSITION

Deposition rate (m/s) 0.02

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

HUMAN INGESTION

Fraction of ingested leafy vegetable
 from home grown source 0.052
 Fraction of ingested exposed vegetable
 from home grown source 0.052
 Fraction of ingested protected vegetable
 from home grown source 0.052
 Fraction of ingested root vegetable
 from home grown source 0.052

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway enabled ***

SOIL INGESTION

*** Pathway enabled ***

MOTHER'S MILK

*** Pathway enabled ***

CHEMICAL CROSS-REFERENCE TABLE AND BACKGROUND CONCENTRATIONS

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	75070	Acetaldehyde	Acetaldehyde	1.000E+00
0002	107028	Acrolein	Acrolein	1.000E+00
0003	9901	DieselExhPM	Diesel engine exhaust, particulate matter (Diesel PM)	1.000E+00
0004	71432	Benzene	Benzene	1.000E+00
0005	106990	1,3-Butadiene	1,3-Butadiene	1.000E+00
0006	100414	Ethyl Benzene	Ethyl benzene	1.000E+00
0007	50000	Formaldehyde	Formaldehyde	1.000E+00
0008	110543	Hexane	Hexane	1.000E+00
0009	67561	Methanol	Methanol	1.000E+00
0010	78933	MEK	Methyl ethyl ketone {2-Butanone}	1.000E+00
0011	91203	Naphthalene	Naphthalene	1.000E+00
0012	115071	Propylene	Propylene	1.000E+00
0013	100425	Styrene	Styrene	1.000E+00
0014	108883	Toluene	Toluene	1.000E+00

File: ChronicHI_Resident_InhOnly

Created by HARP Version 1.4f Build 23.11.01

Uses ISC Version 99155

Uses BPIP (Dated: 04112)

Creation date: 2/13/2014 4:08:02 PM

EXCEPTION REPORT

(there have been no changes or exceptions)

INPUT FILES:

Source-Receptor file: C:\HARP\PROJECTS\DEMO\Demo.src

Averaging period adjustment factors file: not applicable

Emission rates file: Emission Input.ems

Site parameters file: none

Coordinate system: UTM NAD83

Screening mode is OFF

Exposure duration: resident

Analysis method: Derived (OEHHA) Method

Health effect: Chronic HI

Receptor(s): 1

Source(s): 1

Chemicals(s): All

SITE PARAMETERS

DEPOSITION

Deposition rate (m/s) 0.02

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

*** Pathway disabled ***

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway disabled ***

SOIL INGESTION

*** Pathway disabled ***

MOTHER'S MILK

*** Pathway disabled ***

CHEMICAL CROSS-REFERENCE TABLE AND BACKGROUND CONCENTRATIONS

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	75070	Acetaldehyde	Acetaldehyde	1.000E+00
0002	107028	Acrolein	Acrolein	1.000E+00
0003	9901	DieselExhPM	Diesel engine exhaust, particulate matter (Diesel PM)	1.000E+00
0004	71432	Benzene	Benzene	1.000E+00
0005	106990	1,3-Butadiene	1,3-Butadiene	1.000E+00
0006	100414	Ethyl Benzene	Ethyl benzene	1.000E+00
0007	50000	Formaldehyde	Formaldehyde	1.000E+00
0008	110543	Hexane	Hexane	1.000E+00
0009	67561	Methanol	Methanol	1.000E+00
0010	78933	MEK	Methyl ethyl ketone {2-Butanone}	1.000E+00
0011	91203	Naphthalene	Naphthalene	1.000E+00
0012	115071	Propylene	Propylene	1.000E+00
0013	100425	Styrene	Styrene	1.000E+00
0014	108883	Toluene	Toluene	1.000E+00
0015	1330207	Xylenes	Xylenes (mixed)	1.000E+00
0016	108383	m-Xylene	m-Xylene	1.000E+00
0017	95476	o-Xylene	o-Xylene	1.000E+00
0018	7664417	NH3	Ammonia	1.000E+00
0019	7440382	Arsenic	Arsenic	1.000E+00
0020	56553	B[a]anthracene	Benz[a]anthracene	1.000E+00
0021	50328	B[a]P	Benzo[a]pyrene	1.000E+00
0022	205992	B[b]fluoranthene	Benzo[b]fluoranthene	1.000E+00

APPENDIX 4.3 - MET

MET: Evaluation of the Potential for Change in
Crude Constituents with the Project

APPENDIX 4.3-MET

EVALUATION OF THE POTENTIAL FOR CHANGE IN CRUDE CONSTITUENTS WITH THE PROJECT

1.1 INTRODUCTION

Chevron's Modernization Project objective of increasing its flexibility to refine higher sulfur crude and gas oils will result in the acceptance of higher sulfur crude oils and gas oils (i.e., feedstocks to the Refinery) and has the potential to result in the processing of crude oils in a heavier gravity range than was processed during the baseline. The Modernization Project's increase in sulfur removal capacity and the Refinery's ability to process different gravity feedstocks were evaluated as part of both the Air Quality (see *Section 4.3.6.2.1.4.2.1.3*) and Public Safety analyses (see *Appendix 4.13- REL*) of this EIR.

Crude oils and gas oils also contain nitrogen, metals, "reactive sulfur species" (mercaptans), acid, and chlorides that can contribute to corrosion or other equipment damage mechanisms in refinery operations. Accordingly, any potential increases in nitrogen, metals, reactive sulfur species (mercaptans), acid, and chlorides with increasing sulfur content as well as with heavier gravity for the crude oil that may be accepted as a result of the Modernization Project were evaluated below and the conclusions were used as a component of the Public Safety analysis (see *Appendix 4.13-REL*). Increases in these constituents in crude and gas oils could lead to increases in risk from corrosion damage mechanisms associated with these components, as described in more detail in *Appendix 4.13-REL*.

In addition, any change in nitrogen or metals in the feedstocks to the Refinery may also affect air emissions from the Refinery. Increased metals content could lead to increased metals in air emissions, which are usually emitted during the fluid catalytic cracking and thermal processing (EPA, 2011), and increased nitrogen in the feedstock could result in additional emissions of oxides of nitrogen. The data and conclusions on nitrogen and the metals were used as a component of the Air Quality analysis (see *Section 4.3.6.2.1.4.2.1.3*).

1.2 METHODS

Because crude oil occurs naturally in various locations throughout the globe, and because crude quality varies both among different global production areas and even within the same crude extraction fields, a literature search was completed to evaluate whether there is any statistical relationship between the crude oil

sulfur content and API gravity, and whether nitrogen, metals, “reactive sulfur species” (mercaptans), acid, and chlorides content would likely change (e.g., increase), either with increased crude oil sulfur content or with heavier gravity crudes (BP, 2013; Capline, 2013; Eni, 2012; Environment Canada, 2008; Exxon, 2013; Satoil, 2013; Total, 2003).¹ The crude oil data found from various agencies and institutions were statistically evaluated to investigate the potential relationship between the crude oil total sulfur concentration and concentrations of nitrogen, metals, reactive sulfur species (mercaptans), acid, and chlorides. Relationships between gravity (API) and these components were also investigated using a statistical approach.

To perform this statistical analysis, the constituent concentration data was plotted against both sulfur content (in sulfur weight percent (%-wt)) and gravity (in American Petroleum Institute (API)). A statistical relationship was evaluated in this analysis using the Pearson Product-Moment Correlation approach. To be able to use this approach, the data need to generally meet the following conditions:

- The variables must be either interval or ratio measurements.^{2,3} All the plotted data are ratio measurements.
- The variables must be approximately normally distributed, which appears to be generally true for the crude oil data.
- There is a linear relationship between the two variables. The plotted data are generally linear.
- Outliers are kept to a minimum. In this analysis, sub-datasets are studied in order to test the hypothesis of whether outliers might be masking a correlation or whether correlations exist within narrower bands within the entire data set. All these results were accounted for the statistical relationship determinations.
- There is homoscedasticity of the data, which is generally true for the crude oil data.

¹ Unlike crude oils, little public data exists on gas oil constituents. However, as gas oil is derived from crude oils, it is assumed that the results for sulfur vs. nitrogen, metal and other content in crude oil, is likely true for gas oils. The variation of API and nitrogen, metal, and other content in crude oil is likely irrelevant for gas oil, as gas oil is a specific gravity cut of the crude oil.

² A interval variable is a measurement where the difference between two values is meaningful. For example, the difference between a temperature of 100 degrees and 90 degrees is the same difference as between 90 degrees and 80 degrees.

³ A ratio variable has all the properties of an interval variable and also has a clear definition of 0.0. When the variable equals 0.0, there is none of that variable.

A coefficient of determination was generated for each plot shown below. The coefficient of determination, denoted as R^2 , ranges from 0 (0%) to 1 (100%), denotes the strength of the linear association between two variables or how well the data points fit in a predictive linear relationship. For example, an R^2 value of 0.4 means that 40% of the total variation of a constituent concentration can be explained by the linear relationship between the primary variable (e.g., sulfur content or gravity) and the constituent concentration. The other 60% of the total nitrogen variation remain unexplained by this relationship, which implies the linear relationship has a high level of uncertainty, and this relationship cannot be used to make predictions of reasonably likely conditions.

As discussed above, R^2 is coefficient of determination which is a measure of linear dependence between two variables.⁴ Though there is no hard rule for describing correlation strength, ENVIRON considered the following general guidelines in this analysis (Taylor, 1990; Gerstman, 2014; University of Strathclyde, 2014)

- $R^2 \leq 0.1$ to indicate no correlations,
- $0.1 < R^2 < 0.5$ to indicate weak correlations, and
- $R^2 \geq 0.5$ to indicate moderate to strong correlations.

In this analysis, the statistical relationship between two parameters was determined as no correlation, weak correlation, or moderate to strong correlation based on the R^2 value. A moderate to strong correlation indicates a likely relationship exists as more than 50% of the variation can be explained by the linear relationship and predicted trends made using the linear relationship are more likely than not to occur. Thus, moderate to strong correlations are certain enough to provide predictions of reasonable likely changes with the Modernization Project. As weak correlation has greater than 50% unexplained variation, the data confirm some relationship, but the uncertainty is high. If 10% or less of the correlation is explained by the relationship, no predictions can be made based on the parameter tested.

1.2.1 Sulfur Content vs. Gravity

An analysis was conducted to determine whether the variation of sulfur content with gravity of crude oils can be explained by a linear relationship. Based on a

⁴ The coefficient of determination is the square of the correlation coefficient r (ranged from -1 to 0 to +1). A r value of 0 indicates that no linear relationship between the two variables, and a r of -1 or +1 indicates a perfect linear relationship. The positive and negative signs of r explain whether the two variables change in the same or opposite directions, respectively. (<http://www.stat.yale.edu/Courses/1997-98/101/correl.htm>)

visual inspection of available data, there appears to be no linear relationship between the sulfur content and the gravity. Therefore, the coefficient of determination was not evaluated. However, as shown in Figure A4.3-MET-1a, there are more heavier (i.e., lower gravity) high sulfur crudes and fewer lighter (i.e., higher gravity) high sulfur crudes. In fact, as the crude oil gets lighter, the maximum sulfur in the crude oil declines until an API gravity of about 45°, where the crude oils appear to be uniformly sweet with sulfur contents well below 0.5%.

1.2.2 Nitrogen

1.2.2.1 Conclusions

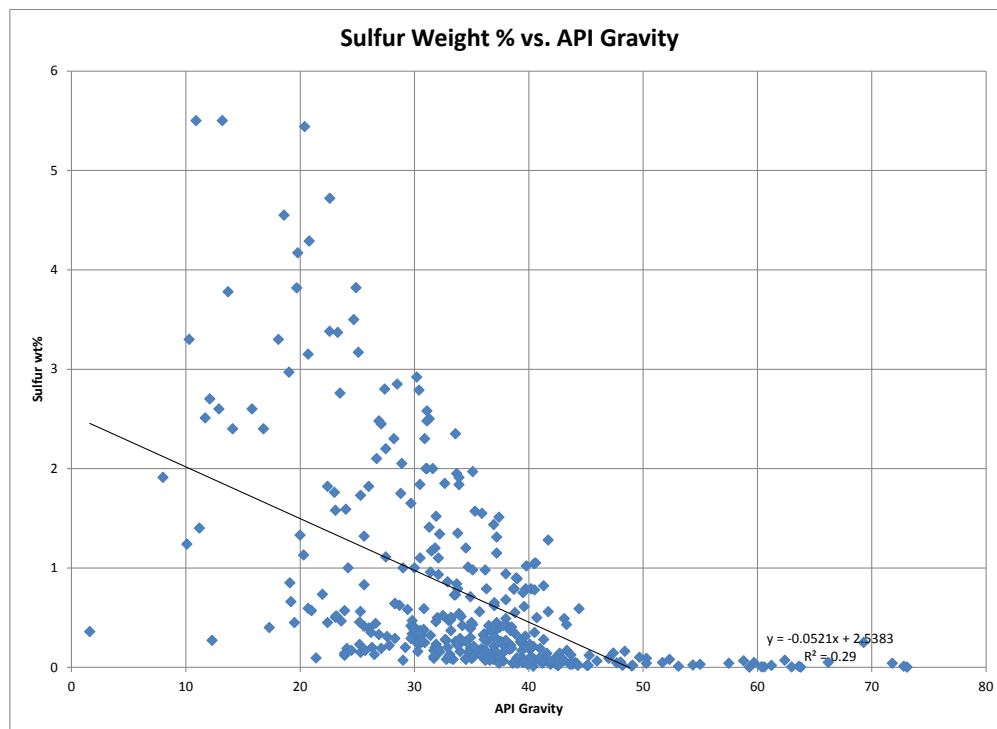
Based on the evaluation of available data on nitrogen content of crude oils, the following was determined:

- A weak statistical relationship was found between nitrogen content and sulfur content of crude oils. Thus, slight increases in nitrogen content of crude oils could be possible with increasing sulfur content crude oils expected with the Modernization Project given the weak correlation.
- A moderate to strong statistical relationship was found between API gravity in the intermediate-lighter gravity range (between 28 and 40 API) and nitrogen content. As the baseline average API was 33.7, the potential for processing heavier API crude oils than were processed during the baseline period as a result of the Modernization Project could result in reasonably likely increases in nitrogen content.

This EIR accordingly concludes that it is likely that the crude oils processed by the Refinery if the Modernization Project is implemented have the potential to contain additional nitrogen.

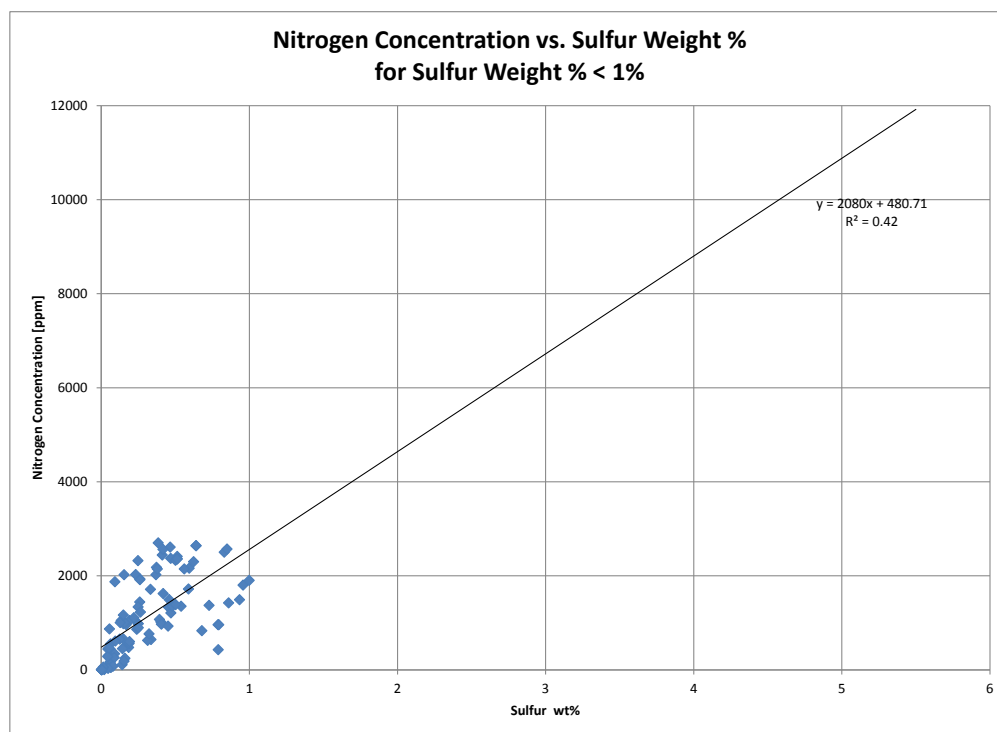
1.2.2.2 Supporting Data

The publicly available crude oil sulfur weight percentage data and the nitrogen content data in parts per million (ppm) were plotted in Figure A4.3-MET-2a. As shown in Figure A4.3-MET-2a, the R^2 is approximately 0.39. To further explore whether linear correlations exists above and below 1 %wt sulfur, two subsets of the data when sulfur weight percentage is below and above 1% were analyzed in Figures A4.3-MET-2b and A4.3-MET-2c. The R^2 is 0.42 and 0.33 for below and above 1 %wt sulfur, respectively. Based on the data analysis described above, a weak statistical relationship was found between nitrogen content and sulfur content of crude oils.



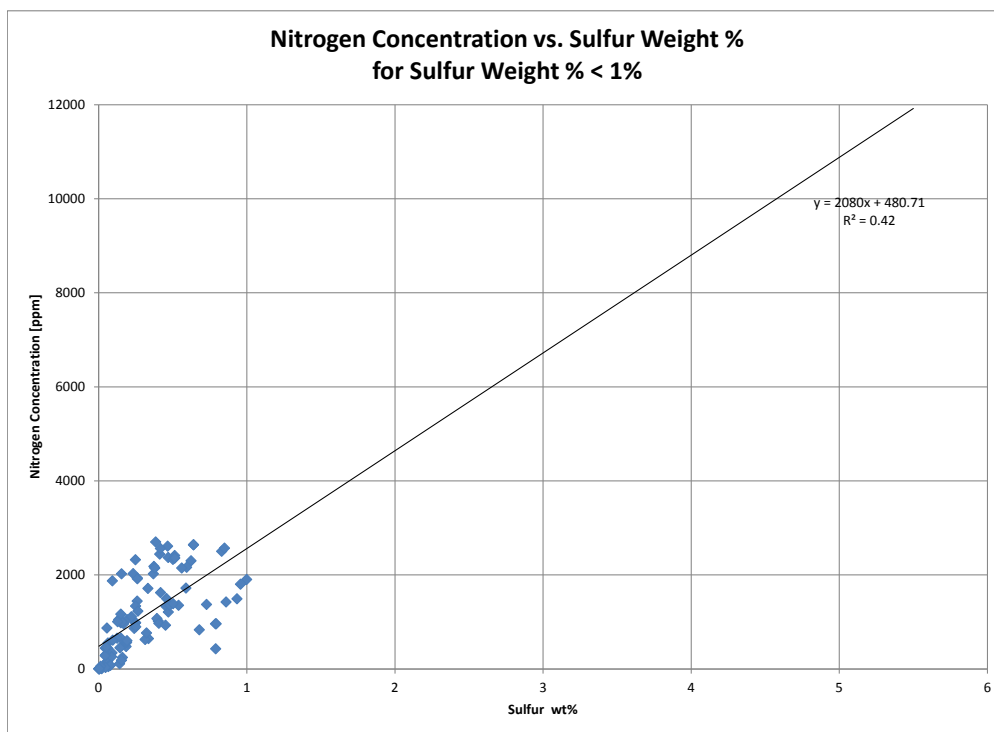
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_4A4.3-MET-1a_2a
Source: Capline; BP PLC; Total Oil Trading SA; Exxon Mobile Corporation; Satoil; Eni S.p.A; Environment Canada

Figure A4.3-MET-1a
Chevron Refinery Modernization Project EIR
Sulfur Weight % vs. API Gravity



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_4A4.3-MET-1a_2a
Source: BP PLC; Total Oil Trading SA; Exxon Mobile Corporation; Satoil; Environment Canada

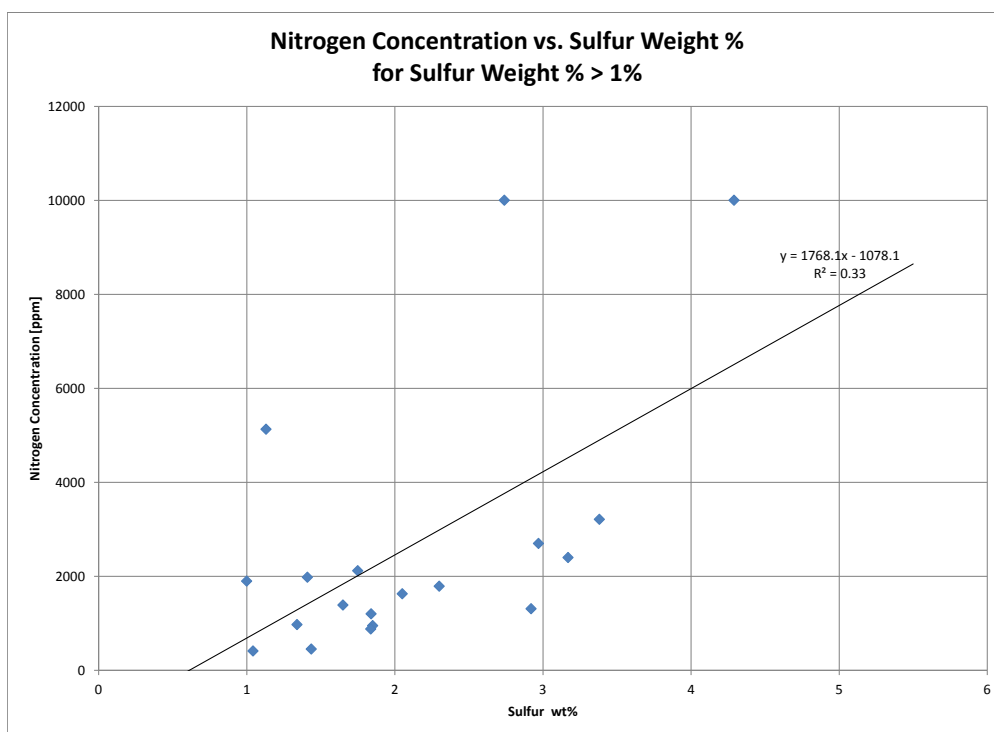
Figure A4.3-MET-2a
Chevron Refinery Modernization Project EIR
Nitrogen Concentration vs. Sulfur Weight %



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-2b_2c

Source: BP PLC; Total Oil Trading SA; Exxon Mobile Corporation;
Satoil; Environment Canada

Figure A4.3-MET-2b
Chevron Refinery Modernization Project EIR
Nitrogen Concentration vs. Sulfur Weight % for Sulfur Weight % < 1%



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-2b_2c

Source: BP PLC; Total Oil Trading SA; Exxon Mobile Corporation;
Satoil; Environment Canada

Figure A4.3-MET-2c
Chevron Refinery Modernization Project EIR
Nitrogen Concentration vs. Sulfur Weight % for Sulfur Weight % > 1%

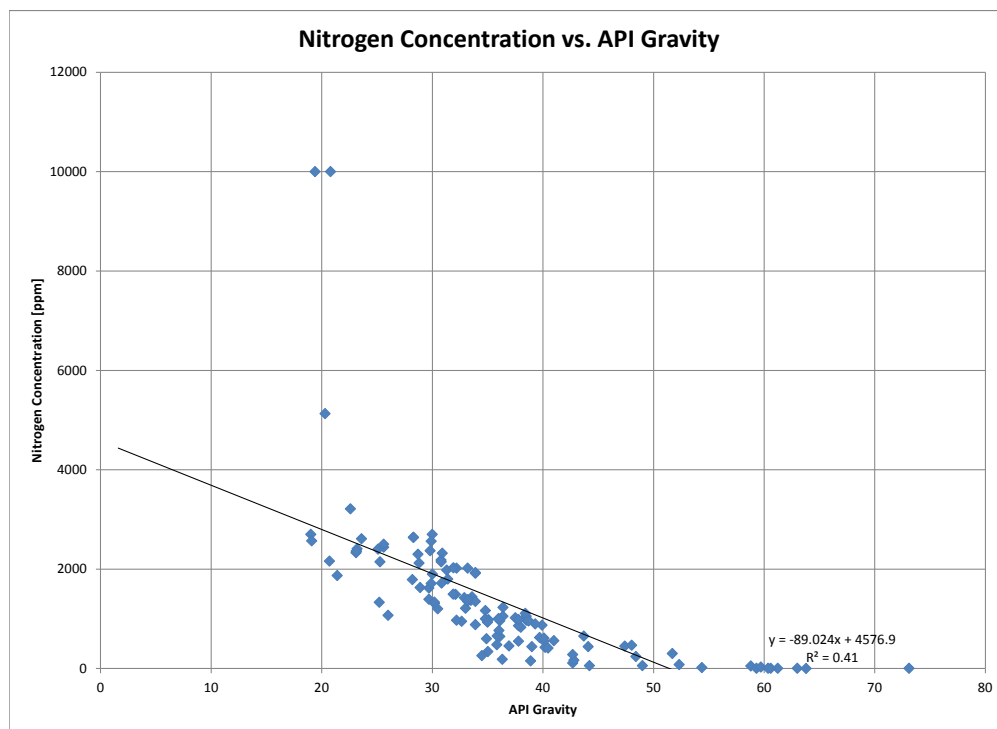
The dependence of nitrogen on gravity (in API) was also explored. An R^2 value for the crude oil API gravity and nitrogen content (in ppm) is 0.41 as shown in Figure A4.3-MET-2d. To further explore potential correlations in the intermediate range of crudes, an analysis of data when API gravity is between 28 and 40 (intermediate range) was conducted and results in an R^2 value of 0.59 (Figure A4.3-MET-2e). When API gravity is less than 28, the R^2 is 0.26 (Figure A4.3-MET-2f). Based on the data analysis described above, a moderate to strong statistical relationship was found between API gravity in the intermediate-light gravity range (between 28 and 40 API) and nitrogen content. Outside of this range, only a weak correlation was seen.

1.2.3 Metals

1.2.3.1 Conclusions

The crude oil data found from various agencies and institutions were evaluated to investigate the potential relationship between the crude oil total sulfur concentration and gravity to the concentration of barium, iron, magnesium, nickel, titanium, vanadium, and zinc. Little data on mercury, lead, copper, cadmium, and arsenic was available to construct meaningful analysis and therefore the statistical relationship between these metals and sulfur or gravity was not evaluated. Based on the evaluation of available data on metal content of crude oils, the following was determined:

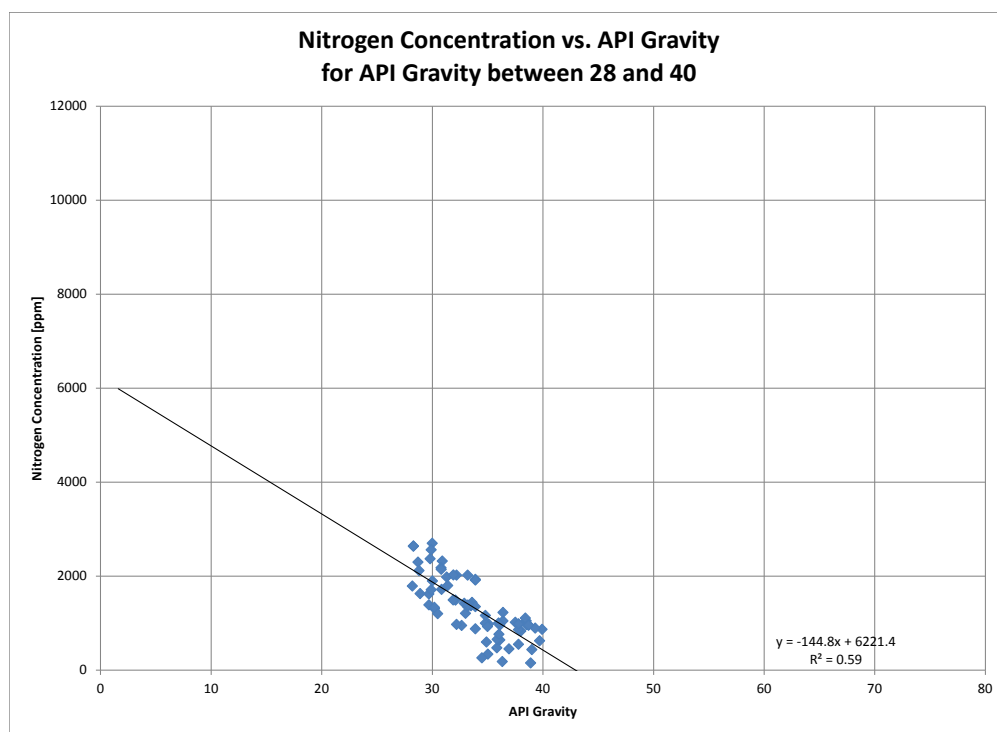
- No statistical relationship was found for the dependence of barium, calcium, magnesium, titanium, and zinc on sulfur (i.e., concentrations of metals did not vary with sulfur concentrations).
- A weak statistical relationship was found for the dependence of iron, nickel and vanadium on sulfur concentration. Thus, it is possible that slight increases in iron, nickel and vanadium content of crude oils could occur with higher sulfur content crude oils expected with the Modernization Project given the weak correlation.
- No statistical relationship was found for the dependence of barium, titanium, and zinc on gravity (API).
- A weak statistical relationship was found for the dependence of calcium, iron, magnesium, nickel, and vanadium on gravity (API). Thus, it is possible that slight increases in calcium, iron, magnesium, nickel and vanadium could occur with lower API crude oils expected with the Modernization Project given the weak correlation.



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apptx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-2d_2e

Source: BP PLC; Total Oil Trading SA; Exxon Mobile Corporation;
Satoil; Environment Canada

Figure A4.3-MET-2d
Chevron Refinery Modernization Project EIR
Nitrogen Concentration vs. API Gravity



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apptx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-2d_2e

Source: BP PLC; Total Oil Trading SA; Exxon Mobile Corporation;
Satoil; Environment Canada

Figure A4.3-MET-2e
Chevron Refinery Modernization Project EIR
Nitrogen Concentration vs. API Gravity for API Gravity between 28 and 40

This EIR accordingly concludes that it is possible that the metal content of crude oils processed by the Refinery could increase slightly if the Modernization Project is implemented.

1.2.3.2 Supporting Data

The publicly available crude oil metal concentration data and sulfur weight percent were plotted in Figures A4.3-MET-3a to -3h. As shown in these charts, the R^2 is less than 0.1 for calcium (0.02), magnesium (0.002), titanium (0.0005), and zinc (0.004), and therefore no statistical relationship was found between these metal concentration and sulfur content of crude oils. The R^2 is between 0.1 and 0.5 for barium (0.1), iron (0.18), nickel (0.35), and vanadium (0.31), and a weak statistical relationship was found between the content of these metals and sulfur content of crude oils.

The dependence of metals on gravity (in API) was also explored. As shown in Figure A4.3-MET-3j to -3p, the R^2 is less than 0.1 for barium (0.08), titanium (0.0005), and zinc (0.05), and therefore no statistical relationship was found between these metal concentration and gravity. The R^2 is between 0.1 and 0.5 for calcium (0.2), iron (0.1), magnesium (0.3), nickel (0.3), and vanadium (0.2), and a weak statistical relationship was found between the content of these metals and gravity.

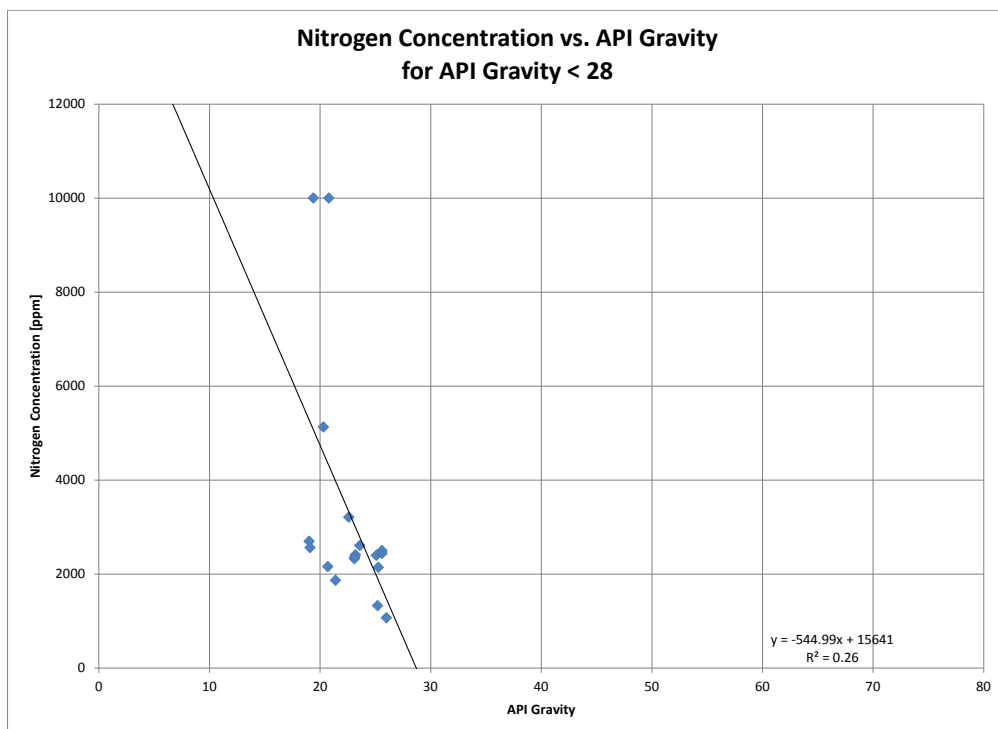
1.2.4 Acids

1.2.4.1 Conclusions

Based on the evaluation of available data on acidity of crude oils, the following was determined:

- No statistical relationship was found between acidity and sulfur content. Thus, increases in acidity of crude oils are not reasonably likely to occur with higher sulfur content crude oils expected with the Modernization Project given the lack of a strong correlation.
- A weak statistical relationship was found between API gravity in the intermediate-light gravity range (28 and 40 API) and acidity. Thus, it is possible that slight increases in acidity of crude oils could occur with lower API crude oils expected with the Modernization Project given the weak correlation.

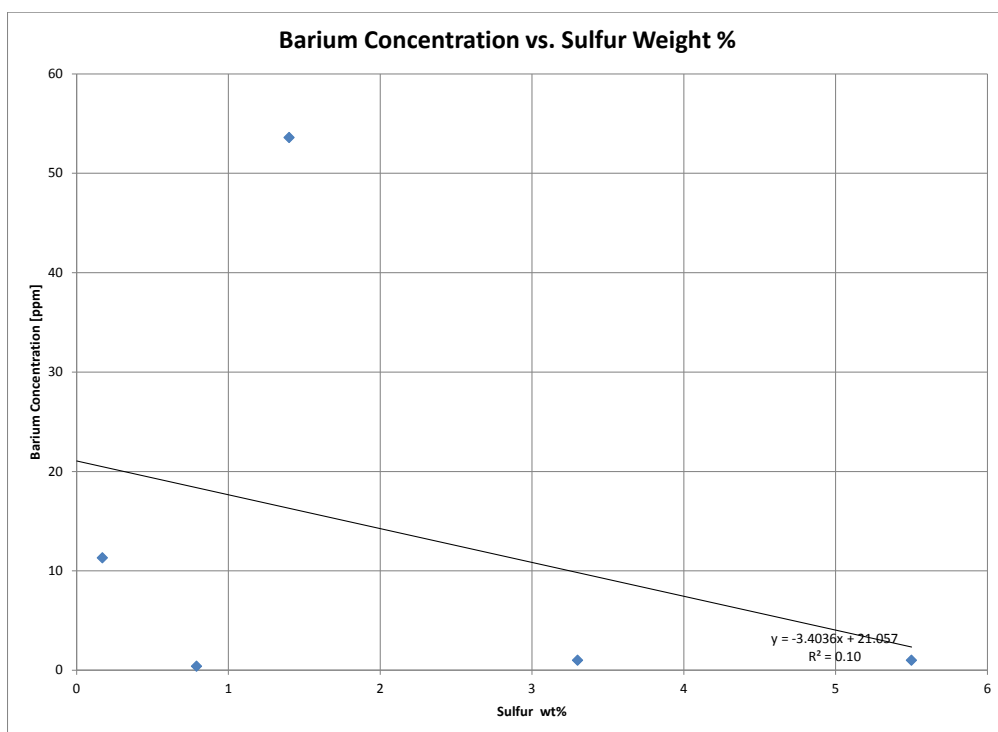
This EIR accordingly concludes that it is possible that slight increases in the acidity of crude oils processed by the Refinery could occur if the Modernization Project is implemented.



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apptx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-2f_3a

Source: BP PLC; Total Oil Trading SA; Exxon Mobile Corporation;
Satoil; Environment Canada

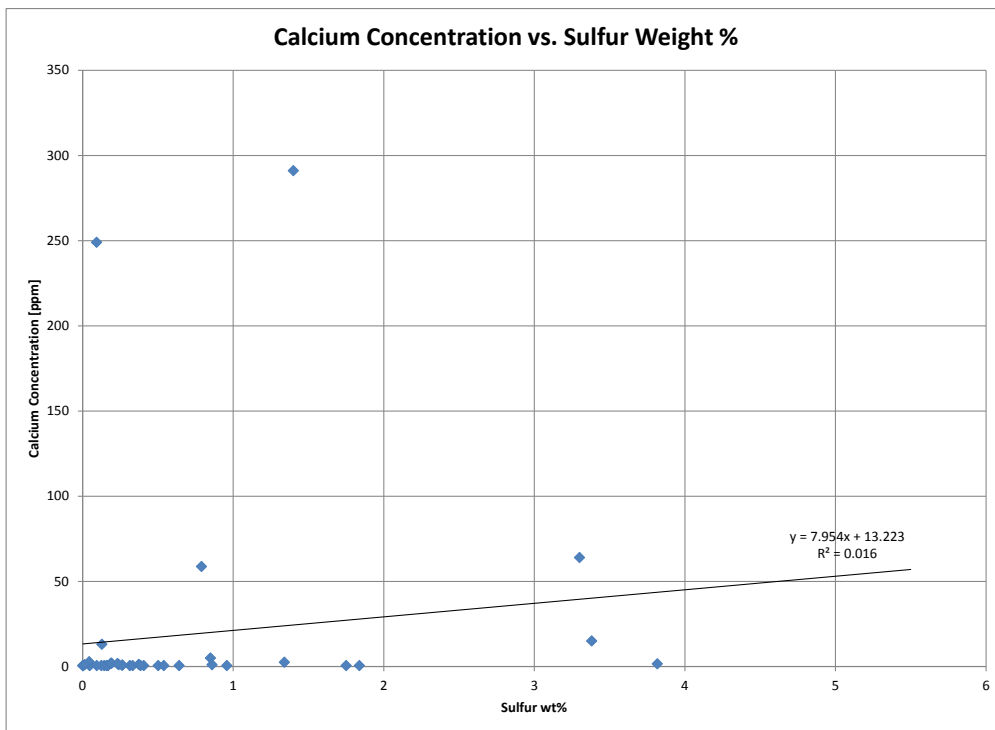
Figure A4.3-MET-2f
Chevron Refinery Modernization Project EIR
Nitrogen Concentration vs. API Gravity for API Gravity < 28



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apptx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-2f_3a

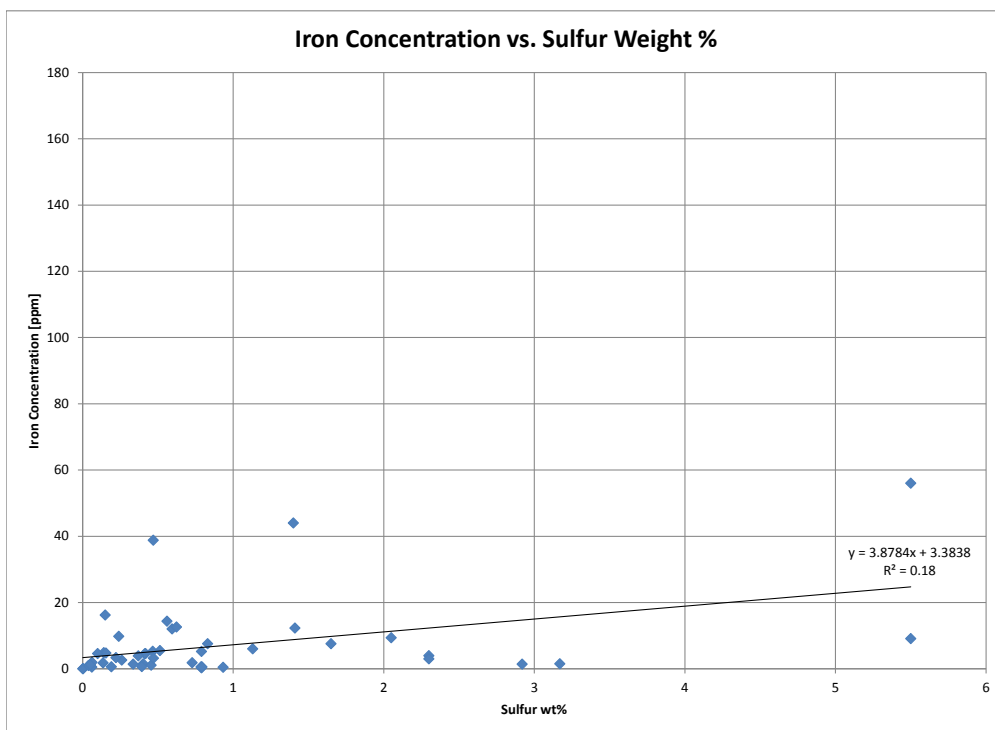
Source: Capline; BP PLC; Total Oil Trading SA;
Exxon Mobile Corporation; Satoil;
Eni S.p.A; Environment Canada

Figure A4.3-MET-3a
Chevron Refinery Modernization Project EIR
Barium Concentration vs. Sulfur Weight %



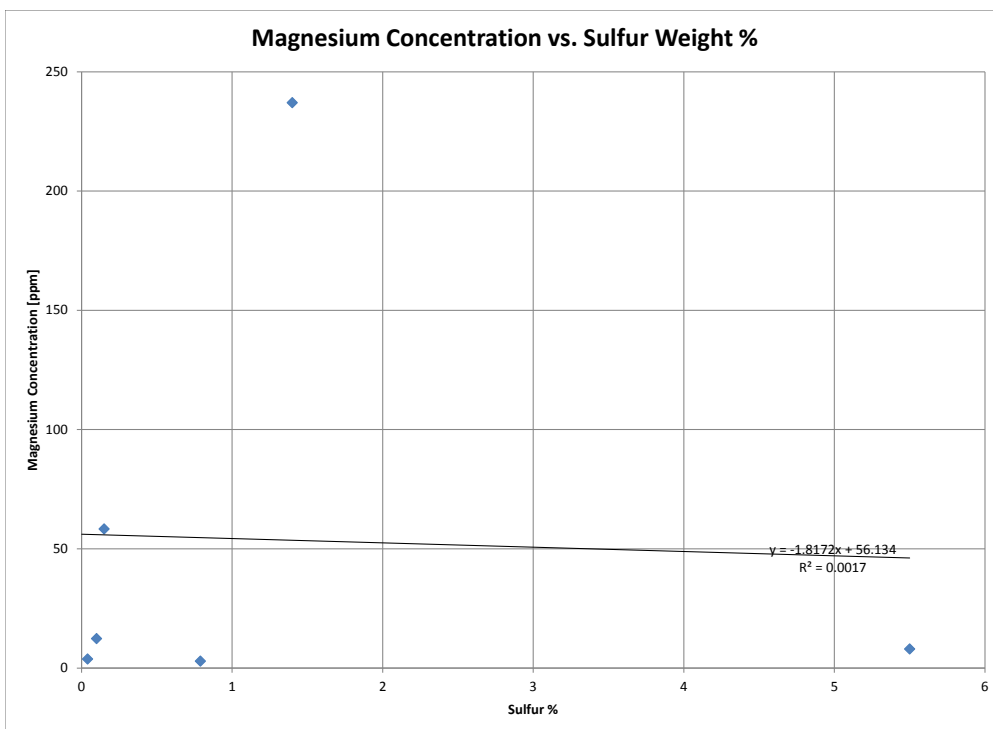
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3b_3c
Source: Exxon Mobile Corporation; Environment Canada

Figure A4.3-MET-3b
Chevron Refinery Modernization Project EIR
Calcium Concentration vs. Sulfur Weight %



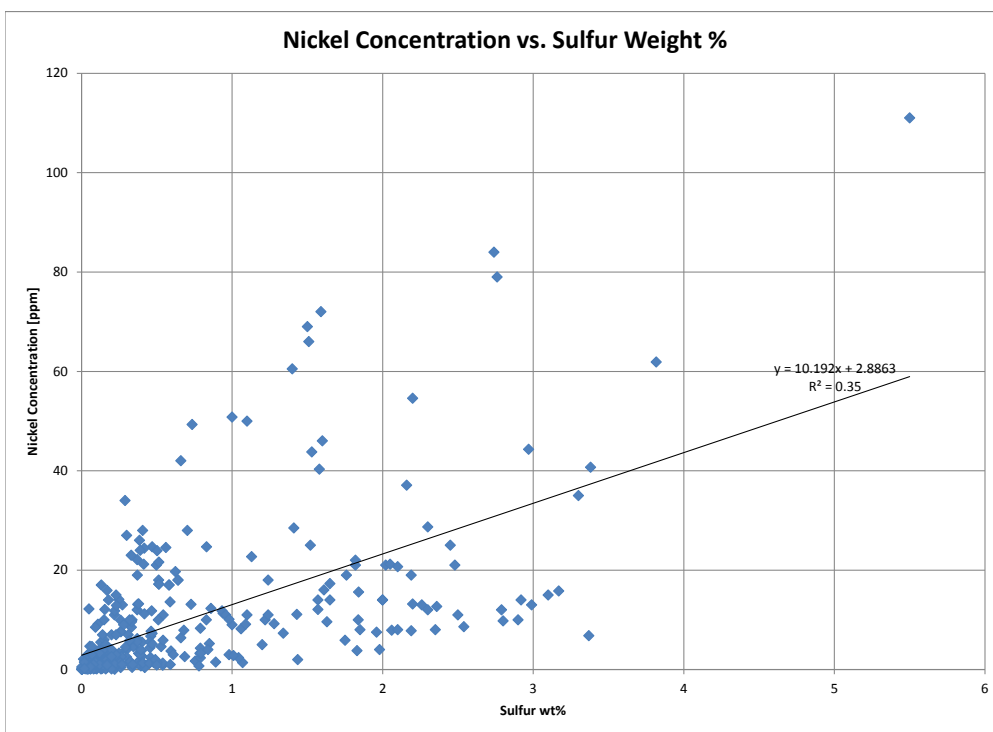
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3b_3c
Source: BP PLC; Total Oil Trading SA; Satoil; Environment Canada

Figure A4.3-MET-3c
Chevron Refinery Modernization Project EIR
Iron Concentration vs. Sulfur Weight %



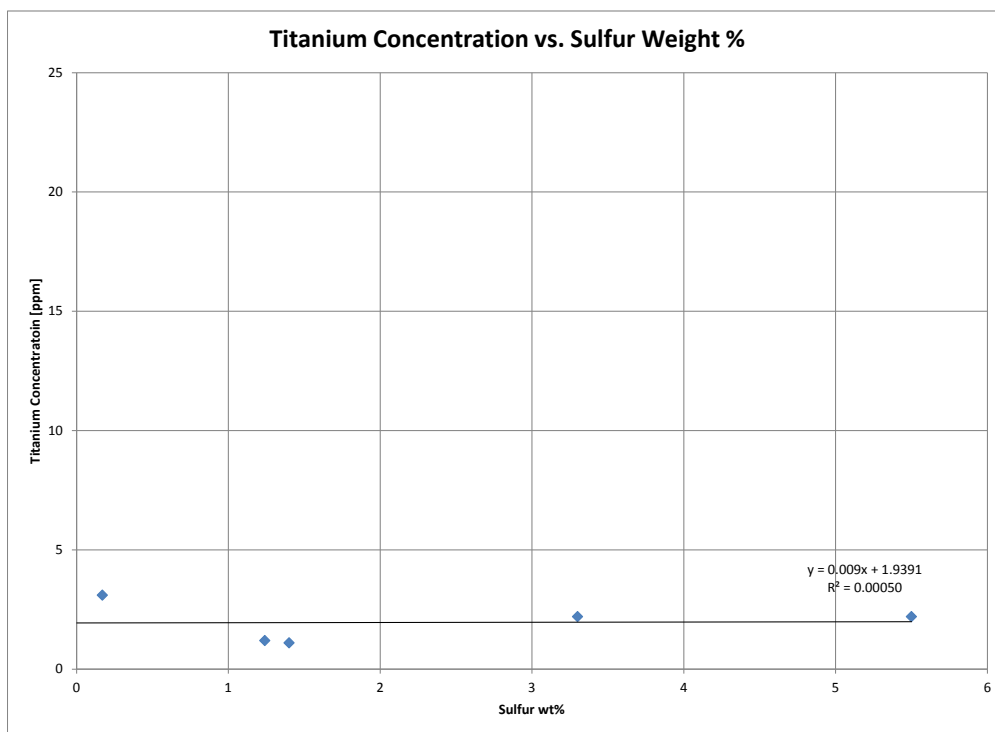
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apptx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3d_3e
Source: Environment Canada

Figure A4.3-MET-3d
Chevron Refinery Modernization Project EIR
Magnesium Concentration vs. Sulfur Weight %



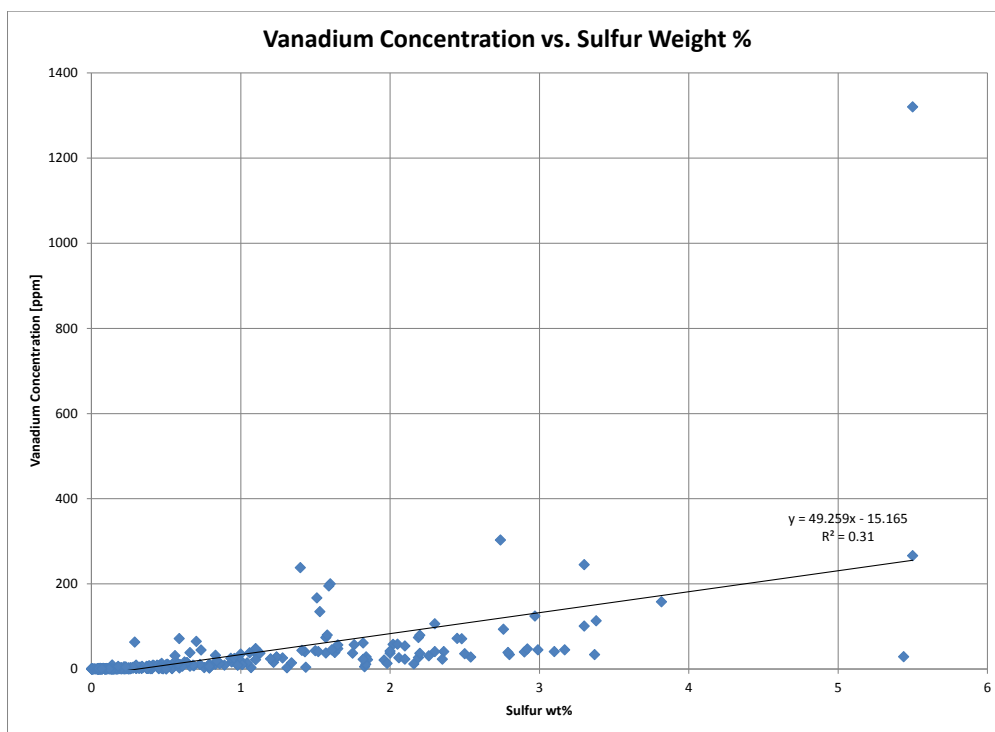
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apptx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3d_3e
Source: Capline; BP PLC; Total Oil Trading SA;
Exxon Mobile Corporation; Satoil;
Eni S.p.A; Environment Canada

Figure A4.3-MET-3e
Chevron Refinery Modernization Project EIR
Nickel Concentration vs. Sulfur Weight %



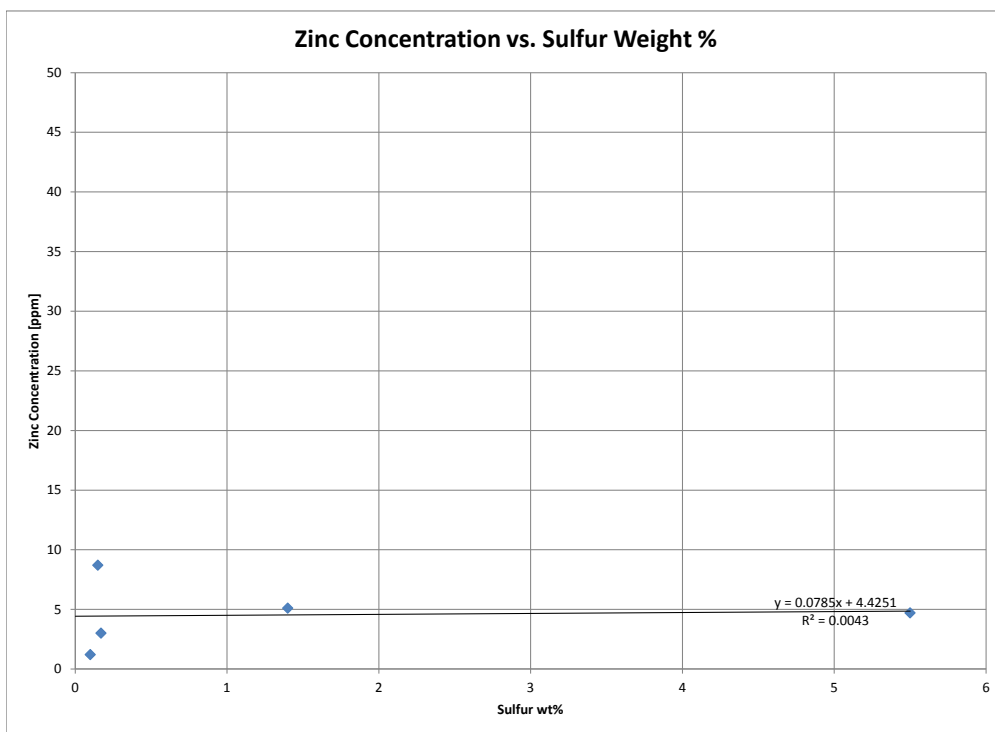
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3f_3g
 Source: Environment Canada

Figure A4.3-MET-3f
 Chevron Refinery Modernization Project EIR
 Titanium Concentration vs. Sulfur Weight %



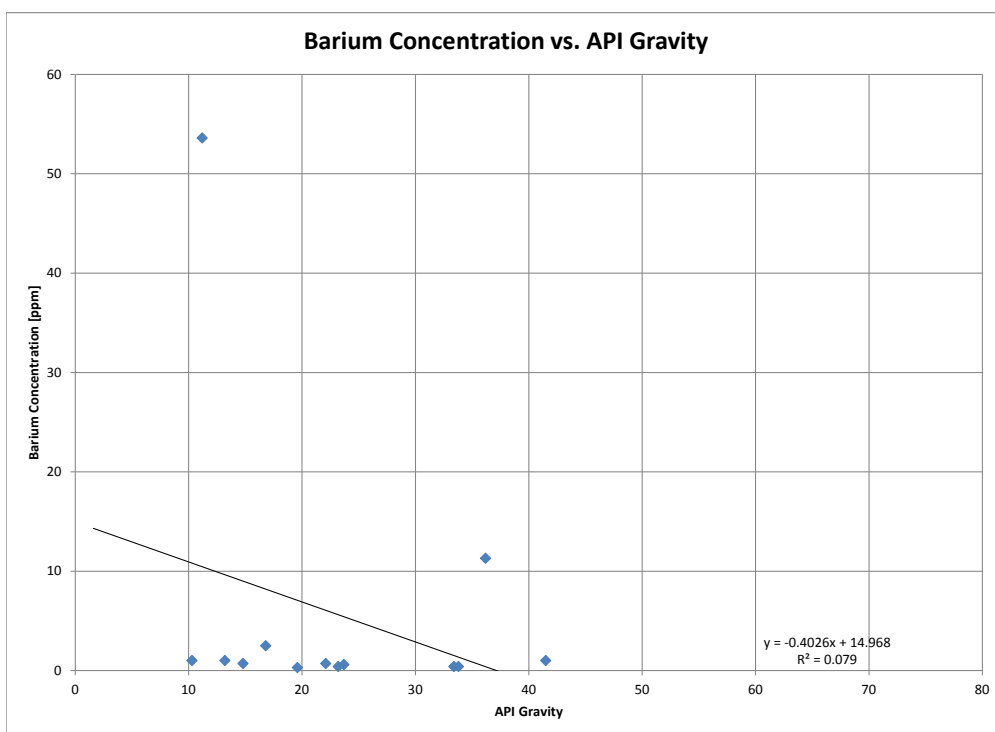
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3f_3g
 Source: Capline; BP PLC; Total Oil Trading SA;
 Exxon Mobile Corporation; Satoil;
 Eni S.p.A; Environment Canada

Figure A4.3-MET-3g
 Chevron Refinery Modernization Project EIR
 Vanadium Concentration vs. Sulfur Weight %



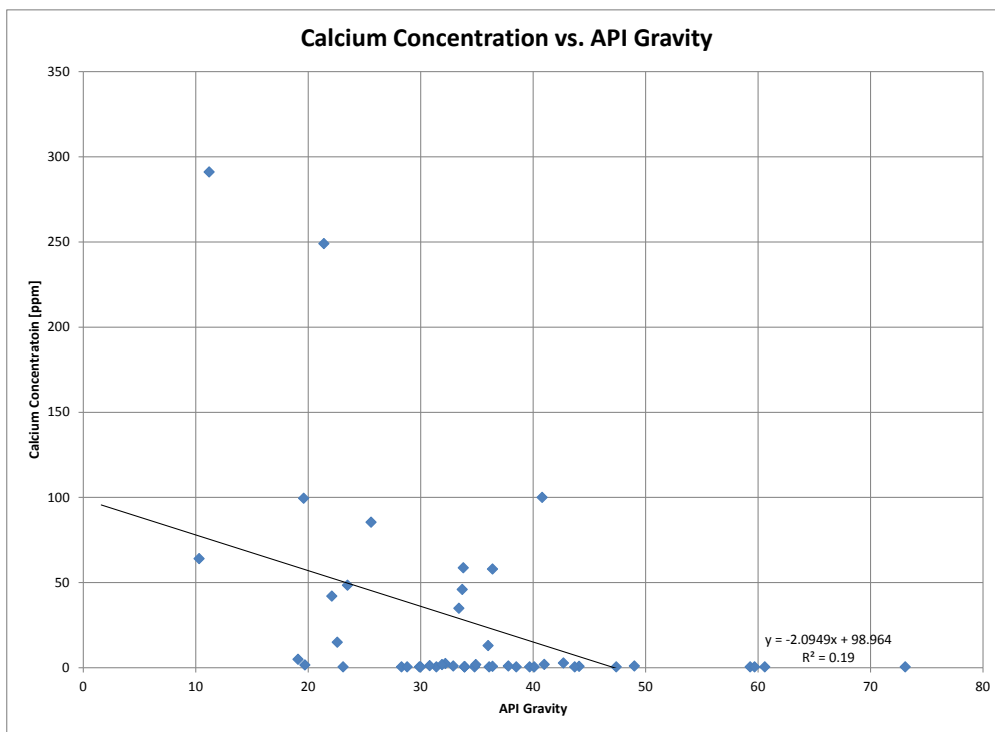
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3h_3i
 Source: Environment Canada

Figure A4.3-MET-3h
 Chevron Refinery Modernization Project EIR
 Zinc Concentration vs. Sulfur Weight %



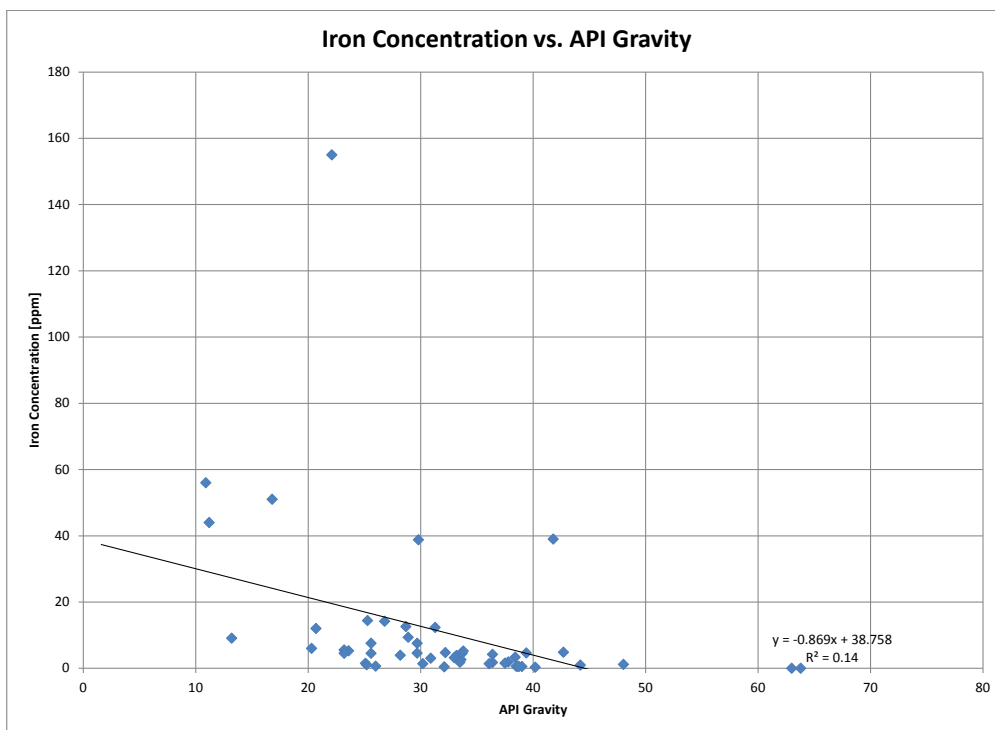
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3h_3i
 Source: Environment Canada

Figure A4.3-MET-3i
 Chevron Refinery Modernization Project EIR
 Barium Concentration vs. API Gravity



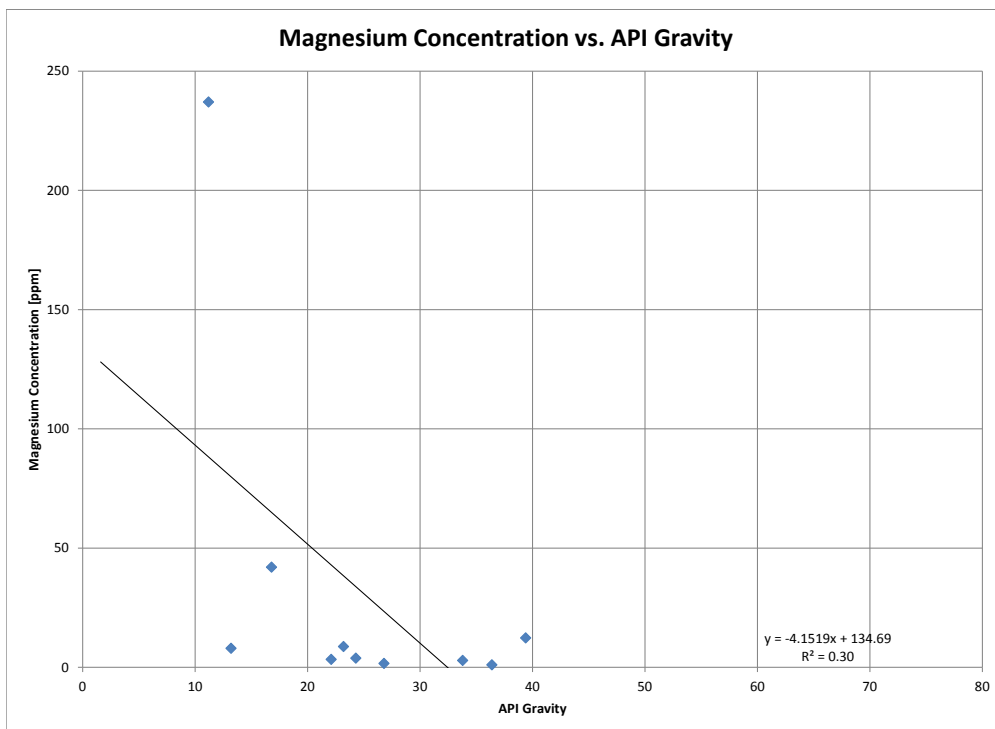
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3j_3k
Source: Exxon Mobile Corporation; Environment Canada

Figure A4.3-MET-3j
Chevron Refinery Modernization Project EIR
Calcium Concentration vs. API Gravity



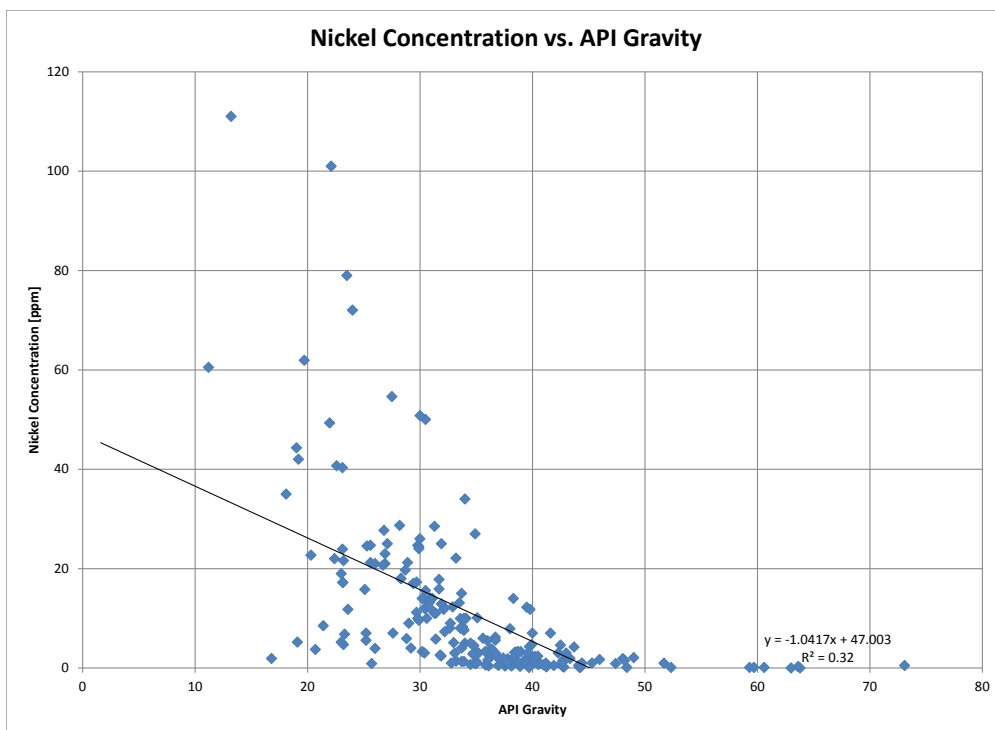
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3j_3k
Source: BP PLC; Total Oil Trading SA; Satoil; Environment Canada

Figure A4.3-MET-3k
Chevron Refinery Modernization Project EIR
Iron Concentration vs. API Gravity



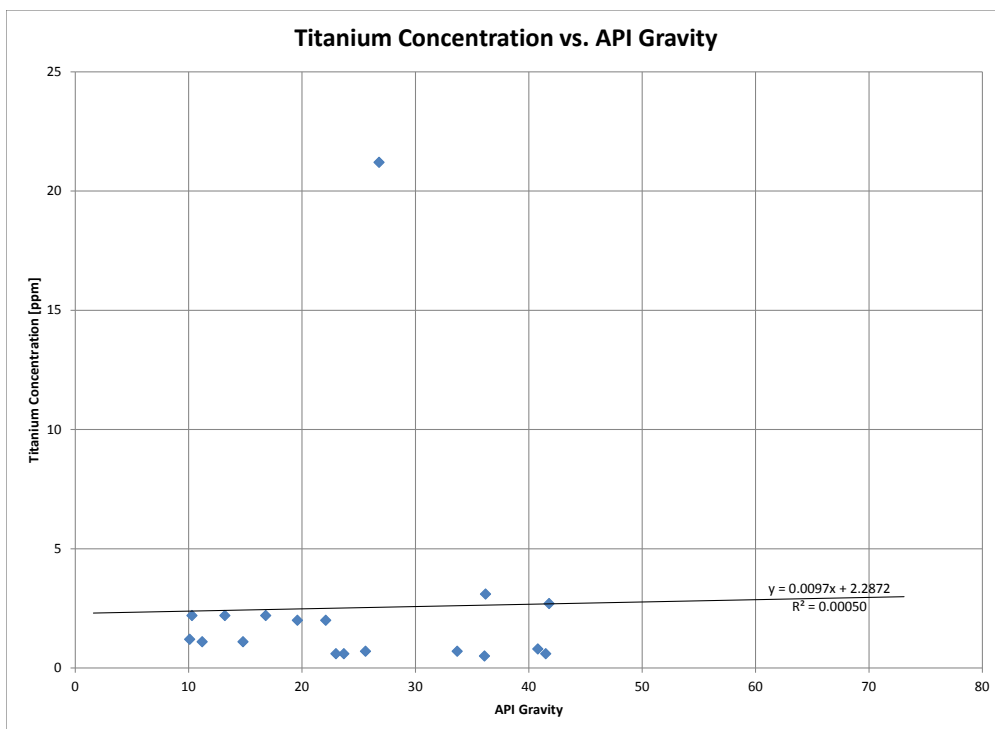
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3I_3m
Source: Environment Canada

Figure A4.3-MET-3I
Chevron Refinery Modernization Project EIR
Magnesium Concentration vs. API Gravity



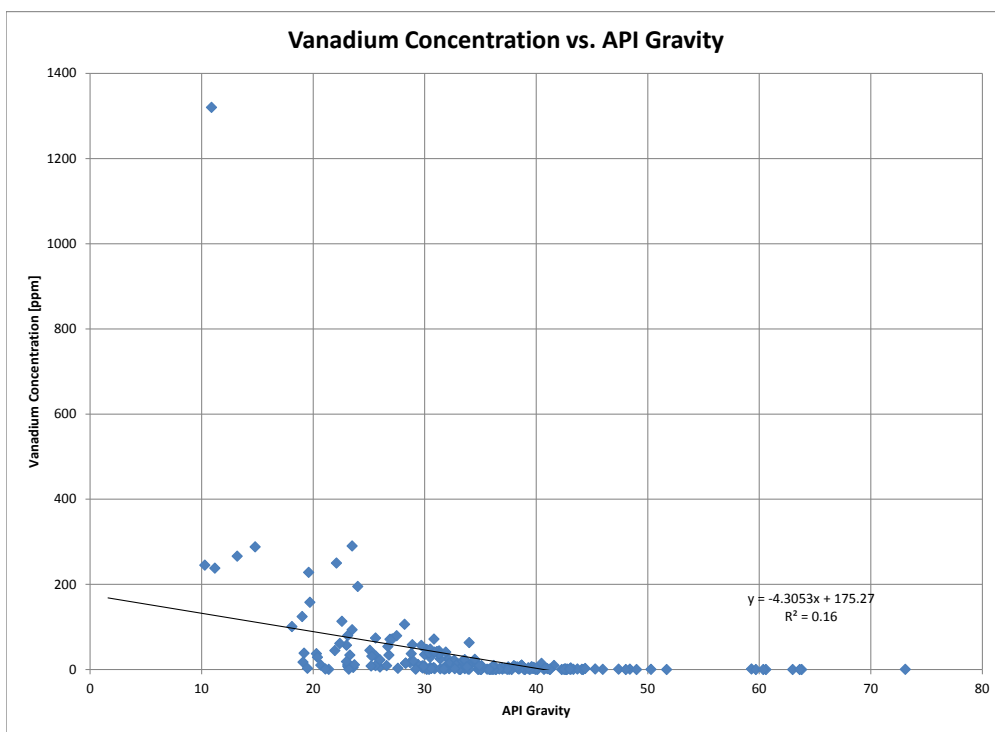
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3I_3m
Source: Capline; BP PLC; Total Oil Trading SA;
Exxon Mobile Corporation; Satoil;
Eni S.p.A; Environment Canada

Figure A4.3-MET-3m
Chevron Refinery Modernization Project EIR
Nickel Concentration vs. API Gravity



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3n_3o
Source: Environment Canada

Figure A4.3-MET-3n
Chevron Refinery Modernization Project EIR
Titanium Concentration vs. API Gravity



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3n_3o
Source: Capline; BP PLC; Total Oil Trading SA;
Exxon Mobile Corporation; Satoil;
Eni S.p.A; Environment Canada

Figure A4.3-MET-3o
Chevron Refinery Modernization Project EIR
Vanadium Concentration vs. API Gravity

1.2.4.2 Supporting Data

The publicly available crude oil sulfur weight percentage data and the acidity data were plotted in Figure A4.3-MET-4a. As shown in Figure A4.3-MET-4a, the R^2 is approximately 0.0003.

The dependence of acidity on gravity (in API) was also explored. An R^2 value for the crude oil API gravity and acidity is 0.3 as shown in Figure A4.3-MET-4b. To further explore potential correlations in the intermediate range of crudes, an analysis of data when API gravity is between 28 and 40 (intermediate range) was conducted and results in an R^2 value of 0.3 (Figure A4.3-MET-4c). Based on the data analysis described above, a weak statistical relationship was found between API gravity in the intermediate-lighter gravity range (between 28 and 40 API) and nitrogen content.

1.2.5 Mercaptans

1.2.5.1 Conclusions

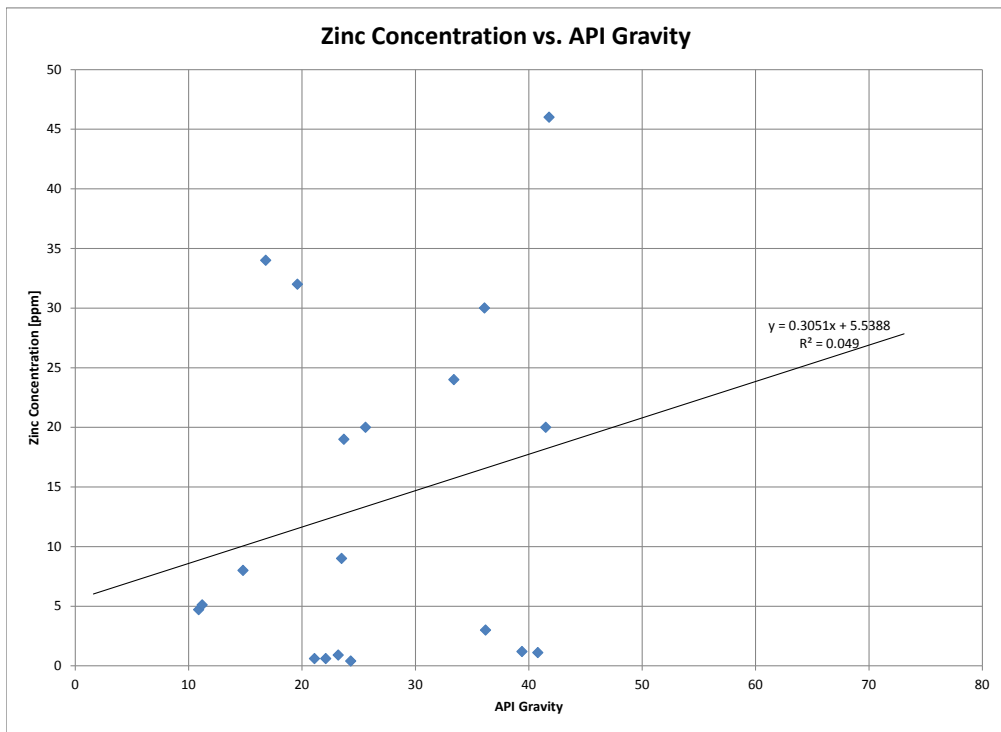
Based on the evaluation of available data on mercaptan sulfur content of crude oils, the following was determined:

- No statistical relationship was found between mercaptan sulfur content and sulfur content. Thus, increases in mercaptan sulfur content of crude oils are not reasonably likely to occur with higher sulfur content crude oils expected with the Modernization Project given the lack of a strong correlation.
- No statistical relationship was found between mercaptan sulfur content and gravity. Thus, increases in mercaptan sulfur content of crude oils are not reasonably likely to occur with lower API crude oils expected with the Modernization Project given the lack of a strong correlation.

This EIR accordingly concludes that it is not likely that mercaptan sulfur content of crude oils processed by the Refinery would increase if the Modernization Project is implemented.

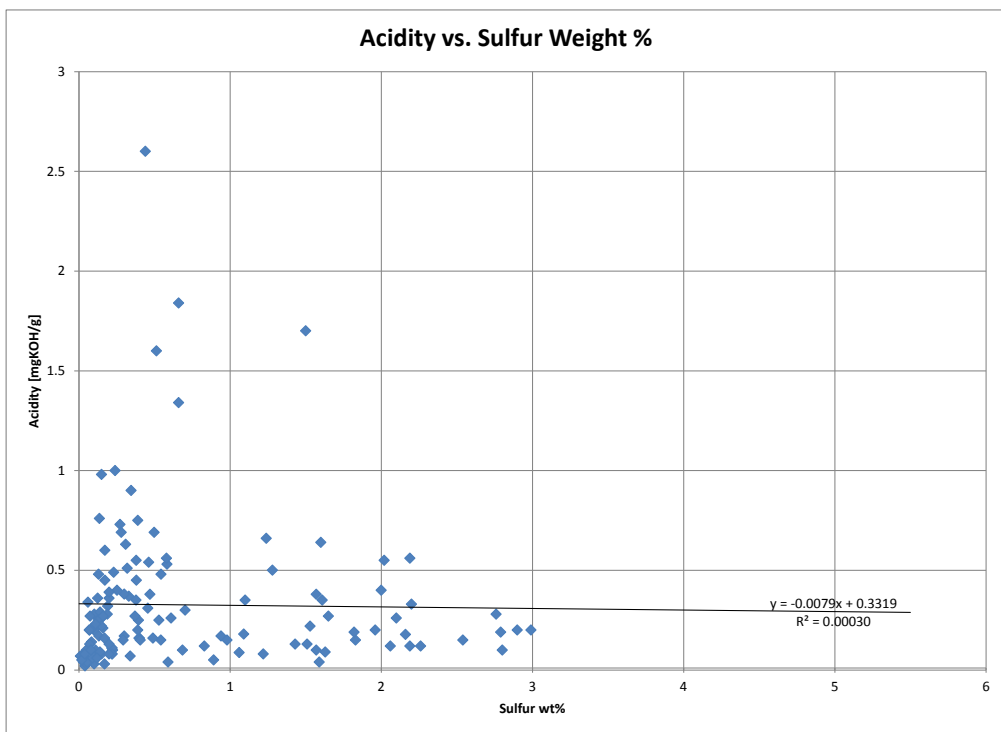
1.2.5.2 Supporting Data

The publicly available crude oil sulfur weight percentage data and the mercaptan sulfur content data in parts per million (ppm) were plotted in Figure A4.3-MET-4d. As shown in Figure A4.3-MET-4d, the R^2 is nearly zero. To further explore whether the outlier might be masking the correlation, a subset of the data when mercaptan sulfur concentration is below 500ppm were analyzed in Figures A4.3-MET-4e. The resulting R^2 is 0.03. Based on the data analysis described above, no statistical relationship was found between nitrogen content and sulfur content of crude oils.



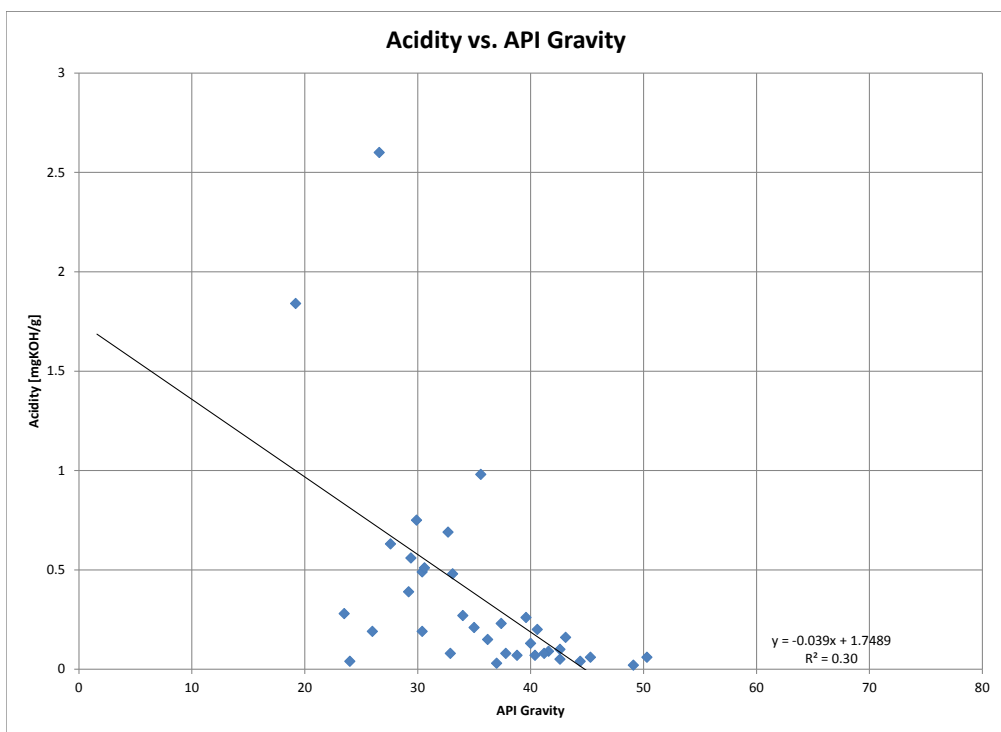
02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apix 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3p_4a
Source: Environment Canada

Figure A4.3-MET-3p
Chevron Refinery Modernization Project EIR
Zinc Concentration vs. API Gravity



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apix 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-3p_4a
Source: Capline; Eni S.p.A.

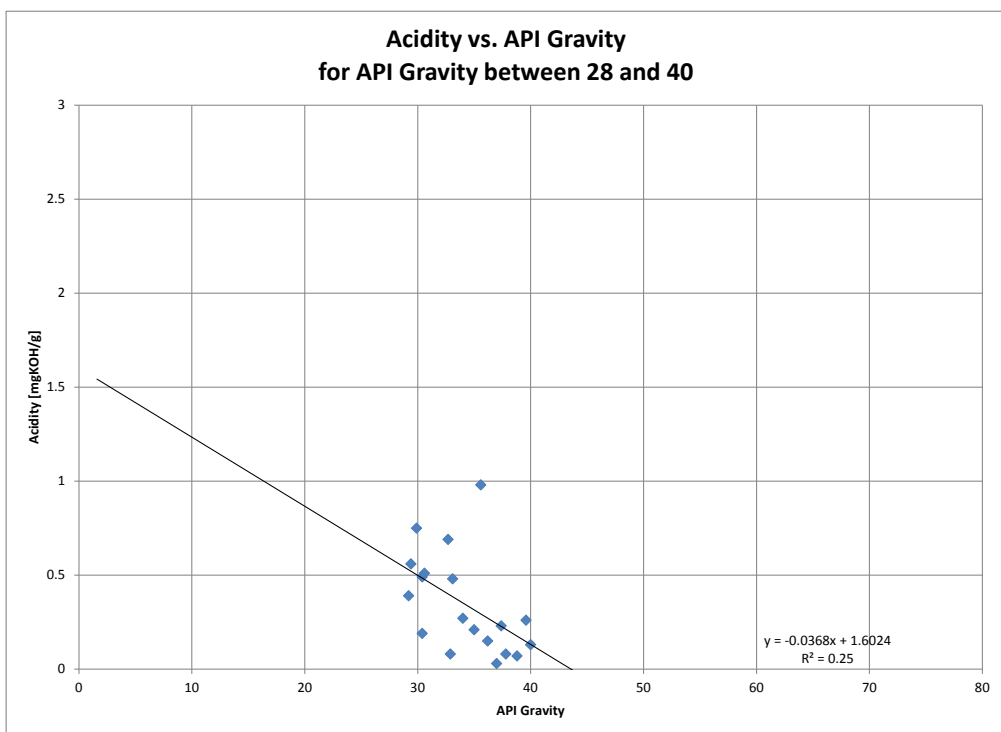
Figure A4.3-MET-4a
Chevron Refinery Modernization Project EIR
Acidity vs. Sulfur Weight %



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-4b_4c

Source: Eni S.p.A.

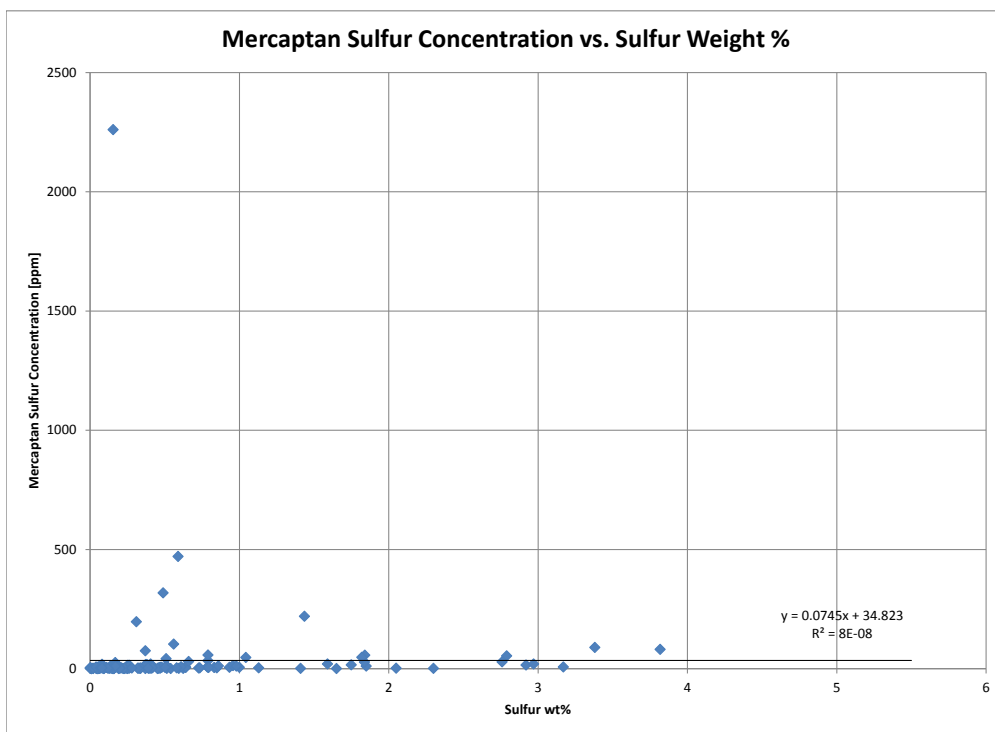
Figure A4.3-MET-4b
Chevron Refinery Modernization Project EIR
Acidity vs. API Gravity



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-4b_4c

Source: Eni S.p.A.

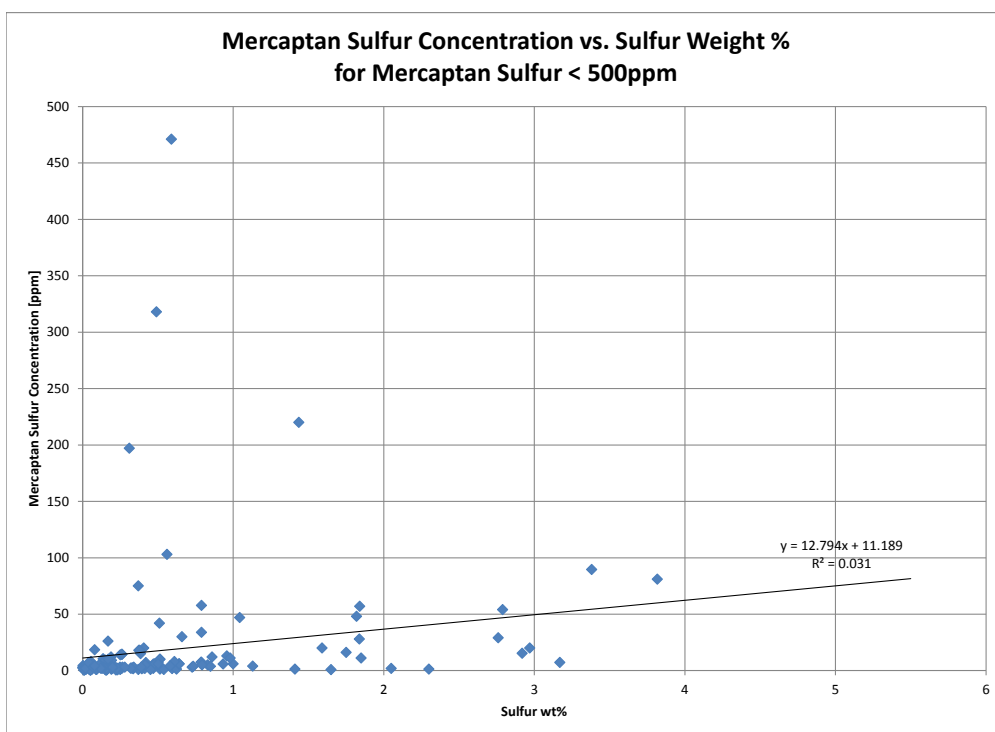
Figure A4.3-MET-4c
Chevron Refinery Modernization Project EIR
Acidity vs. API Gravity for API Gravity between 28 and 40



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-4d_4e

Source: BP PLC; Total Oil Trading SA;
Exxon Mobile Corporation; Satoil; Eni S.p.A

Figure A4.3-MET-4d
Chevron Refinery Modernization Project EIR
Mercaptan Sulfur Concentration vs. Sulfur Weight %



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-4d_4e

Source: BP PLC; Total Oil Trading SA; Exxon Mobile Corporation;
Satoil; Eni S.p.A

Figure A4.3-MET-4e
Chevron Refinery Modernization Project EIR
Mercaptan Sulfur Concentration vs. Sulfur Weight % for Mercaptan Sulfur < 500ppm

The dependence of mercaptan sulfur on gravity (in API) was also explored. An R^2 value for the crude oil API gravity and nitrogen content (in ppm) is 0.0007 as shown in Figure A4.3-MET-4f. To further explore whether the outlier might be masking the correlation, a subset of the data when mercaptan sulfur concentration is below 250 ppm was analyzed in Figure A4.3-MET-4g. The resulting R^2 is 0.03. Based on the data analysis described above, no statistical relationship was found between API gravity and mercaptan sulfur content of crude oils over a wide gravity range (approximately 20 to 73 API).

1.2.6 Salt Content (Includes Chlorides)

1.2.6.1 Conclusions

Based on the evaluation of available data on salt content of crude oils, the following was determined:

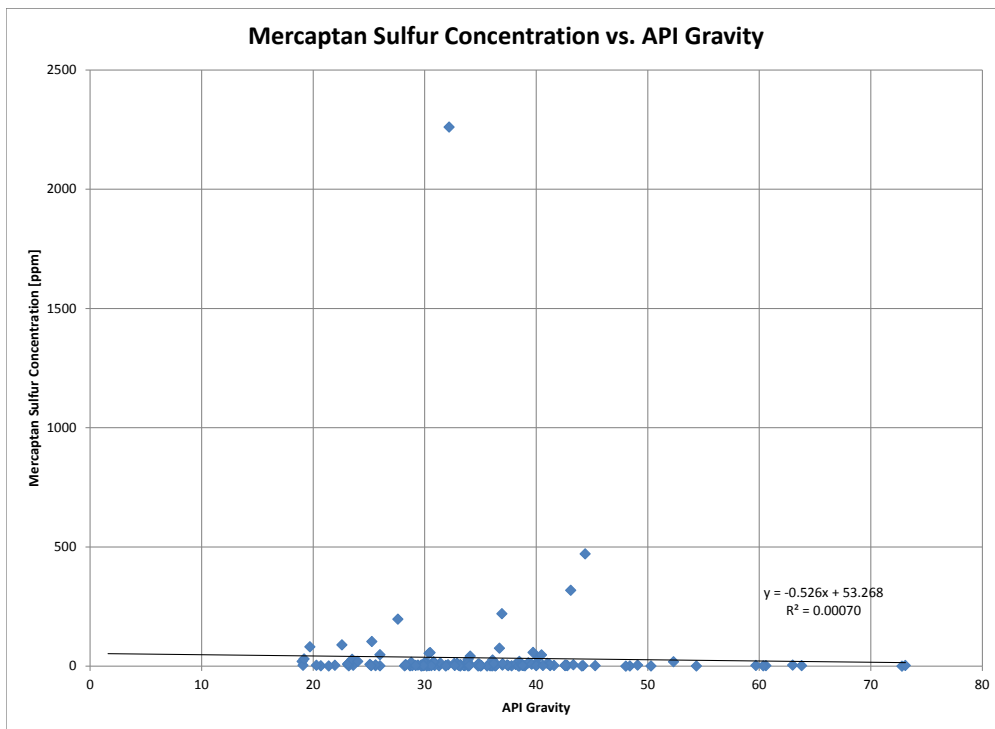
- No statistical relationship was found between salt content and sulfur content. Thus, increases in salt content of crude oils are not reasonably likely to occur with higher sulfur content crude oils expected with the Modernization Project given the lack of a strong correlation.
- No statistical relationship was found between salt content and gravity. Thus, increases in salt content of crude oils are not reasonably likely to occur with lower API gravity crude oils expected with the Modernization Project given the lack of a strong correlation.

This EIR accordingly concludes that it is not likely that salt content of crude oils processed by the Refinery would increase if the Modernization Project is implemented.

1.2.6.2 Supporting Data

The publicly available crude oil sulfur weight percentage data and the salt content data were plotted in Figure A4.3-MET-4h. As shown in Figure A4.3-MET-4h, the R^2 is 0.1, and therefore a weak statistical relationship was found between sulfur content and salt content of crude oils.

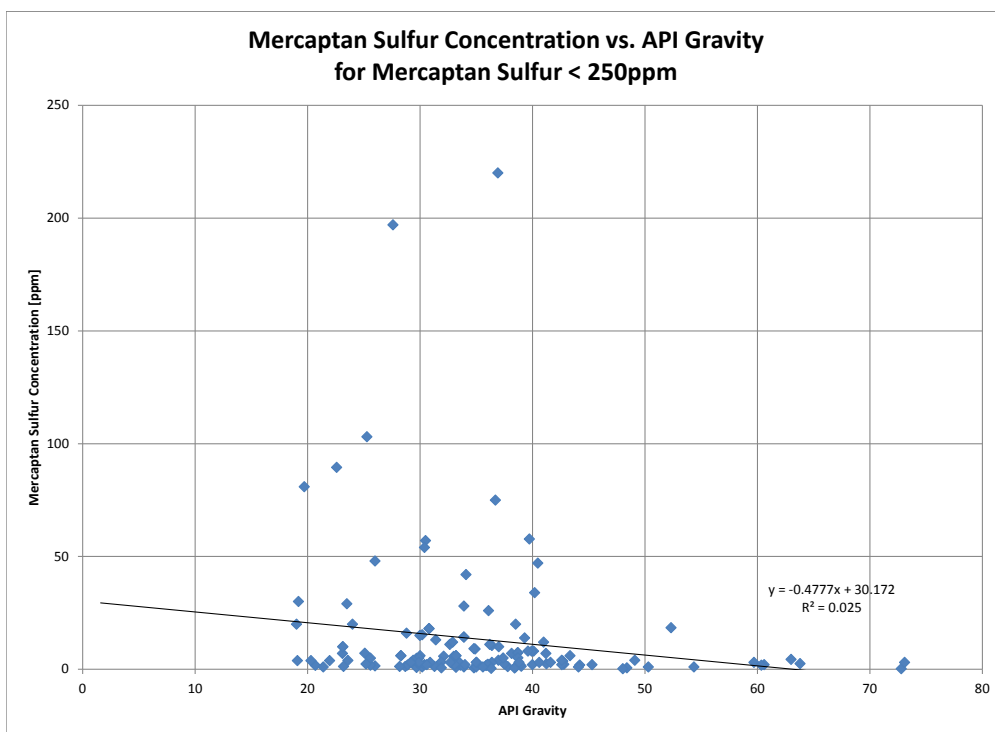
The dependence of salt content on gravity (in API) was also explored. An R^2 value for the crude oil API gravity and salt content is 0.1 as shown in Figure A4.3-MET-4i, and therefore a weak statistical relationship was found between API gravity and salt content of crude oils over a wide gravity range (approximately 20 to 73 API).



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apptx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-4f_4g

Source: BP PLC; Total Oil Trading SA;
Exxon Mobile Corporation; Satoil; Eni S.p.A

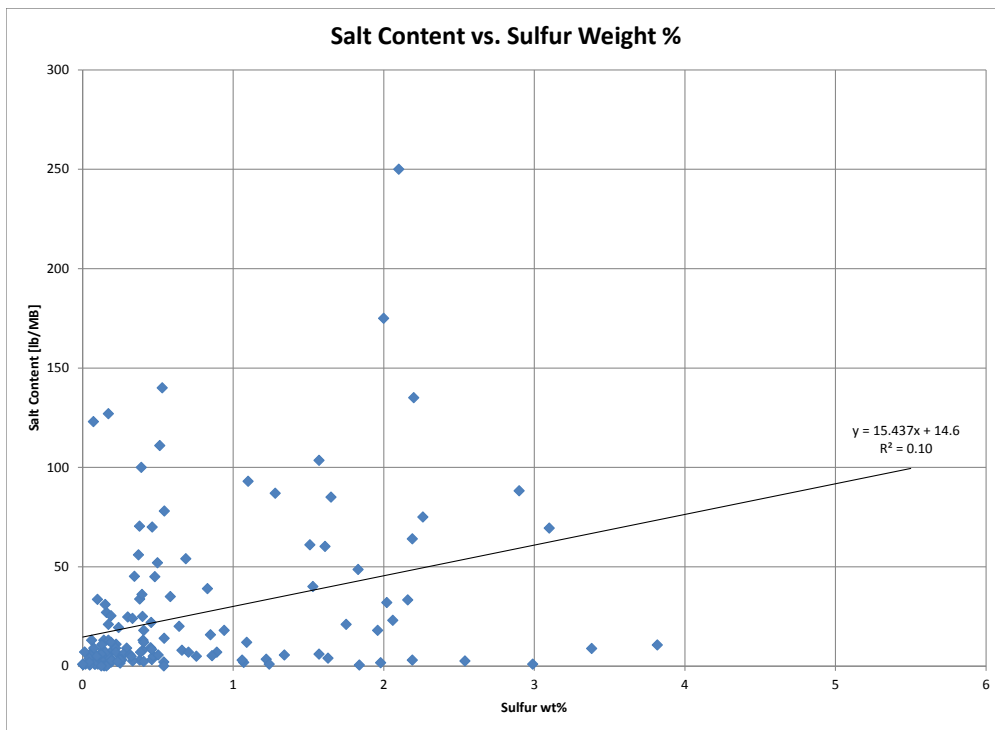
Figure A4.3-MET-4f
Chevron Refinery Modernization Project EIR
Mercaptan Sulfur Concentration vs. API Gravity



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apptx 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-4f_4g

Source: BP PLC; Total Oil Trading SA; Exxon Mobile Corporation;
Satoil; Eni S.p.A

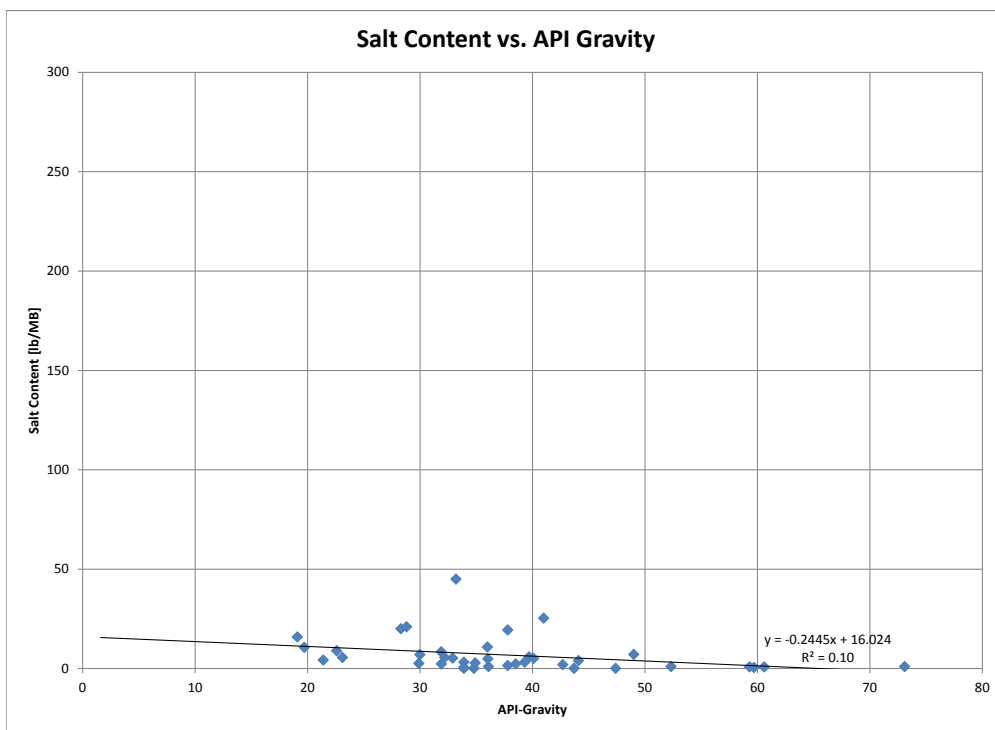
Figure A4.3-MET-4g
Chevron Refinery Modernization Project EIR
Mercaptan Sulfur Concentration vs. API Gravity for Mercaptan Sulfur < 250ppm



02.25.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-MET Draft\CVRN_A4.3-MET-4h_4i

Source: Capline; Exxon Mobile Corporation

Figure A4.3-MET-4h
Chevron Refinery Modernization Project EIR
Salt Content vs. Sulfur Weight %



dt.mo.year filepath

Source: Exxon Mobile Corporation

Figure A4.3-MET-4i
Chevron Refinery Modernization Project EIR
Salt Content vs. API Gravity

1.3 REFERENCES

- BP p.l.c. (BP). 2013. *BP Crudes Assays - Equity Crude Assays*. Accessed July 15, 2013.
<http://www.bp.com/productslistsearch.do?categoryId=16002740&contentId=7020300>.
- Capline. 2013. *Most Current Approved Assay List*. Accessed July 15, 2013.
<http://caplinepipeline.com/PDF/report1.pdf>.
- Eni S.p.A. (Eni). 2012. *Crude Assays Downloads*. Accessed July 15, 2013.
http://www.eni.com/en_IT/company/operations-strategies/trading-shipping/trading-shipping-crude-assays/trading-shipping-crude-assays-downloads.shtml.
- Environment Canada. 2008. *Catalogue - Oil Properties Documents*. Accessed July 15, 2013. http://www.etc-cte.ec.gc.ca/databases/OilProperties/oil_prop_e.html.
- Exxon Mobile Corporation (Exxon). 2013. *Crude Oils - Crude Oil information*. Accessed July 15, 2013.
http://www.exxonmobil.com/crudeoil/about_crudes_alphabet.aspx.
- Gerstman, Burt. 2014. *14: Correlation. StatPrimer (Version 6.4)*. Accessed February 27, 2014.
<http://www.sjsu.edu/faculty/gerstman/StatPrimer/correlation.pdf>.
- Satoil. 2013. *Crude Oil Assays*. Accessed July 15, 2013.
<http://www.statoil.com/en/OurOperations/TradingProducts/CrudeOil/CrudeOilAssays/Pages/default.aspx>.
- Taylor, Richard. 1990. *Interpretation of the Correlation Coefficient: A Basic Review*. JDMS 1:35-39.
- Total Oil Trading SA. (Total). 2003. *Crude Assays*. Accessed July 15, 2013.
http://www.totsa.com/pub/crude/crude_assays.php?rub=1.
- U.S. Environmental Protection Agency (EPA). 2011. *Addressing Air Emissions from the Petroleum Refinery Sector*. Accessed February 27, 2014.
<http://www.epa.gov/air/tribal/pdfs/presentationpetroleumrefineries14Dec11.pdf>.

University of Strathclyde. 2014. *Correlations: Direction and Strength*. Data Analysis in Educational Research, Unit 4 - Modelling Data Using Correlation and Regression. Accessed February 27, 2014.
<http://www.strath.ac.uk/aer/materials/4dataanalysisineducationalresearch/unit4/correlationsdirectionandstrength/>.

APPENDIX 4.3 - MIT

Mitigation Measures

APPENDIX 4.3-MIT MITIGATION MEASURES

The Draft EIR identified mitigation measures that would reduce emissions to less than significant levels (for CEQA purposes) and to "no net increase" (NNI) for purposes of achieving an applicant project objective. Several commenters raised questions about the quantitative reductions associated with each mitigation measure. This new Appendix 4.3 "shows the math" by explaining the quantitative emission reduction calculations that were used in the Draft EIR to reach the conclusion that, as mitigated, the Project would result in NNI in criteria air pollutants (CAPs) and risks from toxic air contaminants (TACs) for both the 93% and 100% Utilization Scenarios.

Other commenters also asked for more specificity about how mitigation measures were prioritized, and requested that physical emission reductions from Facility operations be prioritized ahead of the use of emission reduction credits (ERCs) for CAPs. All mitigation required to reduce risks from TACs were required to be achieved with offsetting physical emission reductions. The mitigation measures for CAPs listed physical emission reduction mitigation measures before ERCs, but did not clearly specify that physical reduction measures must be implemented ahead of ERCs. This prioritization of physical mitigation measures ahead of ERCs has been clarified with revised mitigation measures as explained in the Final EIR (see *Response B12-20*). Please note that the existing regulatory system does not allow the use of ERCs for TAC reductions; therefore, no ERCs were used for TAC reductions. While Mitigation Measure 4.3-5 allows for the use of ERCs for certain CAPs (respirable particulate matter, less than 10 microns in diameter [PM_{10}], fine particulate matter [$PM_{2.5}$], and reactive organic gas [ROG]), the mitigation for TAC risks under Mitigation Measure 4.3-6a are sufficient to achieve compliance with both the Bay Area Air Quality Management District's (BAAQMD) CEQA significance thresholds and NNI in TAC health impacts from Baseline conditions. This appendix also shows this prioritization of physical emission reduction mitigation measures, and identifies with specificity the Mitigation Measures that are required to achieve NNI for the 93% utilization level and the 100% utilization level—for CAPs and for health impacts from TACs.

Mitigation measure calculations are presented below for each CAP and for risk mitigations from diesel particulate matter (DPM) reductions from ships (which is the driver of health risks from TACs).

1.1 SULFUR OXIDES MITIGATION

This section describes the background for the sulfur oxides (SO_x) mitigation proposed as a part of the Chevron Refinery Modernization Project (Modernization Project, or Project) as well as the methods used to estimate the efficacy of that mitigation.

1.1.1 Background

As discussed in Mitigation Measure 4.3-9 of the Chevron Refinery Modernization Project Draft Environmental Impact Report (Draft EIR), *Section 4.3, Air Quality*, no additional SO_x mitigation is required under any of the 93% Utilization Scenarios. Please see *Response B12-20* for modifications to Mitigation Measure 4.3-9, as described above. Table 4.3-20 of the Draft EIR shows that very slight increases in SO_x (1–3 tons/year, depending on the scenario) would occur at the 100% utilization levels; thus, mitigation is required for the 100% Utilization Scenarios. The quantity of SO_x mitigation reductions required will depend on actual SO_x emissions, as reported annually in the BAAQMD Emissions Inventory. Any 1-year exceedance of the Baseline will trigger the need for additional SO_x mitigation, which will result in annual SO_x reductions below Baseline even if such exceedances do not recur in future years. Chevron shall achieve the NNI Project Objective for SO_x by implementing one or more of the following feasible mitigation measures:

Chevron shall increase the use of SO_x -reducing catalyst material that has been demonstrated to substantially reduce SO_x emissions in refinery flue gases. This is a feasible means of reducing SO_x in flue gas in the very low quantities needed to achieve the NNI Project Objective for SO_x , even under the highest SO_x emission scenario identified in Table 4.3-22 of the Draft EIR.

After implementing the above measure, if additional mitigation is required, Chevron will permanently retire ERCs to offset any SO_x over Baseline, to achieve the NNI Project Objective for SO_x . Permanent retirement of ERCs assures that these "banked" emissions cannot occur within Richmond or elsewhere in the Bay Area. If such reductions do not achieve the NNI objective, Chevron must curtail emissions to a level that achieves this objective.

1.1.2 Methodology and Results

This section explains the methodology and supporting information used to estimate SO_x emissions reductions associated with using the SO_x -reducing catalyst materials in the fluid catalytic cracker unit. The Facility used SO_x -reducing catalyst in order to comply with consent decree requirements for fluid

catalytic cracker SO_x emissions. The requirements that came in to effect in October 2006 were included under Condition #11066 (4.b) of the Title V Permit:

“4.b. The owner/operator of S-4285 shall not exceed 25 ppmvd SO₂ @ 0% O₂ on a 365 day rolling average and 50 ppmvd SO₂ @ 0% O₂ on a 7 day rolling average (effective 10/31/06). SO₂ emissions during startup, shutdown, or malfunction shall not be used in determining compliance with this 7 day rolling average SO₂ emission limit, provided that good air pollution control practices to minimize SO₂ emissions are implemented during these periods. (basis: consent decree case # 03-04650, date: 6/27/05)”

The 2005 monthly continuous emission monitoring system reports from January through May show representative fluid catalytic cracker operations prior to the consent decree limit (Chevron Data Transmittal #76 (Rev #1), Attachment #2, 2014), which demonstrates the high sulfur dioxide reduction performance of the SO_x-reducing catalyst when compared to the 2008-2010 continuous emission monitoring system reports (Chevron Data Transmittal #66, 2014). As shown in Tables A4.3-MIT-1 and A4.3-MIT-2 below, the average 24-hour and maximum 1-hour monitored SO_x concentration in fluid catalytic cracker exhaust emissions are much higher in 2005 (pre-requirement) and significantly lower in 2009 (post-requirement).

TABLE A4.3-MIT-1 COMPARISON OF MONITORED 24-HOUR AVERAGE SO_x CONCENTRATION BETWEEN 2005 AND 2009

Summary	24-Hour Average Monitored SO_x Concentration (ppm)		
	2005	2009	Difference
January	156.0	16.0	140.0
February	147.9	15.6	132.3
April	134.6	14.8	119.8
May	170.6	11.8	158.8
Average	152.3	14.6	137.7

Note: ppm = parts per million

The continuous emission monitoring system reports also present the estimated SO_x emissions based on the monitored concentration. Table A4.3-MIT-3 below presents the 2005 and 2009 average monthly emissions, the monthly SO_x reduction, and the projected annual SO_x reduction based on the monthly reduction for January, February, April, and May.

TABLE A4.3-MIT-2 COMPARISON OF MONITORED 1-HOUR MAXIMUM SO_x CONCENTRATION BETWEEN 2005 AND 2009

Summary	1-Hour Maximum Monitored SO _x Concentration (ppm)		
	2005	2009	Difference
January	186.3	19.2	167.1
February	177.2	18.5	158.8
April	180.1	18.5	161.5
May	200.7	15.2	185.6
Average	186.1	17.8	168.2

Note: ppm = parts per million

Source: Chevron Data Transmittal #76 (Rev #1), 2014; Chevron Data Transmittal #66, 2014.

TABLE A4.3-MIT-3 COMPARISON OF FLUID CATALYTIC CRACKER SO_x EMISSIONS BETWEEN 2005 AND 2009

Summary	2005 SO _x Emissions (tons)	2009 SO _x Emissions	Monthly SO _x Reduction	Projected Annual SO _x Reduction
January ^a	127.5	10.6	116.8	1,346
February	123.3	12.9	110.4	1,325
April	154.8	12.5	142.3	1,707
May	197.2	10.6	186.6	2,239
Average	150.7	12.8	137.8	1,654

^a Excluded the plant shutdown period.

Source: Chevron Data Transmittal #76 (Rev #1), 2014; Chevron Data Transmittal #66, 2014.

SO_x-reducing catalyst is a known control technology for fluid catalytic cracker sulfur dioxide listed in the BAAQMD Best Available Control Technology Manual.¹ As shown in Table A4.3-MIT-3, the use of SO_x-reducing catalyst for complying with consent decree requirements reduced the SO_x emissions by approximately 117 tons when comparing SO_x emissions from January 2009 to those in January 2005. The monthly SO_x emissions from February to May for 2005 and 2009 were also compared, and the reductions by month were used to calculate the average monthly SO_x emissions reduction (i.e., approximately 138 tons/month). The

¹ <http://hank.baaqmd.gov/pmt/bactworkbook/default.htm>.

average annual SO_x emissions reduction of 1,654 tons/year resulting from the use of SO_x-reducing catalyst was estimated by multiplying the average monthly SO_x emissions reduction by 12. The additional 1–3 tons/year of SO_x emissions reduction needed to achieve NNI for the 100% Utilization Scenarios is less than 0.2% of the estimated annual SO_x emissions reduction and can be achieved through the use of additional SO_x reducing catalyst in the fluid catalytic cracker unit.

In addition, Table A4.3-MIT-3 also presents the annual SO_x reduction projected based on the individual monthly SO_x reduction. The reduction ranges from 1,325 to 2,239 tons/year. Compared to the average annual SO_x reduction, the lowest annual reduction is about 329 tons lower, and the highest is 585 tons higher. The additional 1–3 tons/year of SO_x emissions reduction needed to achieve NNI is less than 0.3% of difference between the high and low. Therefore, this is a feasible SO_x mitigation measure.

1.2 PARTICULATE MATTER MITIGATION

This section describes the background for the PM₁₀ mitigation proposed as a part of the Modernization Project, and also the methods used to estimate the efficacy of that mitigation.

1.2.1 Background

As discussed in Mitigation Measure 4.3-7 of the Draft EIR *Section 4.3, Air Quality*, as revised in *Response B12-20*, no additional mitigation measures for PM₁₀ are required under any of the 93% Utilization Scenarios. PM₁₀ mitigation is required for the 100% Utilization Scenarios. The quantity of PM₁₀ mitigation reductions required will depend on actual PM₁₀ emissions, as reported annually in the BAAQMD Emissions Inventory. Any 1-year exceedance of the Baseline will trigger the need for additional PM₁₀ mitigation, which will result in annual PM₁₀ reductions below Baseline even if such exceedances do not recur in future years. As described in Mitigation Measure 4.3-7 of the Draft EIR, as revised in *Response B12-20*, Chevron shall reduce PM₁₀ emissions to below BAAQMD Significance Thresholds, and achieve the NNI Project Objective, by implementing the following feasible mitigation measure:

Chevron shall increase the size of the fluid catalytic cracker electrostatic precipitator (ESP) by approximately 50% to eliminate an existing ammonia injection process in the flue gas in the fluid catalytic cracker unit. The ammonia injection process currently occurs before the flue gas is passed through the ESP, and helps remove particulates from the flue gas. Ammonia is also produced by the refinery process, and the reuse of ammonia reduces the quantity of ammonia stored and transported as a product. The ESP

removes particulates from the flue gas with an electrical charge that causes the particulates to attach to a plate that is then periodically cleaned. Eliminating the ammonia injection treatment of the flue gas will significantly reduce PM_{10} emissions, with the potential for up to 50 tons/year of PM_{10} reductions (or approximately double the quantity of PM_{10} reductions required to achieve the NNI Project Objective for the scenarios depicted in Table 4.3-22 of the Draft EIR).

After implementing the above measure, if additional mitigation is required, Chevron will permanently retire ERCs to offset any PM_{10} over Baseline, to achieve the NNI Project Objective for PM_{10} . Permanent retirement of ERCs ensures that these "banked" emissions cannot occur within Richmond or elsewhere in the Bay Area. If such reductions do not achieve the NNI objective, Chevron must curtail emissions to a level that achieves this objective.

This section describes how the injection of ammonia using the current equipment configuration at the Facility results in a significant portion of particulate matter (PM) emissions that are captured as condensable PM. This section also discusses the methodology used to estimate PM_{10} emissions reductions from eliminating the ammonia injection by resizing the fluid catalytic cracker ESP, as discussed in the first mitigation measure above.

1.2.2 Methodology and Results

Emissions from fluid catalytic cracker units may result from the following mechanism: (1) catalyst fines that escape the catalyst recovery and air pollution control equipment; (2) sulfur trioxide and sulfuric acid, which originate from sulfur in fuels, a small fraction (typically 2–10%) of which may be converted to sulfur trioxide and/or sulfuric acid aerosols; (3) particulate and certain semi-volatile organic compounds that may be both generated and consumed during the combustion process and from mineral matter; and (4) ash and other incombustible residues in fuels and feed materials.

Many fluid catalytic cracker units are equipped with ESPs for catalyst removal and PM emissions control. Ammonia is often injected upstream of an ESP to enhance PM collection efficiency, reacting with sulfuric acid to form ammonium sulfate and/or ammonium bisulfate aerosols—"sticky" (i.e., charged) particles that combine with dust or particulates making the particulates larger and easier to remove.

This ammonia application generally results in some level of excess ammonia present in the vent gas at the stack. Gaseous ammonia can contribute to primary PM emissions via reaction with sulfur trioxide and/or sulfuric acid, if present in the stack gas, to form sulfate aerosols. Similar reactions may occur with

ammonia and hydrogen chloride gas, if present, to form ammonium chloride aerosols. Reducing ammonia injection requires upgrading of the ESP to ensure the same level of PM reduction.

Increasing the collection area by adding fields to an existing ESP can significantly improve PM collection efficiency. Under normal conditions in a well-designed ESP, most of the particles will be collected in the first (upstream) fields and ESP emissions are dominated by re-entrainment of fine dust from the last (downstream) field of the ESP during rapping. Adding new fields downstream of an existing ESP can be very effective, as can simply adding collection area similar in design to the existing ESP. A properly designed field addition to the existing ESP should achieve similar or better PM reductions compared with ammonia injection.

The presence of ammonia downstream of the ESP results in a significant portion of PM that is measured as condensable PM emissions (Chevron Data Transmittal #74 (Rev #1), 2014). Increasing the size of the fluid catalytic cracker ESP by approximately 50% counteracts the effect of eliminating ammonia injection and not conditioning the particulates. The PM emissions reduction from this mitigation measure was quantified in two scenarios using the 2011 ammonia injection quantity of 223,187 pounds (lbs) from the 2011 report year Toxic Release Inventory report² and ammonia slip factor of 50% from the 2010 BAAQMD source test. The detailed calculations and BAAQMD source test data are presented below.

In the first scenario, the ammonia emissions of 111,850 lbs/year due to ammonia slip were assumed to become condensable PM₁₀, which results in PM₁₀ emissions of 55.9 tons/year, as presented in Table A3.4-MIT-4 below. This approach is conservative because ammonia is lighter than the most common ammonia-based condensable PM₁₀ emissions (ammonium sulfate), and thus underestimates the PM₁₀ reduction. As an additional layer of conservatism, the PM₁₀ reductions of 55.9 tons/year due to elimination of the ammonia injection process were rounded down to 50 tons/year (Chevron Data Transmittal #74 (Rev #1), 2014). To achieve NNI for all Modernization Project scenarios, a PM₁₀ emissions reduction of 31 tons/year is required, which is less than the PM₁₀ reduction due to this measure.

In the second scenario, the South Coast Air District Management 2013 Final Environmental Assessment (EA) (SCAQMD, 2003) was used to estimate PM

² 2011 was the first year reporting the full-year ammonia injection quantity after the BAAQMD's ammonia slip source test. 2012-2013 data were not used because of the crude unit fire shutdown.

reductions. This assessment indicates that condensable emissions from fluid catalytic cracker unit consist primarily of ammonium sulfate, which forms both in the sampling apparatus and in the atmosphere as the results of both ammonia (due to ammonia slip) and sulfur trioxide and/or sulfuric acid gases being presented in the stack. The 2003 Final EA also mentioned that it is reasonable to expect that all of the ammonia will react to form ammonium sulfate when ammonia is the limiting component. Consistent with the Final EA, in this calculation, all ammonia was assumed to convert into ammonium sulfate (217 tons/year) and is measured as condensable PM₁₀, as presented in the Table A4.3-MIT-4, below. Therefore, by eliminating ammonia injection, a reduction of 217 tons/year of condensable PM₁₀ emissions would be obtained under this scenario; which is approximately 7 times the quantity of PM₁₀ reductions required to achieve the NNI Project Objective for the 100% Utilization Scenarios depicted in Table 4.3-22 of the Draft EIR.

TABLE A4.3-MIT-4 QUANTIFICATION OF CONDENSABLE PM REDUCTION

Scenario	Ammonia Injection ^a (lbs)	Ammonia Slip Factor ^b	Ammonia Slip (lbs)	Condensable PM (lbs)		Condensable PM (ton)	
				As Ammonia ^c	As Ammonium Sulfate ^{d,e,f,g}	As Ammonia ^h	As Ammonium Sulfate ^h
Unmitigated	223,187	50%	111,594	111,594	433,920	55.9	217
Mitigated ⁱ	0		0	0	0	0	0
Condensable PM ₁₀ Reduction				111,594	433,920	55.9	217

^a 2011 ammonia injection quantity from the 2011 report year Toxic Release Inventory report.

^b From 2010 BAAQMD source test.

^c Assuming all ammonia slip emissions become condensable PM₁₀ emissions

^d Calculated by: $\text{Ammonia Injection lb} \times \text{Ammonia Slip Factor \%}$

^e Assumed all ammonia (molecular weight = 17 lbs/lb-mole) slip was converted to ammonium sulfate (molecular weight = 132 lbs/lb-mole) and is measured as condensable PM₁₀.

^f The reaction stoichiometry dictates that 2 moles of ammonia form 1 mole of ammonium sulfate.

^g Calculated by: $\text{Ammonia Slip} \times 132 \frac{\text{lb}}{\text{lb-mole}} \div 17 \frac{\text{lb}}{\text{lb-mole}} \div 2 \frac{\text{mole NH}_4}{\text{Mole (NH}_4)_2\text{SO}_4}$

^h Calculated by: $\text{Ammonium Sulfate or Ammonia Emissions} \frac{\text{lbs}}{\text{year}} \div 2000 \frac{\text{lbs}}{\text{ton}}$

ⁱ The mitigation measure that increases the size of the fluid catalytic cracker ESP by approximately 50% to eliminate an existing ammonia injection process in the flue gas in the fluid catalytic cracker unit.

Source: Chevron Data Transmittal #74 (Rev #1), 2014.

1.3 ROG MITIGATION

This section describes the background for the ROG mitigation proposed as a part of the Modernization Project, and also the methods used to estimate the efficacy of that mitigation.

1.3.1 Background

As discussed in Mitigation Measure 4.3-5f in *Section 4.3.6.2.4* on pages 4.3-92 through 94 of the Draft EIR, and modified by *Response B12-20*, additional ROG mitigation is required under all Modernization Project scenarios, in quantities ranging from 12 to 65 tons/year. ROG reductions required under the 93% Project Scenario are 25 tons/year, and those required under the 100% Utilization Scenario are 54 tons/year, as indicated in Table 4.3-22. ROG emissions increase with Facility utilization levels, with only the lowest utilization level—for Very Heavy Crude Oil (included in Table 4.3-20 of the Draft EIR)—having a net decrease in ROG relative to the Baseline.

Reducing ROG requires lowering volatile organic compound (VOCs) emissions from the Facility. A very high percentage of these VOCs are emitted (or assumed to be emitted for BAAQMD rulemaking and inventory purposes) from miscellaneous small sources, such as the valves and flanges on pipes at the Facility. The most significant opportunity to reduce VOCs at the Facility is to install fixed domes over the large tanks used to store feedstocks and products. The tanks already have floating roofs to reduce VOCs, but adding a fixed dome further reduces VOC emissions by eliminating the effect of wind. Chevron has proposed as Project Design Feature to install a dome on Tank 3225 prior to commencement of Project operations, which is estimated to reduce ROG emissions by 2.1 tons/year. As mitigation, the EIR further requires Chevron to install two additional domes on Tanks 3189 and 3202 within 3 years following the commencement of Project operations, which is estimated to reduce ROG emissions by an additional 3.9 tons/year. Please see Mitigation Measure 4.3-5f, as revised by *Response B12-20*. Chevron has also identified an additional 27 tanks that could be domed, representing cumulative VOC reduction opportunities of approximately 63.7 tons/year. Chevron recently provided new information on tank dome reductions (Chevron Data Transmittal #75 (Rev #3) 2014); however, this new information has not been verified by the BAAQMD. Prior to granting mitigation credit for any tank doming project, a permit will have to be filed with the BAAQMD and the actual reductions will have to be verified by the BAAQMD during the permitting process.

As described on page 4.3-93 of the Draft EIR, the quantity of ROG mitigation reductions required will depend on actual ROG emissions, as reported annually in the BAAQMD Emissions Inventory. Any 1-year exceedance of the Baseline will

trigger the need for additional ROG mitigation, which will result in annual ROG reductions below Baseline even if such exceedances do not recur in future years. As described in the Draft EIR, Chevron shall reduce ROG emissions to below BAAQMD Significance Thresholds, and to ensure no net increase in Project ROG emissions above Baseline ROG emissions, by implementing Mitigation Measure 4.3-5f as revised in *Response B12-20*. As revised, this mitigation measure prioritizes physical mitigation (e.g., doming tanks).

After implementing the above measure, if additional mitigation is required, Chevron will permanently retire ERCs to offset any ROG over Baseline, to achieve the NNI Project Objective for ROG Permanent retirement of ERCs ensures that these "banked" emissions cannot occur within Richmond or elsewhere in the Bay Area. If such reductions do not achieve the NNI objective, Chevron must curtail emissions to a level that achieves this objective.

The evaluation that was conducted to confirm the ROG reduction of these mitigation measures follows.

1.3.2 Methodology and Results

This section explains the methodology used to estimate ROG emissions reductions associated with installation of tanks domes, as discussed in the first mitigation measure above. The emissions reductions from the tank domes were estimated by modeling the post- Modernization Project throughput for each tank with the United States Environmental Protection Agency (EPA) TANKS v4.09D program. This program was used to determine emissions reductions for all tank domes during the permitting process.

TANKS is a Windows-based computer software program developed by the EPA for estimating VOC and hazardous air pollutant emissions from both fixed roof and floating roof storage tanks. TANKS is based on the emission estimation procedures from Chapter 7 of the EPA's Compilation of Air Pollutant Emission Factors (AP-42) (EPA 2006b).³ TANKS uses chemical, meteorological, roof fitting, and rim seal data to generate emissions estimates for several types of storage tanks—including vertical and horizontal fixed roof tanks, internal and external floating roof tanks, domed external floating roof tanks, and underground tanks.

For each tank, the reduced ROG emissions (i.e., with tank dome) were modeled with TANKS V4.09D using the "domed external floating roof tank" option, and emissions without tank a dome were modeled using the "external floating roof tank" option. The modeled material, roof fitting, and rim seal data for each tank

³ <http://www.epa.gov/ttnchie1/software/tanks/>.

were provided in Chevron Data Transmittal #58 (2013) and Chevron Data Transmittal #75 (Rev #1, 2014). The TANKS default meteorological data at San Francisco International Airport (San Francisco AP, California) were used for the model. The tank ROG emissions reduction or the difference in ROG emissions between the domed and undomed tanks for each tank is summarized in the tables below. The cumulative ROG emissions reductions are also summarized in these tables.

1.4 NITROGEN OXIDES MITIGATION MEASURES

This section describes the background for the nitrogen oxides (NO_x) mitigation proposed as a part of the Modernization Project, and also the methods used to estimate the efficacy of that mitigation.

1.4.1 Background

Mitigation Measure 4.3-5a in *Section 4.3.6.2.4* of the Draft EIR, as revised by *Response B12-20*, describes one Project Design Feature and two mitigation measures that reduce NO_x emissions:

1. **Suezmax Engine Upgrades:** To achieve its commitment of NNI in CAP emissions, Chevron has included an emission-reduction Project Design Feature for shipping in the Project. The Project Design Feature is to upgrade engines on two new Chevron Suezmax ships with low-emission engine technologies that result in fewer emissions than required under applicable emission control laws for ships built in 2014. As described in Draft EIR *Section 4.3.6.2.4*, Chevron is removing three Suezmax vessels from West Coast service; these will be replaced with two newly built Suezmax ships in 2014. Chevron has proposed as a Project Design Feature to upgrade the engines on the new Chevron Suezmax ships with low-emission engine technologies that result in fewer emissions than required under applicable emission control laws for ships built in 2014.
2. **Cleaner Tug Boats:** Chevron shall fund and require installation of cleaner main and auxiliary engines on up to six tug boats serving the Long Wharf as well as non-Chevron facilities. Tugs are used to push barges, escort ships and barges, and assist ships and barges into berths. The Long Wharf is primarily served by six tugs. Under applicable California Air Resources Board (CARB) rules, four of these tugboats are required to be retrofitted with cleaner engines meeting designated Tier 2 emission standards, over a phase-in period ending as late as 2022. The remaining two tugboats are required to be retrofitted with cleaner engines meeting designated Tier 3 emission

TABLE A4.3-MIT-5 SUMMARY OF TANK DOME ROG EMISSIONS REDUCTIONS

Tank No.	Service^a	Reduction by Tank (tons/year)	Cumulative Reduction^b (tons/year)
3189	Gasoline	2.6	2.6
3202	Hydrocracker Feed	1.3	3.9
1491	Alky C4 Feed	2.4	6.3
3213	Gasoline	2.5	8.8
3134	Gasoline	2.6	11.4
1688	Gasoline	2.0	13.4
1514	Fluid Catalytic Cracker Gasoline	4.1	17.5
3133	Gasoline	2.6	20.1
3071	Gasoline	2.6	22.7
992	Gasoline	1.7	24.4
3197	Hydrodesulfurized Naphtha	2.1	26.5
1687	Gasoline	2.0	28.5
990	Gasoline	1.8	30.3
991	Gasoline	1.7	32.0
3073	Isomerase	7.4	39.4
1296	Fluid Catalytic Cracker Gasoline	3.1	42.5
3191	Gasoline	1.5	44.0
1287	Reformate	1.2	45.2
3220	Recovered Oil	3.4	48.6
3127	Recovered Oil	1.0	49.6
1488	Gasoline	0.9	50.5
1459	Gasoline	1.3	51.8
3180	Alky C4 Feed	2.5	54.3
3074	Recovered Oil	1.6	55.9
3076	Recovered Oil	1.8	57.7
3193	Alky C4 Feed	2.3	60.0
3128	Recovered Oil	1.0	61.0
3201	Alky C4 Feed	1.6	62.6

TABLE A4.3-MIT-5 SUMMARY OF TANK DOME ROG EMISSIONS REDUCTIONS

Tank No.	Service^a	Reduction by Tank (tons/year)	Cumulative Reduction^b (tons/year)
3075	Gasoline	1.1	63.7

^a This table does not restrict changes in tanks service as would otherwise be allowed by BAAQMD regulations and operating permits.

^b There are differences in tank dome reductions based on throughput for each Project utilization scenario. However, the differences are small enough that these values are representative for all Project utilization scenarios.

^c There is an additional 2.1 tons/year reduction from installation of a dome on Tank 3225, which is a Project Design Feature.

Source: Chevron Data Transmittal #75 (Rev #1), 2014; Chevron Data Submittal #75 (Rev #3), 2014.

standards in 2017. Chevron shall fund the installation of new, cleaner Tier 4 main engines and Tier 3 auxiliary engines for the number of tugs required to remain below the BAAQMD NO_x significance threshold. This mitigation measure would result in NO_x emission decreases of up to 107 tons/year, in excess of the 75-tons/year increase over Baseline that would occur under the highest NO_x emissions scenario (100% Utilization, Lightest Crude) included in Table 4.3-22.

3. **Parcel Size Optimization:** Chevron shall increase the average parcel size (the average ship cargo volume that is delivered or picked up from the Long Wharf) to reduce the number of ship calls, and thereby reduce DPM emissions from shipping. This mitigation measure would also result in NO_x emission decreases of up to 59 tons/year, a substantial portion of the 75-tons/year increase over Baseline that would occur under the highest NO_x emissions scenario (100% Utilization, Lightest Crude) included in Table 4.3-22.

After implementing the above measure, if additional mitigation is required, Chevron will permanently retire ERCs to offset any NO_x over Baseline, to achieve the NNI Project Objective for NO_x. Permanent retirement of ERCs ensures that these "banked" emissions cannot occur within Richmond or elsewhere in the Bay Area. If such reductions do not achieve the NNI objective, Chevron must curtail emissions to a level that achieves this objective.

1.4.2 Methodology and Results

This section explains the methodology used to estimate NO_x emissions reductions associated with each of the NO_x mitigation measures.

1.4.2.1 Suezmax Engine Upgrades

Under current regulations, the replacement of the Suezmax ships require installation of main ship and auxiliary ship engines with a level of emission control called Tier 2 under the International Maritime Organization (IMO) requirements (IMO, 2008)⁴ for new engines that have been adopted by the EPA. These Tier 2 emissions are incorporated into the Baseline (resulting in a decrease in NO_x from these ships). As a Project Design Feature, Chevron would install technologies that would lower emissions further than what is required for ships built in 2014 as follows: (1) the main ship diesel engines would be upgraded to meet the IMO Tier 3⁵ standard (versus the required Tier 2), which would reduce NO_x emissions from the main ship engine beyond those required by regulation; and (2) auxiliary engines would be upgraded with turbogenerators to meet requirements more stringent than IMO Tier 3 standards (versus the required Tier 2), which would eliminate DPM emissions (a TAC emission) and reduce NO_x emissions.

The emission reduction features of this Project Design Feature were calculated using the same methodology as was used in the estimation of shipping emissions, as described in Draft EIR *Appendix 4.3-SHP*. The reduction in NO_x emissions from this mitigation measure are 51 tons/year for the Project 93% Scenario and the Max Light 93% Scenario and 55 tons/year for the 100% Project Scenario and the 100% Max Light Scenario.

1.4.2.2 Cleaner Tug Boats

The emissions reductions from the tug boat engine replacements were estimated based on primary data for the 2008-2010 operation of the six tugs that would be replaced using the same emission estimation methodology as described for tug boats (Chevron Data Transmittal #26F, 2014), accounting for emission reductions achieved by the new Tier 4 main and Tier 3 auxiliary engines. Tug boat NO_x emission reductions were calculated only for the transiting mode; emissions during maneuvering or idling were conservatively not accounted for. If this were accounted for, emissions reductions would be even greater. 2008-2010 transiting information for the tug boats was used to estimate the hours of travel by transiting leg. The reduction in NO_x emissions from this mitigation measure are 97, 104, 101, and 107 tons/year for the 93% Project Scenario, 100% Project Scenario, 93% Max Light Scenario, and 100% Max Light Scenario, respectively.

⁴ The Tier 2 MARPOL Annex IV emission standard (applicable to new engines from 2012 to 2015) requirement for a main diesel engine is 14.4 grams NO_x per kilowatt-hour for engines less than 130 revolutions per minute (rpm).

⁵ The Tier 3 MARPOL Annex VI emission standard (applicable to new engines in IMO defined emission control areas from 2016 on) requirement for a main diesel engine is 3.4 grams NO_x per kilowatt-hour for engines less than 130 rpm.

1.4.2.3 Parcel Size Optimization

The emissions reductions from the parcel size optimization mitigation were estimated using the shipping model (Chevron Data Transmittal #26F, 2014). Emission estimates were calculated in the shipping model for the 100% Light Max Scenario by increasing parcel size by reasonable amounts. Parcel size was optimized for Chevron Suezmax, and Product ships. The parcel size as a percentage of capacity before and after the optimization is shown in Table A4.3-MIT-6 below:

TABLE A4.3-MIT-6 SHIP PARCEL SIZE AS A PERCENT OF CAPACITY BEFORE AND AFTER PARCEL SIZE OPTIMIZATION

Operator	Ship Type	Engine Type	Pump Type	Before Optimization		After Optimization	
				Load	Discharge	Load	Discharge
Chevron	Aframax	SSD	Steam	12.0%	0.0%	60.0%	0.0%
	Suezmax	SSD	Steam	0.0%	59.5%	0.0%	80.0%
	Product	SSD	Diesel	30.5%	17.8%	70.0%	60.0%
			Steam	51.7%	14.9%	70.0%	60.0%

Note: SSD – slow speed diesel engine

Source: Chevron Data Transmittal #73 (Rev #3), 2014.

Similarly, parcel size was optimized for Barge 2D and Barge 4D, as shown in Table A4.3-MIT-7.

TABLE A4.3-MIT-7 BARGE PARCEL SIZE AS A PERCENT OF CAPACITY BEFORE AND AFTER PARCEL SIZE OPTIMIZATION

Barge Type	Tug Engine Type	Before Optimization		After Optimization	
		Load	Discharge	Load	Discharge
BARGE1D	HSD	81.0%	0.0%	81.0%	0.0%
	MSD	87.4%	2.4%	87.4%	2.4%
BARGE2D	HSD	82.4%	7.2%	82.4%	7.2%
	MSD	72.4%	17.6%	80.0%	17.6%
BARGE3D	MSD	85.9%	0.9%	85.9%	0.9%
BARGE4D	MSD	50.1%	0.0%	80.0%	0.0%

Note: HSD = high speed diesel engine; MSD = medium speed diesel engine

Source: Chevron Data Transmittal #73 (Rev #3), 2014.

Optimized average parcel sizes were all less than average ship capacity estimates. Because of the increased parcel size for ships and barges, the annual calls will be reduced by 97 calls for ships, and by 10 calls for barges, respectively, for the 100% Light Max Scenario. Table A4.3-MIT-8 shows for the 100% Light Max Scenario, approximate estimates by ship and barge type, calls reduced, emissions available for mitigation per call, and associated NO_x emission reductions. NO_x emission reductions per call shown in Table A4.3-MIT-8 are estimates of emissions available for reduction from parcel size optimization, including all transit and maneuvering mode emissions and non-pumping at-berth emissions; pumping mode and stand-by tug emissions are not affected by parcel size optimization and are excluded from these estimates.

TABLE A4.3-MIT-8 REDUCTIONS IN ANNUAL CALLS AND NO_x EMISSIONS DUE TO PARCEL SIZE OPTIMIZATION

Ship Type	100% Light Max Scenario Annual Calls	Reduced Annual Calls Due to Parcel Size Optimization	NO_x Emissions per Call Available for Mitigation (tons/call)	NO_x Emission Reductions (tons/year)
SuezMax	145	28	0.31	8.5
Products	208	63	0.70	44.5
AfraMax	43	6	0.87	5.2
BARGE2D	207	9	0.08	0.7
BARGE4D	2	1	0.35	0.2
Totals	605	107		59.2

Source: Chevron Data Transmittal #73 (Rev #3), 2014.

The reductions in NO_x emissions from this mitigation measure are 53, 58, 56, and 59 tons/year for the 93% Project Scenario, 100% Project Scenario, 93% Max Light Scenario, and 100% Max Light Scenario, respectively.

1.5 QUANTIFICATION OF TOXIC AIR CONTAMINANT MITIGATION MEASURES AND RESULTING RISKS

This section describes the background for the TACs mitigation proposed as a part of the Modernization Project, and also the methods used to estimate the efficacy of that mitigation. It also presents the revised health risk assessment (HRA) that is based upon the TACs reduction.

Only cancer risk is considered in this section because, as described in *Appendix 4.3-HRA* and *Section 4.3.6.2.5* of the Draft EIR and further described in Master Response 4: Toxic Air Contaminants, only cancer risk exceeds the NNI health impact threshold for all scenarios. Non-cancer chronic and acute and $PM_{2.5}$ concentrations were all below the NNI threshold in residential locations without Project mitigation.

As described in Draft EIR *Section 4.3.6.2.5* (page 102), for operational emissions, inhalation was determined in the HRA to be the critical exposure pathway, and was evaluated in detail. A thorough multipathway TAC impact assessment conducted as part of the Final EIR affirmed the findings of the Draft EIR screening level assessment that non-inhalation pathways do not change or meaningfully affect the significance of the health impacts analysis. Inclusion of the effects of the multipathway assessment would not result in an exceedance of the TAC health impact NNI commitment. Please see Master Response 4: Toxic Air Contaminants.

1.5.1 Background

The incremental, unmitigated TAC emissions and risks resulting from the Project are presented and discussed in *Section 4.3.6.2.5* of the Draft EIR and *Section 1.7* of *Appendix 4.3-HRA*. Mitigation Measure 4.3-6a includes four mitigation measures (inclusive of the Suezmax replacement Project Design Feature) to reduce DPM emissions and health risks. Mitigation Measure 4.3-6a has been modified, as provided in Master Response 4: Toxic Air Contaminants, to add further specificity and to clarify that if health risk from Project TAC emissions remains above Baseline levels on a net basis as determined by the health risk assessment required by Mitigation Measure 4.3-6b, then Chevron shall curtail Facility operations as necessary to ensure that such health risk is reduced to Baseline levels on a net basis.

These mitigation measures are described in further detail below:

1. **Suezmax Engine Upgrades:** To achieve its commitment of NNI in CAP emissions from shipping, Chevron has included an emission-reduction Project Design Feature for shipping in the Project. The Project Design Feature, which is to be implemented prior to the start of Project operations, is to upgrade engines on two new Chevron Suezmax ships with low emission engine technologies that result in fewer emissions than required under applicable emission control laws for ships built in 2014. As described in Draft EIR *Section 4.3.6.2.4*, Chevron is removing three Suezmax vessels from West Coast service; these will be replaced with two newly built Suezmax ships in 2014. Chevron has proposed as a Project Design Feature to upgrade the engines on the new Chevron Suezmax ships with low-emission engine

technologies that result in fewer emissions than required under applicable emission control laws for ships built in 2014. This measure shall be implemented as described in Master Response 4: Toxic Air Contaminants, under Mitigation Measure 4.3-6a(1)(ii).

2. **Cleaner Tug Boats:** Chevron shall fund and require installation of cleaner main and auxiliary engines on up to six tug boats serving the Long Wharf as well as non-Chevron facilities. Tugs are used to push barges, escort ships and barges, and assist ships and barges into berths. The Long Wharf is primarily served by six tugs. Under applicable CARB rules, four of these tugboats are required to be retrofitted with cleaner engines meeting designated Tier 2 emission standards, over a phase-in period ending as late as 2022. The remaining two tugboats are required to be retrofitted with cleaner engines meeting designated Tier 3 emission standards in 2017. Chevron shall fund the installation of new, cleaner Tier 4 main engines and Tier 3 auxiliary engines for the number of tugs required to reduce DPM, and achieve the NNI Project Objective.

As provided in Master Response 4: Toxic Air Contaminants, under Mitigation Measure 6a(1)(i), prior to the start of Project operations, Chevron shall fund and require installation of cleaner main and auxiliary engines on one tug boat serving the Long Wharf as well as non-Chevron facilities.

3. **Parcel Size Optimization:** Chevron shall increase the average parcel size (the average ship cargo volume that is delivered or picked up from the Long Wharf) to reduce the number of ship calls, and thereby reduce DPM emissions from shipping.
4. **Shore Power:** Chevron shall install electric shore power, and require one or more of the ships using the Long Wharf to use such shore power in lieu of continuing to burn diesel fuel while berthed. This measure, also referred to as "cold ironing," has been demonstrated to substantially reduce DPM-related emissions (and associated risks) from shipping (CARB 2006). This measure would require construction activities in and near the Long Wharf that would result in secondary impacts that are beyond the scope of this EIR. Before implementing this mitigation measure, Chevron shall apply to the City and other responsible agencies for necessary permits, and shall complete the environmental process required under CEQA. Implementation of this measure is not required to achieve the performance standard included in this Mitigation Measure 4.3-6a.

In the event that the Project is projected to exceed the health risk associated with the 93% Utilization Scenario, as described in Master Response 4: Toxic Air Contaminants under Mitigation Measure 4.3-6a(2), Chevron shall implement a combination of the measures i, ii, iii, or iv to reduce DPM,

inclusive of $PM_{2.5}$ to reduce health risk from all Project TAC emissions to below BAAQMD significance criteria and to ensure no net increase of health impacts from Project TAC emissions over Baseline levels. As described in Master Response 4, Mitigation Measure 4.3-6(a)(2)(iv), if, after implementing the above discussed measures, health impacts from Project TAC emissions remains above Baseline levels on a net basis, as determined by the health risk assessment required by Mitigation Measure 4.3-6b, then Chevron shall curtail Facility operations as necessary to ensure that such health risk is reduced to Baseline levels on a net basis.

1.5.2 Methodology and Results

This section explains the methodology used to estimate DPM emissions reductions associated with each of the four mitigation measures that affect TACs and the HRA risks.

Because DPM is used to estimate health risks over a 70-year exposure period for residents, future DPM emissions must be estimated. Due to regulatory changes as described in *Appendix 4.3-REG*, the DPM emissions per unit activity, or emission factor in the future will be decreasing. As described in *Appendix 4.3-SHP*, and as found in a report prepared by Chevron's contractor, ICF International (Chevron Data Transmittal #26F, 2014), the change in DPM from the Baseline took into account the fact that there would be mandated reductions in DPM emission factors for vessels with or without the Modernization Project. Accordingly, future estimated Project emissions were compared Baseline emissions developed using fleet turnover and emission factor assumptions that assure that these 40-year (i.e., worker) and 70-year (i.e., resident) estimates correctly accounted for future changes to vessel fleets (e.g. turnover to new tug engines in compliance with CARB Harbor Craft replacement requirements in 17 CCR Section 93118.5) and fuel regulations (e.g. OGV fuel sulfur content requirements per CARB regulations in 13 CCR Section 2299.2) that reduces particulate and sulfur emission factors in the absence of the Modernization Project. In this manner, it was assured that the Modernization Project did not take credit for reductions in emissions that would have resulted from current regulatory requirements even without the Project.

In addition, the emissions reductions are weighted by the 70-year age-specific sensitivity factors (ASFs) as described in footnote 21 in *Section 1.5.1.1* of *Appendix 4.3-HRA*. The incorporation of ASFs is recommended in the Office of Environmental Health Hazard Assessment's Technical Support Document (Cal/EPA, 2009) and by the BAAQMD (BAAQMD, 2010). This approach accounts for an "anticipated special sensitivity to carcinogens" of infants and children. Cancer risk estimates or emissions are weighted (i.e., increased) by a factor of 10

for exposures that occur from the third trimester of pregnancy to 2 years of age and by a factor of 3 for exposures that occur from 2 through 15 years of age. No weighting factor (i.e., an ASF of 1, which is equivalent to no adjustment) is applied to ages 16 to 70 years. As described in footnote 21 in *Section 1.5.1.1* of *Appendix 4.3-HRA*, health impacts were only evaluated for residential and worker receptors. Using the 70-year ASF-weighted emissions for worker receptors, as done in the Draft EIR, is a conservative approach since worker exposures do not have childhood ASF adjustments like those incorporated into the 70-year risk factors. In addition, health impacts to the 70-year residents are expected to be higher than those of the other populations given the length of assumed exposures and the use of the ASF adjustment.

Chevron provided emissions for shipping for the 93% Utilization Project Scenario, and the 100% Utilization Project Scenario (Chevron Data Transmittal #26D, 2014). For those scenarios where Chevron provided shipping emissions, shipping risks were directly estimated from the emissions following the methods detailed in Appendix 4.3-HRA. However, Chevron did not provide emissions for the 89% Utilization Project Scenario. To estimate shipping risks for the 89% Scenario, there were two options: (1) scaling risks based on the differences in incremental shipping volumes; or (2) scaling risks based on the ratio of total shipping volumes. It was determined that scaling risks based on the differences in incremental shipping volumes yielded more conservative (i.e., higher) risk values. Therefore, in order to estimate risks from shipping for the 89% Utilization Project Scenario and provide an appropriately high level of mitigation, risks were scaled from the 93% Utilization Project Scenario based on the differences in incremental shipping volumes between the two scenarios (93% Utilization and 89% Utilization) and the Baseline.

1.5.2.1 Suezmax Engine Upgrades

Under current regulations, the replacement of the Suezmax ships require installation of main ship and auxiliary ship engines with a level of emission control called Tier 2 under the IMO requirements (IMO 2008)⁶ for new engines that have been adopted by the EPA. These Tier 2 emissions are incorporated into the Baseline (resulting in a decrease in NO_x from these ships). As a Project Design Feature, per Mitigation Measure 4.3-6a(1)(ii), Chevron would install technologies that would lower emissions further than what is required for ships built in 2014, as follows: (1) the main ship diesel engines would be upgraded to meet the IMO

⁶ The Tier 2 MARPOL Annex IV emission standard (applicable to new engines from 2012 to 2015) requirement for a main diesel engine is 14.4 grams NO_x per kilowatt-hour for engines less than 130 rpm.

Tier 3⁷ standard (versus the required Tier 2), which would reduce NO_x emissions from the main ship engine beyond those required by regulation; and (2) auxiliary engines would be upgraded with turbogenerators to meet requirements more stringent than IMO Tier 3 standards (versus the required Tier 2), which would eliminate DPM emissions (a TAC emission) and reduce NO_x emissions. See Master Response 4: Toxic Air Contaminants.

The emission reduction features of this Project Design Feature were calculated using the same methodology as was used in the estimation of shipping emissions, as described in Draft EIR *Appendix AQ-SHP*.

The reductions in 70-year DPM emissions from this mitigation measure are 0.97 ton/year for the 93% Project Scenario and the 93% Max Light Scenario and 1.05 tons/year for the 100% Project Scenario and the 100% Max Light Scenario.

1.5.2.2 Cleaner Tug Boats

The emissions reductions from the tug boat engine replacements were estimated based on primary data for the 2008–2010 operation of the six tugs that would be replaced using the same emission estimation methodology as described for tug boats in Chevron Data Transmittal #26F (2014), accounting for emission reductions achieved by the new Tier 4 main and Tier 3 auxiliary engines. 2008–2010 transiting information for the tug boats was used to estimate the fraction of reductions that would occur within the HRA area and to allocate emission reductions to the transit legs within the HRA area. The tug boats that will be replaced are operated out of the Port of Richmond, whereas the shipping model assumes that tug boats originate from Point Blunt on Angel Island (Chevron Data Transmittal #26F, 2014). In order to maintain consistency in spatial allocations between the shipping model emissions and the shipping mitigation emission reductions, all emissions reductions that occurred on the transit leg from the Port of Richmond to the Long Wharf (Leg W) were conservatively spatially allocated to Leg Y (Angel Island to the Long Wharf), as shown in Figure A4.3-HRA-15 of Draft EIR *Appendix 4.3-HRA*. Any reduction on Leg Y would have lower risk reductions than those on Leg W. Maneuvering emission reductions were estimated based on the assumption that all Chevron ships would be assisted during maneuvering by mitigated tugs only.

⁷ The Tier 3 MARPOL Annex VI emission standard (applicable to new engines in IMO defined emission control areas from 2016 on) requirement for a main diesel engine is 3.4 grams NO_x per kilowatt-hour for engines less than 130 rpm.

Tug boat mitigation emission reductions by leg are shown in Table A4.3-MIT-9.

TABLE A4.3-MIT-9 70-YEAR WEIGHTED TUG BOAT DPM EMISSIONS REDUCTIONS BY LEG

Pollutant	Scenario	Leg X	Y	Z-NB	Z-SB	Maneuvering	Emission Reductions (tons/year, 70-year ASF-weighted)
70-year DPM	93% Project Scenario	0.49	1.51	0.19	0.19	0.35	2.73
	100% Project Scenario	0.52	1.62	0.21	0.21	0.38	2.94
	93% Light Max Scenario	0.51	1.57	0.20	0.20	0.37	2.85
	100% Light Max Scenario	0.54	1.67	0.21	0.21	0.39	3.02

Source: Chevron Data Transmittal #73 (Rev #3), 2014.

1.5.2.3 Parcel Size Optimization

Emission estimates were calculated in the shipping model by increasing parcel size by reasonable amounts. Parcel size was optimized for Chevron Suezmax, and Product ships. The parcel size as a percentage of capacity before and after the optimization is shown in Table A4.3-MIT-10.

TABLE A4.3-MIT-10 SHIP PARCEL SIZE AS A PERCENT OF CAPACITY BEFORE AND AFTER PARCEL SIZE OPTIMIZATION

Operator	Ship Type	Engine Type	Pump Type	Before Optimization		After Optimization	
				Load	Discharge	Load	Discharge
Chevron	Aframax	SSD	Steam	12.0%	0.0%	60.0%	0.0%
	Suezmax	SSD	Steam	0.0%	59.5%	0.0%	80.0%
	Product	SSD	Diesel	30.5%	17.8%	70.0%	60.0%
			Steam	51.7%	14.9%	70.0%	60.0%

Note: SSD – slow speed diesel engine

Source: Chevron Data Transmittal #73 (Rev #3), 2014.

Similarly, parcel size was optimized for Barge 2D and Barge 4D, as shown in Table A4.3-MIT-11.

TABLE A4.3-MIT-11 BARGE PARCEL SIZE AS A PERCENT OF CAPACITY BEFORE AND AFTER PARCEL SIZE OPTIMIZATION

Barge Type	Tug Engine Type	Before Optimization		After Optimization	
		Load	Discharge	Load	Discharge
BARGE1D	HSD	81.0%	0.0%	81.0%	0.0%
	MSD	87.4%	2.4%	87.4%	2.4%
BARGE2D	HSD	82.4%	7.2%	82.4%	7.2%
	MSD	72.4%	17.6%	80.0%	17.6%
BARGE3D	MSD	85.9%	0.9%	85.9%	0.9%
BARGE4D	MSD	50.1%	0.0%	80.0%	0.0%

Note: HSD = high speed diesel engine
MSD = medium speed diesel engine

Source: Chevron Data Transmittal #73 (Rev #3), 2014.

Optimized average parcel sizes were all less than average ship capacity estimates. Because of the increased parcel size for ships and barges, the annual calls will be reduced by 97 calls for ships, and by 10 calls for barges, respectively, for the 100% Light Max Scenario. Annual 70-year DPM emission reductions of 1.2 tons were estimated for the parcel size optimization mitigation for the 100% Light Max Scenario (Chevron Data Transmittal #73 (Rev #3), 2014). Table A4.3-MIT-12 shows for the 100% Light Max Scenario, estimates by ship and barge type, calls reduced, emissions available for mitigation per call, and associated 70-year DPM emission reductions. 70-year DPM emission reductions per call shown in Table A4.3-MIT-12 are estimates of emissions that are inside the HRA boundary and are available for reduction from parcel size optimization, including all low- and high-speed transit, assist and escort tug boats, and non-pumping at-berth emissions; pumping mode and stand-by tug emissions are not affected by parcel size optimization and are excluded from these estimates.

The reduction in 70-year DPM emissions from this mitigation measure are 1.105, 1.190, 1.153, and 1.224 tons/year for the 93% Project 93% Scenario, 100% Project 100% Scenario, 93% Max Light 93% Scenario, and 100% Max Light 100% Scenario, respectively.

TABLE A4.3-MIT-12 REDUCTIONS IN ANNUAL CALLS AND DPM EMISSIONS DUE TO PARCEL SIZE OPTIMIZATION

Ship Type	100% Light Max Scenario Annual Calls	Reduced Annual Calls Due to Parcel Size Optimization	DPM Emissions per Call (tons/call, 70-year ASF-weighted)	DPM Emission Reductions (tons/year, 70-year ASF-weighted)
SuezMax	145	28	0.0144	0.399
Products	208	63	0.0111	0.700
AfraMax	43	6	0.0170	0.102
BARGE2D	207	9	0.0019	0.017
BARGE4D	2	1	0.0081	0.005
Totals	605	107		1.224

Source: Chevron Data Transmittal #73 (Rev #3), 2014

1.5.2.4 Shore Power

For the Shore Power mitigation measure (i.e., Draft EIR Mitigation Measure 4.3-6a2), revised in Master Response 4: Toxic Air Contaminants as Mitigation Measure 4.3-6a(2)(iii), Chevron would be required to install additional electric power infrastructure to service the Long Wharf, and one or more of the ships using the Long Wharf to use such shore power in lieu of continuing to burn diesel fuel while berthed. This measure, also referred to as "cold ironing," has been demonstrated to substantially reduce DPM-related emissions (and associated risks) from shipping. This measure would require construction activities in and near the Long Wharf that would result in secondary impacts that are beyond the scope of this EIR. Before implementing this mitigation measure,

Chevron would be required to apply to the City and other responsible agencies for necessary permits, and the Shore Power project would be required to comply with CEQA. Because shore power is not needed to achieve the reasonably foreseeable 93% Utilization Scenario, it is considered unlikely to be implemented as mitigation.

Emission reductions are estimated for this mitigation based on the assumption that product ships owned and operated by Chevron would be the only ships that are cold-ironed at-berth. In order to utilize shore power, a ship must be compatible with the shore power electricity infrastructure. Since Chevron-owned Product ships are owned and operated by Chevron, Chevron has the ability to ensure that these ships are retrofitted, if necessary, for shore power

compatibility. Chevron-owned Product ships also account for a considerable percentage of at-berth hoteling emissions, so the use of shore power on Chevron-owned Product ships has the potential to attain significant emission reductions. Chevron-owned SuezMax ships were not considered for shore power because DPM emissions from SuezMax auxiliary engines are already controlled by the use of turbogenerators in place of diesel internal combustion engines. Chevron-owned Aframax ships account for a much smaller fraction of at-berth hoteling emissions than Chevron-owned Product ships and were therefore not considered in the shore power mitigation emission reduction estimate. It is noted that auxiliary engine emissions are reduced by cold-ironing; boiler power is not replaced by shore power.

The use of shore power at berth allows a vessel to turn off its auxiliary engines once electric power from the shore to the vessel has been established. The CARB shore power regulation⁸ allows 3 or 5 hours per call of auxiliary engine-on time for vessels complying with the CARB shore power regulation. Tankers are not required to use shore power per the CARB shore power regulation. Due to the complexities and safety considerations associated with tanker cold-ironing, it was assumed that auxiliary engines are operational for 6 hours of at-berth time per call; for the remaining time at-berth, the auxiliary engines are assumed to be turned off.

The parameters needed to estimate shore power mitigation emission reductions are as follows:

- **Hoteling time:** Chevron-owned product ship hoteling time is estimated to be 45 hours (Chevron Data Transmittal #73 (Rev #3), 2014).
- **Percent of auxiliary engine time-on at berth:** Based on the assumption of 6 hours of auxiliary engine time-on at-berth and an average of 45 hours of hoteling time per call, it was estimated that auxiliary engines would be turned on for 13% of at-berth time. It was assumed in the calculation of emission reductions that for both the hoteling mode and pumping mode, auxiliary engines would emit 13% of the emissions were shore power not used. In other words, an 87% emissions reduction due to shore power was estimated for Chevron-owned Product ship hoteling and pumping emissions.
- **Percent of Product ship emissions from Chevron ships:** Chevron-owned Product ships account for 61% of all product ship hoteling emissions and 37% of all product ship pumping emissions (Chevron Data Transmittal #73 (Rev #3), 2014).

⁸ Title 17 of the California Code of Regulations, Section 93118.3, Chapter 1, Subchapter 7.5, Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port.

The emission reductions resulting from the shore power mitigation measures are shown in Table A4.3-MIT-13.

TABLE A4.3-MIT-13 70-YEAR WEIGHTED DPM EMISSIONS REDUCTIONS DUE TO SHORE POWER MITIGATION MEASURES

Scenario	70-year DPM Emissions (tons/year)					
	Product Ship At-Berth Emissions Without Shore Power Mitigation			At-Berth Emission Reduction Achieved By Shore Power Mitigation		
	Hoteling	Pumping	Total	Hoteling	Pumping	Total
93% Project Scenario	2.71	0.19	2.91	1.48	0.06	1.54
100% Project Scenario	2.92	0.21	3.13	1.59	0.07	1.66
93% Light Max Scenario	3.07	0.23	3.30	1.67	0.08	1.75
100% Light Max Scenario	3.18	0.24	3.42	1.73	0.08	1.81

Source: Chevron Data Transmittal #73 (Rev #3), 2014; Chevron Data Transmittal #26D, 2014.

Only DPM reductions are estimated here. However, this shipping mitigation measure also reduces NO_x, as described in *Section 4.3, Air Quality*, of the Draft EIR, and SO_x, which is not quantified for the purpose of the Draft EIR.

Table A4.3-MIT-14 summarizes the total emissions reductions resulting from shipping mitigations for the 100% Max Light Scenario (Chevron Data Transmittal #73, 2014).

TABLE A4.3-MIT-14 SUMMARY OF 70-YEAR WEIGHTED DPM EMISSIONS REDUCTIONS DUE TO SHIPPING MITIGATION MEASURES

Mitigation Measure	Emission Reductions (tons/year, 70-year, ASF-weighted)			
	93% Light Max Scenario	100% Light Max Scenario	93% Project Scenario	100% Project Scenario
Suezmax Engine Upgrades	0.97	1.05	0.97	1.05
Cleaner Tug	2.85	3.02	2.73	2.94
Parcel Size Optimization	1.15	1.22	1.11	1.19
Cold Ironing	1.54	1.66	1.75	1.81

Source: Chevron Data Transmittal #73 (Rev #3), 2014.

Table A4.3-MIT-15 provides the emissions reductions for each shipping mitigation measure by area for the 100% Max Light Scenario.

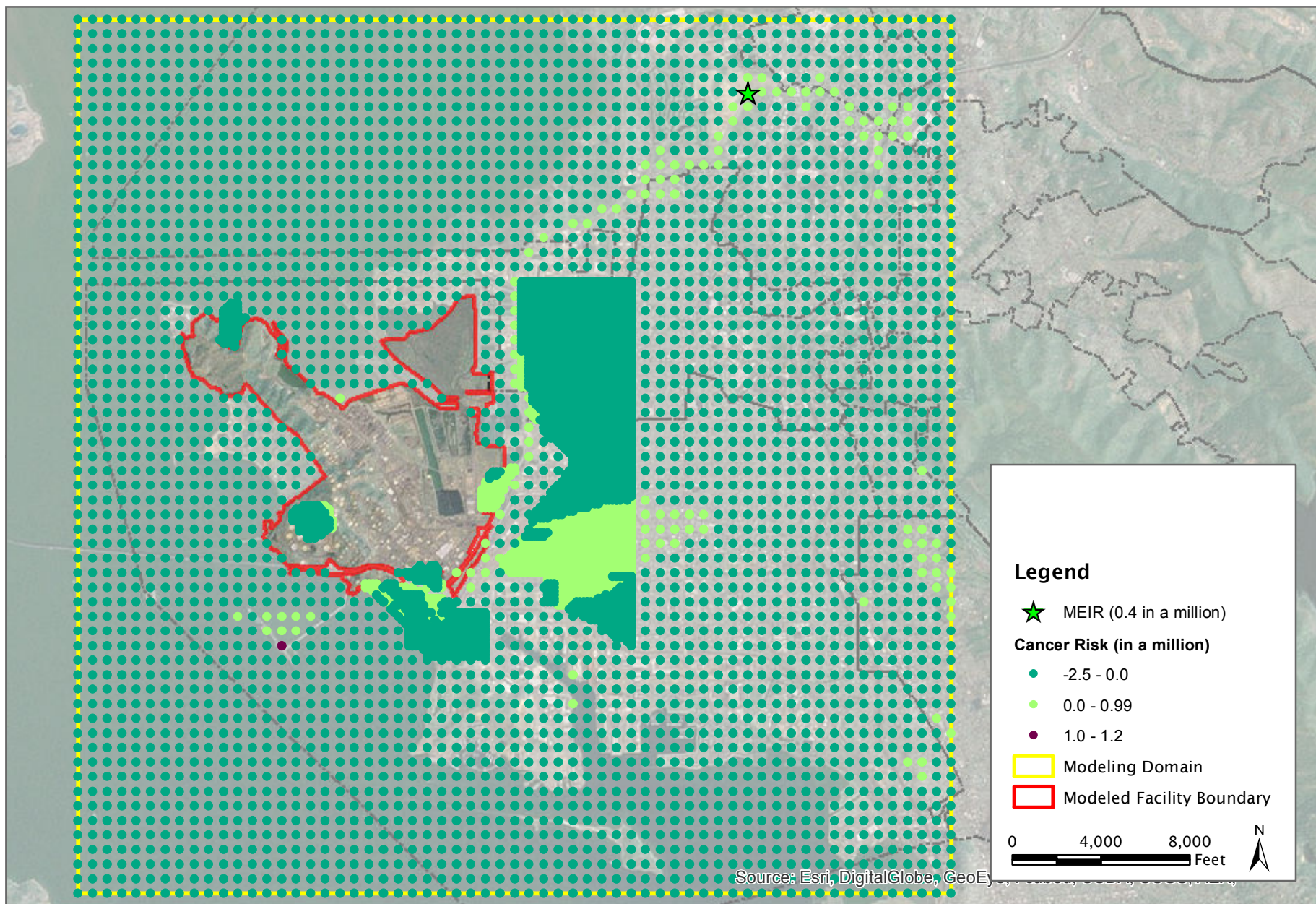
TABLE A4.3-MIT-15 70-YEAR WEIGHTED DPM EMISSIONS REDUCTIONS BY AREA DUE TO SHIPPING MITIGATION MEASURES

Mitigation Measure	Emissions Reduction Area	Emission Reductions (tons/year, 70-year, ASF-weighted)			
		93% Light Max Scenario	100% Light Max Scenario	93% Project Scenario	100% Project Scenario
Suezmax Engine Upgrades	At-berth	0.91	0.98	0.91	0.98
	Maneuvering	0.04	0.04	0.04	0.04
	Transiting	0.03	0.03	0.03	0.03
Cleaner Tug	Maneuvering	0.37	0.39	0.35	0.38
	Transiting	2.48	2.63	2.38	2.56
Parcel Size Optimization – Tug	Maneuvering	0.26	0.27	0.24	0.26
	Transiting	0.46	0.49	0.44	0.47
Parcel Size Optimization – Ship And Barge	At Berth	0.35	0.37	0.33	0.36
Parcel Size Optimization – Ship	Transiting	0.09	0.10	0.09	0.09
Cold Ironing	At Berth	1.54	1.66	1.75	1.81

Source: Chevron Data Transmittal #73 (Rev #3), 2014.

93% Project Scenario Shipping Mitigation Requirements

The 70-year risk under the 93% Project Scenario was 4 in a million (incorporating the Project Design Feature of the retrofitted Suezmax ships). Because the replacement of one tug, as required under Mitigation Measure 4.3-6a(1)(i) as provided in Master Response 4: Toxic Air Contaminants, reduces impacts by one fourth of the Project Scenario, the DPM reduction provided is sufficient to reduce risks to below 1 in a million. Retrofitted tugs are very effective in reducing risks because the tugs travel closer to the community than do the ships that visit the Richmond Long Wharf. In other words, the DPM that is reduced by retrofitting a single tug would result in NNI health impacts. A figure of the risks in the community that result from the retrofitting of one tug under the Project 93% Utilization Scenario, 100% hydrogen plant utilization is shown in Figure A4.3-MIT-1.



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Air Quality\Risk\Figures\CVRN_A4.3-MIT-1_NNI Project 93% Cancer with One Tug.mxd

Note: Risk reductions from the installation of the PDF tank dome were not included in the HRA.
The shipping PDF (replacement of Suezmax ships) was included in the HRA.

Figure A4.3-MIT-1
Chevron Refinery Modernization Project EIR
Mitigated Cancer Risk at 93% Utilization (Project Case)
Replacing Engines for One Tug

The risks are a function of TAC emissions and location and dispersion of those TAC emissions. As described in *Appendix 4.3-HRA*, Table A4.3-HRA-18B, the DPM from marine operations, in general, and tugs in particular, drive the risk for the Project Scenario. Table A4.3-MIT-16 below shows the Baseline emissions, 70-year weighted DPM emissions for the 93% Project Scenario with and without the Project Design Feature, the Project with a single tug retrofit, the Project with multiple tug retrofits, and the Project with parcel size optimization. Note that the Project increment emissions presented in Table A4.3-MIT-16 are 70-year ASF-weighted while that presented in Table A4.3-HRA-4 are first year differences in emissions. Weighted emissions were always used for risk assessments. As shown in Table A4.3-MIT-16, the 70-year ASF-weighted DPM incremental emissions dropped from 0.99 ton/year without Project Design Feature to 0.004 ton/year with Project Design Feature, indicating the Project Design Feature's effectiveness in reducing DPM emissions. This Project Design Feature of upgrading SuezMax engines is described in *Section 1.5.2.1* of this appendix. However, as shown in Table A4.3-HRA-17b, this Project Design Feature does not reduce risks associated with DPM emissions from shipping as effectively. As shown in Table A4.3-HRA-17b, the Project incremental cancer risks associated with shipping are 4.0 in a million without Project Design Feature and 3.4 in a million with Project Design Feature.

TABLE A4.3-MIT-16 70-YEAR WEIGHTED DPM EMISSIONS FOR THE 93% PROJECT SCENARIO

Scenario	70-Year ASF-Weighted DPM Emissions (tons/year)		
	Baseline	Project	Change from Baseline
93% Project Scenario without Project Design Feature	13.47	14.46	0.99
93% Project Scenario plus Project Design Feature	13.47	13.47	0.004
One Tug Retrofit	13.47	13.02	-0.451
Parcel Size Optimization	13.47	12.39	-1.08

Note: The Baseline and Project emissions presented here include the emissions for the two additional shipping transit segments (x_e series and x_e_2 series, as shown in Figure A4.3-MIT-2 below, also called last link) beyond the HRA domain. These additional transit segments were included as a conservative measure to ensure that emissions outside the HRA zone had a de minimis impact on risk to receptors. As a result, the Project increment emissions are slightly different from what's presented in Chevron Data Transmittals #26B and #26D.

Sources: Chevron Data Transmittal #73 (Rev #3), 2014; Chevron Data Transmittal #26B, 2014; Chevron Data Transmittal #26D, 2014.

To be more specific, Figure A4.3-MIT-2 shows the locations of the DPM emissions reductions associated with the shipping Project Design Feature, which total 0.986 tons/year or 1,968 lbs/year, as shown in Table A4.3-MIT-16. Out of the 1,968 lbs/year of reductions, 1,822 lbs occur at Berth 4 and correspond to SuezMax ship hoteling. However, as shown in Table A4.3-MIT-17, the ship emissions and emission reductions were assumed to occur at a much higher height (23 meters) compared to the height of the residents and workers (1.8 meters). In addition, the high temperature (618 Kelvin (K), or 653 degrees Fahrenheit (°F)) of the exhaust compared to the ambient temperature results in additional plume rise at the release point. Consequently, the large emission reductions at Berth 4 do not translate to a correspondingly large risk reduction.

The rest of the emission reductions due to upgrading SuezMax engines are more spread out and occur at locations more distant from the community, with reduction of 70 lbs/year at the maneuvering area, 26 lbs/year on Leg Y, 29 lbs/year on Leg X, and 20 lbs/year total for the two last links. Because these emission reductions are more spread out and farther away from the community, they also do not result in a significant risk reduction.

As a comparison, Figure A4.3-MIT-2 also shows the locations of the DPM emissions reduction associated with retrofitting one tug, which is a total of 0.455 ton/year or 909 lbs/year, as shown in Table A4.3-MIT-16. Out of the 909 lbs/year of reduction, 116 lbs occur at the maneuvering area, and at a much lower release height (7.3 meters), as shown in Table A4.3-MIT-17. In addition, 502 lbs/year of reduction occur on Leg Y, not too far from the residential and worker populations, and also at a much lower release height. Consequently, because the emission reductions due to retrofitting tugs occur near the community and also emit DPM at a lower release height, these reductions are more effective in reducing the risk to NNI.

TABLE A4.3-MIT-17 MODELED SHIPPING SOURCE PARAMETERS

Emission Source Categories	Modeled Release Height (meters)	Modeled Temperature (K)
SuezMax Ships	23 (at Berth 4) or 28.8 (maneuvering or transiting)	618 (at Berth 4)
Tugs	7.3 (maneuvering or transiting)	--

Sources: Chevron Data Transmittal #26A, 2014; Chevron Data Transmittal #26C (Rev #3), 2014.

The installation of a tank dome on Tank 3225 as a Project Design Feature also reduces ROG and TAC emissions. ROG emission reductions due to the tank dome

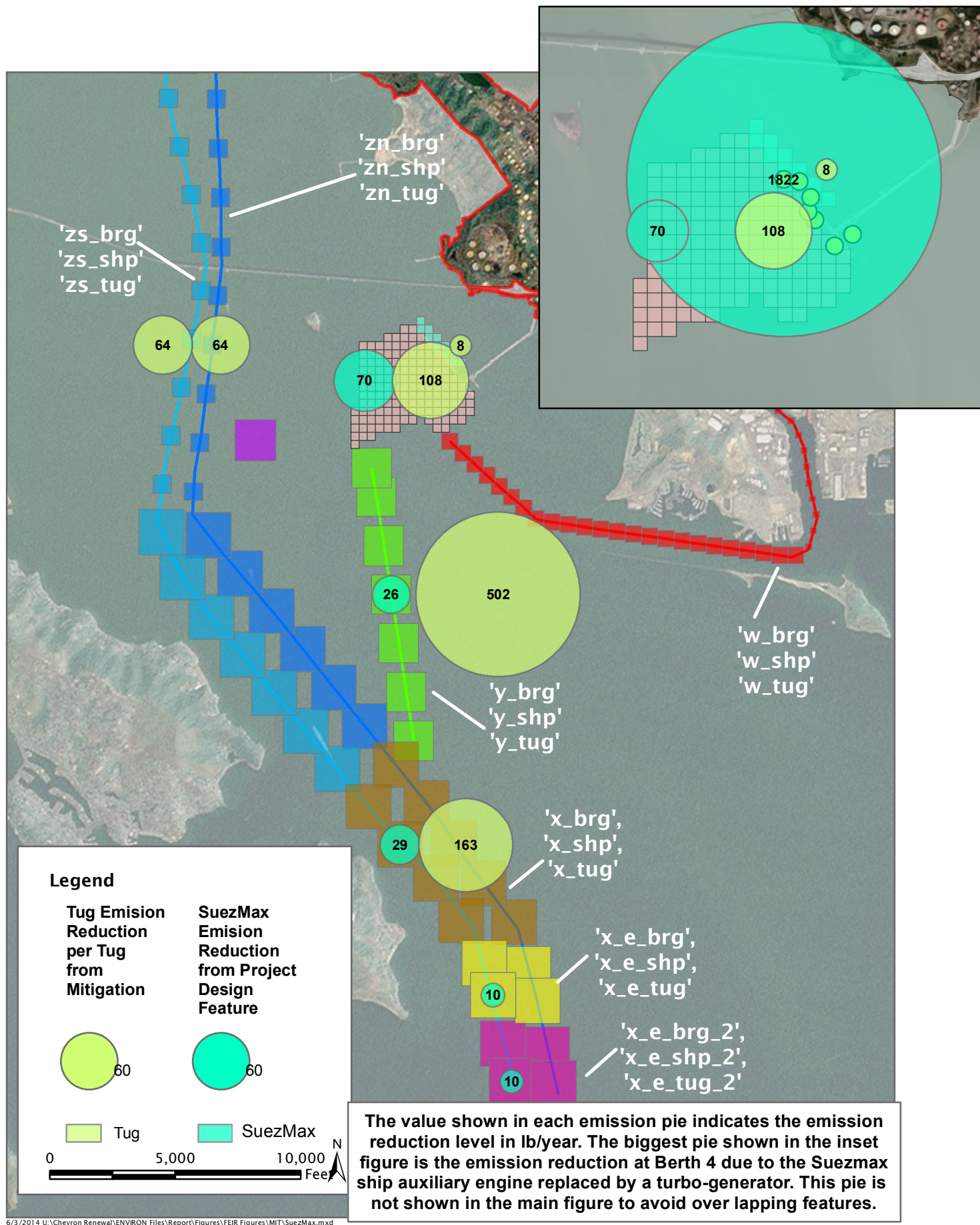


Figure A4.3-MIT-2
Chevron Refinery Modernization Project EIR
Shipping: Emission Reductions due to PDF and NNI Mitigation

Project Design Feature are discussed in *Section 1.3* above and quantified in Table A4.3-MIT-5. Chevron recently provided new information on tank dome reductions (Chevron Data Transmittal #75 (Rev#3), 2014); however, this new information has not been verified by the BAAQMD. Because no risk reduction is assumed from the doming of tanks, any change will have no effects on risks or required mitigation.

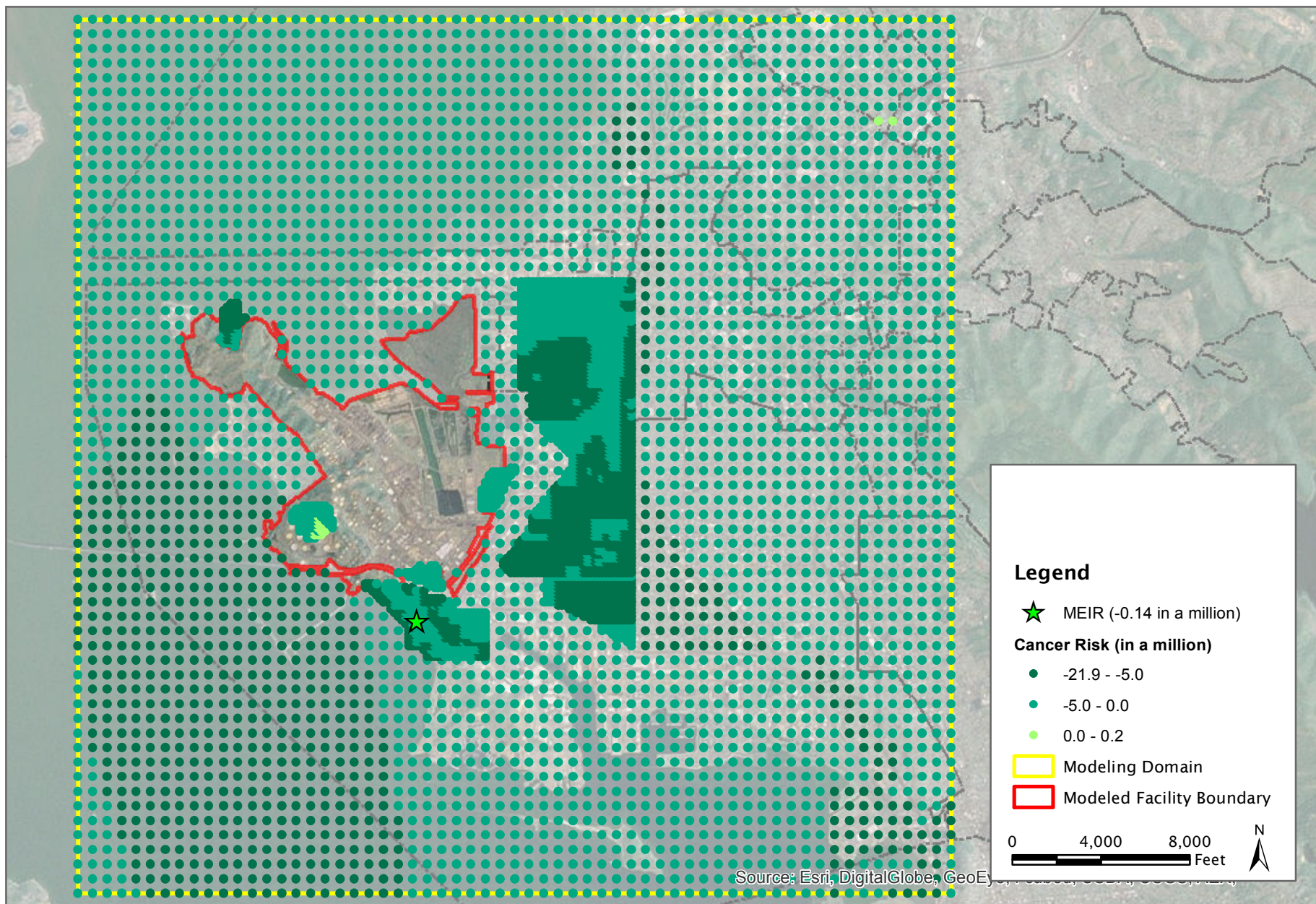
It is noted, that the tank dome Project Design Feature and mitigation measure will also reduce TAC emissions, including emissions of benzene, toluene, xylene, ethylbenzene, cumene, naphthalene, hexane, and 2,2,4-trimethylpentane. However, because DPM emissions are the primary contributor to health risks, the reductions in TAC emissions associated with the tank dome Project Design Feature and mitigation measure have conservatively not been included in the mitigated risk result shown in Figure A4.3-MIT-1. As discussed in footnote 1 of *Appendix 4.3-HRA*, these tanks were modeled at the closest location to the residents. Were the emissions reductions modeled at this location, the reduction in health impacts would be overestimated.

100% Project Scenario Shipping Mitigation Requirements

Reaching NNI beyond this 93% Project Scenario will require implementation of additional shipping mitigation measures.

The 70-year weighted DPM emissions under the 100% Max Shipping Scenario result in risks at the Maximally Exposed Residential Receptor of 12.1 in a million (incorporating the Project Design Feature of the new, retrofitted SuezMax ships). In order to ensure that the risks are under the NNI level of 1 in a million (or one-twelfth of the risks in the Project Scenario), the risks would have been reduced to one-twelfth the risks in the 100% Max Shipping Scenario. This result would be achieved by combining the SuezMax shipping reductions already incorporated into the 93% Project Scenario, with parcel optimization and five Tugboat Retrofits in addition to the one already retrofitted under the 93% Project Scenario with mitigation. It is possible that fewer than six Tugboat Retrofits would be required to reduce the risks to NNI throughout the community. Figure A4.3-MIT-3 shows the risks that result from the mitigated 100% Utilization Scenario and Table A4.3-MIT-18 shows the changes in DPM emissions from the Baseline associated with the Project Design Feature and the shipping Mitigation Measures for the 100% Max Light Scenario.

Finally, as an additional potential measure, the EIR identifies shore power as a feasible additional mitigation measure.



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Air Quality\Risk\Figures\CVRN_A4.3-MIT-3_NNI Project 100% (Max Light) Cancer with PO and Six Tugs.mxd

Note: Risk reductions from the installation of the PDF tank dome were not included in the HRA.
The shipping PDF (replacement of Suezmax ships) was included in the HRA.

Figure A4.3-MIT-3
Chevron Refinery Modernization Project EIR
Mitigated Cancer Risk at 100% Utilization (Max Light)
Parcel Size Optimization Plus Replacing Engines for Six Tugs

TABLE A4.3-MIT-18 70-YEAR WEIGHTED DPM EMISSIONS FOR THE 100% MAX LIGHT SCENARIO

Scenario	70-Year ASF-Weighted DPM Emissions (tons/year)		
	Baseline	Project	Change from Baseline
100% Max Light Scenario without Project Design Feature	13.47	16.36	2.89
100% Max Light Scenario plus Project Design Feature	13.47	15.30	1.83
Six Tug Retrofits (inclusive of the one tug already retrofitted under the 93% Project Mitigation Scenario)	13.47	12.27	-1.20
Parcel Size Optimization	13.47	14.11	0.63

Sources: Chevron Data Transmittal #73 (Rev #3), 2014; Chevron Data Transmittal #26B, 2014; Chevron Data Transmittal #26D, 2014.

Mitigation Requirements for 89% Utilization Scenario (100% Replacement Hydrogen Plant Utilization)

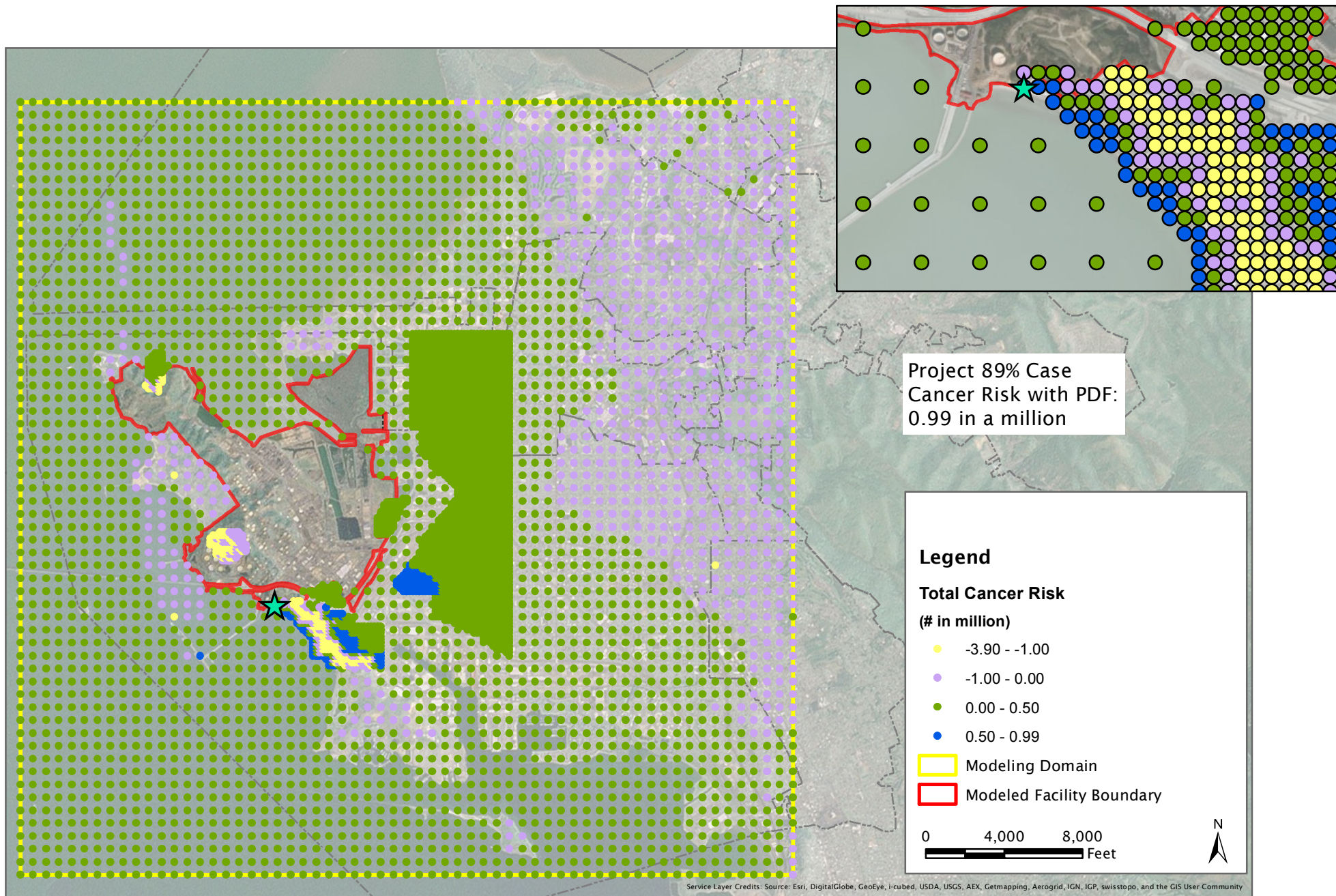
If the Facility operated at a utilization of 89%, for the crude unit and all gas oil gateway units and 100% hydrogen plant utilization, the unmitigated risks would be at the NNI without any mitigation, inclusive of the Suezmax Project Design Feature. Specifically, while the cancer risk is calculated to be 0.99, this rounds to a cancer risk of 1.0, or exactly the threshold for NNI. The reduction in emissions relative to the 93% Project Scenario is shown in Table A4.3-MIT-19. Figure A4.3-MIT-4 shows the risks the result for the 89% Utilization Scenario.

TABLE A4.3-MIT-19 70-YEAR WEIGHTED DPM EMISSIONS FOR THE 89% PROJECT SCENARIO WITH 100% HYDROGEN PLANT PRODUCTION

Scenario	70-Year ASF-Weighted DPM Emissions (tons/year)		
	Baseline	Project	Change from Baseline
89% Project Scenario	13.47	12.83	-0.064

Note: the Baseline and Project emissions presented here include the emissions for the two additional shipping transit segments (x_e series and x_e_2 series as shown in Figure A4.3-MIT-2 above, also called last link) beyond the HRA domain. These additional transit segments were included as a conservative measure to ensure that emissions outside the HRA zone had a de minimis impact on risk to receptors. As a result, the Project increment emissions are slightly different from what's presented in Chevron Data Transmittals #26B and #26D.

Sources: Chevron Data Transmittal #73 (Rev #3), 2014; Chevron Data Transmittal #26B, 2014; Chevron Data Transmittal #26D, 2014.



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\FEIR Figures\AQ\CVRN_4.3-11_Project 89% Cancer with PDF Residents and Workers.mxd

Note: Risk reductions from the installation of the PDF tank dome were not included in the HRA. The shipping PDF (replacement of Suezmax ships) was included in the HRA.

Figure A4.3-MIT-4
Chevron Refinery Modernization Project EIR
Modernization Project Cancer Risk
at 89% Utilization (Project Case)

1.6 REFERENCES

- Bay Area Air Quality Management District (BAAQMD). 2010. *Air Toxics NSR Program Health Risk Screening Analysis (HRSA) Guidelines*.
http://www.baaqmd.gov/~media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx California Air Resources Board (CARB). 2006. *Evaluation of Cold-Ironing Ocean-Going Vessels at California Ports*. March. <http://www.arb.ca.gov/ports/marinevess/documents.htm>
- California Environmental Protection Agency (Cal/EPA). 2009. *Technical Support Document for Cancer Potency Factors: Methodologies for Derivation, Listing of Available Values, and Adjustments to Allow for Early Life Stage Exposures*. May. Website:
http://oehha.ca.gov/air/hot_spots/2009/TSDCancerPotency.pdf.
- Chevron Data Transmittal #26A: Shipping AERMOD Data, 2014.
- Chevron Data Transmittal #26B (Rev #4): Shipping Baseline, 2014.
- Chevron Data Transmittal #26C (Rev #3): More Shipping Model Inputs, 2014.
- Chevron Data Transmittal #26D (Rev #2): Shipping Future, Project Crude Case, 2014.
- Chevron Data Transmittal #26F: Shipping Report, 2014.
- Chevron Data Transmittal #58: Tank Domes Fitting Data, 2013
- Chevron Data Transmittal #66: 2008-2010 BAAQMD Emissions Reports, 2014.
- Chevron Data Transmittal #73 (Rev #3) :Tank Domes Fitting Data 2014.
- Chevron Data Transmittal #74 (Rev #1) :PM Mitigation, 2014.
- Chevron Data Transmittal #75 (Rev #1) :VOC Mitigation, 2014.
- Chevron Data Transmittal #75 (Rev #3) :VOC Mitigation, 2014.
- Chevron Data Transmittal #76 (Rev #1) :SO_x Mitigation, 2014.
- International Maritime Organization (IMO). 2008. Revised MARPOL Annex VI. October.

South Coast Air District Management (SCAQMD). 2003. Final Environmental Assessment for: Proposed Rule 1105.1-Reduction of PM₁₀ and Ammonia Emissions From Fluid Catalytic Cracking Units. Accessed May 5, 2014. http://www.aqmd.gov/ceqa/documents/2003/aqmd/finalEA/FEA_1105.doc.

U.S. Environmental Protection Agency (EPA). 2006. *TANKS Emissions Estimation Software, Version 4.09D*. October. <http://www.epa.gov/ttn/chief/software/tanks/index.html>.

APPENDIX 4.3 - OP

OP: Refinery Operational Emissions

APPENDIX 4.3

OP: REFINERY OPERATIONAL EMISSIONS

1.1 BACKGROUND

This appendix contains details on the emissions of criteria air pollutant (CAPs) and toxic air contaminants (TACs) for the Baseline and Chevron Refinery Modernization Project (Modernization Project). A discussion of CAP emissions methods are followed by a discussion of the TAC emissions methods for the Baseline and Modernization Project subsections. Throughout this appendix, fine particulates ($PM_{2.5}$) emissions are not evaluated separately, but are instead assumed to be equal to respirable particulate (PM_{10}) emissions. This is conservative, as $PM_{2.5}$ is a subset of PM_{10} .

The methods of emissions analysis for operations were developed based on Bay Area Air Quality Management District (BAAQMD), California Air Resources Board (CARB), and United States Environmental Protection Agency (EPA) guidance; the BAAQMD's Engineering Evaluation (EE) of Project components; and extensive consultation with BAAQMD staff. As a result of consultation with the BAAQMD, a protocol for estimating Baseline and Modernization Project emissions, as well as methods for evaluating impacts from those emissions was developed. The methods presented in this appendix reflect the outcome of these meetings with the BAAQMD, and reflect the results of the consensus formed between the City of Richmond's consultants, and the BAAQMD.

After reviewing available regulatory reporting and tracking studies, for purposes of this Environmental Impact Report (EIR) and in consultation with the BAAQMD, the BAAQMD's Emissions Inventory (EI) was determined to provide the most comprehensive ongoing framework for understanding Refinery Operations emissions, and for evaluating Modernization Project emissions, within the City of Richmond.

The major sources of emissions of CAPs and TACs from Refinery Operations are stationary facilities, such as furnaces and process units used to heat, treat, and separate crude and gas oils into marketable products such as gasoline, diesel, jet fuel, and lubricants. In addition, Refinery Operations generate emissions from tanks and process components, emissions from transportation, including shipping, and to a lesser extent, rail and trucking. The locations of major operations, and therefore major sources of emissions, at the Facility are highlighted in Figure A4.3-OP-1.

This section describes existing Refinery Operations CAP and TAC emissions over the 3-year Baseline period (2008 through 2010, inclusive). Average annual Refinery Operations emissions over this 3-year Baseline period are representative of normal Refinery Operations.

In addition to describing Refinery Operations emissions during the Baseline period, this section also includes a description of the adjustments made to the Baseline consistent with the recent California Supreme Court *Smart Rail*¹ decision. In *Smart Rail*, the Court affirmed that it was always appropriate to evaluate Modernization Project impacts under CEQA against the existing setting, but that "adjustments" can and should be made to that Baseline when important for public disclosure purposes. Specifically, the Court acknowledged that where planned or adopted air pollution reduction legal mandates will result in lower facility emissions in the foreseeable future, it is appropriate for an EIR to compare Modernization Project impacts against the reduced emissions that will occur in the "adjusted Baseline" for the facility and not simply compare Modernization Project impacts to existing Baseline emission levels. The adjusted Baseline used in this EIR projects emission levels from existing Refinery Operations equipment and operations as of the proposed Modernization Project's commencement of operations in 2016.

The Baseline was adjusted in a number of ways. These are described in more detail in the descriptions that follow the calculation of the Baseline for Refinery Operations. A summary of the adjustments incorporated into the Baseline includes:

- Changes to legal air pollution limitations based on adopted rules, with known compliance deadlines
- Updates by BAAQMD's engineering staff to emission estimation factors for various Refinery Operations equipment and processing units, consistent with BAAQMD Emission Inventory management practices
- Scheduled, funded and authorized changes in Refinery Operations equipment between the end of the Baseline period (2010) and the beginning of operation (2016)

The Baseline CAP emissions from Refinery Operations are shown in Table A4.3-OP-1, and Figures A4.3-OP-2A-E, below. Additional details regarding each step in the refining process referenced in Table A4.3-OP-1 are provided in *Chapter 3, Project Description, Appendix 3, Overview of Oil Refining Process at Chevron Richmond Refinery*, and discussed further below.

¹ Neighbors for Smart Rail v. Exposition Metro Line Construction Authority, 2013, 57 Cal.4th 439



3/13/2014 C:\Users\cviolet\Documents\ArcGIS\Projects\A4.3-OP-1_Large_Refinery_Sources\A4.3-OP-1_Large_Refinery_Sources.mxd

Source: Chevron (T38 r1 and T6C)

Figure A4.3-OP-1
Chevron Refinery Modernization Project EIR
Large Refinery Air Emission Sources

TABLE A4.3-OP-1 EMISSIONS ASSOCIATED WITH REFINERY OPERATIONAL PROCESS STEPS

Process Description	Major Process Unit	Title V Emission Source Categories for Equipment and Components with Air Emissions
Distillation:	Crude atmospheric and vacuum distillation units SDA	Combustion (furnaces) VOC sources (fugitive components) ^c
Treatment to Remove Sulfur and Other Natural Impurities	Hydrotreaters (JHT, NHT, FCC FHT, GHT, DHT) Amine contactors Amine regenerators Sour water strippers SRU	Combustion (burners, furnaces, thermal oxidizers) Sulfur recovery (H ₂ S plants) Sulfur recovery (Claus plants [SRU]) Tanks VOC sources (fugitive components) ^c
Conversion: "Cracking" Remaining Heavy Hydrocarbon Molecules into Light Hydrocarbons	FCC Hydrocracker	Combustion (furnaces) Process units (FCC) Tanks VOC sources (fugitive components) ^c
Reforming: Increasing Octane Levels in Gasoline	Rheniformers	Combustion (furnaces) Process units (rheniformer catalyst regeneration) VOC sources (fugitive components) ^c Tanks (perchloroethylene tanks)
Blending and Final Product Production Process	Product Storage Tanks	Tanks VOC sources (fugitive components) ^c
Specialty Operations: Lubricating Oil Production Process	RLOP (HNC, LNC, HNF, LNF) hydrocrackers and hydrofinishers	Combustion (furnaces) VOC sources (fugitive components) ^c
Hydrogen Production	Hydrogen plant	Process units (hydrogen plant) Combustion (furnaces) VOC sources (fugitive components) ^c
Other Refinery Operations	Flares	Combustion (flares) ^c
	Power/steam generation Boiler plant, cogeneration plant ^a	Combustion (boilers, cogeneration) ^c VOC sources (fugitive components) ^c
	Cooling towers	Process units (cooling towers)
	Chemical storage tanks	Tanks
	RFG system ^b	VOC sources (fugitive components) ^c
	Wastewater treatment ^c	Wastewater (tanks/API gravity separators, process drains, bioreactor)

TABLE A4.3-OP-1 EMISSIONS ASSOCIATED WITH REFINERY OPERATIONAL PROCESS STEPS

Process Description	Major Process Unit	Title V Emission Source Categories for Equipment and Components with Air Emissions
Other Emission Sources	Emergency diesel generators ^c	Internal combustion engines ^c
Product loading ^d	Sulfur loading Wharf loading Marketing rack	Sulfur recovery (sulfur rack), loading terminals (wharf), loading terminals (truck/rail)
Refinery Maintenance Activities	Maintenance equipment ^c	Cold cleaners ^c Paint booth ^c

Notes: API gravity = American Petroleum Institute gravity; DHT = diesel hydrotreater; FCC = fluid catalytic cracker; FCC FHT = fluid catalytic cracking feed hydrotreater; GHT = gasoline hydrotreater; H₂S = hydrogen sulfide; HNC = heavy neutral hydrocracker; HNF = heavy neutral hydrofinisher; JHT = jet hydrotreater; LNC = light neutral hydrocracker; LNF = light neutral hydrofinisher; NHT = naphtha hydrotreater; SDA = solvent de-asphalting; SRU = sulfur recovery unit; RLOP = Richmond lube oil plant; VOC = volatile organic compound

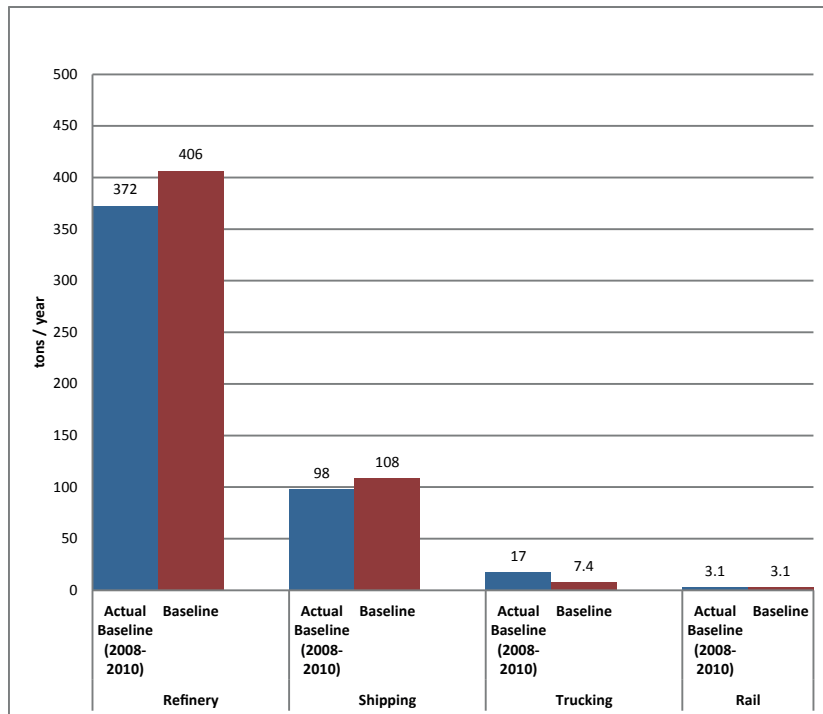
^a Due to their magnitude, emissions from the boiler plant and cogeneration plant were included in this EIR analysis, despite that there are no anticipated emission increases from these sources resulting from the Modernization Project.

^b RFG = refinery fuel gas. Emissions associated with fuel gas system are discussed in the report as furnace combustion emissions.

^c Denotes sources with emissions that are not expected to change as a result of the Modernization Project, and hence were not included in this EIR analysis.

^d Shipping emissions are discussed in *Appendix 4.3-SHP*; rail and trucking emission are discussed in *Appendix 4.3-TRANS*.

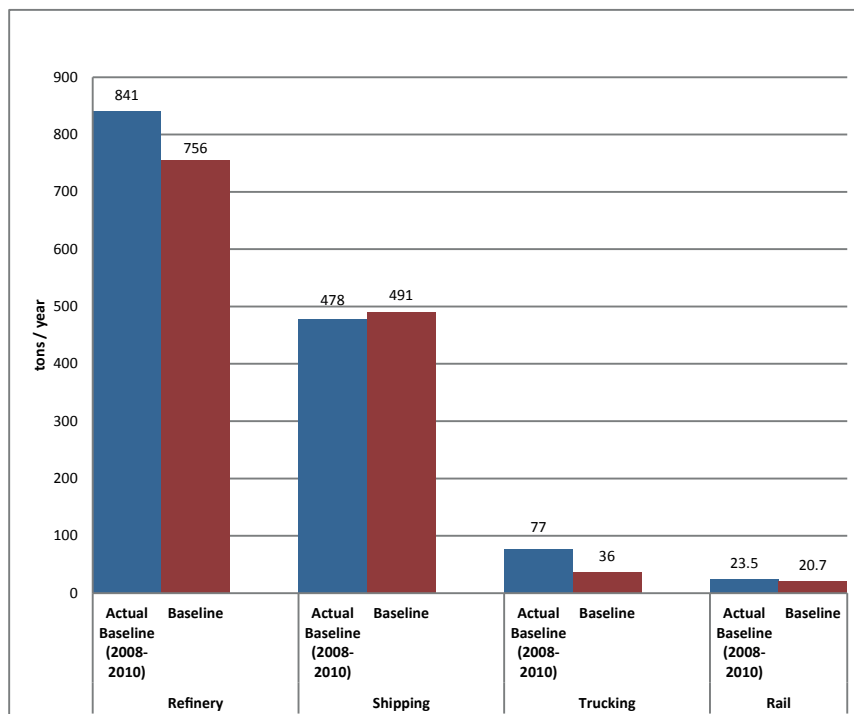
Source: Section 3.0, Project Description (see *Appendix 3, Overview of Oil Refining Process*), Title V Permit.



03.07.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-OP Draft

Source: Appendix 4.3-El; Appendix 4.3-EE; BAAQMD; Chevron (T57r1, T60, and T66); USEPA

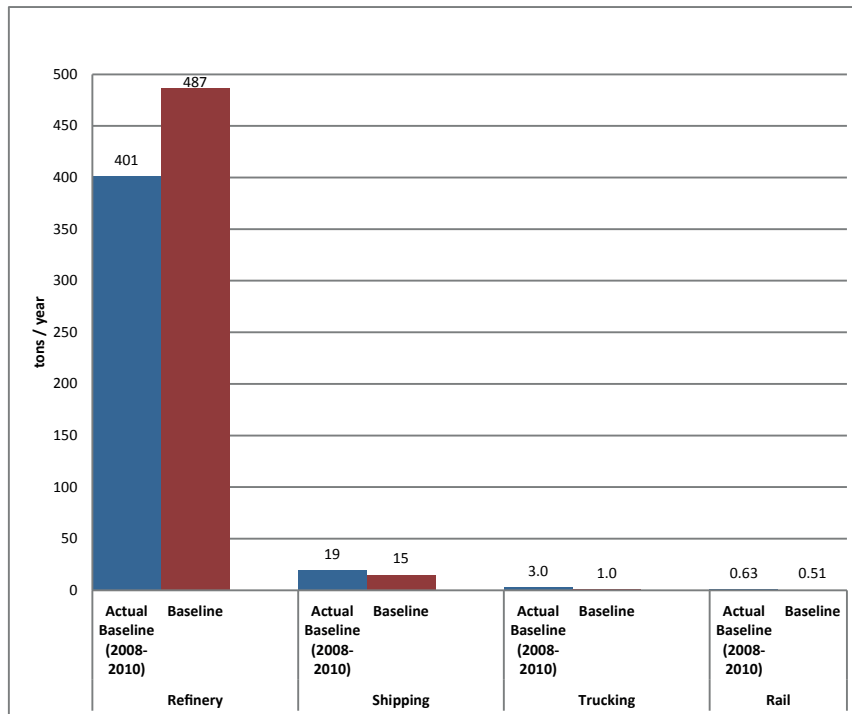
Figure A4.3-OP-2A
Chevron Refinery Modernization Project EIR
2008 - 2010 Period and Baseline Criteria Pollutant Emissions - CO



03.07.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-OP Draft

Source: Appendix 4.3-El; Appendix 4.3-EE; BAAQMD; Chevron (T57r1, T60, and T66); USEPA

Figure A4.3-OP-2B
Chevron Refinery Modernization Project EIR
2008 - 2010 Period and Baseline Criteria Pollutant Emissions - NOx



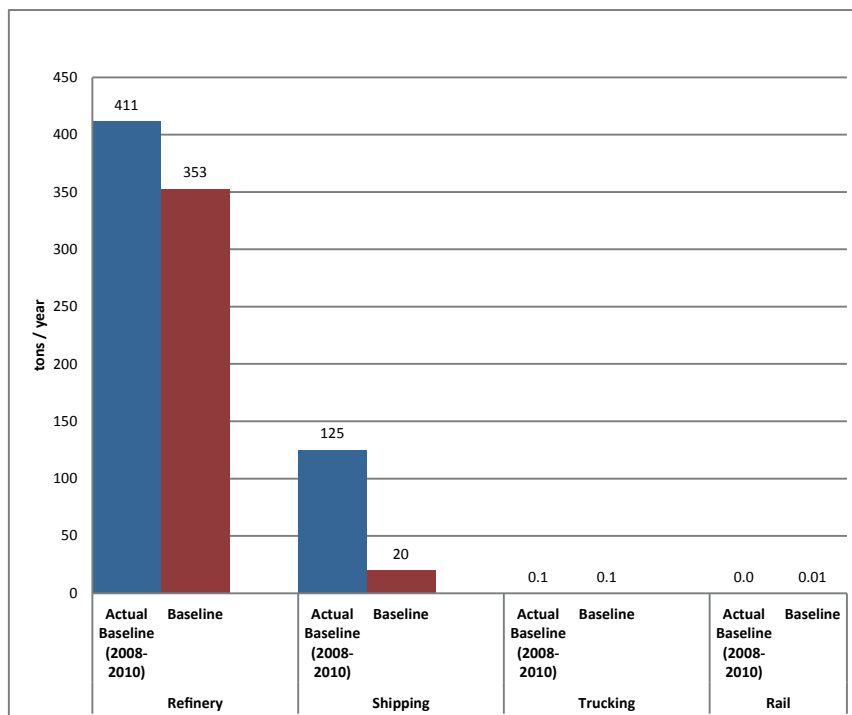
03.07.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-OP Draft

Source: Appendix 4.3-EI; Appendix 4.3-EE; BAAQMD; Chevron (T57r1, T60, and T66); USEPA

Figure A4.3-OP-2C

Chevron Refinery Modernization Project EIR

2008 - 2010 Period and Baseline Criteria Pollutant Emissions - PM₁₀/PM_{2.5}



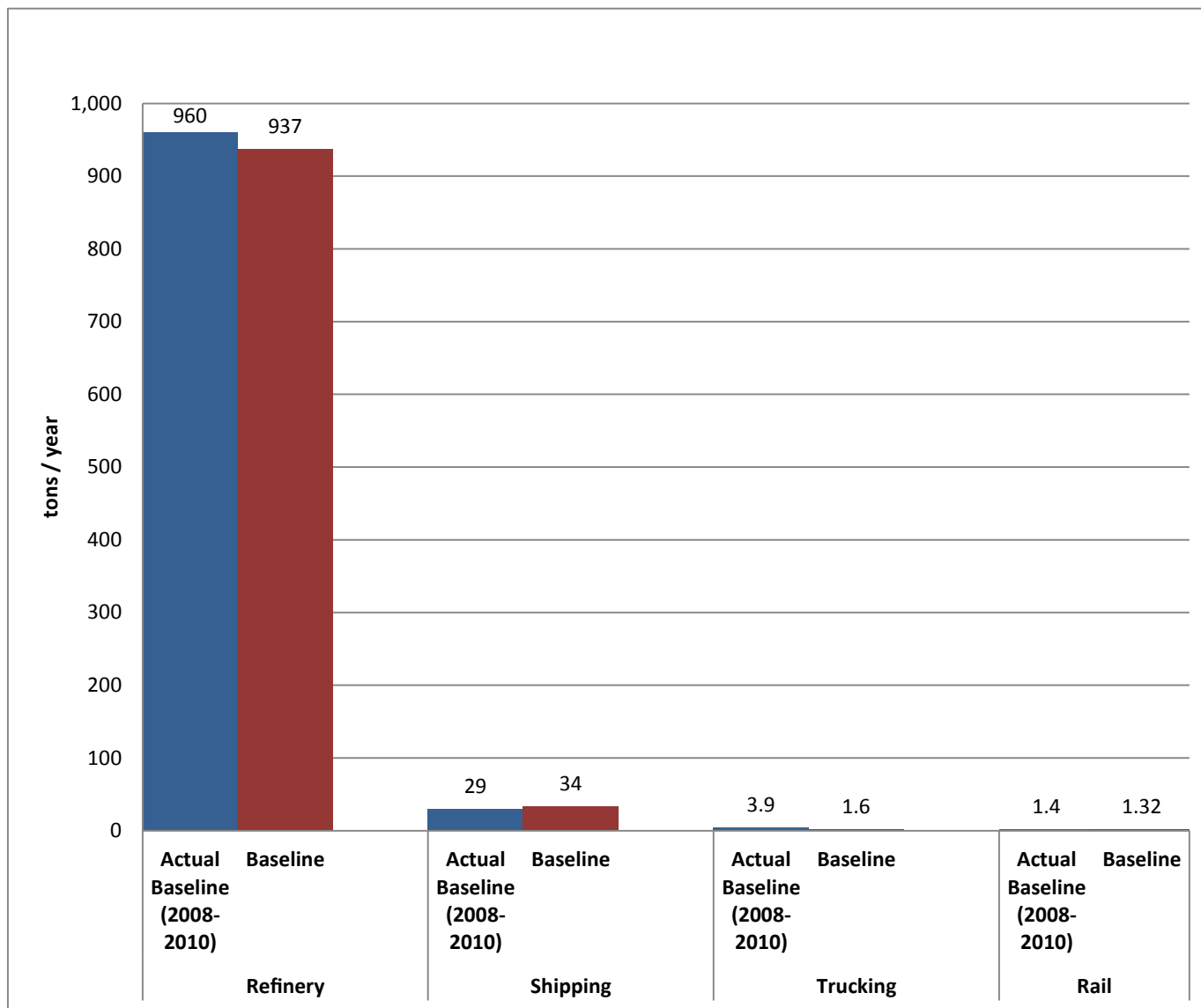
03.07.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-OP Draft

Source: Appendix 4.3-EI; Appendix 4.3-EE; BAAQMD; Chevron (T57r1, T60, and T66); USEPA

Figure A4.3-OP-2D

Chevron Refinery Modernization Project EIR

2008 - 2010 Period and Baseline Criteria Pollutant Emissions - SO₂



03.07.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-OP Draft

Source: Appendix 4.3-EI; Appendix 4.3-EE; BAAQMD; Chevron (T57r1, T60, and T66); USEPA

Figure A4.3-OP-2E
Chevron Refinery Modernization Project EIR
2008 – 2010 Period and Baseline Criteria Pollutant Emissions – VOC

Finally, this section includes a description of how Modernization Project emissions are calculated.

Emissions from Refinery Operations vary with overall utilization: greater utilization results in greater emissions from process units at the Facility, as more fuel is required to process more feedstock.

Emissions from Refinery Operations vary based on the utilization of specific process units, which vary, in some cases, based on the type of feedstock. Higher sulfur feedstocks require greater use of the hydrogen plant and the sulfur recovery unit (SRU). These higher unit utilization levels translate into greater emissions from these units.

In its writ, the court directed the City to evaluate differences in air emissions that could be expected to occur if the Facility processed crude or gas oils with higher sulfur levels, or heavier gravity levels. In order to respond to this part of the writ, a unit rate model (URM) of Refinery Operations was developed by independent petroleum refinery experts retained by the City. Analysis of different crude blends with the URM shows that higher sulfur crude and gas oils require more hydrogen and sulfur removal processing (see *Appendix 4.3-URM*). In the example provided above, these refinery operational process units will have an increased utilization - and increased utilization of process units generally correlates to higher air emissions. The Modernization Project includes a new hydrogen plant that will be both more efficient (i.e., result in fewer emissions per unit of hydrogen produced) and larger (i.e., create more hydrogen needed to process higher sulfur feedstocks).

As further described in *Appendix 4.3-URM*, the URM estimates how the Facility's processing units are used now, and how the processing units could be used if the Modernization Project were approved. The URM generates estimates of the daily average throughput or production of various process units in relation to: (1) the amount of crude and gas oil inputs into the Facility; (2) the American Petroleum Institute (API) gravity and fractional characteristics² of the crude oil inputs; and (3) the sulfur content of the crude and gas oil inputs.

1.2 BASELINE CAP AND TAC EMISSIONS

Baseline emissions associated with the Modernization Project include emissions from the stationary sources at the Facility, such as furnaces and process

² As discussed in *Section 3, Project Description*, of this EIR, crude oil is input to the Facility and distilled in the crude unit into specific fractions of oil defined by boiling temperatures. The phrase "fractional characteristics" refers to the relative proportion of each fraction in the crude oil that enters the Facility's crude unit.

equipment, as well as emissions associated with transportation of products and feedstocks via shipping, rail and trucking. This appendix describes only emissions associated with the operation of the Facility. Shipping emissions are described in *Appendix 4.3-SHP* and rail and trucking emissions are described in *Appendix 4.3-TRANS*.

1.3 STATIONARY EMISSION SOURCES AT THE FACILITY

The main refining steps performed at the Facility are described in *Chapter 3, Project Description*, and are explained in further detail in *Appendix 3, Overview of Oil Refining Process*. Each refining step involves one or more types of processing unit (e.g., crude unit, hydrotreater) that perform a specific function, and each process unit may contain different types of equipment and components (e.g., reaction vessels, tanks, heat exchangers, compressors, pipes, furnaces, boilers, heaters). For example, the crude unit discussed as part of the Distillation Step consists of an atmospheric distillation tower, vacuum distillation tower, heat exchangers, furnaces, piping and fittings. Table A4.3-OP-1 above summarizes the relationships between the refinery operational steps discussed in the Modernization Project Description and the major process units, as well as the types of emission sources associated with each refining process unit.

Not all pieces of process equipment are emission sources. For example, the distillation columns where the crude is distilled in the crude unit consist of vessels that do not have emission stacks. The furnaces that combust refinery fuel gas (RFG) to heat the crude in heat exchangers, however, do have stacks that emit combustion products. Valves, flanges and other fittings associated with pipes and other equipment that handle the various refinery process streams are sources of fugitive emissions via small leaks.

The Facility had eight flaring events³ during the Baseline period for which causal analyses were performed consistent to the Facility's Flare Management Plan⁴ and BAAQMD regulations. Descriptions of these events, including discussions of root causes and corrective actions, are provided in Table A4.3-OP-2 below.

³ Flaring is highly episodic, and typically occurs as a result of a process upset or unit start up and shut down. Separate flare emission reports are provided to BAAQMD. As a result of stringent BAAQMD regulation, flare use is decreasing over time. Flare emissions are a very small portion of Refinery Operational emissions, which will likely further decline with the Modernization Project, as additional requirements on flare usage are being implemented. Potential changes in flare emissions are not considered quantitatively for purposes of this EIR.

⁴ Only flaring events that total 500,000 standard cubic feet per day or result in sulfur dioxide emissions greater than 500 pounds are subject to team investigations and identification of root causes that are reported to BAAQMD, consistent with BAAQMD Regulation 12-12.

TABLE A4.3-OP-2 SUMMARY OF FLARING EVENTS DURING THE BASELINE PERIOD

Date	Flares	Event Description	Root Cause	Corrective Actions
April 29, 2008	FCC, RLOP	K-1900 Surge	RLOP feed gas compressor K-1900 surged. Contributing causes included: (1) lighter off-gas from the PSA plant to K-1900 during V-1410 bleed of hydrogen and impurities; and (2) K-1900 feed gas density analyzer was out of service.	Immediate: Operators: (1) closed the bleed valve from V-1410 to the PSA plant; and (2) opened fuel gas make-up to the suction of K-1900 and the 1st stage minimum flow valve of K-1900 to heavy the feed and stop the K-1900 surging. Follow-up: Chevron: (1) updated operating procedures and engineer guidance to minimize bleeding hydrogen and impurities from V-1410 to the PSA plant; (2) added an alarm at the distributed control system to indicate E-1900 pressure drop to help operators identify if E-1900 is plugging (operators had initially suspected this as a cause); and (3) replaced the K-1900 feed gas density analyzer so that operators can verify the required feed gas specific gravity to K-1900.
April 29, 2008	FCC, North Isomax, South Isomax	Loss of GRU Pump	Isomax GRU pump motor MP-750 experienced a faulty electrical relay.	Immediate: Operators: (1) immediately cut feed in the north Isomax area; and (2) safely stabilized the debutanizer. Maintenance quickly found the faulty electrical relay, replaced it, and brought MP-750 back into service.
September 1, 2008	FCC, RLOP and South Isomax	K-1900 Unplanned Shutdown 1	RLOP feed gas compressor K-1900 shut down due to high liquid level in its knock-out drum. The causes of the high liquid level were: (1) a failed steam trap at the automatic eductor that draws liquid from the drum, leading to condensate build-up in the steam line inhibiting the performance of the eductor; and (2) a check valve did not hold, allowing backflow of steam condensate into the drum.	Immediate: Operators routed potential liquid sources away from V-1900. The second FGR compressor was started up immediately after flaring occurred to maximize the FRG system capacity. Process gases were rerouted to minimize feed gas flow to K-1900. Follow-up: Chevron: (1) added another parallel steam trap to the auto eductor; (2) repaired or replaced the failed check valve; (3) added an alarmed skin temperature indicator on the liquid outlet line from the drum (to help identify condensate backflow) and trained operators on new alarm; (4) added a routine duty to periodically run the manual eductor; and (5) created a troubleshooting job aid for the auto eductor.

TABLE A4.3-OP-2 SUMMARY OF FLARING EVENTS DURING THE BASELINE PERIOD

Date	Flares	Event Description	Root Cause	Corrective Actions
August 21, 2009	North Isomax	K-500 Unplanned Shutdown	A valve positioner associated with TKN recycle compressor K-500 malfunctioned due to build-up of silica, causing compressor shutdown. To safely control the process, operators depressured the TKN reactors, leading to flaring. TKN was taken off flare gas recovery to protect the compressors from high temperatures.	Immediate: Operators initially attempted to restart the compressor with the TKN reactors partially depressured, then followed emergency procedures to safely shut down the affected operating unit and depressure the reactor vessels. Follow-up: The valve positioner was replaced, tested and reconnected. The compressor was recommissioned and the plant restarted. The failure was investigated and the root cause determined to be build-up of silica in the positioner. Prevention measures were implemented to disassemble and inspect air supply lines to the valve positioner and the associated coalescing filter, and to evaluate the effectiveness of the filter.
November 18, 2009	RLOP, FCC and South Isomax	K-1900 Unplanned Shutdown 2	Operator inadvertently activated K-1900 emergency shutdown switch while attempting to activate an adjacent switch.	immediate: Operations immediately identified the shutdown of K-1900 and implemented start-up measures. K-1900 was returned to service within approximately 9 minutes. Follow-up: Chevron relocated the adjacent switch from the emergency control panel.
January 12, 2010	North Isomax, South Isomax, FCC and Alky	Unplanned Shutdown of TKC Unit	Packing leak at PC-4000 2nd downstream Orbit block valve.	Immediate: Operations and maintenance immediately responded to the valve leak with appropriate safety equipment. Attempts were made to stop the leak at normal and reduced operating pressures. The plant was then shut down. Follow-up: Chevron: (1) replaced the failed block valve; and (2) developed a list of Orbit valves in service in the TKC unit, and created a standing preventive maintenance action in the maintenance tracking system for those valves.
May 30, 2010	FCC, RLOP,	Emergency Shutdown of FCC	Emergency shutdown of the FCC MABT caused by high vibrations in the	Immediate: Operators: (1) attempted to restart the MABT; (2) when that proved infeasible, safely shut

TABLE A4.3-OP-2 SUMMARY OF FLARING EVENTS DURING THE BASELINE PERIOD

Date	Flares	Event Description	Root Cause	Corrective Actions
	North Isomax and Alky	Unit	expander section of the MABT resulting from catalyst adherence to the expander blades leading to uneven weight distribution on the rotating equipment.	down the FCC; and (3) maximized use of the flare gas recovery system before flaring. Follow-up: Chevron evaluated whether continuous use of disk cooling steam would prevent catalyst adherence to the MABT expander disk.
November 18, 2010	LSFO	Unplanned Shutdown of TP-460 and K-900A	Cooling water turbine pump TP-460 shut down due to loss of steam, which resulted from closing of OST valve. This led to loss of cooling water flow to No. 4 Rheniformer, accumulation of liquid in V-912A (knock-out drum for hydrogen compressor K-900A), compressor shutdown and flaring. Possible causes for the OST valve shutting include: (1) presence of condensate in the steam system; (2) turbine high speed; or (3) malfunction of the OST valve.	Immediate: Operators: (1) attempted to get spare motor-driven pump (MP-526) up to pressure; (2) restarted TP-460 within 8 minutes; (3) attempted to restart hydrogen compressor K-900A; and (4) started spare hydrogen compressor K-900. Follow-up: Chevron: (1) inspected and conducted necessary maintenance on the OST valve; (2) inspected the governor that regulates speed of the turbine and repaired or replaced as necessary; (3) evaluated the pump and compressor system design; (4) verified correct operation of the level controller on V-912A; and (5) created a procedure/job aid to prepare cooling water pump for operation that explains the steps of bleeding air out of the case.

Note: FCC = fluid catalytic cracker; FGR = flare gas recovery; GRU = gas recovery unit; LSFO = low sulfur fuel oil; MABT = main air blower turbine; OST = overspeed trip; PSA = pressure swing adsorption; RLOP = Richmond lube oil plant

Source: Chevron Data Transmittal #36M (Rev #2), 2014.

To determine the impact, if any, of flaring events on ambient air quality, the dates of the flaring events listed above were compared to the ground-level monitoring data (GLM) for hydrogen sulfide (H_2S) and sulfur dioxide (SO_2). The GLM data is recorded as one-hour averages. Because the exact time of flaring could not be determined from the reports, the GLM data was evaluated for daily maximum values. Figures A4.3-OP-3A-F compare the daily maxima at each station to the dates of flaring events. The figures show that two flaring events coincided with relative peaks in the monitoring data: March 29, 2008 and August 1, 2009, both at the Gertrude Street Station.

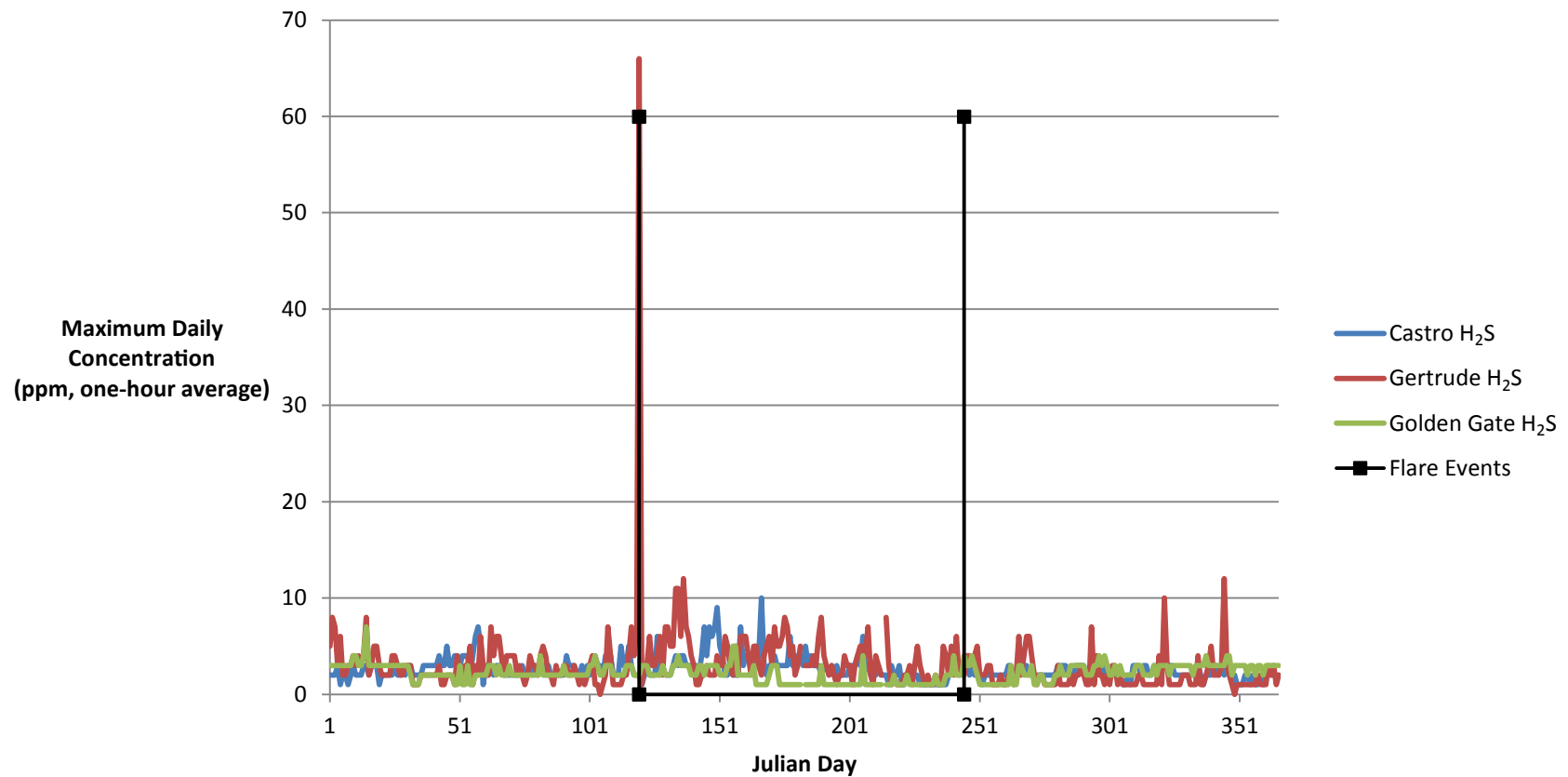
At the time of the daily maximum H_2S and SO_2 concentrations for April 29, 2008, the wind was blowing ENE, placing the monitoring station downwind of the active flares.⁵ However, at the time of the daily maximum concentrations on August 1, 2009, the wind was blowing almost due South, well away from the monitoring site. The figures also clearly show many other peaks in concentration data that do not coincide with flaring events, and which occurred during various wind conditions. Accordingly, one flaring event may have led to higher ambient concentration during the Baseline period, but the data is not conclusive, due to a lack of information on the specific timing of the flare event.

Facility air emission permits, such as its Clean Air Act Title V permit, most directly regulate and limit emissions from the equipment within process units. In most cases, air permit limits also regulate the amount of feedstock that can be processed through a unit. For example, the Facility's crude unit has a Title V permit limit of 257,200 barrels/day, which is not being changed by the Modernization Project.

Air permits do not regulate the quality or constituents of crude and gas oils that can be processed in a particular unit. Since crude and gas oils of differing quality may require more or different processing steps, the URM (see *Appendix 4.3-URM*) was designed to evaluate the effect of processing different crude oil blends and gas oils on the utilization of the various refinery operational process units. The results of the URM demonstrate that, generally, certain Refinery Operating units such as the solvent de-asphalting (SDA) unit reach maximum permissible throughput limits at lower crude unit utilization rates for crude oils containing a greater fraction of heavier constituents. Once a specific process unit such as the SDA reaches its permitted emission limit, it can create a "bottleneck" that reduces crude unit utilization levels.

⁵ Meteorological data were collected at the Gertrude Street station (Chevron Data Transmittal #8, 2011).

2008 H₂S Ground Level Monitoring Data

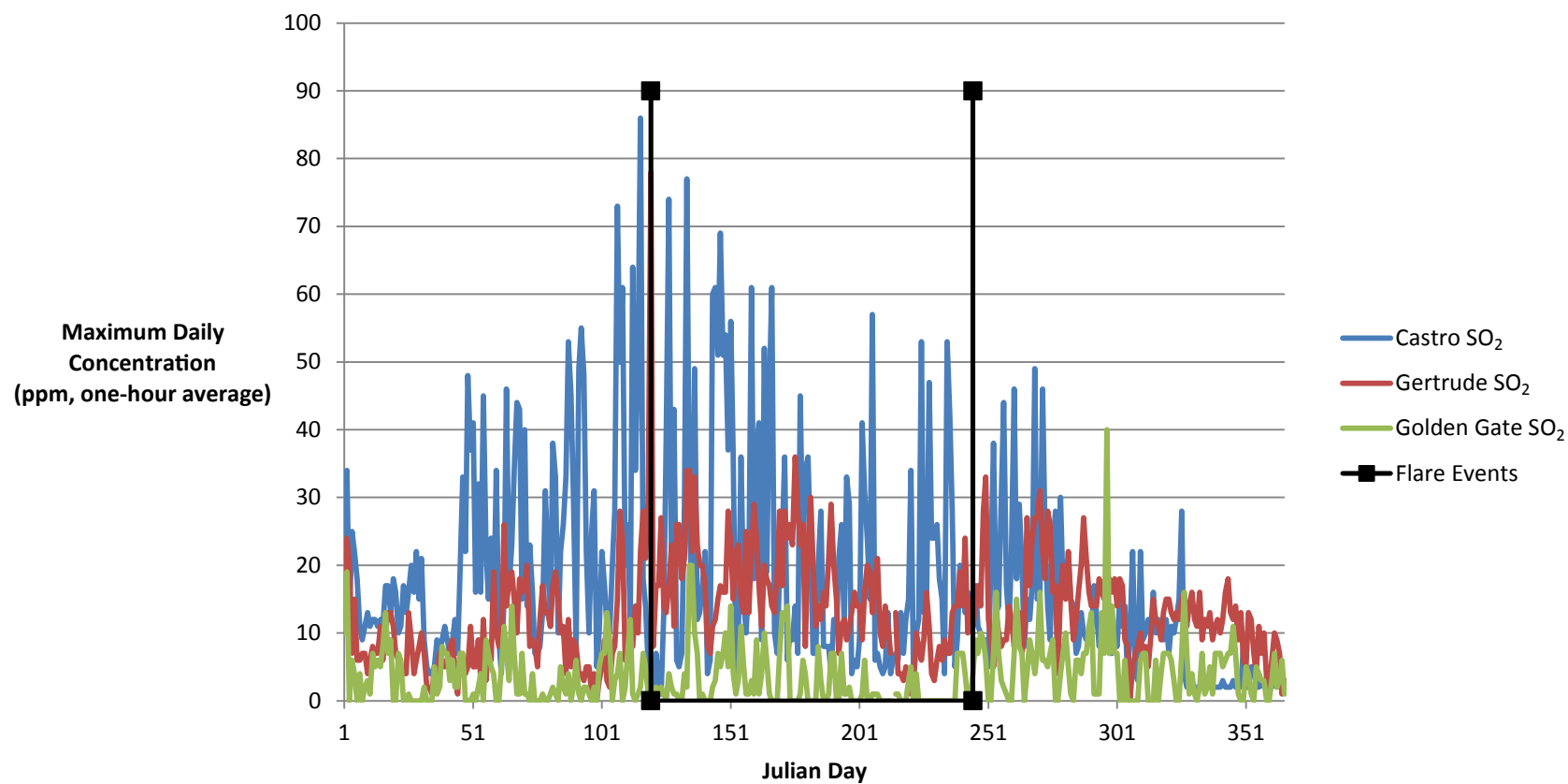


03.07.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-OP Draft

Source: Chevron (T9r1 and T36Mr2)

Figure A4.3-OP-3A
Chevron Refinery Modernization Project EIR
Comparison of 2008 H₂S GLM data to Flare Events

2008 SO₂ Ground Level Monitoring Data

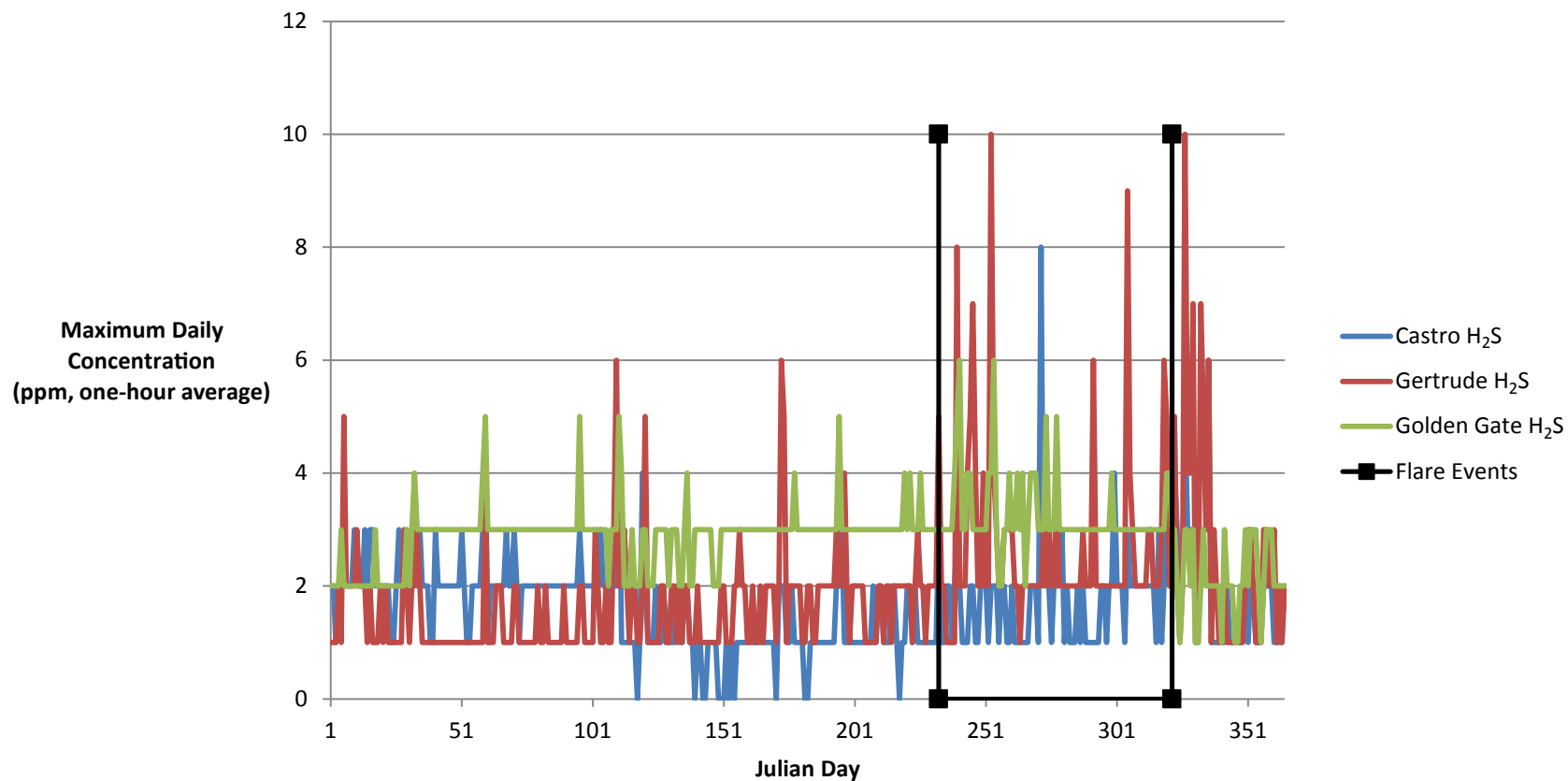


03.07.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-OP Draft

Source: Chevron (T9r1 and T36Mr2)

Figure A4.3-OP-3B
Chevron Refinery Modernization Project EIR
Comparison of 2008 SO₂ GLM data to Flare Events

2009 H₂S Ground Level Monitoring Data

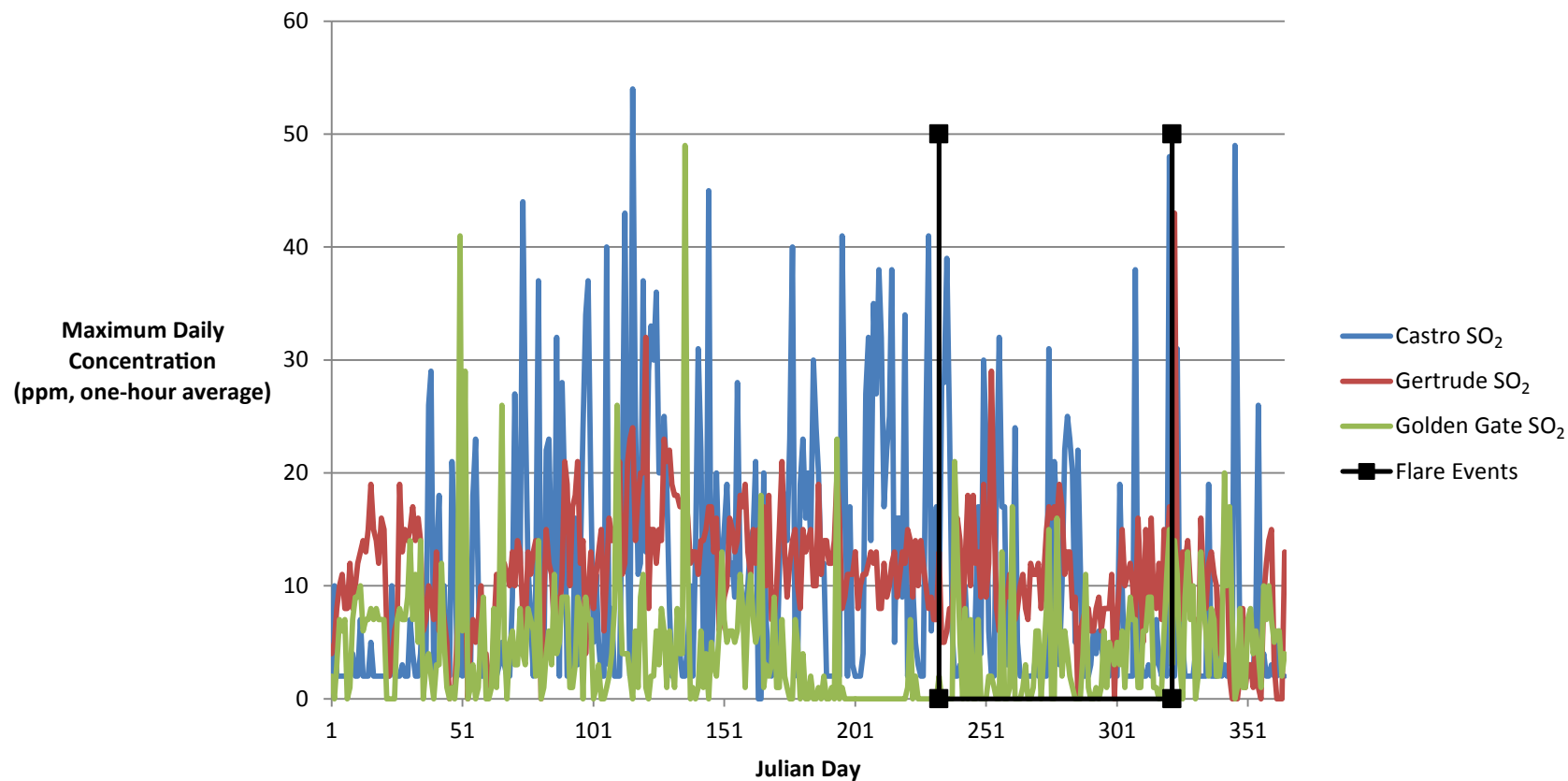


03.07.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-OP Draft

Source: Chevron (T9r1 and T36Mr2)

Figure A4.3-OP-3C
Chevron Refinery Modernization Project EIR
Comparison of 2009 H₂S GLM data to Flare Events

2009 SO₂ Ground Level Monitoring Data

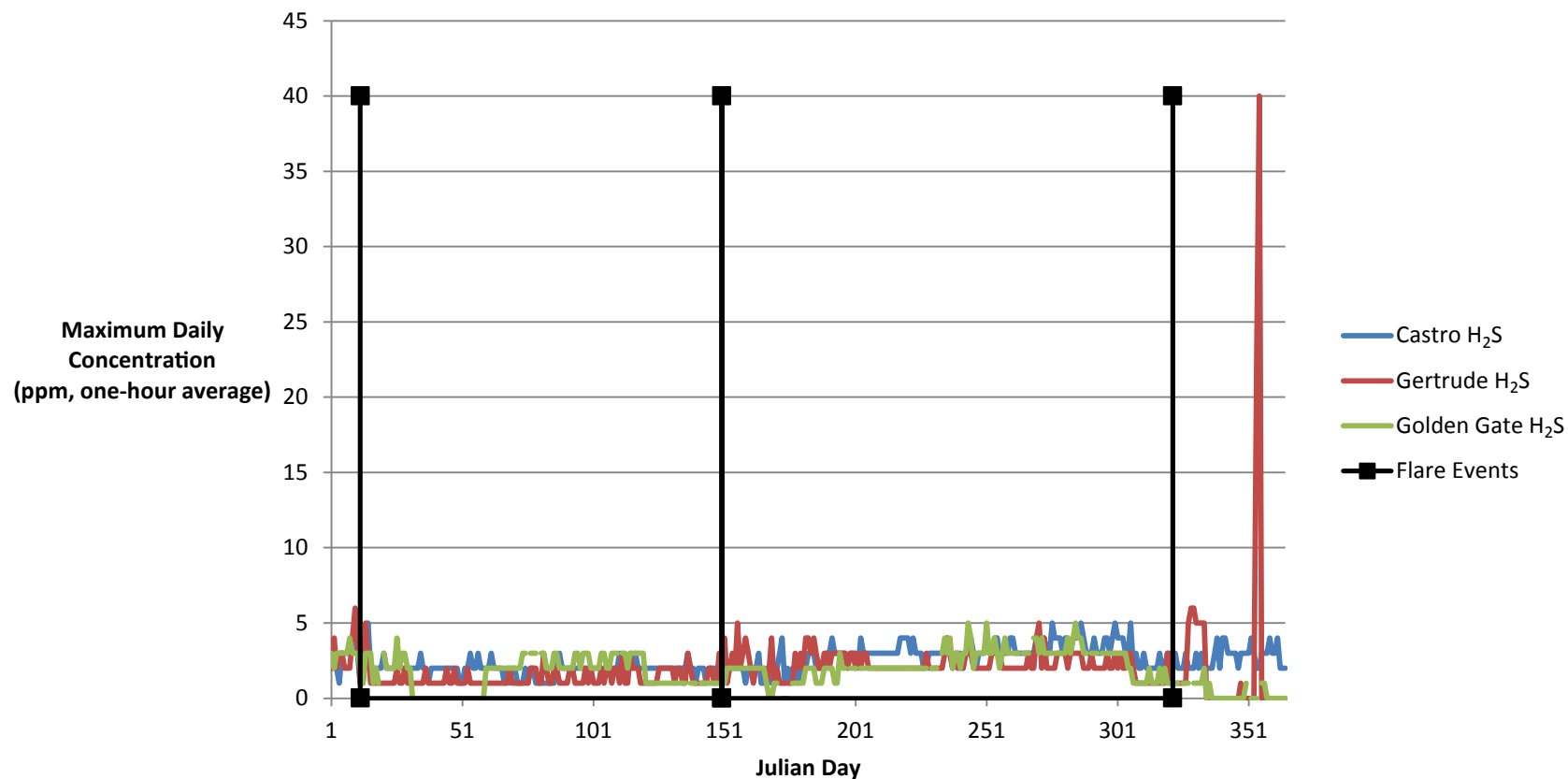


03.07.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-OP Draft

Source: Chevron (T9r1 and T36Mr2)

Figure A4.3-OP-3D
Chevron Refinery Modernization Project EIR
Comparison of 2009 SO₂ GLM data to Flare Events

2010 H₂S Ground Level Monitoring Data

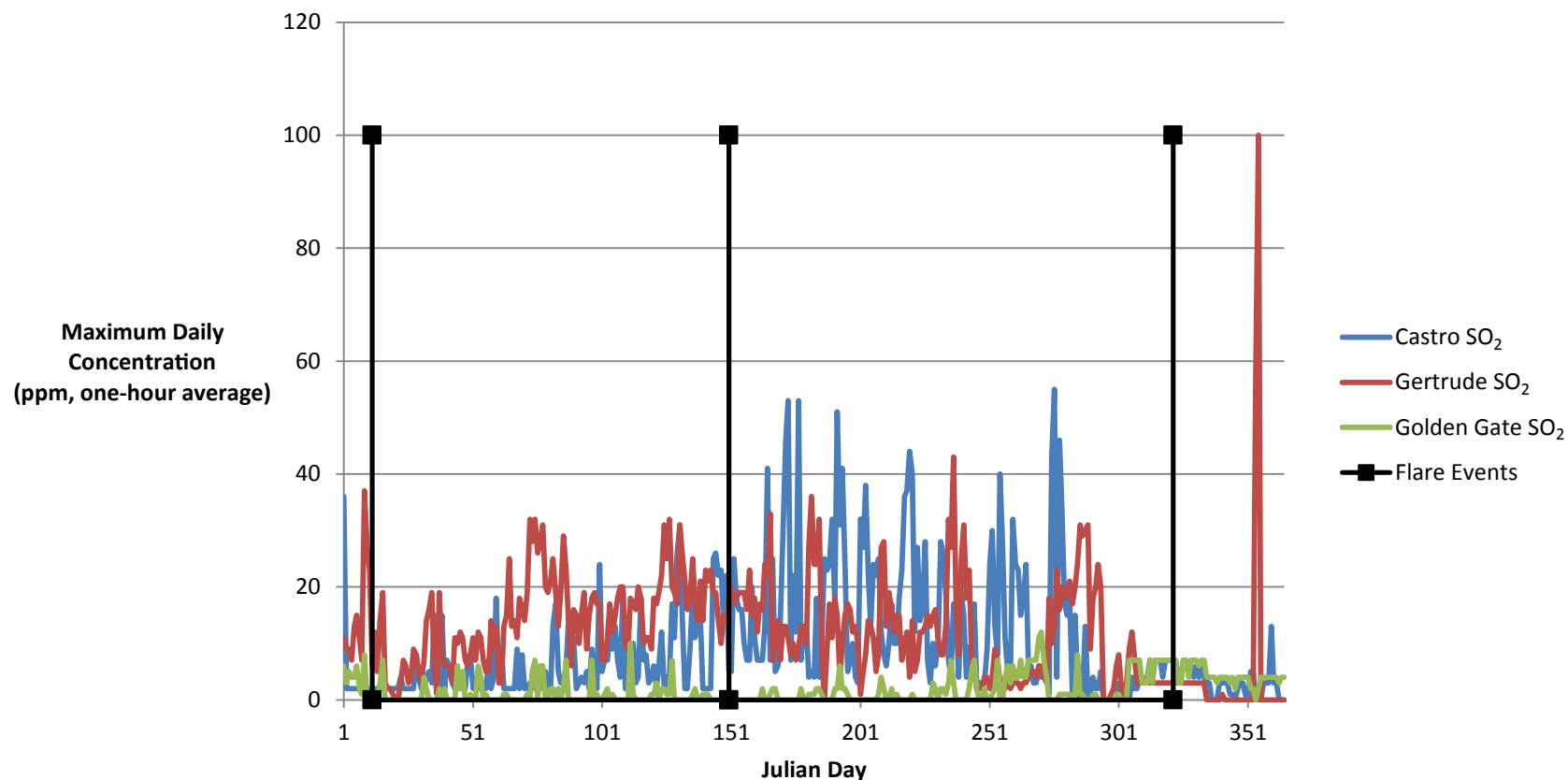


03.07.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apptx 4.3_AQ\AQ-OP Draft

Source: Chevron (T9r1 and T36Mr2)

Figure A4.3-OP-3E
Chevron Refinery Modernization Project EIR
Comparison of 2010 H₂S GLM data to Flare Events

2010 SO₂ Ground Level Monitoring Data



03.07.2014 P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-OP Draft

Source: Chevron (T9r1 and T36Mr2)

Figure A4.3-OP-3F
Chevron Refinery Modernization Project EIR
Comparison of 2010 SO₂ GLM data to Flare Events

The main types of stationary emissions sources at the Facility are:

- Combustion sources (furnaces, engines, boilers, flares, cogeneration units)
- Hydrogen plant
- Loading terminals
- Some process units (cooling towers, FCC unit, miscellaneous)
- Sulfur recovery-related units (H_2S plants, sulfur removal units, sulfur loading rack)
- Storage tanks (organic liquids, inorganic liquids)
- Wastewater-related units (process drains, separators, bioreactors, containers, tanks)
- Volatile organic compound (VOC) sources (cold cleaners, fugitive components, paint booth)

Table A4.3-OP-3 summarizes the types of emissions from the main types of process units at the Facility as listed above.

Most of the process equipment is fueled by refinery fuel gas (RFG). RFG is a collection of light gases created within the Facility itself in various processing units and supplemented with natural gas. These light gases are first collected and processed in a gas-processing unit to recover any heavier components that can be refined into marketable products, and then processed to remove most sulfur compounds such as H_2S to reduce sulfur dioxide emissions from the combustion of RFG. These treated light gases are then used as fuel for the heaters and boilers that run the process units. Consumption of RFG in these process units results in both CAP and TAC emissions. Table A4.3-OP-4 lists the TAC emissions associated with RFG.

1.4 THE BAAQMD EMISSIONS INVENTORY

The BAAQMD calculates emissions of CAPs and TACs annually in its Emissions Inventory, or EI. An EI is an itemized list of emissions estimates for sources of air pollution for a specified time period. The BAAQMD requires stationary sources of emissions, such as the Facility, to provide the BAAQMD with an Annual Update on the activity, such as throughput or firing rates, of sources at the Facility.

Chevron submits an Annual Update for the Facility in which it provides information on the usage, or activity, of each source. The BAAQMD reviews that information and then uses that activity information to generate an annual EI, which is referred to as the BAAQMD EI. Due to the completeness of the EI, the fact that it was used in the Chevron Hydrogen and Energy Renewal Project EIR

TABLE A4.3-OP-3 SUMMARY OF EMISSIONS FROM FACILITY STATIONARY SOURCES

Emission Source	CAPs	TACs
RFG/NG Combustion (including flares)	NO _x , CO, PM, VOC, and SO ₂	Fuel combustion TACs ^a
FCC Process	NO _x , CO, PM, VOC, and SO ₂	FCC process TACs
Rheniformer Process	NO _x , SO ₂ , CO, and VOC	H ₂ SO ₄ ^b
Cooling Towers	VOC, PM	C ₁₂ , bromine, NH ₃ , and metals
Loading Terminals (Wharf, Marketing)	VOC	Wharf: motor gas/aviation gas fugitive TACs Marketing: motor gas/aviation gas TACs
Sulfur Recovery Claus Units (Process and Combustion)	NO _x , CO, PM, VOC, and SO ₂	Fuel combustion TACs CS ₂ , H ₂ S, H ₂ SO ₄
H ₂ S Plants	--	Hydrocarbons
Process Component Fugitives	VOC	Hydrogen plant: NH ₃ , hydrocarbons FCC FHT: DEA, H ₂ S, hydrocarbons SRU, H ₂ S plant: DEA, H ₂ S, NH ₃ Tanks: hydrocarbons
Storage Tanks	VOC	PCE Crude/Gas Oil/Motor Gas/Aviation Gas fugitive TACs
Wastewater-related Units	VOC	Hydrocarbons, H ₂ S and NH ₃
Hydrogen Plant Process	CO, VOC	Methanol, Ethanol

Notes: API gravity = American Petroleum Institute gravity; CO = carbon monoxide; CS₂ = carbon disulfide; DEA = diethanolamine; FCC = fluid catalytic cracker; FCC FHT = fluid catalytic cracking feed hydrotreater; H₂S = hydrogen sulfide; H₂SO₄ = sulfuric acid; HNC = heavy neutral hydrocracker; HNF = heavy neutral hydrofinisher; JHT = jet hydrotreater; LNC = light neutral hydrocracker; LNF = light neutral hydrofinisher; NG = natural gas; NH₃ = ammonia; NO_x = oxides of nitrogen; PCE = perchloroethylene (tetrachloroethylene); PM = particulate matter; RFG = refinery fuel gas; RLOP = Richmond lube oil plant; SRU = sulfur recovery unit

^a Fuel combustion TACs are listed in Table A4.3-OP-4.

^b Insignificant compared to SRU.

Source: BAAQMD EI (see *Appendix 4.3-EI*) and BAAQMD EE (see *Appendix 4.3-EE*).

Consolidated Volume (2008 EIR), and the fact that it represents the most comprehensive data on the Baseline emissions according to the BAAQMD, the EI is the primary source of information relied upon in this EIR to determine Baseline emissions.

TABLE A4.3-OP-4 LIST OF FUEL COMBUSTION TACs (RFG)

Acetaldehyde
Antimony ^a
Arsenic
Benzene
Benzo(a)anthracene ^a
Benzo(a)pyrene
Benzo(b)fluoranthene ^a
Benzo(k)fluoranthene ^a
Cadmium
Chrysene ^a
Copper
Ethylbenzene ^a
Formaldehyde
Indeno(1,2,3-cd)pyrene ^a
Lead ^a
Manganese
Mercury
Naphthalene ^a
Nickel
Phenol
Selenium ^a
Toluene
Xylenes ^a
Zinc

^a Only listed as an RFG Combustion TAC in the EE, and not the EI.

Source: BAAQMD EI (see *Appendix 4.3-EI*) and BAAQMD EE (see *Appendix 4.3-EE*).

1.4.1 Estimation of Baseline CAP Emissions from Facility Stationary Sources

Consistent with the 2008 EIR, Baseline CAP emissions are based on the EI compiled by the BAAQMD (see Appendix 4.3-EI) for the Baseline years: 2008, 2009, and 2010.⁶ The EI reports contain annual-average daily emissions of five CAPs—carbon monoxide (CO), oxides of nitrogen (NO_x), PM₁₀/PM_{2.5}, SO₂, and VOCs—for every permitted and formally exempted operational source in the Facility. The EI for the Baseline years and for 2011 are contained in *Appendix 4.3-EI*. Table A4.3-OP-5 contains a comparison of the 2011 EI for the Facility with the EI for 2008, 2009 and 2010. As can be seen by a review of the information, the EI CAPs emissions for 2011 are consistent with emissions as reported in the EI for the Baseline years. Therefore, the Baseline years are representative of normal operating conditions.⁷ The Baseline did not include 2011 because there was insufficient shipping data available to appropriately characterize emissions from that year. However, a comparison of emissions from 2011, where available, indicates that emissions from that year are representative of emissions from other Baseline years. In addition, the Facility throughput, which drives shipping emissions, was also quite similar to Facility throughput in the Baseline period.

TABLE A4.3-OP-5 COMPARISON OF BAAQMD EI EMISSIONS BY YEAR

Pollutant	Emissions (Tons/Year)			
	2008	2009	2010	2011
CO	360	375	383	418
NO _x	819	867	835	877
PM ₁₀ /PM _{2.5}	252	497	455	494
SO ₂	397	471	367	374
VOC	968	878	1,011	1,319

Source: BAAQMD EI (see *Appendix 4.3-EI*).

⁶ This is consistent with the 2008 EIR in the reliance on BAAQMD's EI, though the 2008 EIR used a 1-year period (2005), instead of a 3-year averaging period (2008-2010), as the Baseline.

⁷ On August 6, 2012, a fire broke out in the crude unit at the Facility. This fire resulted in a shutdown of crude unit until its restart in March 2013. During the crude unit shut down the Facility continued to process gas oil and other feedstocks, but did not process crude oil. Accordingly, during the nearly seven month period when the crude unit was not operating, the Facility did not operate in a manner similar to that which occurred during the Baseline period. For this reason, this EIR does not use include 2012 or 2013 within the Baseline period.

The emissions listed in BAAQMD's EI exceed the Title V permit limits for two pollutants for the fluid catalytic cracker (FCC): PM₁₀, and VOC. The PM₁₀ emissions for the FCC listed in the Title V permit are 92 tons/year. The EI listed emissions of 94, 343, and 287 tons/year for 2008, 2009, and 2010, respectively. Similarly, the VOC emissions listed in the EI were 29, 29, and 24 tons/year for 2008, 2009, and 2010. These emission rates are also in excess of the Title V permit limit of 6.1 tons/year. This is discussed for each pollutant further below.

The Chevron FCC unit Title V permit contains the requirement that compliance with the PM10 limit be measured quarterly using EPA Method 5B. EPA Test Method 5B is designed to measure non-sulfuric acid particulate matter. Specifically, EPA 5B results do not include sulfuric acid but do include sulfate salts that condense above 320 degrees Fahrenheit (°F). Using EPA Method 5B, Chevron measured the FCC's emissions at 14 tons/year, below the permit limit of 92 tons/year.

In 2009 and 2010, the BAAQMD conducted two source tests where an impinger train, which is equipment designed to collect vapor phase particulates, was included at the end of the standard EPA method 5B sampling train. The impinger train was used to collect particulate matter that condenses between 320°F and ambient conditions. The BAAQMD measured PM₁₀ emissions using this method and derived an emission factor of 2.3 pounds (lbs)/ton of coke burned. As a result of those two source tests, and the activity information filed by Chevron, the BAAQMD estimated emissions to be much higher than emissions estimated using the EPA methods specified in the Chevron FCC unit Title V permit and used by Chevron.

Because the test method used by the BAAQMD is not the same test method used to evaluate compliance in the Title V permit, Chevron remains in compliance with its Title V permit, even though the emissions as calculated in the EI are above the Title V permit limit. In addition, because the source test used by the BAAQMD captures more information about PM₁₀ emissions than does the EPA Method 5B, the PM₁₀ emissions value based on the BAAQMD source test and contained in the EI will be used to represent PM₁₀ emissions for purposes of this EIR in the Baseline.

For VOCs, Chevron filed a permit application in September of 2010 to revise the VOC limit to 25.7 tons/year because Chevron believed the current limit may have been established using unreliable test data. (See September 22, 2010 Application to BAAQMD). Subsequent to the permit application, one source test conducted by Chevron in October 2010, indicated that VOC emissions were in excess of the Title V permit limit of 6.1 tons/year. The permit application is pending with the BAAQMD. Based upon consultation with the BAAQMD, the EI emissions, which are

in excess of currently permitted limits, but within the limits specified in Chevron's pending permit application, are used for purposes of this EIR for the Baseline.

1.4.1.1 Ongoing Refinery Operations Monitoring

The Facility has several continuous emissions monitoring devices, called CEMs, installed in its furnace stacks. Depending on the source, these devices measure concentrations (in ppm) of CO, NO_x, or SO₂. In most cases, the concentration measurements are combined with flow rate calculations to calculate mass emissions in lbs/day. Chevron submits this data to the BAAQMD on a monthly basis, and uses it to determine compliance with emissions permit conditions.

1.4.1.1.1 US EPA

The EPA compiles a National Emissions Inventory (NEI) for CAPs and hazardous air pollutants (HAPs) from stationary and mobile sources triennially, based primarily on emission estimates and models using data provided by state, local and tribal air agencies, and using supplemental data developed by EPA. 2008 CAP emissions estimates for Refinery Operations from the EPA NEI are summarized in Table A4.3-OP-6.

**TABLE A4.3-OP-6 SUMMARY OF 2008 CAP EMISSIONS FOR
REFINERY OPERATIONS FROM NEI DATABASE**

Pollutant	2008 Emissions (Tons/Year)
NO _x	826
SO ₂	1,697
VOC	1,046
CO	547
PM ₁₀	209

Source: EPA, 2008.

1.4.1.1.2 State Reporting

In California, the Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588), which was enacted in 1987, requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of AB 2588 are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify

nearby residents of significant risks, and to reduce those significant risks to acceptable levels.

1.4.1.1.3 Other Monitoring and Reporting

Local regulations also require monitoring and reporting of emissions. One such regulation--Regulation 9 Rule 10, which was adopted by BAAQMD on January 5, 1994 and subsequently amended by BAAQMD on July 17, 2002—imposes a refinerywide average NO_x emissions limit on refinery boilers, steam generators and process heaters (excluding CO boilers) that were permitted prior to the adoption of the rule. The rule also imposes a specific (not average) NO_x emission limit on all CO boilers. On a quarterly basis, facilities subject to the requirements of the rule are required to submit to BAAQMD a summary of the data (e.g., CEMs or equivalent parametric monitoring system) used to demonstrate compliance.

Some monitoring and reporting requirements from BAAQMD also appear in existing Chevron permits. For example, monthly compliance reports are required by Chevron's Authority to Construct No. 27797 for the Richmond lube oil plant (RLOP). These compliance reports include calculations of SO₂, NO_x, CO, nonmethane hydrocarbons, and total suspended particulates using equations specific to RLOP permit conditions.

1.4.2 Estimation of Baseline TAC Emissions from Facility Stationary Sources

The Baseline TAC EI was prepared from the same data source as the CAP emissions Baseline – the BAAQMD EI. While the EI for CAPs contain some groups of chemicals, such as VOCs, the BAAQMD EI for TACs contains individual chemicals, such as benzene and toluene that may fall into the broad category of VOCs. Similarly, particulate matter contains individual chemicals, such as lead and arsenic. In order to characterize the individual chemical constituents of groups of chemicals, speciation profiles are used. Speciation profiles provide estimates of the chemical composition of emissions, and are used in the emission inventory and air quality models. Regulatory agencies, such as CARB and the BAAQMD, maintain and update estimates of the chemical composition and size fractions of particulate matter and reactive organic gases, for a variety of emission source categories.

The Baseline TAC EI contains information on chemical emissions for each Facility source. In some cases, the information is presented for individual chemicals, such as benzene and toluene. In other cases, the emissions information is presented for groups of chemicals, such as crude oil or aviation gas. The ultimate use of the TACs EI is to evaluate the impact of chemical emissions on public health. While there is information on the public health impacts of

individual chemicals, there is little information on the public health impacts of blends of chemicals. Accordingly, a methodology was needed to split the groups of chemicals found in the BAAQMD EI into individual chemicals.

The BAAQMD specified that groups of chemicals be characterized as individual chemicals using the EPA's refinery Information Collection Request (ICR) document (EPA, 2011). Most groups of chemicals in the BAAQMD EI were from vapor emissions from liquids being held in tanks at the Facility. Therefore, speciation profiles of vapor emissions were required. While the EPA ICR document provided liquid speciation profiles for a number of materials, the only vapor speciation profile available was for reformulated gasoline. Reformulated gasoline contains a higher proportion of TACs in the liquid phase than other materials listed in the EPA ICR document. As a result, the vapor emissions of reformulated gas would also contain a higher proportion of TACs than other materials listed in the EPA ICR document. A comparison of the liquid profiles for reformulated gasoline and crude oil is below in Table A4.3-OP-7. While some minor components of crude oil are not present in the reformulated gasoline profile, every other constituent is present in greater amounts in reformulated gasoline.

TABLE A4.3-OP-7 COMPARISON OF EPA ICR LIQUID SPECIATION PROFILES

Chemical	ICR Liquid Phase wt%	
	Reformulated Gasoline	Crude Oil
1,3-Butadiene	--	0.0000981
n-Hexane	1.36	1.341
2,2,4-Trimethyl pentane	1.1	0.185
Benzene	0.8	0.312
Toluene	7	0.542
Xylenes (total)	7.31	0.811
Ethylbenzene	1.26	0.186
Cumene	0.19	0.108
1,2,4-Trimethyl benzene ^a	2.52	0.377
Naphthalene	0.21	0.139
Biphenyl	--	0.03
Other VOCs	78.25	95.97

Note: wt% = weight percent

^a From the EPA ICR table: 1,2,4-trimethyl benzene is not a TAC, but is a common VOC component of many refinery streams.

Source: EPA, 2011.

In the BAAQMD EI, emissions from gasoline tanks were the only partially speciated material type. Reported emissions for gasoline tanks included “gasoline” as well as benzene, toluene, ethylbenzene, and xylene (BTEX). Table A4.3-OP-8 compares the EPA ICR reformulated gasoline vapor profile to the BAAQMD EI. The table clearly demonstrates that the EPA ICR profile is conservative, as it has both more chemicals and greater fractions of the four BTEX chemicals.

TABLE A4.3-OP-8 COMPARISON OF GASOLINE VAPOR SPECIATION PROFILES

Chemical	Gasoline Vapor Phase wt%	
	ICR (Reformulated Gasoline)	EI (Unleaded Gasoline)
1,3-Butadiene	--	--
n-Hexane	1.13	--
2,2,4-Trimethyl pentane	0.3	--
Benzene	0.42	0.3
Toluene	1.09	1.02
Xylenes (total)	0.35	0.12
Ethylbenzene	0.07	0.07
Cumene	0.005	--
1,2,4-Trimethyl benzene ^a	--	--
Naphthalene	0.0003	
Biphenyl	--	--
Other VOC	96.63	98.49

Note: wt% = weight percent

^a From the EPA ICR table: 1,2,4-trimethyl benzene is not a TAC, but is a common VOC component of many refinery streams.

Source: BAAQMD EI (see *Appendix 4.3-EI*); EPA, 2011.

To be conservative, as agreed with the BAAQMD, the speciation profile for reformulated gas vapors was used to identify the chemical species in all groups of chemicals listed in the EI with emissions greater than 1,000 lbs/year increase between Baseline and Modernization Project emissions. This accounted for more than 90% of groups of chemical emissions and included unleaded gasoline, lube oil, “other hydrocarbon mixtures,” alkylate, crude oil, leaded gasoline (leaded avgas), naphtha, and distillate oil. The use of the reformulated gasoline vapor speciation profile to these 90% of the groups of chemicals results in a

conservative estimate of TAC emissions. No speciation profile was used for the balance of the groups of chemical emissions.

In determining the TAC emissions Baseline, all chemicals for which data were available from the BAAQMD EI, BAAQMD EE, and the specified ICR profile were considered. As noted earlier, the TAC emissions are used to estimate the impact of emissions on public health. Accordingly, these chemicals were evaluated for inclusion in the TAC emissions Baseline inventory, consistent with the BAAQMD's Regulation 2, Rule 5 methodology for evaluating TACs from new stationary sources (BAAQMD, 2010).

1.4.3 Adjustments to Baseline Emissions

As discussed above, because new regulations and equipment changes are scheduled to be implemented before the January 2016 expected start date of the Modernization Project, and consistent with the Supreme Court decision in Smart Rail, the Baseline is the appropriate metric for evaluating the significance of Modernization Project air emissions impacts and for assuring that there is No Net Increase in CAP emissions. The Baseline will generally result in emissions that are lower than actual 2008-2010 emission levels for Refinery Operations, even if the Modernization Project is not approved.

The specific issues addressed and incorporated in the Baseline for CAPs can be found in each section below detailing the calculation of the Baseline emissions.

In consultation with BAAQMD, the EI data has been supplemented with other BAAQMD data to the extent available and applicable. In order of preference, these alternative data sources are:

- Emissions as recorded by the CEMs from 2008-2010, which were used in lieu of EI data for the Baseline
- The 2008 BAAQMD EE for the Chevron Hydrogen and Energy Renewal Project (2008 Project), which is contained in *Appendix 4.3-EE*, and which has detailed EEs for some Facility and Modernization Project components
- Updated emission factors from the BAAQMD EI itself (i.e., factors that have been updated since the Baseline period EIs originally were compiled)

Each of these three categories of adjustments to the BAAQMD EI Baseline data is further described below. There were no regulatory changes scheduled to take effect prior to 2016 that warranted adjustments to Facility stationary source CAP Emissions. The updated emission factors for the EI are contained in *Appendix 4.3-EI*.

1.4.4 Continuous Emission Monitoring Data

Many of the furnaces at the Facility have continuous emission monitoring (CEMs) to track emissions. CEMs are monitors that continually measure emissions of certain CAPs from the stacks at the Facility. CEMs monitoring is a legal requirement for certain refinery operational equipment under BAAQMD rules and regulations, as well as under the terms of Facility permits issued by BAAQMD. Chevron records the data from these monitors, and files the reports monthly with the BAAQMD (Lazarraga, 2008). CEMs are also tested at a minimum annually, and up to quarterly, in accordance with BAAQMD and EPA requirements⁸ to ensure that they are accurately measuring emissions. CEMs are in place on most furnaces to measure NO_x. CEMs on the FCC and SRU both monitor SO₂, and CEMs on the FCC, one RLOP furnace, one of two jet hydrotreater (JHT) furnaces, and both Cogen units monitor CO. A full list of CEMs at the Facility along with the pollutants monitored during the baseline years is contained in Table A4.3-OP-9, along with the emissions measured during the baseline period by those CEMs. CEMs data was determined to be more accurate than EI data, which is generally calculated, based on more generalized data sources. The original CEMs reports for the baseline period were provided in Chevron Data Transmittal #66.

FCC (all pollutants) and SRU emissions are reported as daily averages. Daily emissions from the Baseline period were summed for each year in the Baseline period, and averaged to calculate annual average emissions over the Baseline period.

For most NO_x CEMs, the CEMs report contains a measured average emission factor (in pounds of pollutant/million British Thermal Units (MMBTU) fired) and firing rate (in MMBTU/hour) for each operating day. These two values were multiplied to calculate daily emissions, which were then summed and averaged to calculate annual average emissions over the Baseline period.

⁸ Federal requirements require all CEMs to be subject to quarterly cylinder gas audits or relative accuracy audits, and annual relative accuracy test audits (RATA) (EPA, 2012). In addition, all CEMs are subject to random field accuracy tests conducted by BAAQMD.

TABLE A4.3-OP-9 MASS EMISSIONS CALCULATED FROM REFINERY CEMS

BAAQMD Source ID	Plant	Baseline Average Emissions (tons/year)		
		CO	NO _x	SO ₂
4038	Catalytic reformer	-	10.8	-
4039	Catalytic reformer	-	10.8	-
4040	Catalytic reformer	-	9.6	-
4041	Catalytic reformer	-	9.6	-
4042	Catalytic reformer	-	5.7	-
4043	Catalytic reformer	-	5.7	-
4044	Catalytic reformer	-	6.4	-
4045	Catalytic reformer	-	6.4	-
4059	Hydrotreaters	-	7.5	-
4060	Hydrotreaters	19.1	7.1	-
4061	Hydrotreaters	-	19.4	-
4062	Hydrotreaters	-	19.4	-
4070	Crude unit	-	26.7	-
4071	Crude unit	-	29.1	-
4072	Crude unit	-	11.4	-
4129	Power plant	-	7.9	-
4131	Power plant	-	6.2	-
4132	Power plant	-	5.7	-
4133	Power plant	-	5.2	-
4135	Power plant	-	12.0	-
4152	SDA	-	1.3	-
4155	SDA	-	22.0	-
4159	FCC/FHT	-	3.0	-
4160	FCC/FHT	-	3.0	-
4161	Hydrocracker	-	15.3	-
4162	Hydrocracker	-	15.3	-
4163	Hydrocracker	-	15.3	-
4164	Hydrocracker	-	3.0	-
4165	Hydrocracker	-	3.0	-

TABLE A4.3-OP-9 MASS EMISSIONS CALCULATED FROM REFINERY CEMS

BAAQMD Source ID	Plant	Baseline Average Emissions (tons/year)		
		CO	NO _x	SO ₂
4166	Hydrocracker	-	3.0	-
4167	FCC/FHT	-	9.3	-
4168	Hydrocracker	-	16.2	-
4169	Hydrocracker	-	15.4	-
4170	Hydrogen plant	-	41.8	-
4171	Hydrogen plant	-	49.6	-
4192	SRU	-	-	8.0
4193	SRU	-	-	10.6
4194	SRU	-	-	13.8
4227	SRU	-	-	8.0
4228	SRU	-	-	10.6
4229	SRU	-	-	13.8
4285	FCC	43.4	102.7	173.3
4330	RLOP	-	1.6	-
4331	RLOP	-	1.6	-
4332	RLOP	-	1.6	-
4333	RLOP	0.3	1.7	-
4334	RLOP	0.3	1.7	-
4335	RLOP	0.3	1.7	-
4336	RLOP	-	1.4	-
4337	RLOP	-	1.4	-
4338	RLOP	-	1.4	-
4339	RLOP	-	1.4	-
4350	Cogeneration ^a	-	30.5	-
4351	Cogeneration ^a	-	15.2	-
4352	Cogeneration ^a	-	30.5	-
4353	Cogeneration ^a	-	15.3	-

a. Cogeneration CO data is not included in Chevron's monthly CEMS reports because there is no CO limit on the Cogeneration unit with which to demonstrate compliance.
Source: Chevron Data Transmittal #66, 2014.

For two sources (cogeneration NO_x and JHT CO), CEMs data were provided in stack gas concentration parts per million (ppm) of pollutant and percent oxygen (%O₂). Consistent with BAAQMD direction, these values were converted to emission factors by way of the EPA Method 19 “F-Factor” (EPA, 2013):

$$EF = C_d * F_d * \frac{20.9}{20.9 - \%O_{2d}} \quad \text{Equation A4.3-OP-1}$$

Where:

EF = Emission factor (lbs/MMBTU)

C_d = Pollutant concentration, dry basis (lbs/dry standard cubic feet [dscf])

F_d = F Factor, fuel-specific, (dscf/MMBTU) determined at standard conditions (20 degree Celsius (°C) and 1 standard atmosphere [atm])

20.9 = %O₂ in air

%O_{2d} = %O₂ at stack exit, dry basis

Pollutant concentrations in ppm were converted to lbs/dscf by the following formula:

$$C_d = \frac{ppm}{1,000,000} * \frac{M * P}{T * R} \quad \text{Equation A4.3-OP-2}$$

Where:

M = Pollutant molecular weight (lbs/lb-mol), used M of NO₂ for NO_x

P = Pressure (1 atm)

T = Temperature (293 K)

R = Gas constant (1.3 cubic feet atm/K lb-mol)

The emission factors calculated from these two equations were combined with firing rate data to calculate emissions. Cogeneration firing rate data were only available on an annual basis, so the resulting emission factors were averaged for each year of the Baseline period. Daily firing rate data were provided for the JHT and RLOP furnaces, so emissions were calculated via the F-Factor method, described in equations A4.3-OP-1 and A4.3-OP-2 above, using the molecular mass of CO in equation OP-2. Because CO ppm data were not available for the RLOP furnaces in January 2008, the 2008 emissions from the remaining 11 months of data were prorated (i.e., multiplied by 12/11) to represent a full year of emissions.

1.5 BAAQMD ENGINEERING EVALUATION

In September 2008, the BAAQMD conducted an EE for the 2008 Project (BAAQMD, 2008b). The EE provided Baseline and Modernization Project emission factors for sources affected by the 2008 Project, including existing Facility process units and equipment. This EE represents the most comprehensive recent

review by BAAQMD staff of process units and equipment being modified by the Modernization Project, Table A4.3-OP-10 shows the sources evaluated in the 2008 EE for the 2008 Project, and those sources which remain included in the currently proposed Modernization Project evaluated in this EIR. This table also notes when an EE emission estimate is used in lieu of the BAAQMD EI for existing Facility equipment. The EE emission estimate is always used for proposed Modernization Project components, as discussed in the consideration of Modernization Project impacts below.

TABLE A4.3-OP-10 ENGINEERING EVALUATION COMPONENTS

Source	Included in 2008 Project	Included in Current Modernization Project
Hydrogen Plant Replacement	X	X
New Hydrogen Plant Cooling Tower	X	X
New Hydrogen Plant Flare	X	X
SRU Expansion	X	X
Sulfur Truck Loading Rack Replacement	X	X ^a
Hydrocracker Low- NO _x Burner	X	X
Poly Plant Low- NO _x Burner	X	X
FCC FHT (Feed Hydrotreater) Debottleneck	X	X
Catalytic Reformer Replacement	X	
Power Plant Replacement	X	

^a The Sulfur Truck Loading Rack Replacement will be conducted as a separate, parallel project. This will occur after the Baseline; thus, for emissions calculation purposes, it is being considered as part of the Modernization Project.
Source: BAAQMD EE (see *Appendix 4.3-EE*).

These emission factors were combined with BAAQMD EI annual activity for the Baseline period to calculate annual emissions. In the case of combustion sources, the EE Emission factors were in units of lbs/MMBTU, which required conversion to be combined with EI activities given in standard cubic feet (scf)/year of fuel gas. BAAQMD provided the following high heating values (HHVs) in order to convert MMBTU into scf (Table A4.3-OP-11):

**TABLE A4.3-OP-11 BAAQMD HIGH HEATING
VALUES**

Fuel Type	HHV (BTU/scf)
Natural Gas	1,050
Refinery Fuel Gas	1,085

Note: BTU = British thermal units

Source: Personal communication with Nicholas Maiden of the BAAQMD. 11 September, 2013.

The EE provided SRU emission factors for NO_x, CO, and PM₁₀/PM_{2.5} in other units: CO and NO_x emission factors were in ppm, and PM₁₀/PM_{2.5} emission factors were in grains/scf. Both of these measurements required stack gas flow rate to calculate emissions, which was not available in the EI – EI data for the SRU was limited to furnace firing (in therms/year) and sulfur production (in long tons/year). To characterize emissions based on these EE emission factors, new emission factors in units of “tons of pollutant/tons sulfur produced” were calculated based on data in the EE, by the following equation:

$$EF = \frac{E}{S} \quad \text{Equation A4.3-OP-3}$$

Where:

EF = emission factor (tons pollutant/long ton sulfur)

E = Emissions reported in EE (tons/year)

S = Sulfur production reported in EE (tons/year)

Separate emission factors were calculated for each release point. Based on the EE, the three SRU stack gas heaters and the three thermal oxidizers are grouped into three release points, with each release point consisting each of one stack gas heater and one thermal oxidizer. These emission factors were then combined with average EI sulfur production values to calculate emissions for the Baseline (see Table A4.3-OP-12).

TABLE A4.3-OP-12 EMISSION FACTORS DERIVED FROM BAAQMD EE

Source ID	Name	Material	Engineering Evaluation Emission Factor					Units
			CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC	
4038	#4 Rheniformer, F-3550	Chevron RFG	0.0018	-	0.0076	0.0058	0.0058	lbs/1,000 ft ³
4039	#4 Rheniformer, F-3560	Chevron RFG	0.0018	-	0.0076	0.0058	0.0058	lbs/1,000 ft ³
4040	#4 Rheniformer, F-3570	Chevron RFG	0.0018	-	0.0076	0.0058	0.0058	lbs/1,000 ft ³
4041	F3580, #4 Rheniformer	Chevron RFG	0.0018	-	0.0076	0.0058	0.0058	lbs/1,000 ft ³
4042	#5 Rheniformer F550 W/36 Ultra Low NO _x Burners	Chevron RFG	0.0038	-	0.0076	0.0058	0.0058	lbs/1,000 ft ³
4043	F560, #5 Rheniformer	Chevron RFG	0.0038	-	0.0076	0.0058	0.0058	lbs/1,000 ft ³
4044	#5 Rheniformer F570	Chevron RFG	0.0038	-	0.0076	0.0058	0.0058	lbs/1,000 ft ³
4045	#5 Rheniformer F580	Chevron RFG	0.0038	-	0.0076	0.0058	0.0058	lbs/1,000 ft ³
4129	800# Steam Boiler #1 #1pp	Chevron RFG	0.0017	-	0.0081	0.0058	0.0059	lbs/1,000 ft ³
4131	800# Steam Boiler #3 #1pp	Chevron RFG	0.0017	-	0.0081	0.0058	0.0059	lbs/1,000 ft ³
4132	800# Steam Boiler #4 #1 Pp	Chevron RFG	0.0017	-	0.0081	0.0058	0.0059	lbs/1,000 ft ³
4133	800# Steam Boiler #5 #1pp	Chevron RFG	0.0017	-	0.0081	0.0058	0.0059	lbs/1,000 ft ³
4135	800# Steam Boiler #7 #1 Pp	Chevron RFG	0.0017	-	0.0081	0.0058	0.0059	lbs/1,000 ft ³
4158	Hydrogen Plant Preheat Furnace F-340	Chevron RFG	0.0107	0.0250	0.0076	0.0058	0.0058	lbs/1,000 ft ³
4159	F410 FCC FHT Feed Furnace	Chevron RFG	0.0177	-	0.0081	-	-	lbs/1,000 ft ³
4160	F420 FCC FHT Feed Furnace	Chevron RFG	0.0177	-	0.0081	-	-	lbs/1,000 ft ³
4161	F-510 Hydrocracker Feed Furnace/Low NO _x Burners	Chevron RFG	0.0177	-	0.0081	-	-	lbs/1,000 ft ³
4162	F-520 Hydrocracker Furnace/Low-NO _x Burners	Chevron RFG	0.0177	-	0.0081	-	-	lbs/1,000 ft ³

TABLE A4.3-OP-12 EMISSION FACTORS DERIVED FROM BAAQMD EE

Source ID	Name	Material	Engineering Evaluation Emission Factor					Units
			CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC	
4163	F-530 Hydrocracker Feed Furnace/Low NO _x Burners	Chevron RFG	0.0177	-	0.0081	-	-	lbs/1,000 ft ³
4167	F-710 FCC FHT Fractionator	Chevron RFG	0.0177	-	0.0081	-	-	lbs/1,000 ft ³
4170	F305 Reforming Furnace, Hydrogen Plant	Chevron RFG	0.0089	-	0.0114	0.0058	0.0058	lbs/1,000 ft ³
4171	F355 Reforming Furnace, Hydrogen Plant	Chevron RFG	0.0049	-	0.0076	0.0058	0.0058	lbs/1,000 ft ³
4188	F-651 Polymer Furnace/Low NO _x Burners	Chevron RFG	0.0177	-	0.0081	-	-	lbs/1,000 ft ³
4189	F-661 Polymer Furnace/Low NO _x Burners	Chevron RFG	0.0177	-	0.0081	-	-	lbs/1,000 ft ³
4192	F-2170 Stack Gas Heater #1 SRU Catalytic Cracker	Natural gas	-	-	-	-	0.0057	lbs/1,000 ft ³
4193	F-2270 Tail Gas Heater #2 SRU	Natural gas	-	-	-	-	0.0057	lbs/1,000 ft ³
4194	F-2370 Tail Gas Heater #3 SRU	Natural gas	-	-	-	-	0.0057	lbs/1,000 ft ³
4227	SRU #1 Train	Sulfur	2.2638	0.3009	0.2557	-	-	lbs/long ton sulfur
4228	SRU #2 Train	Sulfur	1.3869	0.5671	0.2324	-	-	lbs/long ton sulfur
4229	SRU #3 Train	Sulfur	1.6893	0.4363	0.2335	-	-	lbs/long ton sulfur
4237	No. 5 Rheniformer	Facility feedstock – other/not	0.2760	0.0041	-	0.0059	0.0690	lbs/1,000 barrels
4250	Hydrogen Manufacturing Plant	Hydrogen (gas)	0.4073	-	-	-	0.1857	lbs/MM ft ³
4283	No. 4 Catalytic Reformer	Catalytic reformer fresh feed	0.2760	0.0041	-	0.0059	0.0690	lbs/1,000 barrels

Note: ft³ = cubic feet; MM = millionSource: BAAQMD EE (see *Appendix 4.3-EE*).

1.6 UPDATED EI EMISSION FACTORS

BAAQMD staff also periodically review the EI, including emission factors used to estimate Facility emissions, and make adjustments to these factors. Where a factor was adjusted since the Baseline period, or during recent BAAQMD consultations, the newer factor was used in lieu of the superseded factors included in prior EI reports.

The EI data provided by the BAAQMD contained both unabated and abated emissions. “Unabated” emissions are emissions as they would be without any control devices such as low-NO_x burners, baghouses, or scrubbers. “Abated” emissions are the emissions after they have passed through one or more such devices. If a source is connected to an abatement device, the abated emissions represent what is being released to the atmosphere. A source may be connected to multiple devices in series, in which case the abated emissions would represent the emissions after the final device; other sources may not have any abatement, in which case the abated emissions are equal to the unabated emissions.

Relationships between emission sources and abatement devices are noted in the BAAQMD data by Source ID numbers and “Train” ID numbers. A “Train” is simply a path that emissions follow from an emission source to a release point. A source in the BAAQMD EI (e.g., a single furnace) has a Source ID number and a Train ID number. An abatement device has a Device ID number and one or more Train ID numbers. This is because a single abatement device may be connected to multiple emission sources; each of these connections has its own Train ID.

At the BAAQMD’s direction, abatement factors were determined in two ways for each source. First, abatement factors were matched by Train ID number, throughput material type, and pollutant. Second, abatement factors were matched by Source ID number, throughput material type, and pollutant. For example, Source 4285 (FCC) lists A14 as a Train ID. There are no abatement devices listed for this Train ID, but there is an abatement device listed under Train S4285, which matches the Source ID. Even though “S4285” was not a listed Train ID for the source, the BAAQMD has confirmed that their database uses this form of ID matching. The general equation for calculating abated emission factors is as follows:

$$EF_A = EF_U \times AF_T \times AF_S \quad \text{Equation A4.3-OP-5}$$

Where:

EF_A = Abated Emission Factor

EF_U = Unabated Emission Factor

AF_T = Abatement Factor for Train ID (if none, 1)

AF_S = Abatement Factor for Source ID (if none, 1)

It is important to note that the updated emission factors provided by the BAAQMD were speciated, and that the updated EI emission factors do not contain one VOC factor per source. However, the abatement factors were not speciated; an abatement device that destroys or removes organic material is simply listed as having an “organics” abatement factor. In order to reproduce organic (VOC) criteria emissions, the organic abatement factor for a particular source was applied to all non-methane organic emission factors for that source (based on the raw EI data, the BAAQMD does not include methane as part of VOCs in its CAP EI). The resulting abated emission factors were then summed to calculate a single abated VOC emission factor. For example, if a source emits both benzene and toluene and is connected to a device that abates organics, the emission factor would be calculated as is shown below:

$$EF = AF \times (EF_B + EF_T) \quad \text{Equation A4.3-OP-6}$$

Where:

- EF = the updated, abated emission factor
- AF = organics abatement factor
- EF_B = unabated emission factor for benzene
- EF_T = unabated emission factor for toluene

In addition to updated emission factors, the BAAQMD also provided equations and parameters for the small set of sources at the Chevron Marketing Terminal, which were in a separate EI. Only one of these sources had any updated data: when recalculated with the provided parameters, tank S-10 (distillate oil throughput) emissions in 2008 changed from 330.6 lbs/day to 10.8 lbs/day. The BAAQMD did not indicate which parameters had been changed. The updated value of 10.8 lbs/day was incorporated into the Baseline average annual emissions.

Table A4.3-OP-13 contains all of the updated EI emission factors.

1.7 OTHER UPDATES TO THE EI

At the direction of the BAAQMD, some additional changes were made to EI emission factors and activity data to better reflect emissions during the Baseline period. The NO_x emission factor for source S-4349 (RLOP furnace) was updated to reflect a source test that was not included in the updated EF data described above. In addition, the RFG consumption of three other furnaces (S-4044, S-4333, and S-4339) were identified as incorrect by Chevron and subsequently corrected by the BAAQMD in their EI. The updated fuel consumption values for these furnaces were provided in Chevron Data Transmittal #60, 2013.

TABLE A4.3-OP-13 EI EMISSION FACTORS UPDATED AFTER 12/31/2007

Source	Description	Material	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC	EF Units
4107	Heat Treating Furnace No. 1 Boiler Shop	natural gas	--	--	--	--	5.8E-03	lbs/1,000 ft ³
4161	F-510 Hydrocracker Feed Furnace/ Low NO _x Burners	natural gas	--	--	--	--	5.8E-03	lbs/1,000 ft ³
4162	F-520 Hydrocracker Furnace/Low-NO _x Burners	natural gas	--	--	--	--	5.8E-03	lbs/1,000 ft ³
4163	F-530 Hydrocracker Feed Furnace/Low NO _x Burners	Chevron RFG	--	--	--	--	2.9E-03	lbs/1,000 ft ³
4163	F-530 Hydrocracker Feed Furnace/Low NO _x Burners	natural gas	--	--	--	--	5.8E-03	lbs/1,000 ft ³
4167	F-710 FCC FHT Fractionator	Chevron RFG	--	--	--	--	2.9E-03	lbs/1,000 ft ³
4188	F-651 Polymer Furnace/Low NO _x Burners	natural gas	--	--	--	--	5.8E-03	lbs/1,000 ft ³
4189	F-661 Polymer Furnace/Low NO _x Burners	natural gas	--	--	--	--	5.8E-03	lbs/1,000 ft ³
4192	F-2170 Stack Gas Heater #1 SRU Cat Crack.	natural gas	--	--	--	--	5.8E-03	lbs/1,000 ft ³
4193	F-2270 Tail Gas Heater #2 SRU	Chevron RFG	--	--	--	--	2.9E-03	lbs/1,000 ft ³
4193	F-2270 Tail Gas Heater #2 SRU	natural gas	--	--	--	--	5.8E-03	lbs/1,000 ft ³
4194	F-2370 Tail Gas Heater #3 SRU	natural gas	--	--	--	--	5.8E-03	lbs/1,000 ft ³
4227	SRU #1 Train	sulfur	--	--	--	1.1E+00	--	lbs/ton
4228	SRU #2 Train	sulfur	--	--	--	1.2E+00	--	lbs/ton
4229	SRU #3 Train	sulfur	--	--	--	1.1E+00	--	lbs/ton
4285	FCC Plant	coke	3.1E-01	6.7E-01	2.3E+00	1.2E+00	--	lbs/ton
4285	FCC Plant	FCC fresh feed, refinery	--	--	5.1E-03	--	--	lbs/1,000 barrel
4333	FCC FHT Vacuum Furnace, F-1750	Chevron RFG	--	--	--	--	2.9E-03	lbs/1,000 ft ³
4348	Hydrogen Recovery Plant	hydrocarbon - mixtures	--	--	--	--	3.7E-02	lbs/ton

TABLE A4.3-OP-13 EI EMISSION FACTORS UPDATED AFTER 12/31/2007

Source	Description	Material	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC	EF Units
4350	Gas Turbine With Steam Injection	medium BTU natural gas	5.9E-03	3.7E-01	1.9E-03	5.7E-04	3.9E-04	lbs/1,000 ft ³
4352	Gas Turbine With Steam Injection	medium BTU natural gas	5.9E-03	3.7E-01	1.9E-03	5.7E-04	3.9E-04	lbs/1,000 ft ³
4354	Butamer Plant	paraffins - C3+	--	--	--	--	--	lbs/1,000 gal
4355	Deisobutanizer Plant	paraffins - C3+	--	--	--	--	--	lbs/1,000 gal
4391	No. 1 Oxidation Pond	fresh water	--	--	--	--	2.1E-01	lbs/1,000 gal
4392	Wetland Marsh	waste water - other	--	--	--	--	2.1E-01	lbs/1,000 gal
4440	Jet Additive Project Fugitive Sources	petroleum products - other	--	--	--	--	5.6E-01	lbs/1,000 gal
7013	SRU Standby Generator	diesel fuel	--	--	--	--	1.1E+01	lbs/1,000 gal
7513	Stormwater Pump Engine, P-302a	diesel fuel	1.5E+01	1.8E+02	8.0E-01	--	8.1E-01	lbs/1,000 gal
7514	Stormwater Pump Engine, P-302b	diesel fuel	1.5E+01	1.8E+02	8.0E-01	--	8.1E-01	lbs/1,000 gal
7523	Air Compressor Engine, P-1603	diesel fuel	6.4E+01	2.6E+02	2.1E+00	--	1.7E+00	lbs/1,000 gal
7531	Diesel Engine, Detroit Diesel Model 80637305, Emergency Stan	diesel fuel	--	--	--	--	3.3E+01	lbs/1,000 gal
7534	Plant Protection Standby Generator	diesel fuel	--	--	--	--	3.8E+00	lbs/1,000 gal
7538	Emergency Standby Diesel Generator Set	diesel fuel	--	--	--	--	1.0E+01	lbs/1,000 gal
32100	Fugitive Sources - Vacuum Producing Systems	material unknown	--	--	--	--	--	lbs/day
32101	Fugitive Sources - Process Vessel Depressurization	material unknown	--	--	--	--	5.4E-02	lbs/day
32102	Fugitive Sources - Valves And Flanges	material unknown	--	--	--	--	8.5E+02	lbs/day
32104	Fugitive Sources - Pressure Relief Valves	material unknown	--	--	--	--	4.9E-02	lbs/day

TABLE A4.3-OP-13 EI EMISSION FACTORS UPDATED AFTER 12/31/2007

Source	Description	Material	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC	EF Units
32105	Fugitive Sources - Process Drains	material unknown	--	--	--	--	7.8E+01	lbs/day
32110	Process Gas (Combustion) Emissions From Flares And Blowdown	material unknown	1.0E+01	1.9E+00	1.6E-01	3.1E+01	1.3E+01	lbs/day

Note: ft³ = cubic feet; gal = gallons
Source: BAAQMD EI (see *Appendix 4.3-EI*).

If CEMs, EE, or updated EI Emission Factors were not available, the Baseline emissions estimates were set equal to the EI emissions as originally reported by the BAAQMD for the Baseline period.

As is shown in Table A4.3-OP-14, the Baseline emissions are lower than Baseline emissions for NO_x , SO_2 and VOC, but higher for CO and $\text{PM}_{10}/\text{PM}_{2.5}$.

TABLE A4.3-OP-14 EXISTING SETTING BASELINE AND ADJUSTED BASELINE CRITERIA EMISSIONS

	Annual Average Emissions (Tons/Year)				
	CO	NO_x	$\text{PM}_{10}/\text{PM}_{2.5}$	SO_2	VOC
Existing Setting Baseline (2008-2010)	372	841	401	411	960
Baseline	406	756	487	353	937

Source: BAAQMD EI (see *Appendix 4.3-EI*).

1.8 ADJUSTEMENTS TO FACILITY STATIONARY SOURCE BASELINE TACS

TACs data were selected using the same hierarchy as CAPs emissions, except that no CEMs data for TACs are available. The EE included a limited number of speciated emission factors for sources included in both the 2008 Project and the currently proposed Modernization Project. These emission factors are combined with EI emission factors as described below.

Sources and pollutants considered by the 2008 EE were limited to sulfuric acid mist from all sources that were to be shut down or modified in the 2008 Project (hydrogen plant, cogeneration plant, power plant, SRU, and catalytic reformers), as well as a full combustion profile for the SRU.

The EE did not provide full TAC calculations for most existing sources. The SRU was the only existing source that was fully evaluated. The only exception was a calculation for sulfuric acid mist from sources that were to be shut down under that evaluation: the existing hydrogen plant, the rheniformers, and the power plant. Because the EE did not contain a full combustion TAC Profile for these sources, and because the EI did not include sulfuric acid mist for these sources, the sulfuric acid mist EF from the EE was added to TAC profiles from the EI for these sources. Consistent with the BAAQMD's direction, the SRU combustion profile from the EE is substituted entirely for the EI profile.

As with CAPs emissions, TAC emission factors used in the 2008 EE are only applied to the sources included in that evaluation and which remain included as a part of the currently proposed Modernization Project. All emission factors taken from the EE are combined with the activity data from the Baseline period EIs to calculate the Baseline emissions. Tables A4.3-OP-15a and A4.3-OP-15b list all of the EE emission factors used in calculating Baseline TAC emissions.

Similar to CAPs emissions, updated EI emission factors were also used as directed by the BAAQMD. As described above for CAPs, the updated EI emission factors were speciated, while the updated EI abatement factors were not. In calculating updated emission factors for each source, any “organics” abatement factor is applied to all organic (carbon-based) compounds, and any “Particulates” abatement factor is applied to all metals and metal compounds. The full list of chemicals with calculated emission factors, as well as their abatement factor assignments (when applicable), is in Table A4.3-OP-16. If a compound was not assigned an abatement factor, such as sulfuric acid mist, the provided EI emission factor was used without modification.

If neither the 2008 EE nor updated EI emission factors are applicable, chemical emissions listed in the EI as originally reported by BAAQMD for the Baseline period are used for Baseline emissions.

1.9 MODERNIZATION PROJECT EMISSIONS

In order to assess Modernization Project Refinery Operational emissions, three categories of Modernization Project emissions changes must be evaluated and compared to the Baseline.

The first category of emission changes results from physical changes to refinery operational process units and equipment that will affect emissions (even assuming no change in utilization and feedstock quality), such as the replacement of the hydrogen plant.

The second category of emissions changes relates to the increase in emissions resulting from increased utilization at 93% and 100% (respectively) of the Facility's permitted capacity, and 100% of the new hydrogen plant capacity. During the Baseline period, the crude unit operated at an average annual rate of 89% and the existing hydrogen plant operated as needed to produce the level of hydrogen required to process Facility feedstocks. This EIR analyzes operation of the Facility, following completion of the Modernization Project, at an average utilization rate of 93% for the crude unit and gateway gas oil units.

**TABLE A4.3-OP-15A BASELINE SRU EMISSION FACTORS DERIVED FROM THE
ENGINEERING EVALUATION**

	S-4227	S-4228	S-4229
Chemicals	lbs/long tons of Sulfur		
Acetaldehyde	2.7E-04	2.7E-04	2.4E-04
Antimony	2.4E-06	2.4E-06	2.1E-06
Arsenic	4.4E-06	4.4E-06	3.8E-06
Benzene	2.5E-04	2.5E-04	2.2E-04
Benzo(a)anthracene	1.1E-07	1.1E-07	9.2E-08
Benzo(a)pyrene	2.7E-07	2.7E-07	2.4E-07
Benzo(b)fluoranthene	1.3E-07	1.3E-07	1.1E-07
Benzo(k)fluoranthene	7.7E-08	7.7E-08	6.7E-08
Cadmium	3.1E-06	3.1E-06	2.7E-06
Carbon disulfide	2.5E-02	1.5E-02	1.9E-02
Chrysene	9.8E-09	9.8E-09	8.6E-09
Copper	3.0E-05	3.0E-05	2.6E-05
Ethylbenzene	9.3E-05	9.3E-05	8.1E-05
Formaldehyde	5.2E-04	5.2E-04	4.5E-04
Indeno(1,2,3-cd)pyrene	3.2E-07	3.2E-07	2.8E-07
Lead	1.3E-05	1.3E-05	1.1E-05
Manganese	2.4E-05	2.4E-05	2.1E-05
Mercury	1.3E-06	1.3E-06	1.1E-06
Naphthalene	2.5E-06	2.5E-06	2.2E-06
Nickel	2.6E-05	2.6E-05	2.3E-05
Phenol	2.4E-05	2.4E-05	2.1E-05
Selenium	2.6E-05	2.6E-05	2.3E-05
Sulfuric acid mist	4.7E-01	3.0E-01	3.2E-01
Toluene	4.4E-04	4.4E-04	3.8E-04
Xylenes	2.2E-04	2.2E-04	1.9E-04
Zinc	7.6E-05	7.6E-05	6.7E-05

Source: BAAQMD EE (see *Appendix 4.3-EE*).

**TABLE A4.3-OP-15B ADDITIONAL BASELINE EMISSION FACTORS DERIVED FROM THE
ENGINEERING EVALUATION**

BAAQMD Source ID	Process Name	Plant Name	Emission Factor	Unit
S-4038	#4 Rheniformer	Rheniformer	7.5E-11	lbs/1,000 ft ³
S-4040	#4 Rheniformer	Rheniformer	7.5E-11	lbs/1,000 ft ³
S-4042	#5 Rheniformer	Rheniformer	7.5E-11	lbs/1,000 ft ³
S-4044	#5 Rheniformer	Rheniformer	7.5E-11	lbs/1,000 ft ³
S-4129	Steam Boiler #1	Boiler Plant	7.5E-11	lbs/1,000 ft ³
S-4131	Steam Boiler #3	Boiler Plant	7.5E-11	lbs/1,000 ft ³
S-4132	Steam Boiler #4	Boiler Plant	7.5E-11	lbs/1,000 ft ³
S-4133	Steam Boiler #5	Boiler Plant	7.5E-11	lbs/1,000 ft ³
S-4135	Steam Boiler #7	Boiler Plant	7.5E-11	lbs/1,000 ft ³
S-4158	Preheat Furnace	Hydrogen Plant	7.5E-11	lbs/1,000 ft ³
S-4170	Preheat Furnace	Hydrogen Plant	7.5E-11	lbs/1,000 ft ³
S-4171	Preheat Furnace	Hydrogen Plant	7.5E-11	lbs/1,000 ft ³
S-4237	#5 Rheniformer	Rheniformer	1.0E-04	lbs/bbl
S-4283	#4 Rheniformer	Rheniformer	1.1E-04	lbs/bbl

Note: ft³ = cubic feet; bbl = barrel

Source: BAAQMD EE (see *Appendix 4.3-EE*).

The third category of emission changes relates to changes to the quality of the crude and gas oils being processed by the Facility, including heavier crude oils (i.e., lighter gravity crude oils) and more “sour” (i.e., higher sulfur content) crude and gas oils. This includes the potential impacts that result from changes in metals content that may occur with changes in sulfur content and gravity.

1.9.1 Estimation of Process Unit Throughputs: Crude Oil and Gas Oil

As illustrated in Figure 4.3-9 in *Section 4.3, Air Quality*, crude oil blends enter the Facility through the crude unit and are distilled by heating into various fractions. These fractions are then fed to other process units within the Facility. The amount of each fraction is specific to each crude oil feedstock that enters the crude unit. Crude and gas oil feedstocks also contain varying amounts of sulfur that must be processed and removed from the Facility’s products. Sulfur

TABLE A4.3-OP-16 ASSIGNMENT OF EI ABATEMENT FACTORS

EI Chemical Name	Organic	Particulate
Particulates		x
Sulfur or sulfur compounds		
Hydrogen sulfide		
Sulfur dioxide		
Organics (part not speciated)	x	
Benzene	x	
Cycloparaffins	x	
Formaldehyde	x	
Phenol	x	
Toluene	x	
Acetaldehyde	x	
Copper (all) pollutants		x
Manganese		x
Nickel pollutant		x
Mercury (all) pollutant		x
Zinc pollutant		x
PaHS (non-speciated)	x	
PaHS (benzo[a]pyrene	x	
PaHS (non-carcinogenic)	x	
Nitrogen oxides		
Nitrous oxide		
Methane		
Carbon dioxide		
Carbon monoxide		
Arsenic (all)		x
Beryllium (all) pollutants		x
Cadmium		x
Chromium (hexavalent)		x
Lead (all) pollutant		x
Ethyl alcohol	x	

TABLE A4.3-OP-16 ASSIGNMENT OF EI ABATEMENT FACTORS

EI Chemical Name	Organic	Particulate
Methyl alcohol	x	
Chromium		x
Ammonia		
Xylene	x	
Sulfuric acid mist		
Diesel engine exhaust		x
Cyclohexane	x	
Ethylene dichloride	x	
Hexane	x	
Isooctane	x	
Methyl ethyl ketone	x	
Perchloroethylene	x	
Cumene	x	
Ethylbenzene	x	
1,2,4-trimethylbenze	x	
Ethylene dibromide	x	
1,3-Butadiene	x	
Ethylene	x	
Propylene	x	
Methyl tertiary-butyl ether	x	
Cresol	x	
Magnesium pollutant		x

removal requires the use of hydrogen gas produced by the hydrogen plant or catalytic reformers, and sulfur removal processing by other process units such as hydrotreaters.

The URM, as described in *Appendix 4.3-URM*, was developed to allocate crude and gas oil feedstocks to the refinery operational process units based on publicly available technical resources, and average daily Facility crude and gas oil inputs

and process unit throughputs provided by the Modernization Project applicant for 2008-2010 (the Baseline period). Such Baseline data include average crude oil fractional characteristics and the sulfur content of the Facility feedstocks during the Baseline period.

When determining the allocations of process streams for the higher sulfur crude and gas oils proposed to be handled as part of the Modernization Project, and when determining the effect of running higher and heavier gravity crudes, the URM incorporates the proposed components of the Modernization Project, including the increased throughput limits for the FCC FHT, the new hydrogen plant, the SRU modifications, and the 50,000 barrels per day (BPD) limit on the SDA throughput.

Using the refinery operational process unit utilization levels from the URM, air emission estimates were then derived based on applying BAAQMD-approved emission factors as described above for each of the process units in the URM, and for other Facility equipment for which emissions may increase with higher Facility throughput relative to the 89% crude unit utilization during the Baseline period, as described further below.

1.9.2 Facility CAP and TAC Emissions

The methods used to estimate Modernization Project emissions were developed in consultation with the BAAQMD. To estimate Modernization Project emissions, the Baseline emissions described in prior sections of this appendix were scaled to allow for the differences in unit operations between the Baseline period and the post- Modernization Project scenarios analyzed in this EIR. Emissions for each process unit included in the URM, such as the crude unit and FCC, were scaled directly by the ratio of the Modernization Project throughput to the Baseline throughput. Other sources that will be affected by the Modernization Project but are not included in the URM, such as cooling towers, were scaled by the ratio of total crude and gas oil imports from the Baseline to the Modernization Project. In general, the TAC and CAP emissions were estimated using similar methodologies. This is more fully described below.

1.10 EVALUATION OF MODERNIZATION PROJECT CAP EMISSIONS

Project CAP emissions were based on the Baseline, the BAAQMD EE, and the URM.

1.10.1 Engineering Evaluation

As mentioned in *Section 1.5* of this appendix, the BAAQMD EE includes emission factors for Modernization Project sources that were part of the 2008 Project. For

the Modernization Project sources that remain part of the Modernization Project, including the new hydrogen plant and associated cooling tower, the SRU, and low-NO_x burners on the hydrocracker and poly plant, the emissions factors from the EE were used to estimate Modernization Project emissions.

The Modernization Project includes the installation of low-NO_x Burners on the two poly plant furnaces and three hydrocracker furnaces as Project components. The EE included NO_x emission factors for the Baseline and Modernization Project scenarios for these sources, all in units of lbs/MMBTU. To calculate Modernization Project emissions from these sources, a scaling factor was applied to the Baseline emissions:

$$S = \frac{EF_P}{EF_B} \quad \text{Equation A4.3-OP-7}$$

Where:

S = Scaling factor (unitless)

EF_P = Modernization Project emission factor (lbs/MMBTU)

EF_B = Baseline emission factor (lbs/MMBTU)

This scaling factor accounted for the decreased emissions that resulted from the installation of the low-NO_x burners. This factor was applied to the Baseline emissions prior to scaling the emissions to account for different throughputs as described below. CO, PM₁₀/PM_{2.5}, SO₂, and VOC emissions from these sources were unaffected by the low-NO_x burners, and thus were calculated using the throughput scaling method described below.

As described above, EE emission factors for the Baseline SRU emissions were recalculated to be in units of tons pollutant/long ton of sulfur using Equation A4.3-OP-3. This same approach was taken for the Modernization Project emission factors. As a result, Modernization Project emissions could be calculated directly from the sulfur production given in the URM, instead of scaling from the Baseline. The Project emission factors taken from the EE are in Table A4.3-OP-17.

In addition to new emission factors for existing sources, the EE also provided emission factors for the newly constructed hydrogen plant furnaces. The emission factors listed in the EE were in units of pounds of pollutant/MMBTU; in order to calculate emissions based on hydrogen production, these emission factors had to be converted to units of lbs pollutant/million (MM) scf H₂. This was accomplished with the following formula:

$$EF' = EF \times \frac{FR_{Max}}{H_{Max}} \quad \text{Equation A4.3-OP-8}$$

Where:

EF' = Modified emission factor (lbs pollutant/MM scf H₂ produced)

EF = Original emission factor (lbs pollutant/MMBTU)

FR_{Max} = Maximum permitted firing rate per furnace (8,059,200 MMBTU/year)

H_{Max} = Maximum H₂ production for the entire plant (89,060 MM scf/year)

The maximum hydrogen production used in this conversion is from the maximum capacity in the URM (see *Appendix 4.3-URM*). This assumes that the maximum hydrogen production corresponds to the maximum firing rate. This assumption is conservative, as it maximizes the resulting emission factors in Equation A4.3-OP-8. The converted emission factors are in Table A4.3-OP-17.

The same approach was taken for the new hydrogen plant cooling water tower. Emission factors from the EE were converted by Equation A4.3-OP-8, but with the permitted maximum water recirculation rate of 36,000 gallons/minute in place of the firing rate. These emission factors are also presented in Table A4.3-OP-17.

The EE also provided emissions for sources that do not vary with refinery activity. These include the new hydrogen plant flare (S-6021), as well as various new equipment fugitive emissions. To be consistent with the EI and BAAQMD flare reports, emissions from the hydrogen plant flare were calculated only for the flare pilot, at a firing rate of 1.6 MMBTU/hour. These values are given in Table A4.3-OP-17.

Lastly, the EE contained estimates for fugitive leak emissions from new equipment that corresponded to a 15.9 tons/year permit limit (BAAQMD, 2008a). However, this permit limit included fugitive emissions from components that are no longer included in the Project, such as the rheniformer and power plant replacements. As the Modernization Project has been revised since the EE was compiled, only emission estimates for equipment still being modified in the Modernization Project were included. Those emissions are in Table A4.3-OP-17.

Consistent with the EE, Modernization Project SO₂ emissions from sources fired on RFG were limited to 49.09 tons/year.

1.10.2 Process Unit Scaling

The Baseline emissions were scaled to estimate Modernization Project emissions based on the changes that would be anticipated for each source type. Some types of sources would scale linearly with increased Facility throughput. Other types of source emissions would not change between the Baseline and the

TABLE A4.3-OP-17 MODERNIZATION PROJECT EMISSION FACTORS DERIVED FROM THE BAAQMD ENGINEERING EVALUATION

Source ID	Description	Material	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC	Units
4161	Hydrocracker Feed Furnace	Chevron RFG	-	0.283	-	-	-	unitless
4162	Hydrocracker Feed Furnace	Chevron RFG	-	0.283	-	-	-	unitless
4163	Hydrocracker Feed Furnace	Chevron RFG	-	0.283	-	-	-	unitless
4188	Poly Plant	Chevron RFG	-	0.123	-	-	-	unitless
4189	Poly Plant	Chevron RFG	-	0.123	-	-	-	unitless
4227	SRU 1 Thermal Oxidizer	sulfur	0.128	0.070	0.007	0.097	-	tons/1,000 long tons
4228	SRU 2 Thermal Oxidizer	sulfur	0.128	0.070	0.006	0.097	-	tons/1,000 long tons
4229	SRU 3 Thermal Oxidizer	sulfur	0.262	0.143	0.012	0.200	-	tons/1,000 long tons
4436	SRU 1 Stack Heater	natural gas	-	-	-	-	0.003	tons/1,000 long tons
4437	SRU 2 Stack Heater	natural gas	-	-	-	-	0.003	tons/1,000 long tons
4438	SRU 3 Stack Heater	natural gas	-	-	-	-	0.006	tons/1,000 long tons
4490	Sulfur Loading Rack	sulfur	-	-	1.77E-05	2.20E-05	-	tons/1,000 long tons
4471	Hydrogen Plant Train 1	hydrogen	3.64E-07	2.99E-07	1.16E-07	6.97E-09	1.30E-07	tons/1,000 scf H ₂
4472	Hydrogen Plant Train 2	hydrogen	3.64E-07	2.99E-07	1.16E-07	6.97E-09	1.30E-07	tons/1,000 scf H ₂
4465	Hydrogen Plant Cooling Tower	hydrogen	-	-	2.21E-08	-	3.06E-09	tons/1,000 scf H ₂
6021	Hydrogen Plant Flare Pilot and Purge	hydrogen	1.171	0.477	0.052	0.013	0.231	tons/year
-	New Equipment Fugitives	N/A	-	-	-	-	10.390	tons/year

Source: BAAQMD EE (see *Appendix 4.3-EE*).

Modernization Project because the emissions are independent of production or feedstock type and would remain at Baseline levels. This is consistent with direction from the BAAQMD and is described in more detail below and summarized in Table A4.3-OP-18.

TABLE A4.3-OP-18 SUMMARY OF EMISSIONS SCALING METHODS

Scaling Method (Source of Information)	Source Type
Plant Throughput (URM)	Process Furnaces and units
	Catalytic reforming
	FCC
Total Imports (URM)	Cooling water towers
	Product loading racks
	Storage tanks (working losses only)
Not Scaled	Component fugitives
	Electricity and steam generation
	Flares
	Light ends product loading
	Maintenance shops
	Portable storage containers
	Wastewater treatment

Source: URM (see *Appendix 4.3-URM*); Chevron Data Transmittals #36K, 36L, and 36N (Rev#1), 2013.

For both sources scaled by plant throughput and sources scaled by total imports, the general equation is as follows:

$$E_p = E_B \times \frac{URM_p}{URM_B} \quad \text{Equation A4.3-OP-9}$$

Where:

E_p = Modernization Project Emissions (tons/year)

E_B = Baseline Emissions (tons/year)

URM_p = Unit Rate Model Project throughput (BPD)

URM_B = Unit Rate Model Baseline throughput (BPD)

1.10.3 Sources Scaled by Plant Throughput

As mentioned above, emissions from sources included in the URM were scaled based on the ratio of Modernization Project to Baseline URM throughputs. This includes plants such as the crude unit and hydrotreaters, as well as process sources such as the FCC and catalytic reformer regeneration. The hydrogen plant and SRU emissions were scaled based on hydrogen and sulfur produced, respectively.

Increased firing rate results in increased emissions. Thus, by scaling emissions with firing rates, the methodology presumes that firing rates increase proportionally to throughput. For some sources, this assumption resulted in estimated effective firing rates that exceeded their respective Title V firing rate limits. At BAAQMD's direction, emissions from several sources were limited to the amount that corresponds to their Title V firing rates. It is important to note that this does not mean that the throughput of these sources would be limited in any way. Rather, it indicates that firing rates increase at a slower rate than throughput, contrary to the conservative model assumptions. This adjustment was to ensure that emissions predictions did not exceed those that were possible under the maximum allowed firing rate. The affected sources and their restricted throughputs are listed in Table A4.3-OP-19.

A list of each unit scaled by the URM results and the relevant scaling unit are included in Table A4.3-OP-20.

1.10.4 Sources Scaled by Total Imports

Some sources will have increased emissions as Facility throughput increases but are not part of the URM. These sources include cooling water towers, the marketing rack, wharf loading, and the associated wharf emissions reduction device. Emissions from these sources were scaled by the ratio of total crude and gas oil imports (to the Facility) from the Baseline period to the Modernization Project.

1.10.5 Scaling for Storage Tanks

Storage tank emissions were also scaled by the ratio of total crude and gas oil imports, but only for the portion of emissions that varies with tank throughput. Storage tank emissions are calculated as the sum of two components: breathing (fixed) and working (variable) emissions. The BAAQMD EI only provides the total emissions for each tank and does not differentiate between breathing and working losses.

TABLE A4.3-OP-19 SOURCES WITH THROUGHPUTS LIMITED BY TITLE V FIRING RATES

Source	Baseline Firing Rate (MMBTU/year)	Baseline URM (BPD)	Title V Firing Rate (MMBTU/year)	Maximum Linear Throughput (BPD)
S-4159	261,847	36,300	414,348	57,441
S-4160	267,272	36,300	395,076	53,658
S-4167	704,527	36,300	1,007,400	51,905
S-4330	64,377	6,000	120,012	11,185
S-4333	208,128	15,400	549,252	22,000
S-4339	71,514	12,600	166,440	16,500
S-4349	109,187	6,000	144,540	7,943

Source: Title V Permit, BAAQMD EI (see *Appendix 4.3-EI*), URM (see *Appendix 4.3-URM*).

TABLE A4.3-OP-20 SOURCES SCALED BY PLANT THROUGHPUTS

Scaling Unit	Plant
Barrels Fed	Catalytic reformers
	Crude unit (atmospheric and vacuum)
	FCC
	Hydrocracker
	Hydrotreaters (FCC FHT, DHT, GHT, JHT, NHT)
	Poly plant
	RLOP (HNC, HNF, LNC, LNF)
	SDA
Hydrogen Produced	Hydrogen plant
Sulfur Produced	Sulfur recovery unit
	Sulfur loading rack

Source: URM (see *Appendix 4.3-URM*).

To properly estimate Modernization Project emissions, the fraction of working losses was estimated and applied to all storage tanks. The working losses for each tank were then scaled upward in relation to increased Facility throughput, and then added to the breathing losses. The BAAQMD uses the EPA Compilation of Air Pollutant Emission Factors (AP-42) equations to estimate emissions from storage tanks (EPA, 1981).⁹

Chevron provided specifications for four representative storage tanks in Chevron Data Transmittal #16 (Rev #3, 2013): one each for crude oil, gas oil, gasoline and sour water. These data were used in combination with the EPA's AP-42 equations for storage tank emissions, the same equations used by the BAAQMD to estimate emissions. The equations for breathing and working losses are as follows:

$$L_S = K_S \times V^N \times P^* \times D \times M_V \times K_C \times E_F \quad \text{Equation 3 from Supplement 12 to AP-42}$$

Where:

L_S = standing (breathing) loss

K_S = seal factor, taken from AP-42 based on parameters in Chevron Data Transmittal #16 (Rev #3), 2013

V = average wind speed at tank site, 7 miles/hour (value used in BAAQMD EI)

N = seal related wind speed exponent, taken from AP-42 based on parameters in Chevron Data Transmittal #16 (Rev #3), 2013

P^* = vapor pressure function, calculated via

$$P^* = \frac{\frac{P}{P_A}}{\left(1 + \left(1 - \left(\frac{P}{P_A}\right)^{0.5}\right)\right)^2}$$

P = true vapor pressure at average actual organic liquid storage temperature, taken from AP-42 based on parameters in Chevron Data Transmittal #16 (Rev #3), 2013

P_A = average atmospheric pressure at tank location, taken from TANKS v4.09D for San Francisco

D = tank diameter, provided in Chevron Data Transmittal #16 (Rev #3), 2013

M_V = average vapor molecular weight, taken from AP-42 based on parameters in Chevron Data Transmittal #16 (Rev #3), 2013

K_C = product factor, taken from AP-42 based on parameters in Chevron Data Transmittal #16 (Rev #3), 2013

E_F = secondary seal factor, taken from AP-42 based on parameters in Chevron Data Transmittal #16 (Rev #3), 2013

⁹ The equations for storage tank emissions provided with the EI for the Marketing Terminal are consistent with Supplement 12 to AP-42.

$$L_W = \frac{0.943 \times Q \times C \times W_L}{D}$$

Equation 4 from Supplement 12 to AP-42

Where:

 L_W = working loss

Q = average throughput, taken from the EI for the tanks specified in Chevron Data Transmittal #16 (Rev #3), 2013

C = shell clingage factor, taken from AP-42 based on parameters in Chevron Data Transmittal #16 (Rev #3), 2013

 W_L = average organic liquid density, taken from AP-42 based on parameters in Chevron Data Transmittal #16 (Rev #3), 2013

D = tank diameter, provided in Chevron Data Transmittal #16 (Rev #3), 2013

Using these equations, a working loss fraction was calculated for each of the four tanks. These four working loss fractions were applied to each storage tank with the matching material, as listed in the EI. Similar materials were also matched, based on a list provided by Chevron, presented in Table A4.3-OP-21. If a storage tank contained a material other than the ones listed, the maximum calculated working loss percent was used. Once a working loss percent was chosen, Modernization Project emissions for each storage tank were calculated with the following equation:

$$E_F = E_B \times F_W \times \frac{URM_F}{URM_B} + E_B \times (1 - F_W)$$

Equation A4.3-OP-10

Where:

 E_F = Future case emissions E_B = Baseline EI emissions F_W = Working loss fraction URM_F = Future URM crude and gas oil imports URM_B = Baseline URM crude and gas oil imports

Total crude and gas oil imports were used as a surrogate for URM scaling for all tanks. For tanks containing materials that are not similar to crude oil, gas oil, gasoline, or sour water, the most conservative working loss fraction (i.e., for a tank containing gas oil) is applied for scaling purposes. The throughput materials that were assigned a specific working loss fraction are in Table A4.3-OP-21. The EIR's tank emission estimation methodology, like the other Modernization Project emission estimation methodologies, was reviewed with the BAAQMD as part of the EIR preparation process.

TABLE A4.3-OP-21 PERCENT WORKING LOSS USED FOR SPECIFIC MATERIALS

Modeled Material	Throughput Material	Percent Working Loss
Gas oil	Gas oil	95%
Crude oil	Crude oil	81%
Gasoline RVP 7 ^a	Alkylate	15%
	Gasoline - leaded	15%
	Gasoline - unleaded	15%
	Isooctane	15%
	Naphtha	15%
	Paraffins - C3+	15%
Gasoline RVP 10 ^{a,b}	Sour water	2%

^a Chosen because AP-42 vapor pressure most nearly approximated Chevron provided vapor pressure.

^b Sour water tanks are modeled as gasoline.

Source: Transmittal #16 (Rev #3), 2013

1.10.6 Removal of Existing Equipment Fugitives

Because the Modernization Project entails the shutdown and removal of the existing hydrogen plant, fugitive emissions associated with the existing hydrogen plant were subtracted from the Modernization Project emission totals. Chevron provided estimates for these emissions for the Baseline in Chevron Data Transmittal #21C, 2012. These estimates came from Chevron's leak detection and repair system. At the BAAQMD's direction, "pegged" leaks (leaks detected at greater than 10,000 ppm) were removed from the emission totals. Chevron provided measurement data for pegged leak components in Chevron Data Transmittal #49, 2013.

At the BAAQMD's direction, each pegged leak was assumed to have been leaking for half of the measurement frequency, which was 1 year (i.e., assumed 6-month leaks). Emission factors were taken from the CAPCOA guidance for fugitive emissions (CAPCOA, 1999). The resulting emissions reductions are presented in Table A4.3-OP-22.

TABLE A4.3-OP-22 ESTIMATION OF FUGITIVE EMISSIONS FROM THE EXISTING HYDROGEN PLANT

Category	Emissions (tons/year)
Leak Detection and Repair System Emissions	3.38
Estimation of pegged leaks	1.33
Total Project Emissions Reduction	2.05

Source: Chevron Data Transmittals #21C (2012) and #49 (2013).

1.10.7 Source Emissions that do not vary with the Modernization Project

The BAAQMD EI includes emissions for many sources that are not expected to change with Facility throughput generally, or Modernization Project changes more specifically. These sources include the cogeneration plant and power plant boilers, diesel engines (e.g., emergency generators, lights), portable sealed storage containers, wastewater treatment plant, maintenance shops, flares, and certain product loading racks (e.g., non-retail gasoline). A list of these sources, as well as the reason that no change is expected with the Modernization Project is found in Table A4.3-OP-23.

1.11 EVALUATION OF MODERNIZATION PROJECT TAC EMISSIONS

TAC emissions were estimated using generally the same methodology as CAP emissions. In estimating TACs emissions, TACs data from the BAAQMD EI and EE were considered. These TACs were evaluated for inclusion in the TAC emissions estimation based on whether there were quantitative toxicity data published by the California Environmental Protection Agency under the Office of Health Hazard Assessment (Cal/EPA, 2013). This is consistent with how TACs are chosen for inclusion in the BAAQMD's Regulation 2, Rule 5: New Source Review of TACs (BAAQMD, 2010).

Consistent with the approach described in estimating the Baseline TAC emissions, materials where emissions were not presented as individually identifiable compounds, such as crude oil, unleaded gasoline, and other hydrocarbons, were conservatively evaluated using the speciation profile for gasoline vapor provided in the EPA ICR document.

TABLE A4.3-OP-23 FACILITY SOURCES FOR WHICH EMISSIONS ARE EQUAL TO BASELINE EMISSIONS AND DO NOT VARY WITH THE MODERNIZATION PROJECT OR INCREASED FACILITY UTILIZATION LEVELS

Source Type	Reason for Not Scaling
Component Fugitives	Emissions from process components such as valves and flanges are dependent on the material in the pipe and not flow through the pipe.
Electricity Generation	It is reasonably foreseeable that electricity and steam generation would not be affected by the Modernization Project because of inherent energy efficiencies and power/steam generation from Project components.
Flares	Flare pilots operate continuously independently of throughputs. Planned flaring events such as startup and shutdown, as well as emergency flaring events, occur periodically but are also independent of the quantity of Facility throughputs.
Other Product Loading	The unrefined and refined wax loading racks, point orient wharf, asphalt tank truck loading racks, and main tank car loading rack have all been removed from service. The heavy oil trans-loading rack and non-retail gasoline dispensing facility are used internally by Chevron and are not related to Facility throughputs.
Maintenance Shops	Maintenance shops conduct routine operations that are independent of Facility throughputs, and are not expected to increase (and may well decrease) with the modernization of the Facility by the Modernization Project's process unit and equipment modifications.
Portable Storage Containers	These containers are used internally by the Facility for operations not affected by Facility throughputs, and are sealed.
Wastewater Treatment	The volume of wastewater produced in the Modernization Project has been reduced to the same level as the Baseline through Project Design Features, as discussed further in the <i>Section 4.9, Hydrology and Water Quality</i> .

Source: Chevron Data Transmittals #36K, 36L, and 36N (Rev#1), 2013.

1.11.1 Engineering Evaluation

The BAAQMD EE considered post-Modernization Project TAC emissions from the new hydrogen plant, including the cooling tower and flare pilot, the SRU, and new equipment fugitives. Emission factors for the hydrogen plant, cooling tower, and SRU were converted to be compatible with the URM via Equation A4.3-OP-8, above. SRU emission factors were converted using a maximum sulfur production of 600 long tons/day, due to the use of oxygen enrichment as a means of limiting combustion. The resulting emission factor profiles are in Table A4.3-OP-24. As with the Baseline, the sulfuric acid mist emission factors in Table A4.3-OP-15b were also incorporated with EI emission factors for the power plant and rheniformers.

TABLE A4.3-OP-24 MODERNIZATION PROJECT TAC EMISSION FACTORS DERIVED FROM THE BAAQMD ENGINEERING EVALUATION

Chemical	Emission Factors						
	4227 SRU Train #1 (lbs/long ton sulfur)	4228 SRU Train #2 (lbs/long ton sulfur)	4229 SRU Train #3 (lbs/long ton sulfur)	4490 Sulfur Loading Rack (lbs/long ton sulfur)	4465 Hydrogen Plant Cooling Tower (lbs/MM scf hydrogen)	4471 Hydrogen Plant Furnace 1 (lbs/MM scf hydrogen)	4472 Hydrogen Plant Furnace 2 (lbs/MM scf hydrogen)
Acetaldehyde	6.77E-05	6.77E-05	1.18E-04	-	-	4.79E-03	4.79E-03
Ammonia	-	-	-	-	2.95E-05	4.06E-01	4.06E-01
Antimony	5.95E-07	5.95E-07	1.04E-06	-	-	4.20E-05	4.20E-05
Arsenic	1.10E-06	1.10E-06	1.92E-06	-	7.38E-08	7.75E-05	7.75E-05
Benzene	6.22E-05	6.22E-05	1.09E-04	-	-	4.40E-03	4.40E-03
Benzo(a)anthracene	2.64E-08	2.64E-08	4.62E-08	-	-	1.87E-06	1.87E-06
Benzo(a)pyrene	6.78E-08	6.78E-08	1.19E-07	-	-	4.80E-06	4.80E-06
Benzo(b)fluoranthene	3.28E-08	3.28E-08	5.74E-08	-	-	2.32E-06	2.32E-06
Benzo(k)fluoranthene	1.92E-08	1.92E-08	3.36E-08	-	-	1.36E-06	1.36E-06
Bromine & compounds	-	-	-	-	1.07E-05	-	-
Cadmium	7.79E-07	7.79E-07	1.36E-06	-	-	5.51E-05	5.51E-05
Carbon disulfide	4.08E-03	3.20E-03	5.99E-03	-	-	-	-
Chlorine	-	-	-	-	4.83E-06	-	-
Chloroform	-	-	-	-	3.58E-04	-	-
Chrysene	2.46E-09	2.46E-09	4.30E-09	-	-	1.74E-07	1.74E-07
Copper	7.46E-06	7.46E-06	1.31E-05	-	2.27E-07	5.28E-04	5.28E-04

TABLE A4.3-OP-24 MODERNIZATION PROJECT TAC EMISSION FACTORS DERIVED FROM THE BAAQMD ENGINEERING EVALUATION

Chemical	Emission Factors						
	4227 SRU Train #1 (lbs/long ton sulfur)	4228 SRU Train #2 (lbs/long ton sulfur)	4229 SRU Train #3 (lbs/long ton sulfur)	4490 Sulfur Loading Rack (lbs/long ton sulfur)	4465 Hydrogen Plant Cooling Tower (lbs/MM scf hydrogen)	4471 Hydrogen Plant Furnace 1 (lbs/MM scf hydrogen)	4472 Hydrogen Plant Furnace 2 (lbs/MM scf hydrogen)
Cyanide	-	-	-	-	1.00E-07	-	-
Ethylbenzene	2.31E-05	2.31E-05	4.05E-05	-	-	1.64E-03	1.64E-03
Ethylene dibromide (fugitive only)	-	-	-	-	-	-	-
Formaldehyde	1.30E-04	1.30E-04	2.27E-04	-	-	9.18E-03	9.18E-03
Hydrogen sulfide	8.47E-03	8.47E-03	1.74E-02	2.33E-04	-	-	-
Indeno(1,2,3-cd)pyrene	7.92E-08	7.92E-08	1.39E-07	-	-	5.60E-06	5.60E-06
Lead	3.23E-06	3.23E-06	5.65E-06	-	9.15E-09	2.28E-04	2.28E-04
Manganese	6.05E-06	6.05E-06	1.06E-05	-	-	4.28E-04	4.28E-04
Mercury	3.15E-07	3.15E-07	5.51E-07	-	6.49E-10	2.23E-05	2.23E-05
Methanol	-	-	-	-	-	6.20E-06	6.20E-06
Naphthalene	6.20E-07	6.20E-07	1.08E-06	-	-	4.38E-05	4.38E-05
n-Hexane	-	-	-	-	-	-	-
Nickel	6.47E-06	6.47E-06	1.13E-05	-	1.39E-07	4.57E-04	4.57E-04
Phenol	6.05E-06	6.05E-06	1.06E-05	-	-	4.28E-04	4.28E-04
Selenium	6.47E-06	6.47E-06	1.13E-05	-	-	4.57E-04	4.57E-04
Sulfuric acid mist	1.28E-02	8.09E-03	1.44E-02	-	-	4.24E-03	4.24E-03

TABLE A4.3-OP-24 MODERNIZATION PROJECT TAC EMISSION FACTORS DERIVED FROM THE BAAQMD ENGINEERING EVALUATION

Chemical	Emission Factors						
	4227 SRU Train #1 (lbs/long ton sulfur)	4228 SRU Train #2 (lbs/long ton sulfur)	4229 SRU Train #3 (lbs/long ton sulfur)	4490 Sulfur Loading Rack (lbs/long ton sulfur)	4465 Hydrogen Plant Cooling Tower (lbs/MM scf hydrogen)	4471 Hydrogen Plant Furnace 1 (lbs/MM scf hydrogen)	4472 Hydrogen Plant Furnace 2 (lbs/MM scf hydrogen)
Toluene	1.10E-04	1.10E-04	1.92E-04	-	-	7.75E-03	7.75E-03
Xylenes	5.44E-05	5.44E-05	9.52E-05	-	-	3.84E-03	3.84E-03
Zinc	1.91E-05	1.91E-05	3.34E-05	-	1.36E-06	1.35E-03	1.35E-03

Source: BAAQMD EE (see *Appendix 4.3-EE*).

As with CAP emissions, only fugitives from equipment still part of the Modernization Project were included; the fugitives associated with the continuous catalytic reformer and cogeneration 3 units were excluded. The new hydrogen plant flare pilot and equipment fugitive emissions do not vary with any throughputs. Thus the TAC emissions presented in the EE for these sources could be used directly here. The only adjustment made to the hydrogen plant flare pilot emissions was that they were scaled down to represent only activity associated with pilot and purge. This was done with the following equation:

$$E'_i = E_i \times \frac{FR_p \times 8760}{FR} \quad \text{Equation A4.3-OP-11}$$

Where:

E'_i = scaled emissions for pollutant 'i' (lbs/year)

E_i = originally reported emissions for pollutant 'i' (lbs/year)

FR_p = permit limit firing rate for pilot/purge only (1.6 MMBTU/hour)

8760 = hours/year

FR = firing rate originally used in the EE (MMBTU/year)

The speciated emissions for these sources are presented in Table A4.3-OP-25.

1.11.2 Scaling of TAC Emissions

The scaling of Modernization Project TAC emissions was conducted identically to the scaling for CAPs, as described above.

1.12 FACILITY MODERNIZATION PROJECT CAPS EMISSIONS

The Facility CAPs emissions, calculated as described above are presented for the Modernization Project crude blend as well as a variety of other crude blends in Table A4.3-OP-26. Each of the four main crude blends (Modernization Project, sourest, heaviest, and lightest) are presented at 93% and 100% gateway unit utilization, as well as URM specified and maximum hydrogen production. Table A4.3-OP-26 also includes the three “bookend” maximum crudes (sour, heavy, and light).

Chevron will install one tank dome as a Modernization Project Design Feature, on Tank 3225. The emissions reductions from the tank dome were estimated by modeling the post- Modernization Project throughput for tank with the EPA's TANKS v4.09D program, as the program will be used to determine emissions reductions for all tank domes during the permitting process. The tank was modeled at the projected post-Project throughput, with and without the tank dome, to determine the reduction. The tank dome will reduce VOC emissions by 2.1 tons per year (A4.3-MIT-11). The Facility CAPs emissions with the tank dome Project Design Feature are presented in Table A4.3-OP-27.

TABLE A4.3-OP-25 TAC EMISSIONS FROM THE ENGINEERING EVALUATION

Chemical	Emissions (lbs/year)			
	Hydrogen Plant Flare	Hydrogen Plant Fugitives	FCC FHT Fugitives	SRU Fugitives
Acetaldehyde	3.56	-	-	-
Antimony	0.03	-	-	-
Ammonia	-	85.0	-	10.4
Arsenic	0.06	-	-	-
Benzene	3.27	-	50.8	-
Benzo(a)anthracene	1.39E-03	-	-	-
Benzo(a)pyrene	3.57E-03	-	-	-
Benzo(b)fluoranthene	1.73E-03	-	-	-
Benzo(k)fluoranthene	1.01E-03	-	-	-
1,3-Butadiene	-	5.6	-	-
Cadmium	0.04	-	-	-
Chrysene	1.29E-04	-	-	-
Copper	0.39	-	-	-
Cresols (fugitive only)	-	6.5	-	-
Diethanolamine (fugitive only)	-	-	455.0	1150.0
Ethylbenzene	1.22	3.8	72.5	-
Formaldehyde	6.83	-	-	-
n-Hexane	-	12.2	200.2	-
Hydrogen sulfide	-	60.5	152.3	870.6
Indeno(1,2,3-cd)pyrene	4.17E-03	-	-	-
Lead	0.17	-	-	-
Manganese	0.32	-	-	-
Mercury	0.02	-	-	-
Naphthalene	0.03	22.0	58.2	-
Nickel	0.34	-	-	-
Phenol	0.32	33.8	-	-
Propylene (fugitive only)	-	597.6	-	-

TABLE A4.3-OP-25 TAC EMISSIONS FROM THE ENGINEERING EVALUATION

Chemical	Emissions (lbs/year)			
	Hydrogen Plant Flare	Hydrogen Plant Fugitives	FCC FHT Fugitives	SRU Fugitives
Selenium	0.34	-	-	-
Sulfuric acid mist	47.50	-	-	-
Toluene	5.77	6.5	292.7	-
Xylenes	2.86	15.8	328.5	-
Zinc	1.00	-	-	-

Source: BAAQMD EE (see *Appendix 4.3-EE*).

1.13 FACILITY MODERNIZATION PROJECT TACS EMISSIONS

The Facility TACs emissions, calculated as described above are presented for the Baseline as well as the four Project HRA Cases (see *Appendix 4.3-HRA*) in Table A4.3-OP-28.

Facility TAC emissions with the single tank dome Project Design Feature are in table A4.3-OP-29. Reductions in TAC emissions were estimated by speciating the 2.5 ton/year VOC reduction with the EPA ICR profile for reformulated gasoline, described above in Table A4.3-OP-7, as the BAAQMD EI lists “recovered oil” as the throughput material for Tank 3225.

1.14 FACILITY CAP AND TAC MODERNIZATION PROJECT DESIGN FEATURES

Several components of the Modernization Project have been proposed to reduce air emissions under the Modernization Project's proposed 93% Refinery Utilization levels. The following sections contain a summary, by individual CAP, of the various Modernization Project components that contribute to the Modernization Project's No Net Increase Project objective.

TABLE A4.3-OP-26 CAP EMISSIONS BY CASE, WITHOUT PROJECT DESIGN FEATURES

Emissions Case	Emissions (tons/year)					Change from Baseline (tons/year)				
	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC
Baseline	406	756	487	353	937	--	--	--	--	--
Project Crude Blend, Max Hydrogen Production, 100% Utilization	462	757	516	350	988	56	1	29	-3	51
Project Crude Blend, Max Hydrogen Production, 93% Utilization	447	723	484	336	962	40	-32	-3	-16	26
Project Crude Blend, 100% Utilization	454	750	513	350	985	48	-6	26	-3	48
Project Crude Blend, 93% Utilization	434	713	479	336	958	28	-42	-8	-17	21
Sourest Crude Blend, Max Hydrogen Production, 100% Utilization	464	758	516	350	987	57	2	29	-3	51
Sourest Crude Blend, Max Hydrogen Production, 93% Utilization	449	724	484	336	959	43	-31	-3	-16	23
Sourest Crude Blend, 100% Utilization	457	752	514	350	985	50	-4	27	-3	48
Sourest Crude Blend, 93% Utilization	440	717	481	336	956	33	-39	-6	-17	19
Heaviest Crude Blend, Max Hydrogen Production, 100% Utilization	463	752	515	350	982	57	-4	28	-3	46
Heaviest Crude Blend, Max Hydrogen Production, 93% Utilization	449	718	483	336	954	42	-37	-4	-16	17
Heaviest Crude Blend, 100% Utilization	455	746	512	350	979	49	-10	25	-3	43
Heaviest Crude Blend, 93% Utilization	438	710	480	336	950	32	-46	-7	-17	14
Lightest/Max Shipping, Max Hydrogen Production, 100% Utilization	457	758	515	350	997	51	2	28	-3	60
Lightest/Max Shipping, Max Hydrogen Production, 93% Utilization	440	729	484	335	975	34	-26	-3	-18	38
Lightest/Max Shipping, 100% Utilization	443	747	510	350	992	37	-9	23	-3	55
Lightest/Max Shipping, 93% Utilization	423	715	478	334	969	17	-41	-9	-19	32

TABLE A4.3-OP-26 CAP EMISSIONS BY CASE, WITHOUT PROJECT DESIGN FEATURES

Emissions Case	Emissions (tons/year)					Change from Baseline (tons/year)				
	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC
Max Sour	457	752	514	350	985	50	-4	27	-3	48
Max Heavy	414	637	489	350	890	7	-119	2	-3	-47
Max Light	365	676	494	318	968	-41	-80	7	-35	31

TABLE A4.3-OP-27 CAP EMISSIONS BY CASE, WITH PROJECT DESIGN FEATURES

Emissions Case	Emissions (tons/year)					Change from Baseline (tons/year)				
	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC
Baseline	406	756	487	353	937	--	--	--	--	--
Project Crude Blend, Max Hydrogen Production, 100% Utilization	462	757	516	350	985	56	1	29	-3	49
Project Crude Blend, Max Hydrogen Production, 93% Utilization	447	723	484	336	960	40	-32	-3	-16	23
Project Crude Blend, 100% Utilization	454	750	513	350	982	48	-6	26	-3	46
Project Crude Blend, 93% Utilization	434	713	479	336	955	28	-42	-8	-17	19
Sourest Crude Blend, Max Hydrogen Production, 100% Utilization	464	758	516	350	985	57	2	29	-3	48
Sourest Crude Blend, Max Hydrogen Production, 93% Utilization	449	724	484	336	957	43	-31	-3	-16	20
Sourest Crude Blend, 100% Utilization	457	752	514	350	982	50	-4	27	-3	46
Sourest Crude Blend, 93% Utilization	440	717	481	336	953	33	-39	-6	-17	17
Heaviest Crude Blend, Max Hydrogen Production, 100% Utilization	463	752	515	350	980	57	-4	28	-3	43
Heaviest Crude Blend, Max Hydrogen Production, 93% Utilization	449	718	483	336	951	42	-37	-4	-16	15
Heaviest Crude Blend, 100% Utilization	455	746	512	350	977	49	-10	25	-3	40
Heaviest Crude Blend, 93% Utilization	438	710	480	336	948	32	-46	-7	-17	11
Lightest/Max Shipping, Max Hydrogen Production, 100% Utilization	457	758	515	350	994	51	2	28	-3	58
Lightest/Max Shipping, Max Hydrogen Production, 93% Utilization	440	729	484	335	972	34	-26	-3	-18	36
Lightest/Max Shipping, 100% Utilization	443	747	510	350	989	37	-9	23	-3	53
Lightest/Max Shipping, 93% Utilization	423	715	478	334	966	17	-41	-9	-19	30

TABLE A4.3-OP-27 CAP EMISSIONS BY CASE, WITH PROJECT DESIGN FEATURES

Emissions Case	Emissions (tons/year)					Change from Baseline (tons/year)				
	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC	CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOC
Max Sour	457	752	514	350	982	50	-4	27	-3	46
Max Heavy	414	637	489	350	887	7	-119	2	-3	-49
Max Light	365	676	494	318	965	-41	-80	7	-35	29

TABLE A4.3-OP-28 TAC EMISSIONS BY CASE, WITHOUT PROJECT DESIGN FEATURE TANK DOME

Chemical	Emissions (lbs/year)				
	2016 Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization
Acetaldehyde	201.02	1,062.65	1,068.23	1,061.84	1,068.04
Ammonia	228,006.81	300,520.47	300,649.08	300,520.47	300,649.08
Antimony	0.34	7.98	7.98	7.97	7.98
Arsenic	2.12	16.30	16.41	16.29	16.41
Benzene	18,224.97	19,191.40	19,357.11	19,278.83	19,420.33
Benzo(a)anthracene	0.01	0.35	0.35	0.35	0.35
Benzo(a)pyrene	240.20	182.21	193.46	183.66	192.75
Benzo(b)fluoranthene	0.02	0.44	0.44	0.44	0.44
Benzo(k)fluoranthene	0.01	0.26	0.26	0.26	0.26
Beryllium	0.01	0.01	0.01	0.01	0.01
Bromine and compounds	0.00	0.95	0.95	0.95	0.95
1,3-butadiene	65.70	71.28	71.28	71.28	71.28
Biphenyl	0.00	9.22	9.22	9.22	9.22
Butane	0.00	66.50	66.50	66.50	66.50
Methyl ethyl ketone	91.56	91.56	91.56	91.56	91.56
Butyl acetate	3.77	3.77	3.77	3.77	3.77

TABLE A4.3-OP-28 TAC EMISSIONS BY CASE, WITHOUT PROJECT DESIGN FEATURE TANK DOME

Chemical	Emissions (lbs/year)				
	2016 Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization
Cadmium	0.82	10.84	10.87	10.83	10.87
Carbon disulfide	2,909.20	2,908.53	2,908.53	2,846.30	2,908.53
Chlorine	0.00	0.43	0.43	0.43	0.43
Chloroform	0.00	31.89	31.89	31.89	31.89
Chromium	0.36	0.38	0.41	0.38	0.41
Chromium (hex)	0.79	0.83	0.88	0.83	0.87
Chrysene	0.00	0.03	0.03	0.03	0.03
Copper compounds	8.88	100.86	100.87	100.73	100.87
Cumene	125.89	141.08	142.85	142.08	143.58
Cyclohexane	537.45	540.32	543.59	542.17	544.92
1,2-Dibromoethane	1.10	1.10	1.10	1.10	1.10
Diesel particulate matter (engine exhaust)	581.05	581.05	581.05	581.05	581.05
Diethanolamine	38.33	1,645.90	1,648.82	1,647.55	1,650.02
Ethane	0.00	2,629.80	2,629.80	2,629.80	2,629.80
Ethanol	620.28	578.18	621.88	602.88	639.72
Ethanolamine	40.88	43.62	46.75	45.39	48.02

TABLE A4.3-OP-28 TAC EMISSIONS BY CASE, WITHOUT PROJECT DESIGN FEATURE TANK DOME

Chemical	Emissions (lbs/year)				
	2016 Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization
Ethylene	2,444.98	3,894.44	3,894.44	3,894.44	3,894.44
Ethylbenzene	1,339.00	1,739.15	1,769.43	1,755.85	1,781.78
Formaldehyde	1,343.16	3,016.59	3,025.57	3,014.46	3,025.49
N-Hexane	10,219.20	10,789.70	11,197.30	11,020.04	11,363.60
Cyanide compounds	0.00	0.01	0.01	0.01	0.01
Hydrogen sulfide	1,013.33	9,756.08	9,838.47	9,623.29	9,850.67
Indeno(1,2,3-cd)pyrene	0.04	1.06	1.06	1.06	1.06
Lead compounds	1.87	43.35	43.35	43.29	43.35
Tetra-ethyl lead	35.65	38.04	40.77	39.58	41.88
Manganese compounds	120.44	179.29	186.58	179.42	186.47
Mercury compounds	3.02	7.04	7.19	7.05	7.18
Methanol	2,892.89	6.49	6.49	6.49	6.49
2-heptanone	2.60	2.60	2.60	2.60	2.60
Cresols	0.38	6.88	6.88	6.88	6.88
Naphthalene	2.72	90.96	91.07	91.01	91.11
Nickel compounds	8.35	90.82	91.06	90.73	91.05

TABLE A4.3-OP-28 TAC EMISSIONS BY CASE, WITHOUT PROJECT DESIGN FEATURE TANK DOME

Chemical	Emissions (lbs/year)				
	2016 Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization
PAHs	645.40	496.03	528.05	499.43	526.40
Phenol	53.03	160.88	164.04	161.11	163.88
Propane	0.00	367.40	367.40	367.40	367.40
Propylene glycol monomethyl ether	1.28	1.28	1.28	1.28	1.28
Propylene	1,447.48	2,045.04	2,045.04	2,045.04	2,045.04
Selenium	3.67	86.80	86.80	86.69	86.80
Sulfuric acid mist	52,873.10	8,510.55	8,510.69	8,345.10	8,510.82
Perchloroethylene	26.37	26.51	26.66	26.59	26.73
Toluene	24,595.36	26,547.01	27,501.23	27,080.91	27,888.09
1,2,4-trimethylbenzene	884.47	952.72	952.72	952.72	952.72
Xylene	16,166.21	17,339.15	17,486.98	17,421.73	17,547.30
2,2,4-trimethylpentane	3,230.60	3,335.89	3,451.27	3,401.10	3,498.35
Zinc Compounds	135.75	381.58	390.49	381.80	390.23
Amine - other	6.31	6.31	6.31	6.31	6.31
Avgas	810.30	864.67	926.56	899.64	951.81
Bunker C fuel oil	0.83	0.89	0.96	0.93	0.99

TABLE A4.3-OP-28 TAC EMISSIONS BY CASE, WITHOUT PROJECT DESIGN FEATURE TANK DOME

Chemical	Emissions (lbs/year)				
	2016 Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization
Cycloparaffins - other	608.41	459.30	487.79	462.98	486.00
Diesel oil	3,544.15	3,781.97	4,052.65	3,934.93	4,163.09
Fuel - jet 'A'	7,675.24	8,190.27	8,776.46	8,521.52	9,015.62
Gas oil	3,533.20	3,770.28	4,040.13	3,922.77	4,150.23
Glycols	7.63	7.63	7.63	7.63	7.63
Ketone - other	12.63	13.48	14.44	14.02	14.83
Liquefied petroleum gas	13,273.83	13,273.83	13,273.83	13,273.83	13,273.83
Mineral spirits	17.89	17.89	17.89	17.89	17.89
Oil - non-fuel, other	4,343.50	4,343.50	4,343.50	4,343.50	4,343.50
Oil/water mixture	12,405.93	13,172.53	14,045.07	13,665.60	14,401.06
Organic liquid - other	9,206.70	9,819.17	10,516.27	10,213.10	10,800.69
PAHs (non-carcinogenic)	1,601.09	1,208.68	1,283.64	1,218.36	1,278.95
Paraffins - C3+	4,534.72	4,549.20	4,565.67	4,558.51	4,572.39
Petroleum products - other	1,387.03	1,480.10	1,586.03	1,539.96	1,629.25
Facility feedstock - other	6,593.68	7,036.08	7,539.62	7,320.63	7,745.06
Reformate	10.51	10.51	10.51	10.51	10.51

TABLE A4.3-OP-28 TAC EMISSIONS BY CASE, WITHOUT PROJECT DESIGN FEATURE TANK DOME

Chemical	Emissions (lbs/year)				
	2016 Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization
Stoddard solvent	5.20	5.20	5.20	5.20	5.20
Sulfur or sulfur compounds	1,501.50	1,602.25	1,716.93	1,667.06	1,763.72
Wastewater	2,284.90	2,438.22	2,612.73	2,536.84	2,683.93
Water/organics mixture	559.06	559.11	559.18	559.15	559.20

Note: PAH = polycyclic aromatic hydrocarbon.

TABLE A4.3-OP-29 TAC EMISSIONS BY CASE, WITH PROJECT DESIGN FEATURE TANK DOME

Chemical	Emissions (lbs/year)				
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization
Acetaldehyde	201.02	1,062.65	1,068.23	1,061.84	1,068.04
Ammonia	228,006.81	300,520.47	300,649.08	300,520.47	300,649.08
Antimony	0.34	7.98	7.98	7.97	7.98
Arsenic	2.12	16.30	16.41	16.29	16.41
Benzene	18,224.97	19,189.30	19,355.01	19,276.73	19,418.23

TABLE A4.3-OP-29 TAC EMISSIONS BY CASE, WITH PROJECT DESIGN FEATURE TANK DOME

Chemical	Emissions (lbs/year)				
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization
Benzo(a)anthracene	0.01	0.35	0.35	0.35	0.35
Benzo(a)pyrene	240.20	182.21	193.46	183.66	192.75
Benzo(b)fluoranthene	0.02	0.44	0.44	0.44	0.44
Benzo(k)fluoranthene	0.01	0.26	0.26	0.26	0.26
Beryllium	0.01	0.01	0.01	0.01	0.01
Bromine & compounds	0.00	0.95	0.95	0.95	0.95
1,3-butadiene	65.70	71.28	71.28	71.28	71.28
Biphenyl	0.00	9.22	9.22	9.22	9.22
Butane	0.00	66.50	66.50	66.50	66.50
Methyl ethyl ketone	91.56	91.56	91.56	91.56	91.56
Butyl acetate	3.77	3.77	3.77	3.77	3.77
Cadmium	0.82	10.84	10.87	10.83	10.87
Carbon disulfide	2,909.20	2,908.53	2,908.53	2,846.30	2,908.53
Chlorine	0.00	0.43	0.43	0.43	0.43
Chloroform	0.00	31.89	31.89	31.89	31.89
Chromium	0.36	0.38	0.41	0.38	0.41

TABLE A4.3-OP-29 TAC EMISSIONS BY CASE, WITH PROJECT DESIGN FEATURE TANK DOME

Chemical	Emissions (lbs/year)				
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization
Chromium (hex)	0.79	0.83	0.88	0.83	0.87
Chrysene	0.00	0.03	0.03	0.03	0.03
Copper compounds	8.88	100.86	100.87	100.73	100.87
Cumene	125.89	141.06	142.83	142.06	143.55
Cyclohexane	537.45	540.32	543.59	542.17	544.92
1,2-Dibromoethane	1.10	1.10	1.10	1.10	1.10
DPM	581.05	581.05	581.05	581.05	581.05
Diethanolamine	38.33	1,645.90	1,648.82	1,647.55	1,650.02
Ethane	0.00	2,629.80	2,629.80	2,629.80	2,629.80
Ethanol	620.28	578.18	621.88	602.88	639.72
Ethanolamine	40.88	43.62	46.75	45.39	48.02
Ethylene	2,444.98	3,894.44	3,894.44	3,894.44	3,894.44
Ethylbenzene	1,339.00	1,738.80	1,769.08	1,755.50	1,781.43
Formaldehyde	1,343.16	3,016.59	3,025.57	3,014.46	3,025.49
N-Hexane	10,219.20	10,784.05	11,191.65	11,014.39	11,357.95
Cyanide Compounds	0.00	0.01	0.01	0.01	0.01

TABLE A4.3-OP-29 TAC EMISSIONS BY CASE, WITH PROJECT DESIGN FEATURE TANK DOME

Chemical	Emissions (lbs/year)				
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization
Hydrogen Sulfide	1,013.33	9,756.08	9,838.47	9,623.29	9,850.67
Indeno(1,2,3-cd)pyrene	0.04	1.06	1.06	1.06	1.06
Lead compounds	1.87	43.35	43.35	43.29	43.35
Tetra-ethyl lead	35.65	38.04	40.77	39.58	41.88
Manganese compounds	120.44	179.29	186.58	179.42	186.47
Mercury compounds	3.02	7.04	7.19	7.05	7.18
Methanol	2,892.89	6.49	6.49	6.49	6.49
2-heptanone	2.60	2.60	2.60	2.60	2.60
Cresols	0.38	6.88	6.88	6.88	6.88
Naphthalene	2.72	90.96	91.07	91.01	91.11
Nickel compounds	8.35	90.82	91.06	90.73	91.05
PAHs	645.40	496.03	528.05	499.43	526.40
Phenol	53.03	160.88	164.04	161.11	163.88
Propane	0.00	367.40	367.40	367.40	367.40
Propylene glycol monomethyl ether	1.28	1.28	1.28	1.28	1.28
Propylene	1,447.48	2,045.04	2,045.04	2,045.04	2,045.04

TABLE A4.3-OP-29 TAC EMISSIONS BY CASE, WITH PROJECT DESIGN FEATURE TANK DOME

Chemical	Emissions (lbs/year)				
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization
Selenium	3.67	86.80	86.80	86.69	86.80
Sulfuric acid mist	52,873.10	8,510.55	8,510.69	8,345.10	8,510.82
Perchloroethylene	26.37	26.51	26.66	26.59	26.73
Toluene	24,595.36	26,541.56	27,495.78	27,075.46	27,882.64
1,2,4-trimethylbenzene	884.47	952.72	952.72	952.72	952.72
Xylene	16,166.21	17,337.40	17,485.23	17,419.98	17,545.55
2,2,4-trimethylpentane	3,230.60	3,334.39	3,449.77	3,399.60	3,496.85
Zinc Compounds	135.75	381.58	390.49	381.80	390.23
Amine - other	6.31	6.31	6.31	6.31	6.31
Avgas	810.30	864.67	926.56	899.64	951.81
Bunker C fuel oil	0.83	0.89	0.96	0.93	0.99
Cycloparaffins - other	608.41	459.30	487.79	462.98	486.00
Diesel oil	3,544.15	3,781.97	4,052.65	3,934.93	4,163.09
Fuel - jet 'A'	7,675.24	8,190.27	8,776.46	8,521.52	9,015.62
Gas oil	3,533.20	3,770.28	4,040.13	3,922.77	4,150.23
Glycols	7.63	7.63	7.63	7.63	7.63

TABLE A4.3-OP-29 TAC EMISSIONS BY CASE, WITH PROJECT DESIGN FEATURE TANK DOME

Chemical	Emissions (lbs/year)				
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest Crude Blend, Max Hydrogen Production, 100% Utilization
Ketone - other/not spec	12.63	13.48	14.44	14.02	14.83
Liquefied petroleum gas	13,273.83	13,273.83	13,273.83	13,273.83	13,273.83
Mineral spirits	17.89	17.89	17.89	17.89	17.89
Oil - non-fuel, other	4,343.50	4,343.50	4,343.50	4,343.50	4,343.50
Oil/water mixture	12,405.93	13,172.53	14,045.07	13,665.60	14,401.06
Organic liquid - other	9,206.70	9,819.17	10,516.27	10,213.10	10,800.69
PAHs (non-carcinogenic)	1,601.09	1,208.68	1,283.64	1,218.36	1,278.95
Paraffins - C3+	4,534.72	4,549.20	4,565.67	4,558.51	4,572.39
Petroleum products - other	1,387.03	1,480.10	1,586.03	1,539.96	1,629.25
Facility feedstock - other	6,593.68	7,036.08	7,539.62	7,320.63	7,745.06
Reformate	10.51	10.51	10.51	10.51	10.51
Stoddard solvent	5.20	5.20	5.20	5.20	5.20
Sulfur or sulfur compounds	1,501.50	1,602.25	1,716.93	1,667.06	1,763.72
Wastewater	2,284.90	2,438.22	2,612.73	2,536.84	2,683.93
Water/organics mixture	559.06	559.11	559.18	559.15	559.20

Note: PAH = polycyclic aromatic hydrocarbon
 Source: See *Appendix 4.3-OP*.

1.14.1 Nitrogen Oxides

1.14.1.1 Replacement Hydrogen Plant and Associated Emission Controls on the Unit's Furnaces

The Modernization Project includes the replacement of the Facility's existing hydrogen plant. As described in *Chapter 3, Project Description*, the new plant will be equipped with newer technology including pressure swing absorption that is less fuel intensive and results in reduced fuel usage per unit of hydrogen produced, and subsequently lower NO_x emissions, compared to the existing plant. Additionally, the three existing hydrogen plant furnaces will be replaced by two new furnaces. Currently, only one of the three existing furnaces is equipped with selective catalytic reduction emission controls, which converts NO_x to nitrogen and water. Both replacement furnaces will meet Best Achievable Control Technology requirements and be equipped with selective catalytic reduction and low-NO_x emitting burners, which control the fuel and air mixture in the furnace to reduce NO_x formation.

1.14.1.2 Emission Controls on the Existing Sulfur Recovery Units

The SRU contains burners and furnaces that provide the heat required to complete the sulfur removal process. The Modernization Project replaces existing burners with "ultra low-NO_x emitting burners" and fuel-induced recirculation, which lowers NO_x emissions by recirculating a portion of the exhaust gas into the incoming fuel. These replacements are required to meet BAAQMD emission reduction requirements and help offset increases in NO_x that would otherwise occur to increased utilization at the SRUs.

1.14.1.3 Replacement with of Low- NO_x Burners for Five Existing Furnaces

The Modernization Project also includes the installation of low-NO_x burners on five furnaces, three in the hydrocracker unit and two in the polymerization unit. These new burners will effectively reduce NO_x emissions by reducing the NO_x formed as part of the combustion process, helping to reduce the Facility's overall NO_x emissions.

1.14.1.4 FCC FHT Alterations

As part of the Revised Modernization Project, heat exchangers and other equipment used to transfer heat energy at the FCC FHT unit will be modified to improve energy efficiency, allowing for additional throughput without requiring additional permitted heat input at the unit's furnaces, helping to control NO_x emissions.

1.14.2 Carbon Monoxide

1.14.2.1 Emission Controls on the Existing Sulfur Recovery Units

As discussed above, the Modernization Project includes new low-NO_x Burners equipped with fuel-induced recirculation, as well as other minor modifications in the SRU stack heaters that will improve the mixing and combustion efficiency of the units, which reduces CO emissions. The existing thermal oxidizers at the SRUs will also operate at a higher minimum operating temperature, further reducing CO emissions.

1.14.2.2 FCC FHT Alterations

Also as described above, the Modernization Project includes heat exchangers and other equipment used to transfer heat energy at the FCC FHT unit. These modifications improve energy efficiency, allowing for additional throughput without requiring additional heat for the unit's furnaces, and thereby lowering CO emission rates for this process unit.

1.14.3 Sulfur Dioxide

1.14.3.1 Collection and Treatment of Refinery Process Gas

As discussed above, the Facility's process heaters use a gaseous fuel called RFG (which consists of refinery process gas plus natural gas) to produce the heat needed for refinery operational process units. The Modernization Project involves the collection of most of the refinery process gas (RPG) stream to be used as a feedstock in the new hydrogen plant, in lieu of using imported natural gas for the hydrogen plant. Prior to using the RPG stream as a hydrogen plant feedstock, the sulfur from the RPG will be further removed to less than 100 parts per billion using a zinc oxide scrubber.

After the Modernization Project is completed, additional imported natural gas (which is already low in sulfur) will be mixed with the RPG not used in the hydrogen plant. The treatment of the RPG for use in the hydrogen plant, and the subsequent decrease in the ratio of RPG to natural gas in the use of this mixture of RPG and natural gas in other refinery operational process units, will result in a net decrease in overall SO₂ emissions from the Facility combustion sources.

1.14.3.2 FCC FHT Alterations

As discussed above, heat exchangers and other equipment used to transfer heat energy at the FCC FHT unit will be modified to improve energy efficiency, allowing for additional throughput without requiring additional heat for the unit's furnaces, thus reducing fuel use. This reduction in fuel results in lower SO₂ emissions.

1.14.4 Respirable Particulate Matter (<10 microns)

1.14.4.1 Replacement Hydrogen Plant

The Modernization Project includes the replacement of the Facility's existing hydrogen plant. As described in Section 4.3.6.2.1.4.4 the new plant will be equipped with newer technology that is less fuel intensive and results in reduced fuel usage per unit of hydrogen produced. This modification also lowers PM₁₀ emissions from combustion.

1.14.4.2 Wet Electrostatic Precipitators

The Modernization Project includes the installation of wet electrostatic precipitators, which use electric charges to remove small liquid droplets and particulates from exhaust gas streams, on each of the existing SRUs. These emission reduction devices are required under applicable BAAQMD requirements and will reduce PM₁₀ emissions from these sources.

1.14.4.3 FCC FHT Alterations

As described above, heat exchangers and other equipment used to transfer heat energy at the FCC FHT unit will be modified to improve energy efficiency, allowing for additional throughput without requiring additional heat to the unit's furnaces, thus reducing fuel use. This reduction in fuel results in lower PM₁₀ emissions.

1.14.5 Volatile Organic Compounds

1.14.5.1 Replacement Hydrogen Plant

As described in Section 4.3.6.2.1.4.4, the new hydrogen plant will be equipped with newer technology that is less fuel intensive and results in reduced fuel usage per unit of hydrogen product. The reduced fuel use results in less VOC emissions compared to the existing plant.

1.14.5.2 Emission Controls on the Existing Sulfur Recovery Units

As described above, the Modernization Project's new low-NO_x Burners and other minor stack modifications in both the SRU combustion sources that will improve the mixing and combustion efficiency of the units, which reduces VOC emissions. Furthermore, Chevron has agreed to increase the minimum temperature limitations of the existing thermal oxidizers at the SRUs, resulting in a greater reduction in VOC emissions. An increase in minimum combustion temperatures at the SRU will reduce the VOC emissions, as more destruction of VOCs will occur at higher temperatures.

1.14.5.3 FCC FHT Alterations

As part of the Revised Modernization Project, heat exchangers and other equipment used to transfer heat energy at the FCC FHT unit will be modified to improve energy efficiency, allowing for additional throughput without requiring additional permitted heat input at the unit's furnaces, helping to control VOC emissions.

The Emission Reduction features of this set of Project Design Features were reviewed by BAAQMD in its EE prepared for the 2008 Project, and the emission factors and permit limits for these Project Design Features have already been integrated into the emission estimates used to calculate CAP emission from the Facility.

1.15 REFERENCES

Bay Area Air Quality Management District (BAAQMD). 2008a. Condition Number 24136. September 19.

Bay Area Air Quality Management District (BAAQMD). 2008b. *Engineering Evaluation Report Application No. 12842 Chevron Energy and Hydrogen Renewal Project*. September 19.

Bay Area Air Quality Management District (BAAQMD). 2010. *Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants*. January.

California Air Pollution Control Officers Association (CAPCOA). 1999. *California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Refineries*.
http://www.arb.ca.gov/fugitive/impl_doc.pdf.

California Environmental Protection Agency (Cal/EPA). 2013. *Consolidated Table of OEHHA/CARB Approved Risk Assessment Health Values*. August.

Chevron Data Transmittal #6C: HRA Modeling Inputs, 2013.

Chevron Data Transmittal #8: Meteorological Data Files, 2011.

Chevron Data Transmittal #16 (Rev #3): Storage Tanks for Emissions Calculation, 2013.

Chevron Data Transmittal #21C: Project Fugitives, 2012.

Chevron Data Transmittal #36K: Stationary Source Emissions #1, 2013.

Chevron Data Transmittal #36L: Stationary Source Emissions #2 – Other, 2013.

Chevron Data Transmittal #36M (Rev #2): Flares, 2014.

Chevron Data Transmittal #36N (Rev #1): Stationary Source Emissions #3 -
Loading & Wastewater, 2013.

Chevron Data Transmittal #38 (Rev #1): APNs, 2013

Chevron Data Transmittal #47A (Rev #6): PDF Descriptions: Domes, LED, 2014.

Chevron Data Transmittal #49: 2008-2010 Pegged Leakers to be Removed, 2013.

Chevron Data Transmittal #60: Corrections to 2009 Firing Rates, 2013.

Chevron Data Transmittal #66: 2008-2010 BAAQMD Emissions Reports, 2014.

Lazarraga, T.A. 2008. Chevron. Communication with Ken Kunaniec of BAAQMD
re: Continuous Emission Monitoring Report January 2008. February 18.

U.S. Environmental Protection Agency (EPA). 1981. *Supplement No. 12 for
Compilation of Air Pollutant Emission Factors*, Third Edition. April.

U.S. Environmental Protection Agency (EPA). 2008. *National Emissions Inventory
Data*. <http://www.epa.gov/ttn/chief/net/2008inventory.html>.

U.S. Environmental Protection Agency (EPA). 2011. *Emission Estimation Protocol
for Petroleum Refineries*. May. Accessed November, 20, 2013.
[http://www.epa.gov/ttnchie1/efpac/protocol/Emission_Estimation_Protocol
_for_Petroleum_Refinerie_052011.pdf](http://www.epa.gov/ttnchie1/efpac/protocol/Emission_Estimation_Protocol_for_Petroleum_Refinerie_052011.pdf).

U.S. Environmental Protection Agency (EPA). 2012. *Appendix F to Part 60-Quality
Assurance Procedures*. July. Accessed February 28, 2014.
<http://www.epa.gov/ttnemc01/perfspec/appendixf.pdf>

U.S. Environmental Protection Agency (EPA). 2013. *Method 19 - SO₂ Removal and
PM, SO₂, NO_x Rates from Electric Utility Steam Generators*. Accessed October 17,
2013. <http://www.epa.gov/ttnemc01/promgate/m-19.pdf>.

APPENDIX 4.3 - PHYS

PHYS: Physical Setting

APPENDIX 4.3

PHYS: PHYSICAL SETTING

Air quality depends upon both the rate and location of pollutant emissions. Atmospheric conditions such as wind speed, wind direction, and air temperatures interact with features of the landscape to determine the movement and dispersal of air pollutants and consequently affect air quality. This appendix describes the physical setting for the Modernization Project through a discussion of regional and local information related to climate, meteorology, and air pollution conditions.

1.1 REGIONAL AIR QUALITY BASIN

The City of Richmond is located in the nine-county San Francisco Bay Area in west Contra Costa County. It is located within the San Francisco Bay Area Air Basin (SFBAAB) under the jurisdiction of the BAAQMD. The SFBAAB includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, the southern portion of Sonoma County, and the southwest portion of Solano County. The SFBAAB covers approximately 5,540 square miles of terrain consisting of coastal mountain ranges, inland valleys, and the San Francisco Bay. The SFBAAB is generally bounded on the west by the Pacific Ocean, on the north by the Coast Ranges, and on the east and south by the Diablo Range.

The City of Richmond is located in the Northern Alameda and West Contra Costa County climatological subregion of the SFBAAB. This climatological subregion stretches from Richmond to San Leandro. Its western boundary is defined by the Bay and its eastern boundary by the Oakland-Berkeley Hills. The Oakland-Berkeley Hills have a ridgeline height of approximately 1,500 feet, a significant barrier to air flow. The most densely populated area of the subregion lies in a strip of land between the Bay and the lower hills.

Richmond, the northern-most city of this zone, is 10 miles northeast of the Golden Gate. At the Bay Area Air Quality Management District's (BAAQMD's) San Pablo meteorological station, 4½ miles west-northwest of downtown Richmond, the prevailing direction is south-southwesterly with over 50% of the winds coming from the south through southwest sector. The average wind speed at this station is 11 miles per hour (mph).

In the SFBAAB, marine air traveling through the Golden Gate, as well as across San Francisco and through the San Bruno Gap, is a dominant weather factor. The Oakland-Berkeley Hills cause the westerly flow of air to split off to the north and south of Oakland, which causes diminished wind speeds. The prevailing winds

for most of this subregion are from the west. At the northern end of the region, near Richmond, prevailing winds are from the south and southwest. The prevailing wind patterns in the SFBAAB are shown in Figure A.3-PHYS-1.

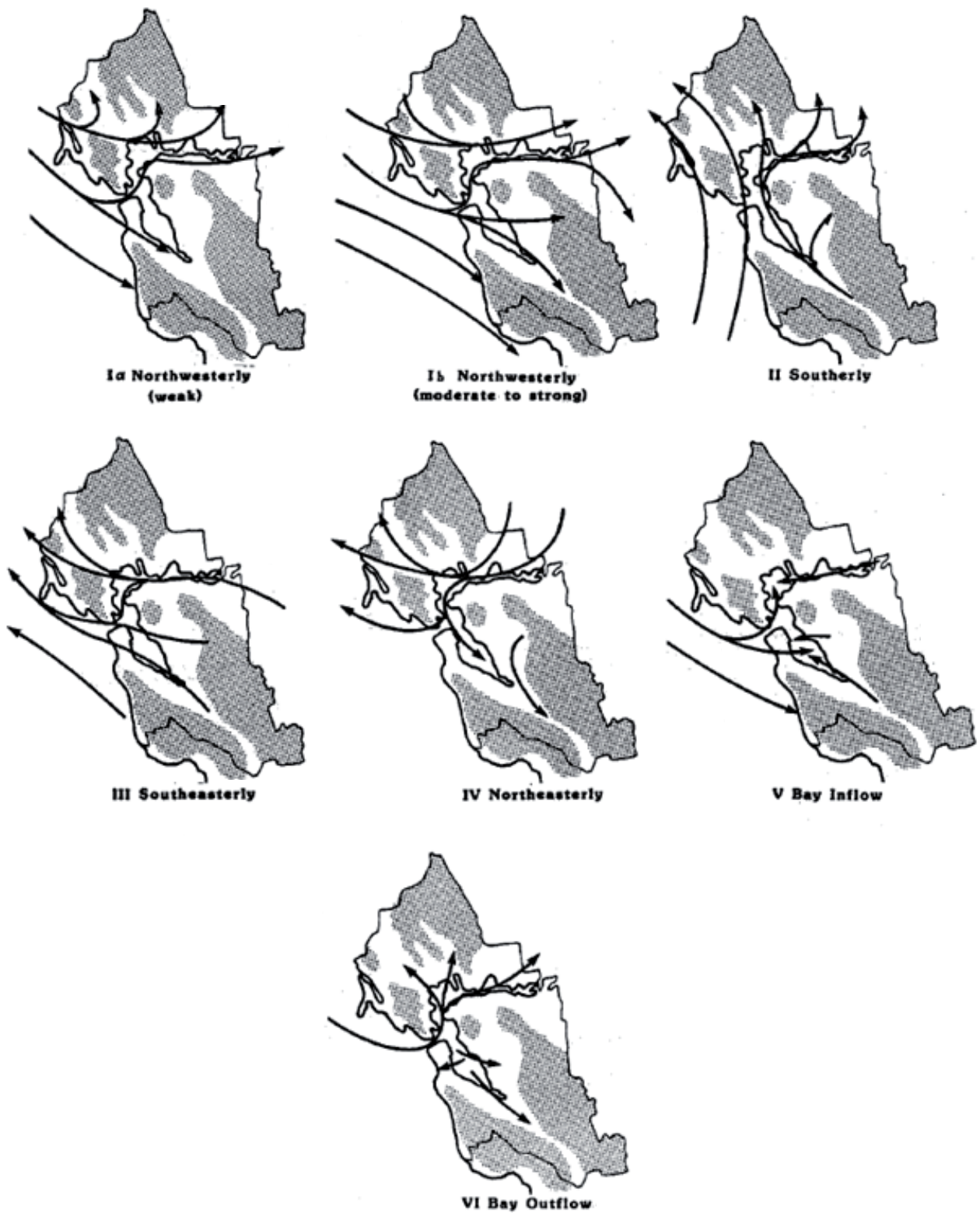
As shown in Figure A4.3-PHYS-2, two surface meteorological stations were found in the vicinity of the Facility: one is the station maintained by the Facility located just south of the western end of the W. Gertrude Avenue (“Gertrude station”) on the Facility property. The other station is a National Climate Data Center (NCDC) station (AWS ID 994036) located on the Refinery Pier just south of Highway 580 (“Pier station”).

Based on the pattern of wind direction frequencies (i.e., windroses) depicted in Figure A4.3-PHYS-2, the wind conditions between the two stations are generally similar; however, there are a few notable differences. One difference is that low wind speeds occur more frequently at the Pier station than at the Gertrude station. In addition, wind blowing from the northwest direction happens more frequently at the Pier station than at the Gertrude station. The more frequent northwest wind at the Pier station can be explained by the “channeling” effect of the terrain just north of the Pier station, which features a mountain ridge running from Point San Pablo to south of the Site boundary, separating the two stations. The Gertrude station represents meteorological conditions on the north side of the mountain ridge, while the Pier station represents meteorological condition on the south side of the mountain ridge, due to the effect of terrain on the meteorology in that area.

1.2 TOPOGRAPHY, METEOROLOGY, AND CLIMATE

The SFBAAB climate is dominated by a strong, semi-permanent, subtropical high-pressure cell over the northeastern Pacific Ocean. Climate is also affected by the moderating effects of the adjacent oceanic heat reservoir. Mild summers and winters, moderate rainfall and humidity, and daytime onshore breezes characterize regional climatic conditions in the San Francisco Bay Area (Bay Area). In summer, when the high-pressure cell is strongest and farthest north, fog forms in the morning and temperatures are mild. In winter, when the high-pressure cell is weakest and farthest south, occasional rainstorms occur.

Ambient concentrations of air pollutant emissions are determined by the amount of emissions released by pollutant sources and the atmosphere’s ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and the presence of sunlight. Existing air quality conditions in the project area are determined by such natural factors as topography, meteorology, and climate in addition to the amount of emissions that the existing sources of air pollutants release. The



mo.dt.year file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.3-2.ai
 Source: Hayes et al, 1984

Figure A4.3-PHYS-1
 Chevron Refinery Modernization Project EIR
 Prevailing Winds Near Richmond

environmental factors that affect ambient air pollutant concentrations are discussed separately.

1.2.1 Temperature Inversions

Temperature inversions, also called thermal inversions, describe areas where the normal decrease in air temperature with increasing altitude is reversed and air at higher altitudes is warmer than the air below it. Inversion layer thicknesses can be anywhere from under 100 feet to over thousands of feet. Thermal inversions limit the vertical dispersion of air pollutants, and can trap pollutants close to the ground. These inversions occur most often when a warmer, less dense air mass flows over colder denser air mass close to the ground. The highest air pollutant concentrations in the Bay Area generally occur during such inversions, of which there are two types: 1) subsidence inversions – a regional phenomenon that is most common in the Bay Area during summer and fall, when descending warmer air from the subtropical high pressure cell centered over the Pacific Ocean caps the cooler marine air layer nearer the surface; and 2) radiation inversions – which are more localized and more typical of winter nights in interior parts of the Bay Area where air in contact with the ground cools more rapidly than the air layer above it.

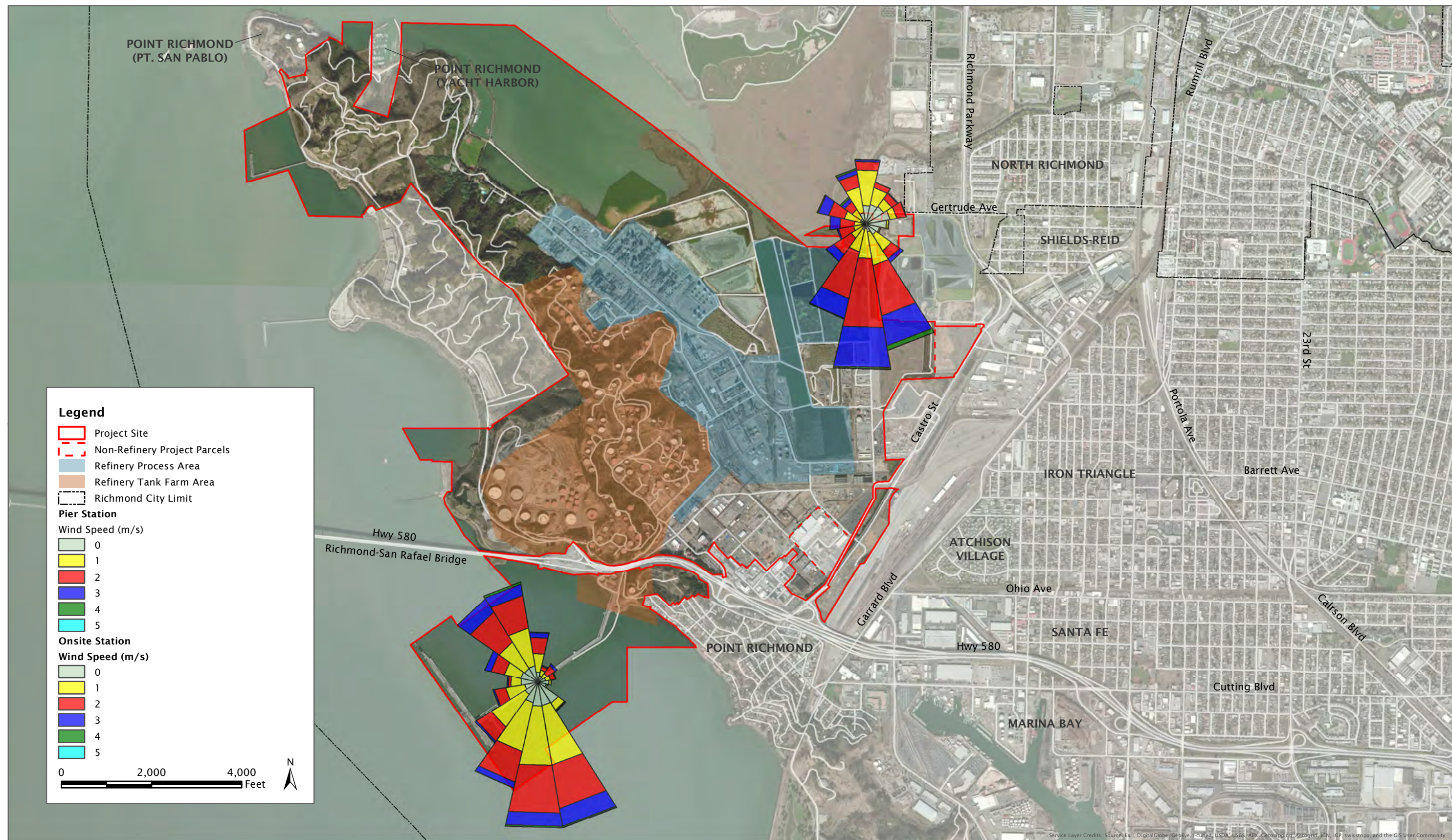
1.2.2 Topography and Its Effect on Wind Speeds and Patterns

Low wind speed conditions limit horizontal air dispersion, and can result in the buildup of air pollutants. Poor air quality under low wind speed conditions can be especially pronounced in interior valleys, where the topography also contributes to the restriction of air movement and pollutant dispersion.

1.2.3 Solar Radiation and Its Impact on Photochemical Pollutants

The higher intensity and longer duration of solar radiation during the Bay Area's summer months provide ultraviolet light and warm temperatures that promote the formation of secondary photochemical pollutants (e.g., ozone (O_3)). Because sunlight intensity and summer temperatures are much higher in many of the Bay Area's inland valleys than near the coast, these inland areas are especially prone to photochemical air pollution.

As a consequence of all these factors, the parts of the Bay Area having the highest air pollution potential tend to be the inland areas, which experience higher temperatures in the summer and lower temperatures in the winter, and which are sheltered from the higher winds and more frequent fog episodes that affect the coastal areas. Also, because air pollutant levels depend on the amount of pollutants emitted locally or from upwind sources, ambient levels in inland areas are higher because they are subject to emissions transported by the prevailing winds from populous upwind areas.



3/5/2014 C:\Users\temp1\Documents\ArcGIS\Projects\CVRN_A4.3-PHYS-2_Met_Stations_Windroses\101\CVRN_A4.3-PHYS-2_Met_Stations_Windroses.mxd

Source: Chevron (T9r1, T38r1); NCDC, 2007

Figure A4.3-PHYS-2
Chevron Refinery Modernization Project EIR
Gertrude and Pier Meteorological Station and Windroses (Indicating "Blowing From" Distribution)

1.2.4 Climate Subregion for Project Site

The Project site is located in the Northern Alameda and West Contra Costa County climatological subregion. In this subregion, marine air traveling through the Golden Gate, as well as across San Francisco, is a dominant weather factor. The Oakland-Berkeley Hills cause the westerly flow of air to split off to the north and south of Oakland, which causes diminished wind speeds.

The climate of the greater San Francisco Bay Area, including Richmond, is a Mediterranean-type climate characterized by warm, dry summers and mild, wet winters. The climate is determined largely by a high-pressure system often present over the eastern Pacific Ocean. In winter, the Pacific high-pressure system shifts southward, allowing storms to pass through the region. Richmond's maximum summer temperatures average in the low 70s and minimums average in the mid-50s. In winter, maximums are in the high 50s to low 60s and minimums are in the low to mid- 40s. The mean annual rainfall in Richmond, for the period between 1950 and 2010, is approximately 22 inches (WRCO, 2014).

Farther to the north, the Carquinez Strait is the only sea-level gap between San Francisco Bay and the Central Valley. The prevailing winds in the region are from the southwest; however, due to the heavy influence of topographic features in the project area, winds in Richmond are predominately from the south-southeast. During the summer and fall months, high pressure offshore coupled with low pressure in the Central Valley causes marine air to flow eastward through the Carquinez Strait.

The wind in the SFBAAB is strongest in the afternoon. Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait. Afternoon wind speeds of 15 to 20 mph are common throughout the strait region. Annual average wind speeds are 8 mph in Martinez, and 9 to 10 mph further east.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited and stagnant conditions are likely to result.

1.3 REGIONAL AIR QUALITY

Regional air quality is tracked for purposes of monitoring and either maintaining or achieving compliance with applicable air quality laws and regulations.

The legal framework for regulating air emissions is divided into two general categories of pollutants, and then further divided based on the nature of the activity or "source" of air pollution. The first category of pollutants is "criteria air pollutants" (CAPs), for which ambient air quality standards based on the protection of public health have been established under State and federal law. These criteria air pollutant standards, the types of sources that emit criteria air pollutants, and the region's status in complying with these standards, are described in *Section 1.3.1* below.

The second category of pollutants is "toxic air pollutants" (TACs), which comprise a wide variety of compounds determined to pose an actual or potential risk to public health, either by increasing cancer risks or increasing other health risks such as respiratory diseases like asthma. TACs have been of particular concern in Richmond, and have been evaluated in a variety of studies and are being addressed with various programs, as described below.

1.3.1 Criteria Air Pollutants

Federal and State air quality laws identify CAPs, including particulate matter (PM), ground-level ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen oxides (NO_x), and lead (Pb). Additional details regarding the federal and State regulations pertaining to CAPs is in Appendix 4.3-REG.

1.3.1.1 Bay Area Criteria Air Pollutant Attainment Status

Attainment of ambient air quality standards is demonstrated with mandatory monitoring of regional air quality. BAAQMD operates a regional monitoring network that measures the ambient concentrations of six criteria air pollutants. The major pollutants of concern in the San Francisco Bay Area are O_3 , PM_{10} , $PM_{2.5}$, CO, NO_2 , and SO_2 . Within Contra Costa County, the BAAQMD operates or receives criteria air pollutant data from six monitoring stations in the local area. The monitoring stations along with the pollutants measured are described in Table A4.3-PHYS-1 below, and are shown in Figure A4.3-PHYS-3.

Based on this monitoring data, the SFBAAB is currently designated as an air quality attainment area under federal NAAQS standards for all pollutants except for O_3 (for which the region is designated as a marginal nonattainment area) and $PM_{2.5}$ (EPA, 2013a)¹ Under the California State standards, the region is a nonattainment area for O_3 , PM_{10} , and $PM_{2.5}$; and as an attainment or unclassified area for all other pollutants.

¹ SFBAAB is in non-attainment of the 24-hour $PM_{2.5}$ NAAQ; its status under the recently revised annual $PM_{2.5}$ standard is currently under review.



3/6/2014 C:\Users\SKlug\Documents\ArcGIS\Projects\CVRN_A4.3-PHYS-3_BAAQMD_Monitoring_Stations\101\CVRN_A4.3-PHYS-3_BAAQMD_Monitoring_Stations.mxd

Source: BAAQMD, 2012a; BAAQMD, 2013b

Figure A4.3-PHYS-3
Chevron Refinery Modernization Project EIR
Map Showing Locations of BAAQMD Ambient Air Monitoring Locations

**TABLE A4.3-PHYS-1 BAAQMD CRITERIA POLLUTANT MONITORING STATIONS
OPERATING IN CONTRA COSTA COUNTY**

Contra Costa County Monitoring Station	Criteria Pollutants Monitored	Operation Schedule
Bethel Island	O ₃ , PM ₁₀ , CO, NO _x , SO ₂	PM ₁₀ : 1 in 6 days; other pollutants continuous
Concord	O ₃ , PM ₁₀ , PM _{2.5} , CO, NO _x , SO ₂	PM ₁₀ : 1 in 6 days; PM _{2.5} : daily (October – March), 1 in 3 days (April – September); other pollutants continuous
Crockett	SO ₂	Continuous
Martinez	SO ₂	Continuous
Richmond: 7th St	SO ₂	Continuous
San Pablo: Rumrill	O ₃ , PM ₁₀ , PM _{2.5} , CO, NO _x , and SO ₂	PM ₁₀ : 1 in 6 days; other pollutants continuous

Note: Operating schedule based on 2012.

Source: BAAQMD, 2013c.

Of the six criteria air pollutants, O₃ is the only one that is not emitted directly to the air from emission sources. Instead, ground-level O₃ is formed from a chemical reaction between NO_x and VOCs, often referred to as precursors, in the presence of sunlight (EPA, 2013d). NO_x collectively refers to two oxides of nitrogen, namely NO and NO₂. VOCs refer to a general class of carbon-containing compounds that exhibit photochemical reactivity (i.e., can undergo a chemical reaction in air in the presence of sunlight). Different regulatory agencies (i.e., EPA, CARB and BAAQMD) have established different nomenclature and definitions of photochemically reactive organic compounds (i.e., VOCs, reactive organic compounds (ROGs), and precursor organic compounds (POCs)). However, these definitions are very similar and generally include the same organic compounds, with only minor differences in specific chemicals that are excluded (i.e., exhibit negligible photoreactivity, as determined by the specific regulatory agency). Although not defined by photoreactivity, total hydrocarbons (THC) is another term that is used by the United States Environmental Protection Agency (EPA) to encompass airborne organic compounds. Because THC, VOCs, ROGs, and POCs generally include the same organic compounds, in consultation with BAAQMD, it was determined that these were equivalent for the purposes of estimating and evaluating emissions for the purposes of this EIR. The definition of each of these terms and lists of specific organic compounds excluded from each category can be found on agency websites or in publicly available documents (CARB, 2009c; CFR 2010; BAAQMD, 1994).

As mentioned above, ambient concentrations of pollutants are determined by regional pollutant emissions, pollutant emissions in a given area, and wind

patterns and meteorological conditions for that area. As a result, ambient concentrations can vary among different locations within an area. The closest and most representative monitoring station locations to the Project site are Richmond and San Pablo. On January 1, 2013, the San Pablo Rumrill station began monitoring $PM_{2.5}$. Prior to this date, the nearest monitoring station in Contra Costa County that monitored $PM_{2.5}$ was located in Concord (2975 Treat Boulevard). Table A4.3-PHYS-2 shows a 5-year (2008-2012) summary of maximum concentration monitoring data collected from the Richmond (SO_2), San Pablo (O_3 , SO_2 , PM_{10} , $PM_{2.5}$, CO , and NO_2), and Concord ($PM_{2.5}$, CO , O_3 , and NO_2) stations, compared with Ambient Air Quality Standards (AAQS). The monitoring data show that O_3 , PM_{10} , and $PM_{2.5}$ periodically exceeded the AAQS during this period.

1.3.1.2 Criteria Pollutant Emissions—Contra Costa County

Table A4.3-PHYS-3 summarizes the emissions inventory for CAPs within Contra Costa County and within the entire SFBAAB for various source categories. According to Contra Costa County's emissions inventory, total mobile sources (on-road and off-road) are the largest contributor to the estimated annual average air pollutant levels of ROG, CO, and NO_x , accounting for approximately 42%, 78%, and 68%, respectively, of the total inventory as shown in Figure A4.3-PHYS-4.

Area-wide sources (e.g., solvent evaporation from equipment cleaning operations; on-site fuel combustion for space and water heating (e.g., hot water heaters); and landscape maintenance equipment such as lawnmowers and leaf blowers) account for approximately 76% of Contra Costa County's PM_{10} emissions and 57% of the County's $PM_{2.5}$ emissions (CARB, 2009a) as shown in Figure A4.3-PHYS-5.

Although mobile source emissions constitute the majority of the 2010 criteria air pollutant inventory both statewide and for Contra Costa County, emissions from this source category have decreased greatly since the 1970s due to more stringent federal and State emission controls on mobile sources and fuels. Examples of vehicle emissions standards include CARB's low-emission vehicle (LEV) standards (CARB, 2012), CARB's heavy-duty engine standards (CARB, 2013), and EPA's corporate average fuel economy (CAFE) standards for passenger cars and light duty trucks (EPA, 2013b). Examples of cleaner fuel standards include the elimination of lead from gasoline, and lowering of sulfur content in fuels (EPA, 2013c).

TABLE A4.3-PHYS-2 2008-2012 CRITERIA POLLUTANT AMBIENT AIR MONITORING DATA COLLECTED NEAR THE MODERNIZATION PROJECT

Pollutant	Standard	Value Federal Standard	Value State Standard					
				2008	2009	2010	2011	2012
Ozone ^a (San Pablo; Concord for 2009)	Highest 1-Hour Avg. (ppm)	--	0.09	0.08	0.11	0.10	0.08	0.09
	Days Over State Std.	--	--	0	2	1	0	0
	Highest 8-Hour Avg. (ppm)	0.075 ^d	0.07	0.063	0.088	0.081	0.058	0.059
	Days Over State Std.	--	--	0	2	1	0	0
	Days Over National Std.	--	--	0	5	1	0	0
Carbon Monoxide ^b (San Pablo; Concord for 2009, 2010)	Highest 1-Hour Avg. (ppm)	35 ^e	20	2.5	1.8	1.2	1.9	1.6
	Highest 8-Hour Avg. (ppm)	9 ^e	9.0	1.3	1.1	1.0	1.0	0.9
Nitrogen Dioxide ^{a,b} (San Pablo; Concord for 2009, 2010)	Highest 1-Hour Avg. (ppm)	0.1 ^f	0.18	0.067	0.040	0.042	0.051	0.055
	Annual Avg. (ppm)	--	0.03	0.012	0.009	0.008	0.010	0.009
Sulfur Dioxide ^c (Richmond)	Highest 1-Hour Avg. (ppm)	--	0.25	--	--	N/A	N/A	N/A
	Highest 24-Hour Avg. (ppm)	0.14	0.04	0.008	0.006	N/A	N/A	N/A
	Annual Avg. (ppm)	0.03	--	0.002	0.001	N/A	N/A	N/A
	Highest 1-Hour Avg. (ppm)	0.075 ^g	0.25	N/A	N/A	0.026	0.021	0.013
	Highest 24-Hour Avg. (ppm)	--	0.04	N/A	N/A	0.007	0.003	0.002
	Annual Avg. (ppm)	--	--	N/A	N/A	--	--	--
Particulate Matter ^b (PM ₁₀) (San Pablo; Concord for 2009, 2010)	Highest 24-Hour Avg. (µg/m ³)	150 ^h	50	44	33	41	73	47
	Days Over State Std.	--	--	0	0	0	1	0
	Annual Avg.(µg/m ³)	--	20	20.9	14.7	13.7	19.7	15.6

TABLE A4.3-PHYS-2 2008-2012 CRITERIA POLLUTANT AMBIENT AIR MONITORING DATA COLLECTED NEAR THE MODERNIZATION PROJECT

Pollutant	Standard	Value Federal Standard	Value State Standard					
				2008	2009	2010	2011	2012
Particulate Matter (PM _{2.5}) ^a (Concord)	Highest 24-Hour Avg. (µg/m ³)	35 ⁱ	--	60.3	39	36.4	47.5	32.2
	Days Over National Std.	--	--	3	1	1	2	0
		12 (primary)	12	9.3	8.4	7.1	7.8	6.5
	Annual Avg. (µg/m ³)	15 (secondary) ^j						

Notes: -- = indicates there was insufficient (or no) data available; ppm = parts per million; µg/m³ = microgram per cubic meter.

^a CARB-approved a new State 8-hour O₃ standard of 0.070 ppm on May 17, 2008, and approved new State 1-hour and annual NO₂ standards of 0.18 ppm and 0.03 ppm, respectively on February 22, 2007. The EPA approved a new federal 24-hour PM_{2.5} standard of 35 µg/m³ on September 21, 2006.

^b The San Pablo site was temporarily closed in March 2009 due to heavy damage from a building fire. No statistics are available for 2009 and therefore, data from the Concord site is reported here.

^c On June 2, 2010, the EPA established a new 1-hour SO₂ standard, effective August 23, 2010, and revoked both the existing 24-hr SO₂ standard and the annual primary SO₂ standard. Data shown is from the Richmond monitoring station.

^d Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.

^e Not to be exceeded more than once per year.

^f 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years.

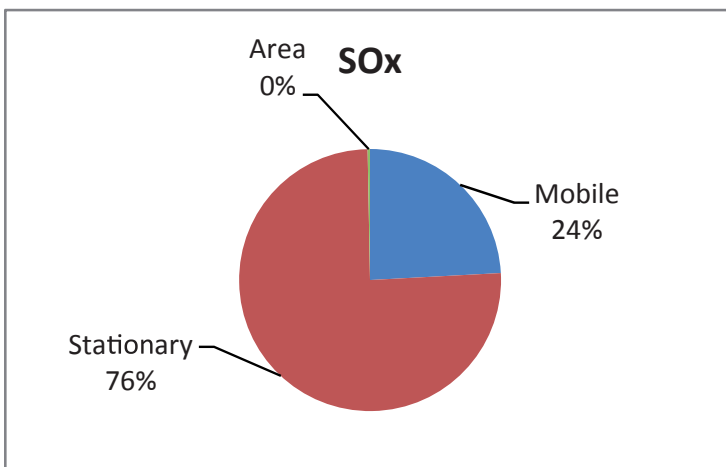
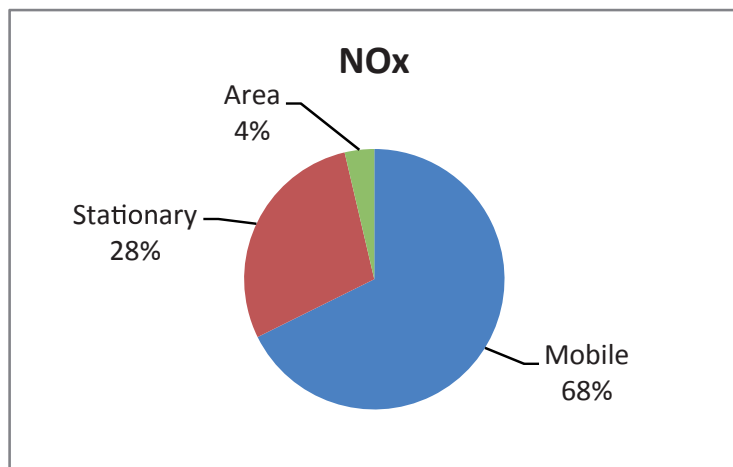
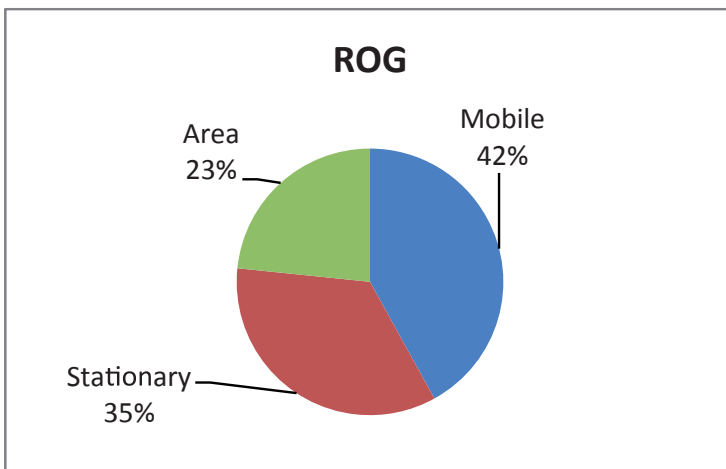
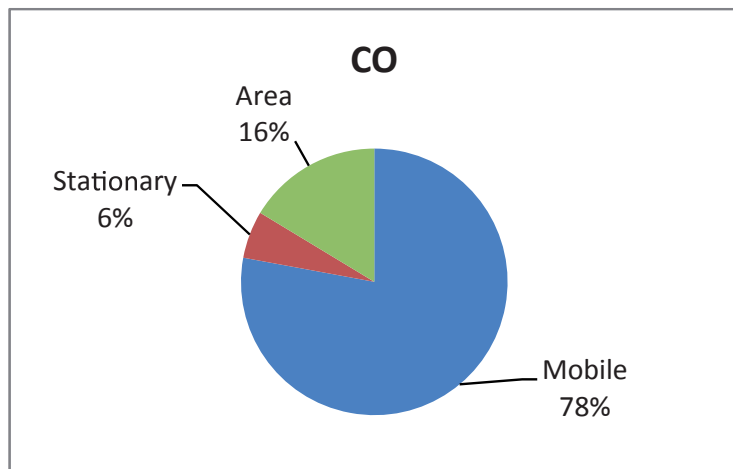
^g 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.

^h Not to be exceeded more than once per year on average over 3 years.

ⁱ 98th percentile, averaged over 3 years.

^j Annual mean, averaged over 3 years.

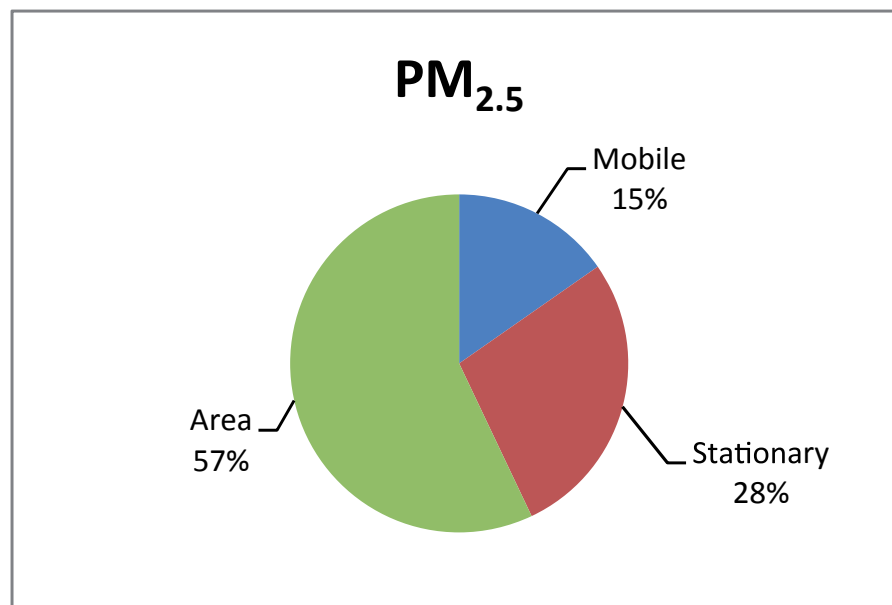
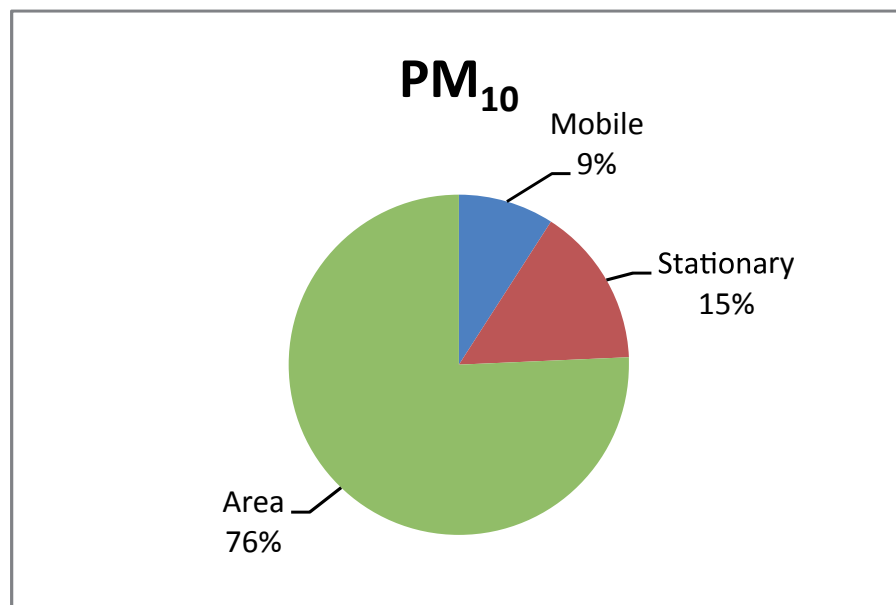
Source: BAAQMD, 2013a.



ROG = reactive organic gases; CO = carbon monoxide; NOX = oxides of nitrogen; SOX = oxides of sulfur.

01.29.2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.3-15-16.ai
Source: CARB, 2009a

Figure A4.3-PHYS-4
Chevron Refinery Modernization Project EIR
2010 Estimated Source Contribution to the 2010 Contra Costa County
Emissions Inventory for CO, ROG, NOx and SOx



PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter.

01.29.2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.3-15-16.ai

Source: CARB, 2009a

Figure A4.3-PHYS-5
Chevron Refinery Modernization Project EIR
2010 Estimated Source Contribution to the 2010 Contra Costa County
Emissions Inventory for PM₁₀ and PM_{2.5}

TABLE A4.3-PHYS-3 2010 ESTIMATED CRITERIA POLLUTANT EMISSIONS INVENTORIES BY SOURCE (COUNTY AND AIR BASIN) (TONS/DAY BASED ON ANNUAL AVERAGE)

Source	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Contra Costa County						
Mobile	24.6	207.4	51.5	8.4	3.3	2.6
Stationary	20.3	15.3	21.8	26.3	5.5	4.7
Area	13.7	43.5	2.8	0.1	27.4	9.7
Total	58.6	266.2	76.1	34.8	36.2	17
San Francisco Bay Area Air Basin						
Mobile	163.1	1,387.4	345.6	14.4	19.8	15.7
Stationary	107.1	45.2	51.3	47.1	16.6	12.4
Area	89.1	163.2	17.2	0.6	179.3	53.6
Total	359.2	1,595.7	414.2	62.2	215.7	81.6

Notes: ROG = reactive organic gases; CO = carbon monoxide; NO_x = oxides of nitrogen; SO_x = oxides of sulfur; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter.

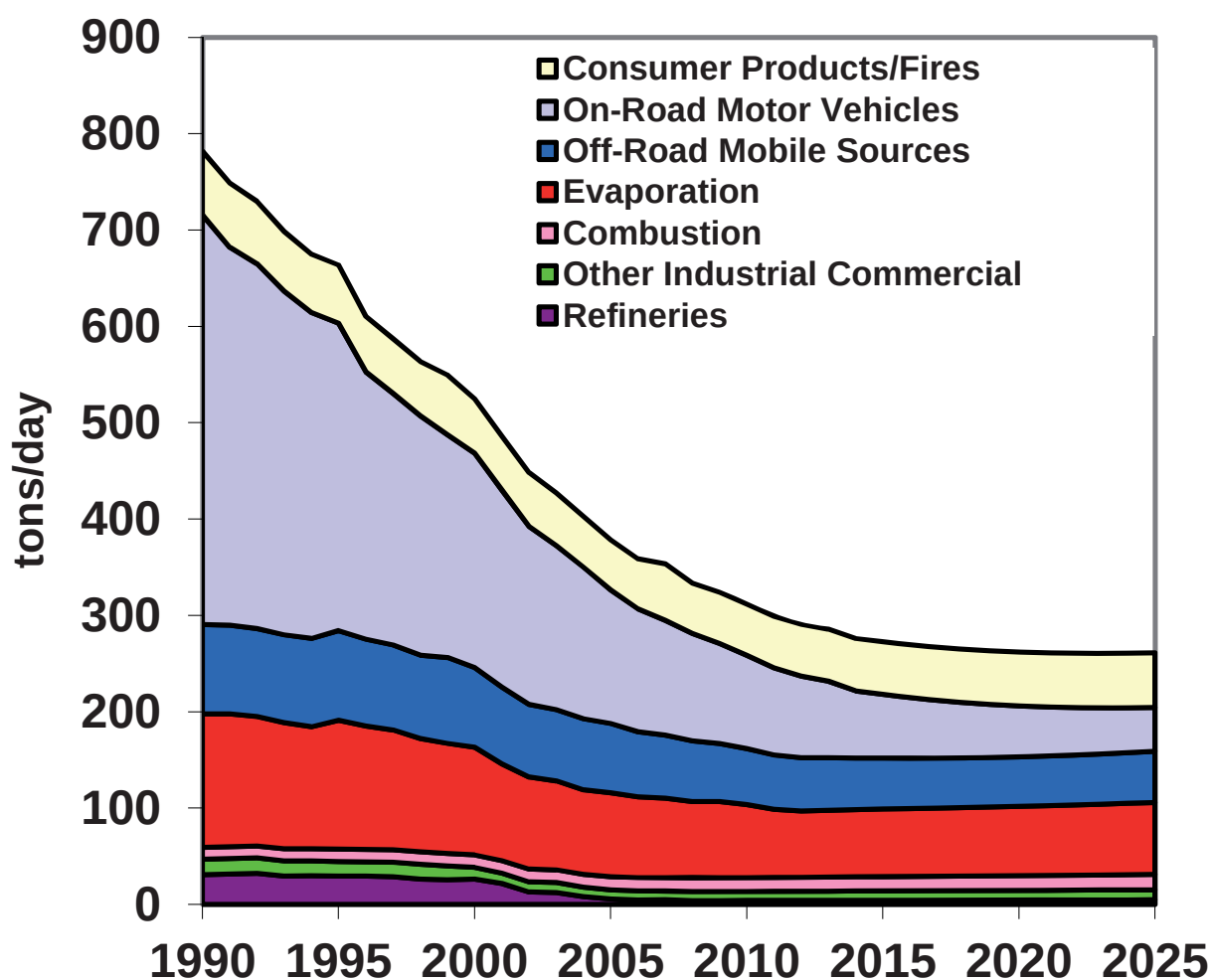
Totals in table may not add exactly because of rounding.

Source: CARB, 2009a.

Criteria pollutant emissions from mobile sources are projected to continue decreasing with vehicle fleet turnover to newer, cleaner models. However, while emissions from gasoline- and diesel-fueled mobile sources are showing a decreasing trend, a greater reduction in emissions from gasoline-fueled vehicles relative to diesel-fueled vehicles has increased the relative contribution of diesel sources to CAP from mobile sources (CARB, 2009). As a result, current regulatory development is focusing on reducing emissions from diesel vehicles (CARB, 2000).

Similarly, emissions from stationary sources such as Contra Costa's refineries and manufacturing facilities have decreased over time, both as a result of more stringent air pollution controls and as a result of the closure, downsizing or modification of these plants. For example, the BAAQMD prepared a historical inventory (BAAQMD, 2008) for ROG that shows a marked decrease in Facility emissions from 1990 projected through 2025, as shown in Figure A4.3-PHYS-6.

Reactive Organic Gases



01.29.2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.3-17.ai

Source: BAAQMD, 2011

Figure A4.3-PHYS-6
Chevron Refinery Modernization Project EIR
Bay Area Emissions Trend for ROG – Annual Average

1.3.1.3 Criteria Pollutant Emissions Sources in Richmond and Surrounding Area

Local CAP sources include industrial activity in the vicinity of the Project site as well as emissions from the Port of Richmond, and vehicle emissions from nearby roadways, including Interstate 580 and Interstate 80. Table A4.3-PHYS-4 below summarizes estimated 2008 emissions from point sources at major facilities in Richmond. Table A4.3-PHYS-5 summarizes total CAP emissions in 2005 from the Port of Richmond.² These years represent information that is readily available to the public.

TABLE A4.3-PHYS-4 SUMMARY OF 2008 CRITERIA AIR POLLUTANT EMISSIONS FOR MAJOR FACILITIES EMITTING 0.01 TONS/DAY OR MORE OF CRITERIA AIR POLLUTANTS (CAPs) IN RICHMOND, CALIFORNIA (TONS/YEAR)

Plant	Plant Name	PM ₁₀	PM _{2.5}	ROG	NO _x	SO ₂	CO
13637	BP West Coast Products, LLC	--	--	25.6	--	--	--
72	Chevron Inc.	--	--	65.9	--	--	--
10	Chevron Products Co.	226.9	201.3	1,024.8	827.2	1,701.9	549.0
15693	ConocoPhillips	--	--	43.9	--	--	--
23	General Chemical West LLC	--	--	--	--	172.0	--
13002	Kinder Morgan Liquids Terminal	--	--	18.3	--	--	--
706	New NGC, Inc.	--	--	--	36.6	--	7.3
93	Safeway Stores Inc., Bakery Plant	--	--	40.3	--	--	--
2352	SF Bay Area Rapid Transit District SF Bay Area Rapid Transit District	29.3	18.3	--	--	--	--
1840	West Contra Costa County Landfill	29.3	22.0	25.6	18.3	3.7	91.5

Note: Plant 72 (Chevron Inc.) refers to the marketing terminal, while Plant 10 (Chevron Products Co.) refers to the Refinery.

Source: BAAQMD, 2011. Values shown are the reported daily emissions reported by 366 days in 2008.

² Both of these inventories are the most recent editions available on the BAAQMD website at the time of writing.

TABLE A4.3-PHYS-5 CRITERIA POLLUTANT EMISSIONS AT PORT OF RICHMOND IN 2005 (TOTAL TONS)

Source Category	ROG	CO	NO _x	PM ₁₀	SO ₂
Ocean-Going Vessels (OGV)	2.2	5.3	60.5	6.0	42.7
Harbor Craft (HC)	0.8	3.0	11.9	0.5	0.1
Cargo Handling Equipment (CHE)	0.1	0.6	0.2	<0.1	<0.1
Heavy Duty On-Road Vehicles (HDV)	<0.1	0.3	0.3	<0.1	<0.1
Rail Locomotives (RL)	<0.1	<0.1	<0.1	<0.1	<0.1
Total	3.1	9.2	72.8	6.5	42.8

Source: Bay Planning Coalition, 2010.

1.3.2 Toxic Air Contaminants

This section presents ambient air toxics monitoring data for the Project site and vicinity, as well as information regarding regional, local, and Facility emissions.

1.3.2.1 TAC Chemicals and Their Sources

Table A4.3-PHYS-6 presents source and health effect information for the ten TACs posing the greatest known health risks in California, based on ambient air quality data.

Ambient air monitoring data for TACs measured near the Facility is presented in Section 1.4.3 of this appendix.

1.3.2.2 TAC Emission Sources in Richmond and Surrounding Area

Major local TAC sources include industrial activity in the vicinity of the Project site, shipping and other maritime activities from the Port of Richmond and its tenants, and emissions from cars, trucks and trains using the area's highway, parkway, and rail transportation network. Like CAP emissions, TAC emissions result from the operation of factories and other "stationary" facilities, and from "mobile sources" such as passenger automobiles and light-duty trucks, other mobile equipment such as portable diesel generators, ships and harbor craft such as tugboats, cargo handling equipment, heavy duty trucks and construction equipment, and rail locomotives.

**TABLE A4.3-PHYS-6 SUMMARY OF SOURCES AND HEALTH EFFECTS OF TOP 10
CARCINOGENIC TACS IN CALIFORNIA**

TAC	Sources	Example Non-Cancer Chronic and Acute Effects
Acetaldehyde	Mobile engine exhaust Stationary source fuel combustion	Eye, skin, respiratory system irritation
Benzene	Fugitive emissions from gasoline Gasoline engine exhaust Crude oil and natural gas mining Petroleum refining Electricity generation Residential fuel combustion Natural petroleum seeps	Central nervous system effects
1,3-Butadiene	Mobile engine exhaust (incomplete combustion) Agricultural waste burning Residential wood burning Wildfires Oil/gas extraction Petroleum refining, synthetic material manufacturing	Neurological effects Eye, mucous membrane irritation
Carbon Tetrachloride	Chemical product manufacturing Petroleum refining	Respiratory tract irritation Central nervous system effects
Hexavalent Chromium	Industrial uses: chrome plating, chromic acid anodizing; glass furnace firebrick lining Gasoline motor vehicles	Renal toxicity Gastrointestinal hemorrhaging
p-Dichlorobenzene	Consumer products (insect repellants, air fresheners)	Eye, nose, throat irritation Liver, skin, central nervous system effects
Formaldehyde	Motor vehicle exhaust (complete combustion) Residential wood burning	Respiratory symptoms Eye, nose, throat irritation
Methylene Chloride	Plastic product and synthetics manufacturing Aircraft and parts manufacturing Paint stripping operations	Bone marrow, liver, Kidney effects
Perchloroethylene	Dry cleaning operations Aircraft part manufacturing Fabricated metal product manufacturing Consumer products (e.g. brake cleaners, tire sealants)	Liver toxicity Kidney dysfunction Neurological effects
Diesel Particulate Matter	Diesel fuel combustion	Reduced lung function

Note: All compounds in this list have been identified as carcinogens by the State of California.
Sources: CARB, 1998; CARB, 2009b.

Different TACs are emitted from different types of sources. A major TAC emitted by mobile sources and maritime sources is diesel particulate matter (DPM), which includes PM_{10} and $PM_{2.5}$. PM_{10} emissions from a portion of the Port of Richmond's maritime sources,³ for example, were quantified for year 2005 in the Port's 2010 emissions inventory prepared for the Bay Planning Coalition (BPC, 2010). The total particulate emissions for 2005 were estimated to be 6.5 tons from all maritime source categories at the Port. Of those, 92% of particulate emissions were attributed to ocean going vessels. Future growth at the Port, as well as CARB and EPA adopted regulations, will both increase and decrease DPM emissions in the future.

According to the 2008 through 2010 BAAQMD EIs, over 30 facilities in the City of Richmond emit TACs in addition to the Facility. Examples include, but are not limited to, ABS CBN International, AC Transit, Bayer HealthCare Pharmaceuticals, Inc., Bio-Rad Laboratories, BNSF Railway Company, BP West Coast Products, LLC, Catahoula Coffee Company, City of Richmond, ConocoPhillips, Contra Costa County, COR-O-VAN, DiCon Fiberoptics Inc., East Bay Municipal Utility District, Electro Forming Company, General Chemical West LLC, IMTT Richmond CA, JC Penny Company, Kaiser Permanente, Lal's Best Service Station, Levin Richmond Terminal Corporation, New NGC, Inc., Pacific Bell, Plains Products Terminals LLC, Point Richmond R & D Associates, Quality Dry Cleaners, Red Hanger Kleaners, Rolling Hills Memorial Park, Shell Oil Products US, Social Security Administration, State of California Department of Transportation, US Postal Service, United Parcel Service, Verizon Wireless, Wareham Property Group – EPA Lab, West Contra Costa County Landfill, and West County Wastewater District. Additional emissions inventory information for the Facility is available from its annual EPA Toxic Release Inventory (TRI) reports. Tables A4.3-PHYS-7 through A4.3-PHYS-9 summarize air toxics data from 2008 through 2010 from the BAAQMD Emissions Inventory for the Facility and for other available Richmond sources.

³ Privately owned terminals or non-maritime tenants are not included in the Port's 2005 emissions inventory and limited information is available to quantify these emissions. The Port tenants not explicitly captured in the inventory include ALOHA Storage, BP Arco, Conoco, GATX, National Gypsum, Sugar Dock, Brenntag Chemicals, BP Castrol, KKMI, Bay Marine Boatworks, Channel Lumber, IMTT, WAX, MANSON, Levin-Richmond Terminal, Atlantic Pipeline, SIMS Hugo Neu, and CAL Oils Refinery.

**TABLE A4.3-PHYS-7 COMPARISON OF 2008 BAAQMD EMISSION INVENTORY TAC REPORTS
FOR THE FACILITY AND OTHER RICHMOND SOURCES (LBS/YEAR)**

Chemical	2008 EI (Chevron Refinery)	2008 AB2588 (All Richmond)
1,3-Butadiene	102	103
1,4-Dioxane	--	8
1,1,2,2-Tetrachloroethane	--	0.1
1,1,1-Trichloroethane (w/o dioxane)	--	0.5
1,1,1-Trichloroethane (with dioxane)	--	89
Acetaldehyde	179	179
Acrylonitrile	--	0.1
Ammonia ¹	134,811	221,001
Arsenic (all)	2	2
Benzene	9,668	10,364
Benzyl Chloride	--	0.1
Beryllium (all)	0.02	0.2
Cadmium	0.4	2
Carbon Tetrachloride	--	0.1
Cellulose Acetate	--	37
Chlorinated Dioxins and Furans	--	0.00001
Chlorobenzene	--	397
Chloroform	--	799
Chromium (hexavalent)	1	1
Cresol	0.4	0.4
Dichlorobenzene	--	73
Diesel Engine Exhaust Particulates	1,463	2,666
Diethanolamine	38	38
Ethylbenzene	1,154	2,499
Ethylene Dibromide	1	1
Ethylene Dichloride	5	6
Ethylidene Chloride	--	21
Formaldehyde	812	2,325
Hexane	1,622	2,353
Hydrochloric Acid Mist	--	0.4

**TABLE A4.3-PHYS-7 COMPARISON OF 2008 BAAQMD EMISSION INVENTORY TAC REPORTS
FOR THE FACILITY AND OTHER RICHMOND SOURCES (LBS/YEAR)**

Chemical	2008 EI (Chevron Refinery)	2008 AB2588 (All Richmond)
Hydrogen Chloride (HCl)	--	990
Hydrogen Fluoride (HF)	--	85
Hydrogen Sulfide (H ₂ S)	784	3,574
Isopropyl Alcohol	--	7,833
Lead (all)	0.1	47
Manganese	121	122
Mercury (all)	3	4
Methyl Alcohol	2,973	5,049
Methyl Cellosolve	--	240
Methylene Chloride	--	1,779
Methyl Tertiary-Butyl Ether	--	26
Naphthalene	--	8
Nickel	5	8
PAH's (benzo[a]pyrene equiv)	249	249
Perchloroethylene	28	1,170
Phenol	51	51
Propylene	2,506	2,506
Propylene Glycol Monomethyl Ether	1	1
Selenium	--	0.1
Styrene	--	12,815
Sulfuric Acid mist	--	1,504
Toluene	21,814	27,050
Trichloroethylene	--	109
Vinyl Chloride	--	157
Vinylidene Chloride	--	0.1
Xylene	14,591	18,960

Notes: -- = Not reported. Ammonia and hydrogen sulfide are not TACs.

Source: BAAQMD, 2008b.

TABLE A4.3-PHYS-8 COMPARISON OF 2009 AIR TOXIC EMISSION REPORTS FOR THE FACILITY AND OTHER RICHMOND SOURCES (LBS/YEAR)

Chemical	2009 BAAQMD EI (Chevron Refinery)	2009 AB2588 (All Richmond)
1,3-Butadiene	51	52
1,4-Dioxane	--	8
1,1,2,2-Tetrachloroethane	--	0.1
1,1,1-Trichloroethane (w/o dioxane)	--	2
1,1,1-Trichloroethane (with dioxane)	--	91
Acetaldehyde	181	181
Acrylonitrile	--	0.1
Ammonia	292,134	292,134
Arsenic (All)	2	2
Benzene	5,524	6,267
Benzyl Chloride	--	0.1
Beryllium (all)	0.004	0.02
Cadmium	0.4	0.4
Carbon Tetrachloride	--	0.1
Cellosolve Acetate	--	43
Chlorinated Dioxins and Furans	--	0.000001
Chlorobenzene	--	397
Chloroform	--	736
Chromium (Hexavalent)	1	1
Cresol	0.4	0.4
Dichlorobenzene	--	71
Diesel Engine Exhaust Particulate	315	1,167
Ethylbenzene	900	2,217
Ethylene Dibromide	1	1
Ethylene Dichloride	5	7
Ethylidene Chloride	--	20
Fluorides (all)	--	6
Formaldehyde	1,664	5,621
Hexane	1,039	1,821
Hydrochloric Acid Mist	--	0.2
Hydrofluoric Acid Mist	--	0.2

TABLE A4.3-PHYS-8 COMPARISON OF 2009 AIR TOXIC EMISSION REPORTS FOR THE FACILITY AND OTHER RICHMOND SOURCES (LBS/YEAR)

Chemical	2009 BAAQMD EI (Chevron Refinery)	2009 AB2588 (All Richmond)
Hydrogen Chloride (HCl)	--	745
Hydrogen Fluoride (HF)	--	86
Hydrogen Sulfide (H ₂ S)	1,552	4,342
Isopropyl Alcohol	--	7,383
Lead (all)	0.01	0.1
Manganese	117	117
Mercury (all)	3	3
Methyl Alcohol	2,870	4,915
Methyl Cellosolve	--	240
Methyl Tertiary-Butyl Ether	--	26
Methylene Chloride	--	1,710
Naphthalene	--	7
Nickel	4	5
PAH's (benzo[a]pyrene equiv)	240	240
Perchloroethylene	29	965
Phenol	55	55
Propylene	985	985
Propylene Glycol Monomethyl Ether	3	3
Selenium	--	0.02
Styrene	--	9,375
Sulfuric Acid Mist	--	3,705
Toluene	19,289	24,026
Trichloroethylene	--	111
Vinyl chloride	--	159
Vinylidene Chloride	--	0.5
Xylene	10,875	15,019

Notes: -- = Not reported. Ammonia and hydrogen sulfide are not TACs.
Source: BAAQMD, 2009b.

TABLE A4.3-PHYS-9 COMPARISON OF 2010 AIR TOXIC EMISSION REPORTS FOR THE FACILITY AND OTHER RICHMOND SOURCES (LBS/YEAR)

Chemical	2010 BAAQMD EI (Chevron Refinery)	2010 AB2588 (All Richmond)
1,3-Butadiene	43	44
1,4-Dioxane	--	8
1,1,2,2-Tetrachloroethane	--	0.1
1,1,1-Trichloroethane (w/o dioxane)	--	0.3
1,1,1-Trichloroethane (with dioxane)	--	96
Acetaldehyde	159	159
Acrylonitrile	--	0.1
Ammonia	255,882	286,334
Arsenic (All)	1	2
Benzene	33,306	34,045
Benzyl Chloride	--	0.1
Beryllium (All)	0.002	0.04
Cadmium	0.3	1
Carbon Tetrachloride	--	0.1
Cellosolve Acetate	--	39
Chlorinated Dioxins and Furans	--	0.000001
Chlorobenzene	--	318
Chloroform	--	796
Chromium (Hexavalent)	1	1
Cresol	0.4	0.4
Dichlorobenzene	--	76
Diesel Engine Exhaust Particulate	103	2,137
Diethanolamine	38	38
Ethylbenzene	837	2,176
Ethylene Dibromide	1	1
Ethylene Dichloride	5	5
Ethylidene Chloride	--	20
Fluorides (all)	--	0.005
Formaldehyde	1,436	5,178

TABLE A4.3-PHYS-9 COMPARISON OF 2010 AIR TOXIC EMISSION REPORTS FOR THE FACILITY AND OTHER RICHMOND SOURCES (LBS/YEAR)

Chemical	2010 BAAQMD EI (Chevron Refinery)	2010 AB2588 (All Richmond)
Hexane	988	2,397
Hydrochloric Acid Mist	--	0.2
Hydrofluoric Acid Mist	--	0.2
Hydrogen Chloride (HCl)	--	1,454
Hydrogen Fluoride (HF)	--	435
Hydrogen Sulfide (H ₂ S)	707	3,497
Isopropyl Alcohol	--	5,426
Lead	0.01	0.2
Manganese	115	115
Mercury (all)	3	3
Methyl Alcohol	2,837	13,628
Methylene chloride	--	1,539
Methyl Tertiary-Butyl Ether	--	26
Methylene Chloride	--	1,802
Naphthalene	--	7
Nickel	4	7
PAH's (benzo[a]pyrene equiv)	255	256
Perchloroethylene	23	958
Phenol	53	53
Propylene	851	851
Selenium	--	0.02
Styrene	--	7,831
Sulfuric Acid Mist	--	3,705
Toluene	21,699	26,225
Trichloroethylene	--	109
Vinyl Chloride	--	152
Vinylidene Chloride	--	0.1
Xylene	16,168	20,659

Notes: -- = Not reported. Ammonia and hydrogen sulfide are not TACs.

Source: BAAQMD, 2010.

1.4 AIR QUALITY WITHIN THE CITY OF RICHMOND

1.4.1 Richmond and Neighborhoods Surrounding Facility

Figure A4.3-PHYS-7 shows the City of Richmond, including North Richmond (unincorporated Richmond) along with the location of the Modernization Project.

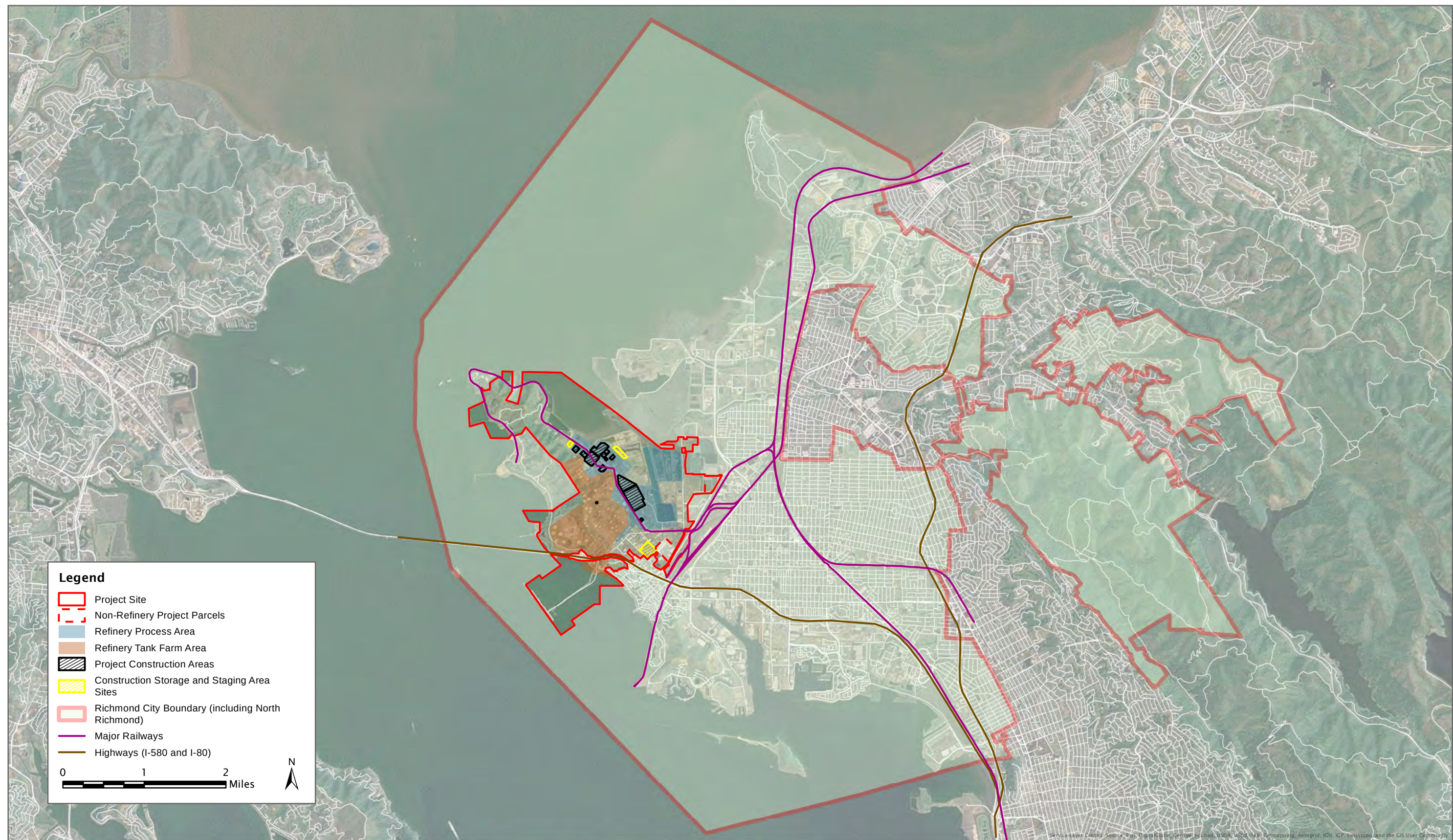
As shown in Figure A4.3-PHYS-8, the 2,153-acre Project site is located along the western boundary of the City of Richmond. The main portion of the Facility is bounded by the Chevron Richmond Marketing Fuels Terminal to the southeast and Chevron Energy Technology Company to the south.

The marine terminal and wharf (the “Long Wharf”) are located on the southern boundary of the Project site on the San Francisco Bay. The Long Wharf is over one mile long and receives and unloads crude oil and other raw materials shipped from worldwide locations, as well as loading refined products produced at the Facility for shipment elsewhere.

As shown in Figure A4.3-PHYS-9, a number of neighborhoods surround the Project site. The residential communities of Atchison Village, Santa Fe, and Iron Triangle are located southeast of the Project site, across Castro Street and Garrard Boulevard. The Shields-Reid community lies toward the northeast. Parchester Village is located northeast of the Project site and Point Richmond is located to the southwest. Point San Pablo Peninsula and the San Francisco Bay form the western border of the Project site and San Pablo Bay forms the northern boundary of the Facility property.

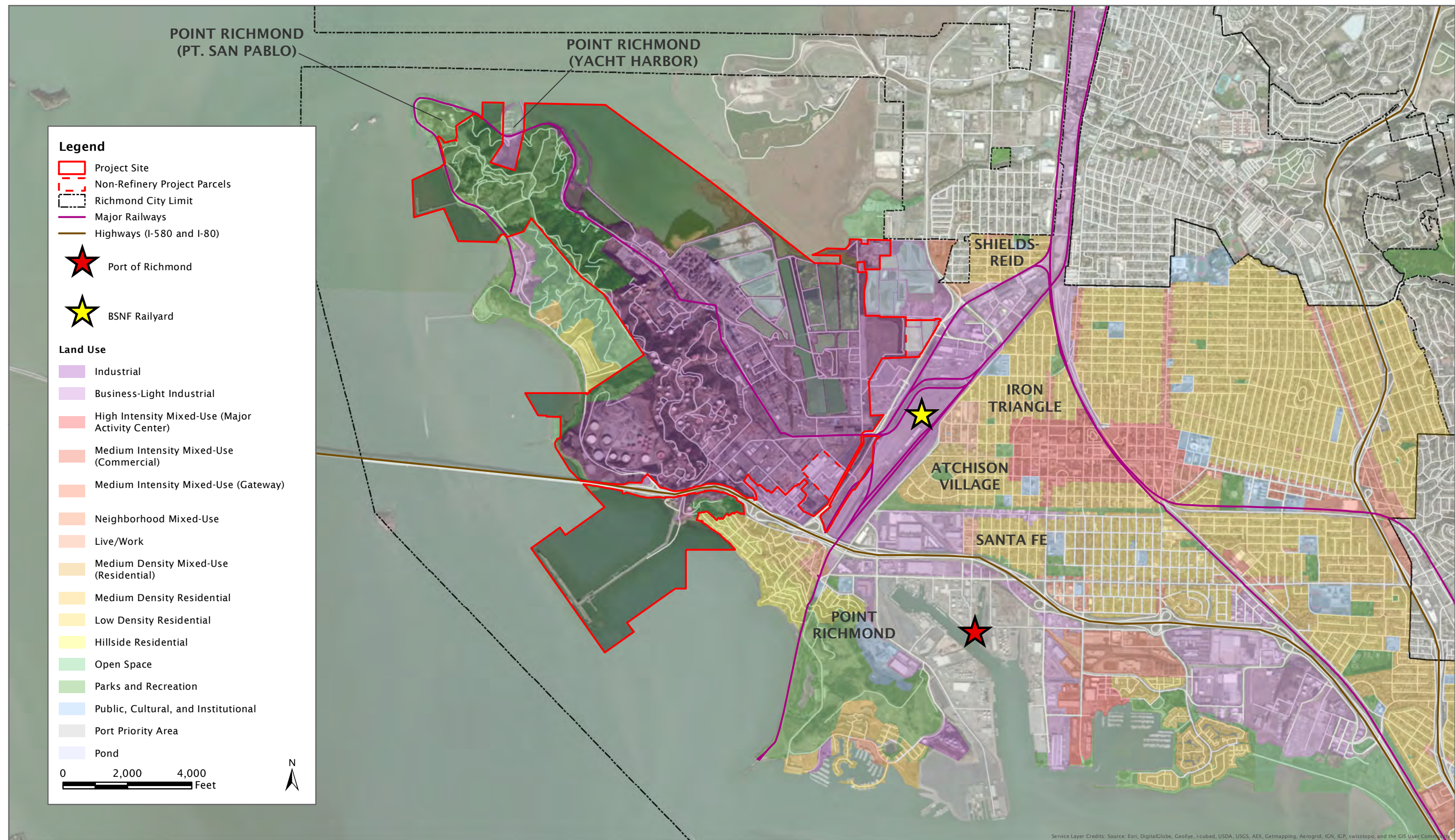
1.4.2 Sensitive Receptors within Refinery Vicinity Neighborhoods

For the purposes of air quality, public health, and noise analyses, sensitive receptors are generally defined as land uses with population concentrations that would be particularly susceptible to disturbance from dust, noise, vibration, air pollutant concentrations, or other disruptions associated with project construction and/or operation. These receptors generally include schools, day care centers, libraries, hospitals, residential care centers, parks, and churches. Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than is the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air. Recreational uses are also considered sensitive due to the greater exposure to ambient air because



Source: Chevron (T38r1, T22r2, T47Ar6, and T47Br3); Google, 2013

Figure A4.3-PHYS-7
Chevron Refinery Modernization Project EIR
City of Richmond, Including North Richmond



3/13/2014 P:\GIS\11-005_CVRN\Data\ENVIRON\4.3 PHYS Maps\Revised\Figure A4.3-PHYS-8.mxd

Source: Chevron (T38 r1)

Figure A4.3-PHYS-8
Chevron Refinery Modernization Project EIR
Location of Project Site and Adjacent Land Use

vigorous exercise associated with recreation places a high demand on the human respiratory system.

Since the 1970s, Chevron has been relocating petroleum processing units northward, away from the community located near the southern and eastern boundaries of the Project site. This has created vacant land areas at the Facility's southern and eastern perimeter that serve as a physical separation or buffer, between Facility processing activities and adjacent off-site uses.

The five neighborhoods that have portions of the neighborhood within a one-mile radius of the Project site are Shields-Reid, Iron Triangle, Atchison Village, Point Richmond, and Santa Fe as shown in Figure A4.3-PHYS-9. The following is a listing of sensitive land uses within a mile of the Modernization Project's physical components (e.g., the new Hydrogen plant) as shown in Figure A4.3-PHYS-10:

- Atchison Park, the closest sensitive land use to the Modernization Project site, is approximately 5,200 feet or 1 mile from the closest physical modification proposed as part of the Modernization Project;
- Washington Park and Washington Elementary School are approximately 5,700 feet or 1.1 miles away;
- Richmond Municipal Natatorium is approximately 5,000 feet or 0.9-mile away; and
- Peres Elementary School is approximately 6,000 feet or 1.1 miles away.

Additional land use information is presented and discussed in more detail in *Section 4.10, Land Use Plans and Policies*.

1.4.3 Monitoring Richmond Air Quality

Air quality is monitored in Richmond by BAAQMD and Chevron for a variety of CAPs and TACs. Chevron monitors hydrogen sulfide (H_2S) and SO_2 at three locations in the vicinity of the Project site (Castro Street, Gertrude Street, and Golden Gate), and they are also starting a new community air monitoring program that will include $\text{PM}_{2.5}$, H_2S , ammonia (NH_3), and select metals, polycyclic aromatic hydrocarbons (PAHs), and other VOCs. BAAQMD monitors for H_2S at the Point Richmond station; H_2S , SO_2 , and a number of TACs at Richmond—7th Street station; and various criteria air pollutants (O_3 , PM_{10} , CO, NO_x , SO_2) and TACs at the nearby San Pablo Rumrill station. Further information on these monitoring networks is provided below.

1.4.3.1 Ambient TAC Monitoring in Richmond

H₂S concentrations are monitored by Chevron at a number of stations in and around the Project site. Table A4.3-PHYS-10 summarizes these data from Castro Street, Golden Gate, and Gertrude Street monitoring sites, for 2008 through 2010. The data shows two episodes where the hourly H₂S concentration exceeded the ambient air quality standard.

TABLE A4.3-PHYS-10 AIR QUALITY DATA SUMMARY (2008-2010) FROM FACILITY

Pollutant	Standard	Value	Site	2008	2009	2010
Hydrogen Sulfide	Highest 1-hour Avg (ppb)	30 ^a	Castro Street	10	8	5
			Gertrude Street	<u>66</u>	10	<u>111</u>
			Golden Gate	7	6	5

Notes: ppb = parts per billion. Values in **bold and underlined** are in excess of applicable standard.

^a State Standard. Generally, State standards are not to be exceeded.

Source: Chevron Data Transmittal #9 (Rev #1), 2013.

Table A4.3-PHYS-11 summarizes H₂S concentrations from BAAQMD's Richmond 7th Street and Point Richmond stations for 2007 through 2009, the most recent complete years with quality controlled data available from BAAQMD's website. The data indicates there are no exceedances of the H₂S ambient air quality standard.

TABLE A4.3-PHYS-11 AIR QUALITY DATA SUMMARY (2007-2009) FROM RICHMOND 7TH STREET AND POINT RICHMOND STATIONS

Pollutant	Standard	Value	Site	2007	2008	2009
Hydrogen Sulfide	Highest 1-hour Avg (ppb)	30 ^a	Pt. Richmond	11	11	12
			Richmond 7 th St.	5	2	4

Notes: ppb = parts per billion.

^a State Standard. Generally, State standards are not to be exceeded.

Source: BAAQMD, 2014.

Table A4.3-PHYS-12 summarizes the monitored concentrations of TACs and other chemicals at BAAQMD's Richmond (7th Street) station and the nearby San Pablo (Rumrill) station in 2010, the most recent year for which data are available.



3/5/2014 C:\Users\temp1\Documents\ArcGIS\Projects\CVRN_A4.3-PHYS-9_Neighborhoods1\101\CVRN_A4.3-PHYS-9_Neighborhoods.mxd

Source: Chevron (T38r1)

Figure A4.3-PHYS-9
Chevron Refinery Modernization Project EIR
Neighborhoods in the Project Site's Vicinity



3/13/2014 P:\GIS\11-005_CVRN\Data\ENVIRON\4.3 PHYS Maps\Revised\Figure A4.3-PHYS-10.mxd

Source: CDE, 2013; CCLD, 2012; OSHPD, 2014; Chevron (T38r1); Google, 2013

Figure A4.3-PHYS-10
Chevron Refinery Modernization Project EIR
Sensitive Land Uses within a Mile of the Project Site Boundary

**TABLE A4.3-PHYS-12 AMBIENT CONCENTRATIONS OF TACs AND OTHER CHEMICALS
(RICHMOND-7TH STREET AND SAN PABLO-RUMRILL BAAQMD
MONITORING STATIONS)**

Compound	Concentration ^{a,b}			
	Richmond 7 th		San Pablo Rumrill	
	ppb	µg/m ³	ppb	µg/m ³
Acetone ^c	1.404	3.334	4.533	10.768
1,3-Butadiene ^d	0.030	0.067	0.030	0.067
Benzene	0.186	0.594	0.198	0.632
Carbon Tetrachloride	0.107	0.676	0.106	0.665
Chloroform	0.018	0.089	0.022	0.106
Ethylbenzene	0.080	0.349	0.110	0.476
Ethylene Dibromide ^d	0.005	0.038	0.005	0.038
Ethylene Dichloride ^d	0.050	0.202	0.050	0.202
Freon 113 ^c	0.070	0.335	0.066	0.314
Methyl chloroform (1,1,1-Trichloroethane) ^d	0.016	0.086	0.015	0.081
Methylene chloride (Dichloromethane)	0.183	0.636	0.322	1.119
Methyl Ethyl Ketone	0.171	0.503	0.573	1.689
Tetrachloroethylene (Perchloroethylene)	0.012	0.081	0.012	0.085
Toluene	0.690	2.602	0.838	3.158
Trichloroethylene	0.069	0.374	0.006	0.032
Trichlorofluoromethane ^c	0.183	1.026	0.169	0.947
Vinyl Chloride ^d	0.050	0.128	0.050	0.128
M/P Xylene	0.330	1.433	0.534	2.318
O-Xylene	0.120	0.523	0.347	1.506

Notes: ppb = parts per billion; µg/m³ = micrograms per cubic meter.

^a Data is taken from the BAAQMD Richmond-7th Street and San Pablo-Rumrill monitoring stations for 2010.

^b Average of 27 samples at Richmond - 7th Street and 20 samples at San Pablo - Rumrill. Samples with concentrations below the method detection limit were assigned a value equal to one-half of the detection limit.

^c Acetone, Freon 113, and trichlorofluoromethane are not TACs.

^d Ethylene dibromide, ethylene dichloride, 1,3-butadiene, and vinyl chloride were not detected above the method detection limit in any of the samples at either station. In addition, at San Pablo - Rumrill only, methyl chloroform was not detected above the method detection limit in any of the samples.

Source: BAAQMD, 2010.

1.4.3.2 Richmond Community Air Quality Monitoring Program

As part of a prior agreement with the City of Richmond, Chevron is funding and managing a new community air quality monitoring program. The program consists of air quality monitors in three nearby neighborhoods (Atchison Village, North Richmond and Point Richmond), as well as fenceline monitors at the Facility adjacent to those neighborhoods, as shown in Figure A4.3-PHYS-11. The monitors provide continuous and/or discrete data on $PM_{2.5}$, ozone, SO_2 , black carbon, H_2S , NH_3 , select metals, PAHs (monitored on an event-driven basis), and other VOCs. Real-time monitoring data is available to the public via the website, and monthly reports summarizing results for the three fenceline sites are compiled and made available on the website (Chevron, 2012).

The Richmond Community Air Monitoring Program was implemented in two phases. The first phase, which included a program website (www.fenceline.org/richmond) and real-time reporting of data from air monitoring equipment along the fenceline of the Project site, launched on April 5, 2013. The launch of the second phase, which included installation of equipment at community locations in the Atchison Village, North Richmond and Point Richmond neighborhoods, was staggered, starting in December 2013 and ending in January 2014 (City of Richmond, 2014).

Maximum detected concentrations measured since April 2013 by the fenceline monitoring equipment located adjacent to Point Richmond, Atchison Village, and North Richmond are summarized in Table A4.3-PHYS-13. As stated in the monthly reports available on the website, the concentrations of these compounds were lower than the toxicity standards established by the State of California. Note that the concentration of sulfur dioxide at Atchison Village on September 7, 2013, and October 16, 2013, was above the 1-hour short-term/acute exposure limit of 230 ppb used for the monitoring program; however, these concentrations only lasted for 5-minutes and did not last long enough for the 1-hour concentration to exceed the exposure limit, and the wind direction during these episodes was from the south or southeast, suggesting that they are not attributable to the Refinery (Argos Scientific, 2013).

Community monitoring data for Point Richmond, Atchison Village, and North Richmond are summarized in Table A4.3-PHYS-14. For all compounds except $PM_{2.5}$, the maximum detected concentrations for the month of available data (January 2014) are summarized in the table. For those compounds with exposure limits established for the community monitoring program, these maximum concentrations are all below the exposure limits. Note that this is a conservative comparison because the data is based on 5-minute averages but the exposure limits have averaging times of 1-hour or longer. For $PM_{2.5}$, the table includes a summary of the maximum daily and monthly average concentrations. As



3/13/2014 P:\GIS\11-005_CVRN\Data\ENVIRON\4.3 PHYS Maps\Revised\Figure A4.3-PHYS-11.mxd

Source: City of Richmond, 2013

Figure A4.3-PHYS-11
Chevron Refinery Modernization Project EIR
Map of Fenceline and Community Air Monitoring Stations

**TABLE A4.3-PHYS-13 MAXIMUM DETECTED CONCENTRATIONS (PPB) MEASURED BY THE
FENCE LINE MONITORING EQUIPMENT LOCATED ADJACENT TO
POINT RICHMOND, ATCHISON VILLAGE, AND NORTH RICHMOND**

		2013								
	Compound	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Point Richmond	Benzene	7	11	ND	ND	ND	24	ND	ND	ND
	Sulfur Dioxide	27	16	11	7	14	124	226	89	113
	Toluene	23	13	6	5	8	35	5	8	5
	p-Xylene	10	16	14	ND	ND	10	ND	ND	ND
	Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Hydrogen Sulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Ozone	45	72	NR	NR	NR	NR	NR	NR	NR
Atchison Village	Benzene	8	8	6	ND	12	10	ND	ND	6
	Sulfur Dioxide	51	24	ND	ND	ND	257	240	169	100
	Toluene	23	15	19	ND	ND	72	24	19	170
	p-Xylene	8	9	6	7	8	7	ND	ND	10
	Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Hydrogen Sulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Ozone	50	45	NR	NR	NR	NR	NR	NR	NR
North Richmond	Benzene	ND	6	ND	ND	ND	ND	ND	ND	ND
	Sulfur Dioxide	20	15	14	23	22	41	49	47	104
	Toluene	9	23	8	13	11	16	52	22	126
	p-Xylene	ND	ND	6	ND	9	5	50	ND	26
	Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Hydrogen Sulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Ozone	45	60	NR	NR	NR	NR	NR	NR	NR

Note: ppb = parts per billion. ND = not detected NR = not reported
Source: Argos Scientific, 2013.

indicated in the table, the maximum 24-hour average $PM_{2.5}$ concentration on January 24, 2014, is above the 24-hour NAAQS of $35 \mu\text{g}/\text{m}^3$ at the Atchison Village and North Richmond stations (36 and $38 \mu\text{g}/\text{m}^3$, respectively). However, this is not considered an exceedance of the NAAQS because the form of the 24-hour standard is the 98th percentile averaged over three years. While there is not enough data to make a direct comparison to the NAAQS, the 98th percentile of the data collected, which corresponds to the second highest 24-hour concentration at each station, is below the NAAQS of $35 \mu\text{g}/\text{m}^3$. Furthermore, a significant portion of the higher readings from January 24, 2014, occurred when the wind was blowing from the south or southeast, suggesting that they are not attributable to the Refinery. The form of the $PM_{2.5}$ annual primary ($12 \mu\text{g}/\text{m}^3$) and secondary ($15 \mu\text{g}/\text{m}^3$) standards is the annual mean, averaged over three years. Thus, a direct comparison to these annual standards is also not possible since only a single month of data has been reported. However, the monthly average concentrations at the Point Richmond and North Richmond stations are 12.04 and $14.78 \mu\text{g}/\text{m}^3$, respectively, which is slightly above the primary $PM_{2.5}$ standard concentration.

1.4.3.3 Chevron Ambient SO_2 Monitoring

SO_2 concentrations are monitored by Chevron at a number of stations at and around the Project site. Table A4.3-PHYS-15 summarizes these data from the Castro Street, Golden Gate, and Gertrude Street monitoring sites, for 2008 through 2012. The data shows several episodes where the SO_2 concentration exceeds the applicable ambient air quality standards. The Refinery received a notice of violation (NOV A51291A) for exceeding BAAQMD's Regulation 9 Rule 1 SO_2 concentration limit on December 21, 2010. Although it appears that SO_2 concentrations measured at the facility monitors exceeded BAAQMD's Regulation 9 Rule 1 SO_2 concentration limit during 2011 and 2012, there is no record of NOVs for elevated SO_2 concentration during these years.

1.4.3.4 Other Emissions Monitoring and Reporting

Air emissions of CAPs and TACs from the Facility and other facilities in Richmond are monitored, recorded and reported to federal, State and local regulatory authorities as part of a number of different regulatory programs. These include BAAQMD (e.g., BAAQMD EI, Regulation 9 Rule 10 Reporting, RLOP permit reporting) and EPA air permitting programs (e.g., Title V permitting, Prevention of Significant Deterioration permitting and New Source Review), and other emissions tracking and reporting programs (e.g., CARB Air Toxics "Hot Spots" (AB2588) Program, EPA Toxic Release Inventory (TRI), EPA National Emission Inventory (NEI)). The measurement and reporting frequency of emissions monitoring data depends on the specific program, and publicly available summaries of emissions monitoring data are typically available as hourly-average

TABLE A4.3-PHYS-14 SUMMARY OF CONCENTRATIONS (PPB) MEASURED BY THE COMMUNITY MONITORING EQUIPMENT LOCATED POINT RICHMOND, ATCHISON VILLAGE, AND NORTH RICHMOND

	Maximum 5-Minute Average Concentration																Max. 24-Hour Conc.	Max. Monthly Conc.
	Ammonia	Benzene	Black Carbon	Ethyl-benzene	Hydrogen Sulfide	3-Methylpentane	MP-Xylene	N-Hexane	N-Heptane	N-Octane	O-Xylene	Toluene	1,2,3-Trimethylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2,2,4-Trimethylpentane	PM _{2.5}	PM _{2.5}
	ppb	ppb	µg/m ³	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	µg/m ³	µg/m ³
Atchison Village	92.9	4.3	12.0	7.8	5.3	5.6	30.4	14.7	3.1	1.1	10.7	9.9	0.50	1.4	0.30	6.5	35.5	11.9
Point Richmond	41.4	2.3	8.8	0.86	4.8	3.0	1.4	3.9	6.5	0.90	0.78	5.3	0.32	8.8	0.20	6.9	31.8	12.0
North Richmond	54.7	1.0	31.1	0.72	3.7	3.6	2.3	18.7	0.82	1.6	0.41	3.2	0.21	0.33	0.13	5.7	38.1	14.8
Exposure Criteria^a																		
Acute (1-Hour) Exposure Criteria	4,800						6,285				6,285	8,600						
Acute (6-Hour) Exposure Criteria		433																
24-Hour Exposure Criteria																	35 ^b	
Chronic Exposure Criteria	300	20		8			200				200	70						12 ^c

Notes: ppb = parts per billion. Conc. = concentration

The time period of data summarized in this table includes a single month (January 2014). For all compounds except PM_{2.5}, the maximum 5-minute average concentration is summarized in the top part of the table. For PM_{2.5}, the maximum daily and monthly average concentrations are summarized in the top part of the table.

^a Exposure criteria used for community monitoring program (<http://www.fenceline.org/richmond/chems.htm>)

^b The form of the 24-hour PM_{2.5} National Ambient Air Quality Standard (NAAQS) of 35 µg/m³ is the 98th percentile averaged over 3-years.

^c The form of the annual PM_{2.5} NAAQS of 12 µg/m³ is the 98th percentile averaged over 3-years. □

Sources: Chevron Data Transmittal #93, 2014; City of Richmond, 2013.

TABLE A4.3-PHYS-15 SO₂ AMBIENT MONITORING DATA SUMMARY (2008-2012) FROM FACILITY

Pollutant	Standard	Value Federal Std.	Value State Std.	Site	2008	2009	2010	2011	2012
Sulfur Dioxide	Highest 1-Hour Average (ppb) ^d	--	250 ^a	Castro St.	86	54	N/A	N/A	N/A
				Gertrude St	78	43	N/A	N/A	N/A
				Golden Gate	40	49	N/A	N/A	N/A
	Highest 1-Hour Average (ppb) ^e	75 ^{b,c}	250 ^a	Castro St	N/A	N/A	55	<u>763</u>	<u>370</u>
				Gertrude St	N/A	N/A	<u>276</u>	<u>429</u>	<u>312</u>
				Golden Gate	N/A	N/A	12	<u>342</u>	<u>568</u>
	Highest 24-Hour Average (ppb)	140 ^b	40 ^a	Castro St	20	23	21	39	<u>68</u>
				Gertrude St	17	15	20	25	20
				Golden Gate	8	9	7	19	32
	Annual Average (ppb) ^e	30 ^b	--	Castro St	5	4	4	3	3
				Gertrude St	6	5	6	2	4
				Golden Gate	1	1	1	4	3

Note: ppb = parts per billion. Values in **bold and underlined** are in excess of applicable standard.

^a State Standard. Generally, State standards are not to be exceeded.

^b Federal Standard. Generally, national standards are not to be exceeded more than once per year. In August, 2010, the EPA revoked the annual average SO₂ standard of 0.030 ppm and the 24-hour SO₂ standard of 0.14 ppm. In June 2010, the EPA established a new 1-hour SO₂ standard of 0.075 ppm and thus, during the period above, the 250 ppb CAAQS would apply.

^c 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.

^d Limit applicable before 2010.

^e Limit applicable since 2010.

Source: Chevron Data Transmittal #9 (Rev #1), 2013.

values or as annual totals by pollutant. The purpose of many of these programs is to provide regulators, as well as the general public, a way of continuously monitoring overall air emissions in a locality or region. These air emissions monitoring and reporting programs also provide specific information regarding the contributions to air pollution on a local and regional basis, and assist in informing policy decisions to improve or maintain air quality.

1.4.4 Evaluations of Richmond Air Quality

Air quality has been a longstanding concern for Richmond. There have been several studies of past conditions, and there are ongoing monitoring activities

and studies underway, of Richmond's air quality. Two major studies are described below.

1.4.4.1 TAC Study Comparing Richmond and Bolinas

A community-based participatory research collaboration involving the Silent Spring Institute, Communities for a Better Environment, and faculty from Brown and the University of California at Berkeley, completed a 2009 exposure study comparing indoor and outdoor air samples from 40 homes in communities adjacent to the Project site to samples from 10 homes in the rural, coastal community of Bolinas, California in Marin County (Green-Brody, 2009). These 24-hour integrated samples were analyzed for pollutants including particulates, metals, PAHs, polychlorinated biphenyls (PCBs), ammonia, sulfates, pesticides, flame retardants, phthalates, and phenols. Unlike Richmond, Bolinas has no industrial facilities, has no freeways, has no Port, is not adjacent to urbanized areas with industrial facilities or freeways, and has an isolated population base of approximately 1,620, relative to Richmond's population of 210,000, located adjacent to populated communities. The study also used other available data from California Environmental Protection Agency (Cal/EPA) State ambient air quality monitors. The following results were reported in the study:

- More air pollutants and higher outdoor concentrations of air emissions were detected in urbanized Richmond than in rural Bolinas.
- Nickel and vanadium, which are generally associated with refineries, other industrialized operations, and shipping were detected in Richmond at some of the highest concentrations when compared to a distribution of monitoring data from Cal/EPA State ambient air quality monitors.
- Despite high traffic in Richmond, outdoor concentrations of certain particulates and traffic-related pollutants were in the lower half of the distribution of Cal/EPA's Statewide monitoring data.
- There is a correlation between outdoor and indoor concentrations that suggests that outdoor pollutants likely penetrate into homes.

As noted in the journal article, limitations of the study include the small sample size in Bolinas, and the lack of multi-season samples or direct Facility emissions samples to compare to household contaminant profiles.

The BAAQMD initiated the Community Air Risk Evaluation (CARE) program in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from point sources, area sources and mobile sources near sensitive populations to help focus air quality mitigation strategies. The main objectives of the program are to:

- Characterize and evaluate potential cancer and non-cancer health risks associated with exposure to TACs from both stationary and mobile sources throughout the Bay Area.
- Assess potential exposures to sensitive receptors including children, senior citizens, and people with respiratory illnesses.
- Identify significant sources of TAC emissions and prioritize use of resources to reduce TACs in the most highly impacted areas (i.e., priority communities).
- Develop and implement mitigation measures - such as grants, guidelines, or regulations - to achieve cleaner air for the public and the environment, focusing initially on priority communities.

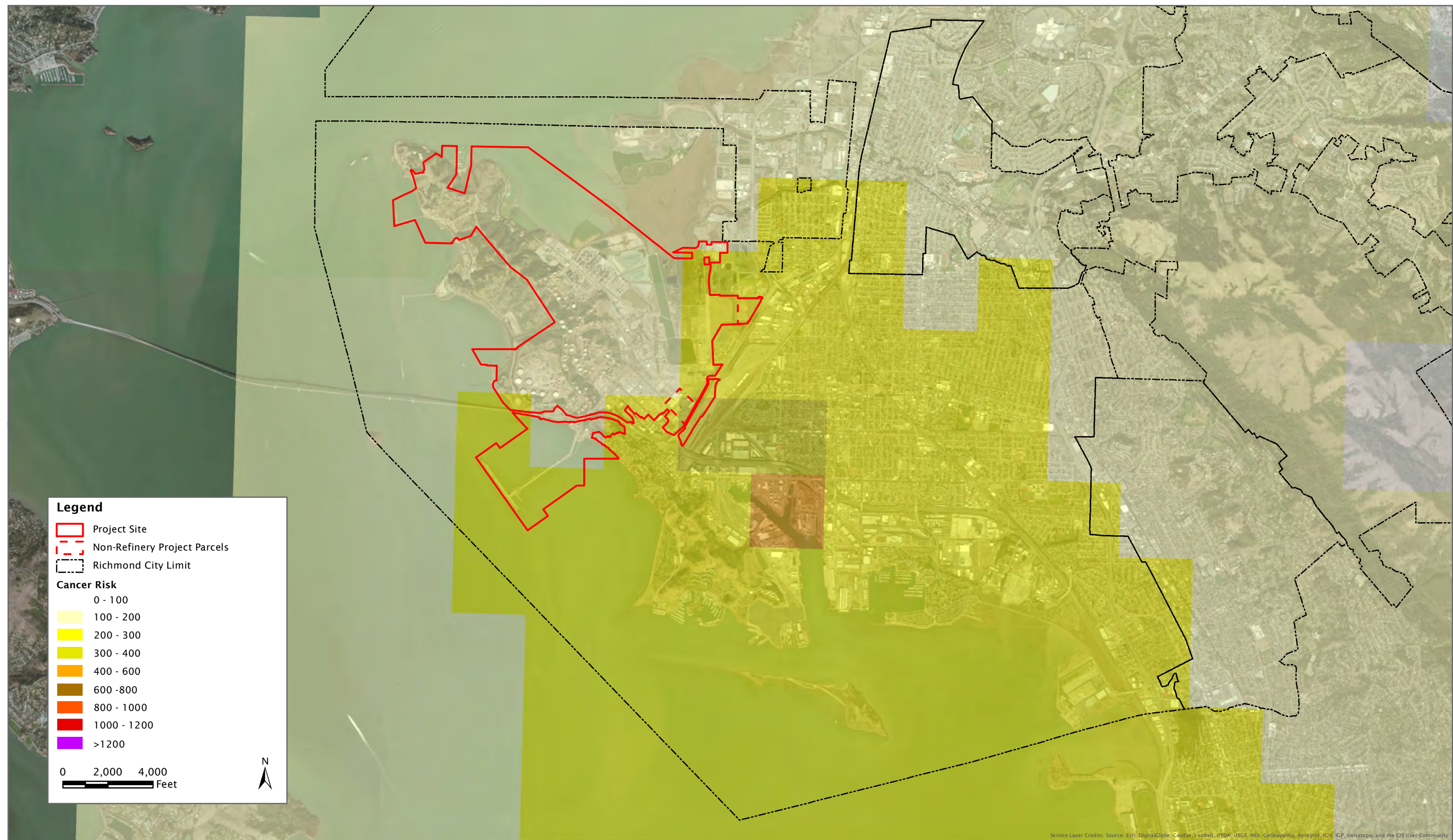
The BAAQMD used the information gathered during the initial CARE process to designate communities with higher relative TAC exposure levels (CARE Communities).

The Modernization Project is located within the Richmond/San Pablo CARE Community, which is one of six impacted communities identified under the CARE program, as described below.

The CARE program methodology also evaluated risk reductions projected to occur in the near term based on the implementation of air quality improvement mandates already required and in the process of being implemented, such as cleaner fuels for cars and trucks, and more stringent emission standards designed to reduce diesel and other pollutants. As shown in Figures A4.3-PHYS-12 and A4.3-PHYS-13, the estimated cancer risk in 2015 for locations in the vicinity of the Modernization Project ranges from 100 to 300 in a million (BAAQMD, 2012). These risks may not accurately represent localized risk for a couple of reasons. First, the risks are presented in broad ranges (i.e., increments of 100 in a million), so the estimated risks can fall anywhere within the specified range. Second, the risks were estimated for large areas (i.e., using grid cells with one kilometer by one kilometer spacing) that are assumed to have uniform risk across an entire grid cell, but localized variations in risk within each grid cell may exist.

1.4.4.1.1 CARE Program Phases I and II Inventories

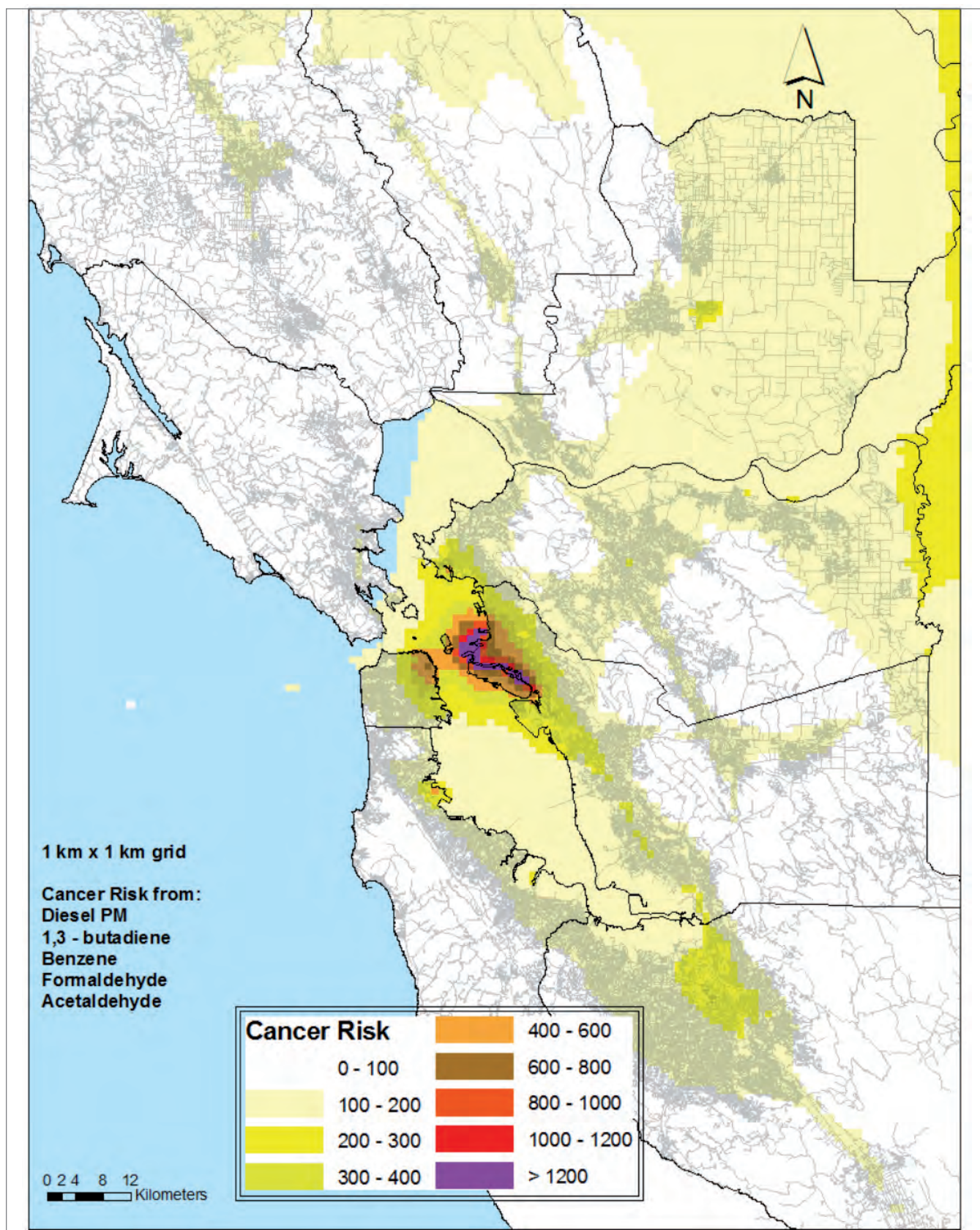
During Phases I and II of the CARE program, the BAAQMD developed a preliminary Bay Area-wide TAC emissions inventory (based on county-level area source and non-road mobile source emissions, point source emissions inventory, and gridded on-road mobile emissions inventory); compiled demographic and health-statistics data; and conducted regional computer modeling of selected TAC species to identify communities that are disproportionately impacted from high concentrations of TACs. As shown in Figure A4.3-PHYS-14 for 2005, five TACs (i.e., diesel particulate matter (DPM), 1,3-butadiene, benzene, hexavalent



3/13/2014 P:\GIS\11-005_CVRN\Data\ENVIRON\4.3 PHYS Maps\Revised\Figure A4.3-PHYS-12.mxd

Source: BAAQMD, 2012b; Chevron (T38r1)

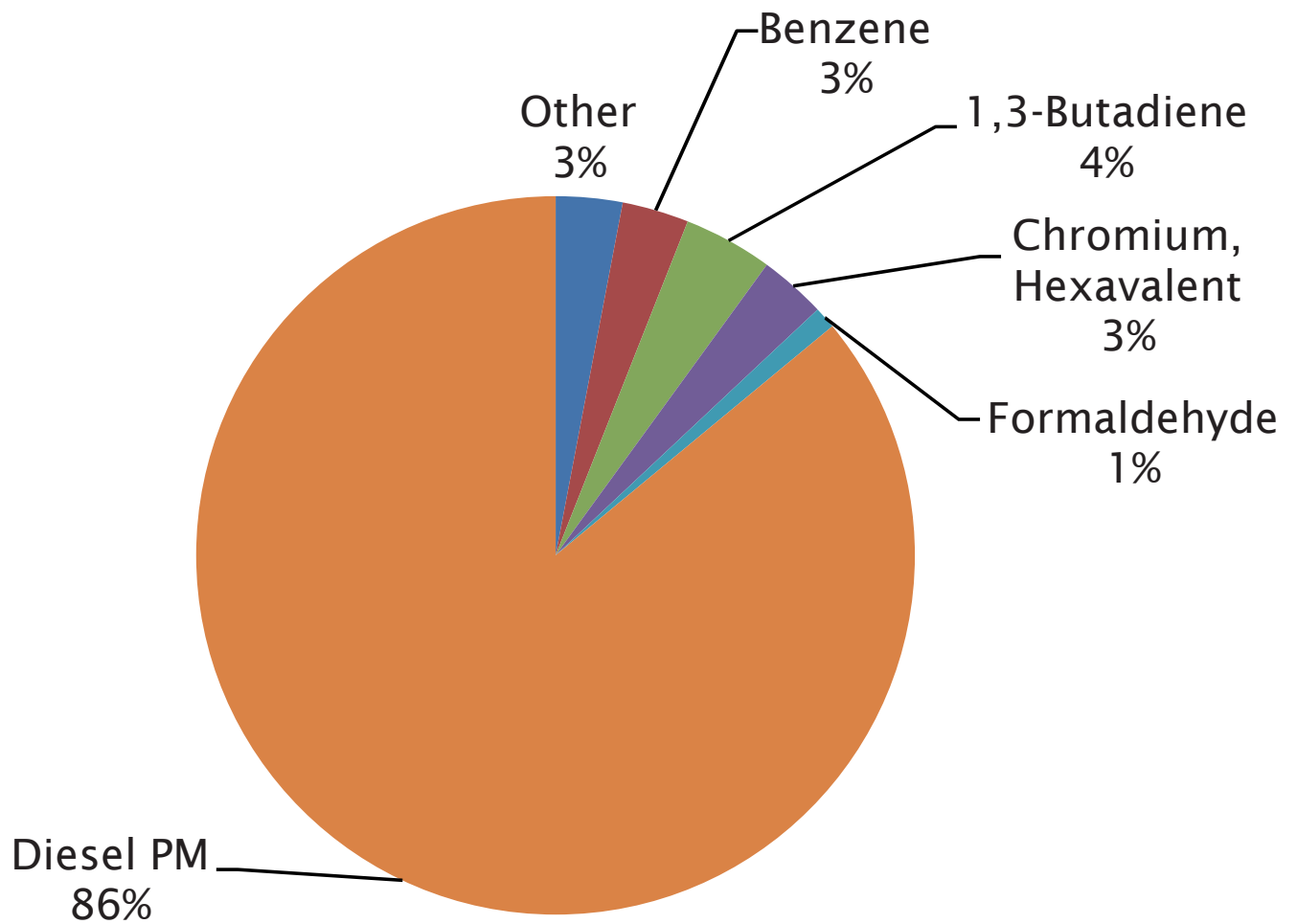
Figure A4.3-PHYS-12
Chevron Refinery Modernization Project EIR
CARE Program Cancer Risk Ranking Estimate in 2015 in the Vicinity of the Project Site



01:29:2014 file path: U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.3-10.ai

Source: BAAQMD, 2012b

Figure A4.3–PHYS–13
 Chevron Refinery Modernization Project EIR
 Estimated 2015 Cancer Risk from Ambient Air Quality



01.29.2014 file path\\: U:\\Chevron Renewal\\ENVIRON Files\\Report\\Figures\\Illustrator Files\\Figure 4.3-11-12.ai
Source: Sonoma Technology, 2008.

Figure A4.3-PHYS-14
Chevron Refinery Modernization Project EIR
Bay Area-wide Contributions to Airborne Toxic Cancer Risk
by Pollutant, Based on 2005 Emissions Inventory

chromium, and formaldehyde) were estimated to be responsible for about 97% of the Bay Area's cumulative cancer risk, and DPM alone for about 86% of this cancer risk. Major sources of DPM include on-road mobile sources and construction equipment, as shown in Figure A4.3-PHYS-15. The CARE TAC evaluation methodology evaluated dozens of individual TAC constituents, including TACs from mobile sources (i.e., trucks and cars), stationary sources (i.e., refineries and factories) and area sources (i.e., water heaters). Of the TACs evaluated, BAAQMD concluded that the five most relevant to purposes of understanding ambient TAC-related health risks are DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde.

1.4.4.1.2 Impacted Communities

The District used data on TAC emissions and risk to identify impacted communities. The impacted communities are areas where the District focuses policies and programs to reduce TAC emissions and exposures. The emissions and concentrations data were combined with locations of sensitive populations and income levels to identify communities with relatively higher impacts from air quality than other Bay Area communities.

The CARE program identified six impacted communities in the Bay Area including Concord, eastern San Francisco, western Alameda County, Redwood City/East Palo Alto, Richmond/San Pablo, and San Jose (see Figure A4.3-PHYS-16).

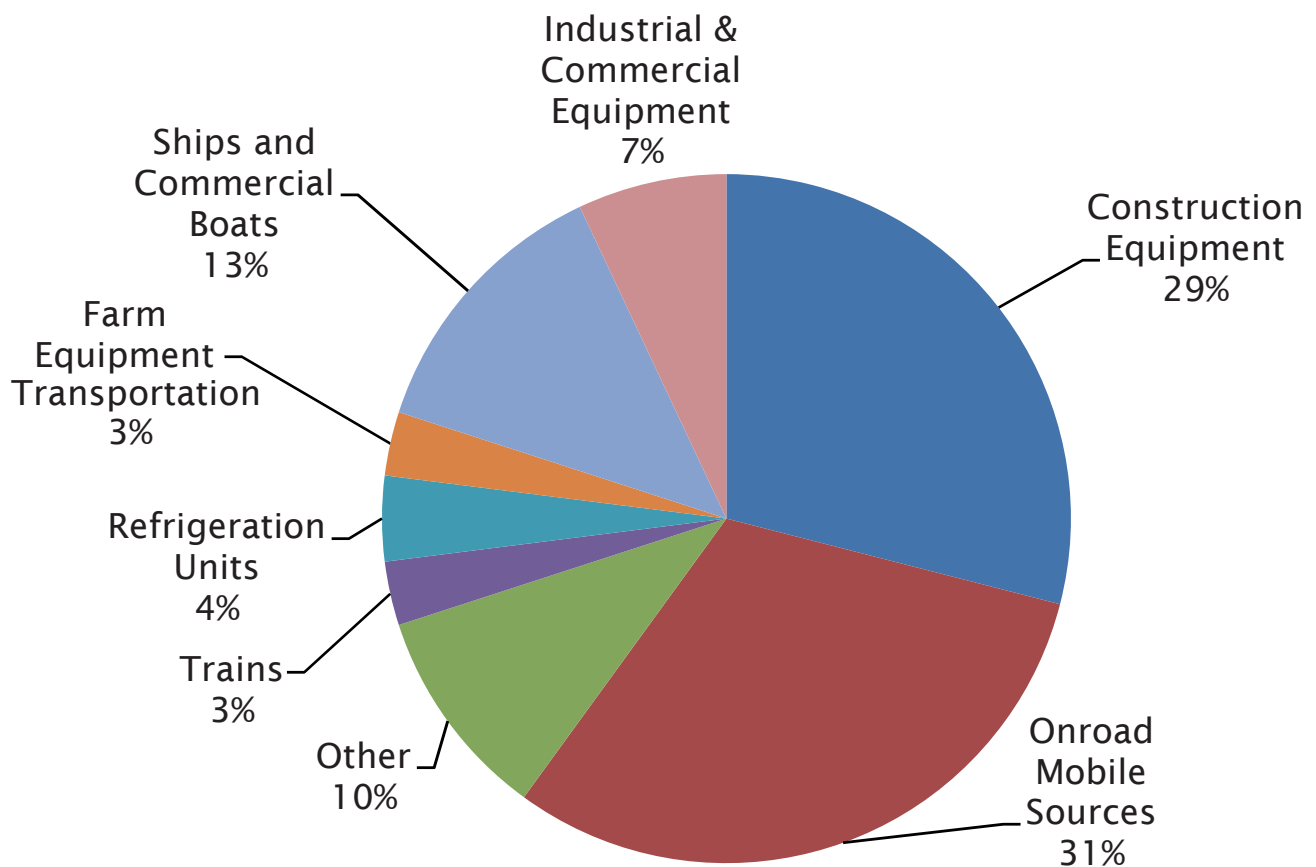
1.4.5 Other Policy Considerations

In addition to the evaluations of air quality in Richmond as described above, the California Environmental Protection Agency (Cal/EPA) has also used a health screening tool to evaluate the impact of various environmental indicators in Richmond, as further discussed below.

1.4.5.1 Cal EnviroScreen

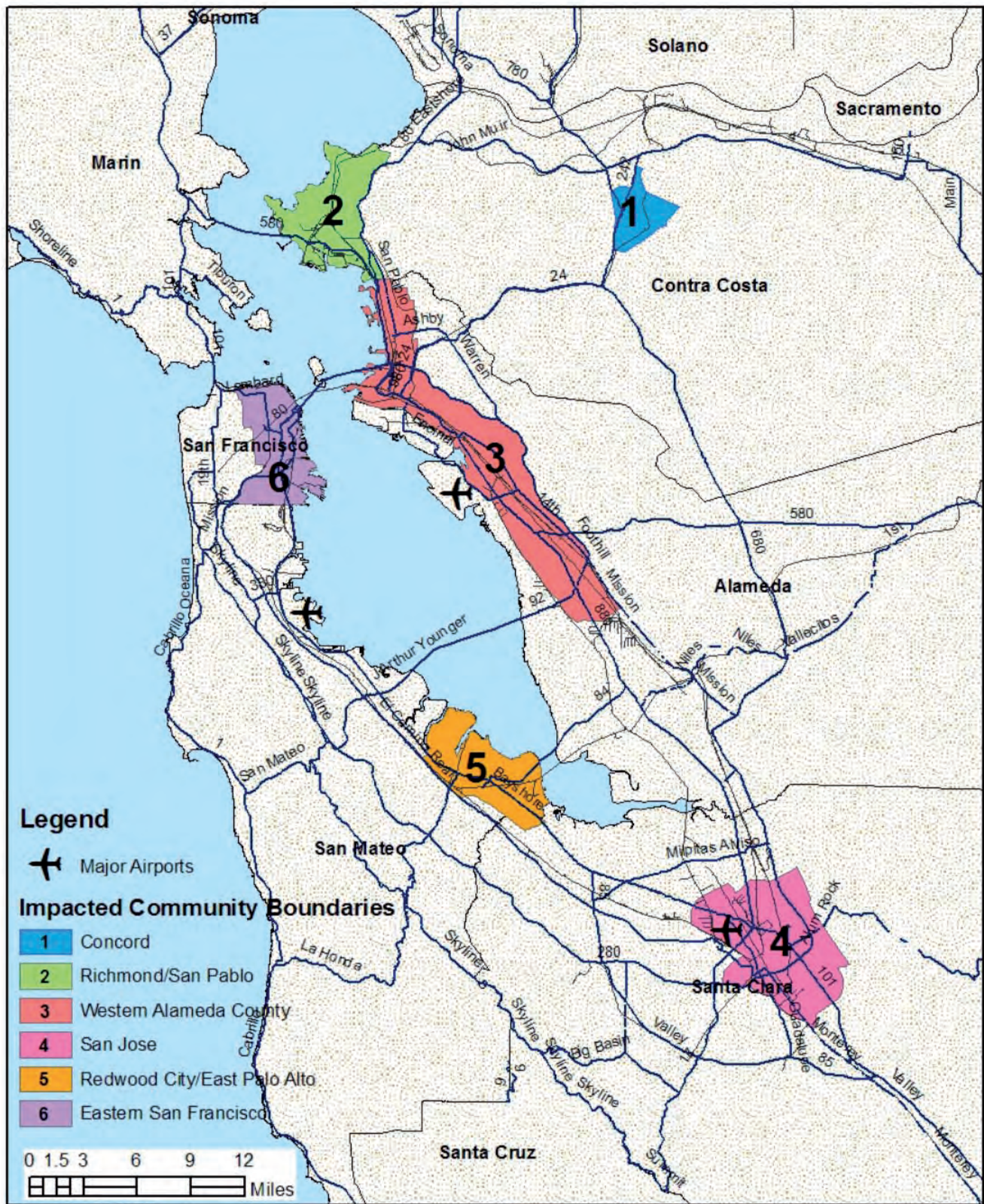
The Cal/EPA California Communities Environmental Health Screening Tool, Version 1.1 (CalEnviroScreen 1.1) (OEHHA, 2013) provides a State-wide assessment methodology designed to help characterize the combined relative impacts of multiple pollutants and stressors on a community. CalEnviroScreen's methodology is based on the evaluation of a series of 17 indicators⁴ of the environment, including air pollution as well as other forms of pollution such as contaminated soils and water, socioeconomic factors, and the presence of sensitive populations. The CalEnviroScreen rankings are specifically intended to be used to help direct resources, and focused attention, on areas of California

⁴ These indicators are: O₃, PM_{2.5}, DPM, pesticides, toxic release inventory, traffic, cleanup sites, groundwater threats, hazardous waste sites, impaired water bodies, solid waste sites, age, asthma, low birth weight, education, linguistic isolation and poverty.



01.29.2014 file path\\: U:\\Chevron Renewal\\ENVIRON Files\\Report\\Figures\\Illustrator Files\\Figure 4.3-11-12.ai
Source: Sonoma Technology, 2008.

Figure A4.3-PHYS-15
Chevron Refinery Modernization Project EIR
Bay Area-wide Contributions to Airborne Toxic Cancer Risk
by Source Type, Based on 2005 Emissions



01.29.2014 file path: U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.3-13.a
 Source: BAAQMD, 2009a

Figure A4.3-PHYS-16
 Chevron Refinery Modernization Project EIR
 Care Impacted Communities

that have higher levels of hazardous materials-related activities and/or higher sensitivities to such activities.

Using zip codes as the geographic unit of analysis, CalEnviroScreen uses a variety of data bases that measure different "indicators" or factors relevant to hazardous materials usage and emissions, and sensitivity to hazards, including US census information, to create a total numerical "score" for each zip code. Higher scores indicate higher levels of hazardous materials-related activity and/or higher sensitivity to such hazardous materials-related activities. CalEnviroScreen also includes a comparative ranking system that allows the relative scores for each indicator, and the aggregate score of all indicators, to be ranked by zip code across the State.

There are seven zip codes in the city of Richmond (94801, 94802, 94804, 94805, 94807, 94808, and 94850) and one zip code partially in the city of Richmond (94806); three of these zip codes are for post office boxes only (94802, 94807, and 94808), and 94850 has no population.

For populated zip codes in the vicinity of the Project site (94801, 94804, 94805 and 94806 (see Figure A4.3-PHYS-17), the CalEnviroScreen results (Table A4.3-PHYS-16) indicate that 94801 is in the top 96 to 100% (most impacted) zip codes within the State,⁵ while zip code 94804 is in the top 86 to 90% of zip codes in the State, zip code 94805 is in the 50 to 55% group, and zip code 94806 is in the 76-80th percentile.

In the Cal EnviroScreen calculations of indicator percentiles for each zip code, the higher the ranking, the greater the impact. As shown in Table A4.3-PHYS-16, all four zip codes with a non-zero population scored above the 90th percentile for asthma; zip codes 94801, 94804, and 94806 exceeded 94th percentile for zip codes with legacy toxic contamination conditions requiring cleanup. Zip codes 94801 and 94804 exceeded 90% for groundwater threat percentiles and impaired water bodies percentiles, with zip code 94806 having only modestly lower percentiles of 82% and 87%, respectively. For these indicators, there is little differentiation among these specific zip codes, suggesting that populations in these zip codes may experience similar impacts and vulnerabilities due to those

⁵ CalEnviroScreen was developed in part to address the Cap and Trade program established for Greenhouse Gas emissions under AB 32. Specifically, Senate Bill (SB) 535 requires that 25% of California's cap and trade auction proceeds (Assembly Bill 32) be spent on programs that benefit disadvantaged communities. SB 535 also directed Cal/EPA to identify disadvantaged communities in order to support the allocation of auction fund proceeds. Accordingly, the Office of Environmental Health Hazard Assessment (OEHHA) used CalEnviroScreen results to identify the top 10% of impacted zip codes as 'disadvantaged' for the purpose of identifying zip codes such as 94801 that qualify for Cap and Trade auction fund proceeds.

TABLE A4.3-PHYS-16 CALENVIROSCREEN PERCENTILES FOR RICHMOND, CA**POPULATION BURDEN INDICATORS**

ZIP Code	O ₃ Percentile	PM _{2.5} Percentile	Diesel PM Percentile	Pesticides Percentile	TRI Percentile	Traffic Percentile	Cleanup Sites Percentile	Groundwater Threats Percentile	Haz. Waste Percentile	Imp. Water Bodies Percentile	Solid Waste Percentile
94801	0%	32%	63%	16%	99%	59%	100%	96%	100%	91%	99%
94804	0%	33%	81%	0%	74%	81%	99%	94%	89%	93%	0%
94805	0%	35%	75%	0%	0%	90%	69%	30%	33%	28%	0%
94806	0%	36%	66%	11%	0%	86%	94%	82%	74%	87%	0%
94850	0%	34%	90%	0%	0%	99%	31%	0%	5%	0%	0%

POPULATION CHARACTERISTICS INDICATORS

ZIP Code	Total Population	Age Percentile	Asthma Percentile	Low Birth Weight Percentile	Education Percentile	Linguistic Isolation Percentile	Poverty Percentile
94801	29,395	44%	98%	69%	86%	84%	83%
94804	38,559	42%	98%	83%	68%	68%	65%
94805	13,648	35%	93%	25%	53%	62%	44%
94806	59,861	35%	93%	60%	79%	76%	61%
94850	0	N/A	N/A	N/A	N/A	N/A	N/A

FINAL CALENVIROSCREEN SCORE

ZIP Code	CalEnviroScreen Percentile Range ¹
94801	96-100%
94804	86-90%
94805	51-55%
94806	76-80%
94850	NA

factors. Linguistic isolation percentiles (an indicator measuring the population with limited proficiency in English) ranged from 62% (94805) to 68% (94804) to 76% (94806) to 84% (94801). Educational attainment scores were similar to linguistic isolation percentiles, and showed the same trend among zip codes, indicating that the greatest impacts from these indicators are associated with populations in zip code 94801. Zip code 94801 also received the highest percentile ranking for hazardous wastes (100%), compared to 89% (94804), 74% (94806), and 33% (94805).

DPM concentrations ranked in the 81st percentile for zip code 94804, but were somewhat lower for 94801 (63%), 94806 (66%), and 94805 (75%) as shown in Table A4.3-PHYS-16. Although zip code 94850 has no population, it was scored on pollution burden indicators and ranked in the 90th percentile for DPM. Traffic scores placed zip codes 94804, 94805, 94806, and 94850 above the 80th percentile, with zip code 94801 associated with a percentile of 59%. The Toxic Release Inventory (TRI) percentiles indicate that zip code 94801 is relatively impacted by facility releases (99th percentile), with zip code 94804 also ranked high at 74%. There were no TRI releases in zip codes 94805, 94806, and 94850. Zip code 94801 placed in the 99th percentile for solid waste sites, while all of the other zip codes received scores of zero for this indicator. Zip code 94801 also had the highest percentile for poverty (83%), with the other three populated zip code percentiles ranging between 44% and 65%. The highest percentile for low birth weight was calculated for zip code 94804 (83%), followed by zip code 94801 (69%), 94806 (60%), and 94805 (25%).

All populated zip codes scored similarly for PM_{2.5} levels (32% to 36%) and for age (35% to 44%); O₃ concentration data were not available for any of the zip codes. Pesticide usage was not a significant contributor to overall score, with zip codes 94801 and 94806 in approximately the 16th and 11th percentiles, respectively, while zip codes 94804, 94805, and 94850 received scores of zero for the pesticide indicator, in that none of the pesticides evaluated by CalEnviroScreen were used in these zip codes.

Although Richmond zip codes 94801, 94804, 94805, 94806, and 94850 are in direct proximity to one another and share similar environmental and population burdens for some indicators, the relatively high percentile rankings for multiple indicators within zip code 94801 and the relatively low percentile rankings for 94806 and 94805 in certain indicators were important determinants of the final scores they received. The total score for zip code 94804 was intermediate to the other three populated zip codes, and included contributions from a number of high-percentile indicators.

1.5 REFERENCES

- Argos Scientific. 2013. *Monthly Report: Chevron Richmond Community Air Monitoring Program*. Reports for April 2013 through December 2013. Accessed February 18, 2014. <http://www.fenceline.org/Richmond/report.htm>.
- Bay Area Air Quality Management District (BAAQMD). 1994. *Regulation 8 – Organic Compounds, Rule 1 – General Provisions*. Accessed November 21, 2013. <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Rules%20and%20Regs/reg%2008/rg0801.ashx?la=en>.
- Bay Area Air Quality Management District (BAAQMD). 2008a. *Base Year 2005 Emissions Inventory: Summary Report*, Figure 2. Accessed December 20, 2013. <http://www.baaqmd.gov/Divisions/Planning-and-Research/Emission-Inventory-and-Air-Quality-Related/~media/A06B5C918A5F413B9BDBE0B63AC2340E.ashx>.
- Bay Area Air Quality Management District (BAAQMD). 2008b. *Toxic Air Contaminant Inventory for 2008 – Sorted by County, by City and by Facility Name*. Accessed April 10, 2013. <http://www.baaqmd.gov/Divisions/Engineering/Air-Toxics/Toxic-Air-Contaminant-Control-Program-Annual-Report.aspx>.
- Bay Area Air Quality Management District (BAAQMD). 2009a. *Applied Method for Developing Polygon Boundaries for CARE Impacted Communities*. Accessed February 12, 2014. <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CARE%20Program/Documents/ImpactedCommunitiesMethodsMemo.ashx>.
- Bay Area Air Quality Management District (BAAQMD). 2009b. *Toxic Air Contaminant Inventory for 2009 – Sorted by County, by City and by Facility Name*. Accessed April 10, 2013. <http://www.baaqmd.gov/Divisions/Engineering/Air-Toxics/Toxic-Air-Contaminant-Control-Program-Annual-Report.aspx>.
- Bay Area Air Quality Management District (BAAQMD). 2010. *Toxic Air Contaminant Inventory for 2010 – Sorted by County, by City and by Facility Name*. Accessed April 10, 2013. <http://www.baaqmd.gov/Divisions/Engineering/Air-Toxics/Toxic-Air-Contaminant-Control-Program-Annual-Report.aspx>.
- Bay Area Air Quality Management District (BAAQMD). 2011. *Base year 2008 Bay Area Emissions Inventory Summary Report*. Accessed April 10, 2013.

<http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Emission%20Inventory/BY08SummaryReportFinal.ashx>.

Bay Area Air Quality Management District (BAAQMD). 2012a. *California Environmental Quality Act Air Quality Guidelines*.

http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en.

Bay Area Air Quality Management District (BAAQMD). 2012b. *Identifying Impacted Communities: Draft Revised Mapping Method*. CARE Task Force Meeting Presentation. Accessed December 23, 2012.

http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CARE%20Program/Task%20Force%20Meetings/101612%20TF/20121016_TF_MappingMethod.ashx?la=en.

Bay Area Air Quality Management District (BAAQMD). 2013a. *Annual Bay Area Air Quality Summaries*. Accessed April 10, 2013.

<http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx>.

Bay Area Air Quality Management District (BAAQMD). 2013b. *District Air Monitor Sites*. Accessed November 27, 2013. http://hank.baaqmd.gov/tec/maps/dam_sites.htm.

Bay Area Air Quality Management District (BAAQMD). 2013c. *2012 Air Monitoring Network Report*, July 1. Accessed February 21, 2014.

<http://www.baaqmd.gov/Divisions/Technical-Services/Ambient-Air-Monitoring/AAMN-Plan.aspx>.

Bay Area Air Quality Management District (BAAQMD). 2014. *Data Display System*. Accessed February 24, 2014.

<http://gate1.baaqmd.gov/aqmet/AQYearly.aspx>.

Bay Planning Coalition (BPC). 2010. *SF Bay Area Seaports Air Emissions*

Inventory, Port of Redwood City 2005 Emissions Inventory. Accessed July 2012. <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Emission%20Inventory/Port%20of%20Richmond%202005%20Emissions%20Inventory%20June%202010.ashx>.

California Air Resources Board (CARB). 1998. *Findings of the Scientific Review Panel on THE REPORT ON DIESEL EXHAUST as adopted at the Panel's April 22, 1998 Meeting*. Accessed April 10, 2013. <http://www.arb.ca.gov/toxics/dieseltac/de-fnds.pdf>.

- California Air Resources Board (CARB). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. Accessed February 2014. <http://www.arb.ca.gov/diesel/documents/rrpFinal.pdf>.
- California Air Resources Board (CARB). 2009a. *Almanac Emissions Projection Data (online)*. Accessed August 2011. <http://www.arb.ca.gov/app/emsmv/emssumcat.php>.
- California Air Resources Board (CARB). 2009b. *The California Almanac of Emissions and Air Quality – 2009 Edition (online)*. Accessed August 2011. <http://www.arb.ca.gov/aqd/almanac/almanac09/toc09.htm>.
- California Air Resources Board (CARB). 2009c. *Definitions of VOC and ROG*. Accessed November 21, 2013. http://www.arb.ca.gov/ei/speciate/voc_rog_dfn_1_09.pdf.
- California Air Resources Board (CARB). 2012. *Low-Emission Vehicle Program*. Accessed February 12, 2014. <http://www.arb.ca.gov/msprog/levprog/levprog.htm>.
- California Air Resources Board (CARB). 2013. *Truck and Bus Regulation*. Accessed February 12, 2014. <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>.
- California Department of Education (CDE). 2013. *California School Directory*. <http://www.cde.ca.gov/re/sd/>.
- California Department of Social Services, Community Care Licensing Division (CCLD). 2012. *CCLD Facility Search Form*. http://www.cclld.ca.gov/docs/cclld_search/cclld_search.aspx.
- California Environmental Protection Agency (Cal/EPA) - Office of Environmental Health Hazard Assessment (OEHHA). 2013. *California Communities Environmental Health Screening Tool, Version 1 (CalEnviroScreen 1.0) Guidance and Screening Tool*. April.
- California Office of Statewide Health Planning and Development (OSHPD). 2014. *Facility Listings*. <http://www.oshpd.ca.gov/HID/Products/Listings.html>.
- Chevron. 2012. *Richmond Chevron Tax Settlement Agreement Community Air Quality Monitoring Program Work Plan*. Accessed May 7, 2013. <http://www.ci.richmond.ca.us/DocumentCenter/View/26764>.
- Chevron Data Transmittal #9 (Rev #1): GLM Data and Locations, 2013.

Chevron Data Transmittal #22 (Rev #2): Project Locations, 2014.

Chevron Data Transmittal #93: Community-Fenceline Air Monitoring Data, 2014.

Chevron Data Transmittal #38 (Rev #1): APNs, 2013.

Chevron Data Transmittal #47A (Rev #6): Tank Dome, LED Lighting, 2014.

Chevron Data Transmittal #47B (Rev #3): Marine Engine Upgrades, Water Reuse,
MCE, FCC CWT Motor Upgrade, 2014.

Chevron Data Transmittal #54: Map of Process & Tank Areas, 2013.

Chevron Data Transmittal #56 (Rev #2): Cumulative Projects, 2013.

City of Richmond. 2005. *City of Richmond Map*.

<http://www.ci.richmond.ca.us/DocumentCenter/Home/View/399>

City of Richmond. 2010. *Neighborhood Council Districts*.

<http://www.ci.richmond.ca.us/DocumentCenter/Home/View/400>

City of Richmond. 2013. *Richmond Community Air Monitoring Program*.

Accessed October 18th, 2013. <http://www.ci.richmond.ca.us/index.aspx?NID=2645>.

City of Richmond. 2014. Telephone Conversation between ENVIRON and City of Richmond. February 21.

Code of Federal Regulations. 2010. 40 CFR: Chapter 1, Subchapter C, Part 51, Subpart F, 51100. Accessed on November 21, 2013.

<http://cfr.vlex.com/source/code-federal-regulations-protection-environment-1089>.

Environmental Health Hazard Assessment (OEHA). 2013. *California Communities Environmental Health Screening Tool, Version 1.1*

(CalEnviroScreen 1.1). *Guidance and Screening Tool*. Accessed February 2014. <http://www.oehha.ca.gov/ej/ces11.html>.

Green-Brody J. et al. 2009. *Linking Exposure Assessment Science with Policy Objectives for Environmental Justice and Breast Cancer Advocacy: The Northern California Household Exposure Study*. American Journal of Public Health, Supplement 3, Vol. 99, No. S3, pp. S600-S609. Accessed March 21, 2013. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2774181/>.

- Hayes, T.P., J.J. R. Kinney, and N.J.M. Wheeler. 1984. *California Surface Wind Climatology*, p. 17, Figure 2b. Accessed February 2014.
http://gate1.baaqmd.gov/pdf/0635_California_Surface_Wind_Climatology_1984.pdf.
- National Climatic Data Center (NCDC), 2007. *Meteorological Conditions*. National Oceanic and Atmospheric Administration. Available online at:
<ftp://ftp3.ncdc.noaa.gov/pub/data/noaa/2007/>
- Sonoma Technology, Inc., 2008. *Technical Memorandum to BAAQMD re: Final documentation of the preparation of year-2005 emission inventories of toxic air contaminants for the San Francisco Bay Area (Contract No. 2006-019)*. Accessed April 10, 2013.
http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CAR E%20Program/STI_2005_TAC_EI_TechMemo_Final.ashx.
- United States Environmental Protection Agency (EPA). 2013a. *Criteria Pollutant Area Summary Report*. Accessed May 2013.
<http://www.epa.gov/oaqps001/greenbk/anc12.html>.
- United States Environmental Protection Agency (EPA). 2013b. *Fuel Economy*. Accessed February 12, 2014. <http://www.epa.gov/fueleconomy/>.
- United States Environmental Protection Agency (EPA). 2013c. *Fuels and Fuel Additives*. Accessed February 12, 2014.
<http://www.epa.gov/otaq/fuels/index.htm>.
- United States Environmental Protection Agency (EPA). 2013d. *Ground Level Ozone*. Accessed November 21, 2013.
<http://www.epa.gov/airquality/ozonepollution>.
- Western Regional Climate Center (WRCC). 2014. *Monthly Total Precipitation (inches)*. Accessed February 2, 2010. <http://www.wrcc.dri.edu/cgi-bin/cliMONTpre.pl?ca7414>.

APPENDIX 4.3 - REG

REG: Air Quality Regulations

APPENDIX 4.3

REG: AIR QUALITY REGULATIONS

Air quality within the San Francisco Bay Area Air Basin (SFBAAB) is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work individually and jointly to improve air quality through legislation, regulations, planning, policymaking, education, and programs. This appendix discusses air regulatory context for the Modernization Project.

1.1 REGULATION OF CRITERIA AIR POLLUTANTS

1.1.1 Federal and State Ambient Air Quality Standards

The Federal Clean Air Act (FCAA) required the United States Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS), which set limits on pollutants in ambient air to protect public health and welfare. In response, the EPA established both primary and secondary standards for six pollutants (called “criteria” pollutants), which come from numerous and diverse sources. These six criteria pollutants are: ozone (O_3); carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); particulate matter (PM)—including respirable particulates (less than 10 microns in diameter [PM_{10}]) and fine particulates (less than 2.5 microns in diameter [$PM_{2.5}$]); and lead. Primary standards are designed to protect human health including the health of “sensitive” populations, such as asthmatics, children and the elderly. Secondary standards are designed to protect property and public welfare, including protection against visibility impairment and damage to animals, crops, vegetation, and buildings, from air pollutants in the atmosphere. Table A4.3-REG-1, includes a summary of the sources and health effects of the various criteria pollutants.

The FCAA allows states to adopt ambient air quality standards and other regulations, provided that they are at least as stringent as federal standards. The California Air Resource Board (CARB) has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988 (CCAA), and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H_2S), vinyl chloride and visibility-reducing particles.

TABLE A4.3-REG-1 CRITERIA POLLUTANTS, THEIR PRECURSORS, SOURCES, AND RELATED HEALTH EFFECTS

Pollutant	Sources and Health Effects
PM _{2.5} and PM ₁₀	Respirable and fine particulates (PM₁₀ and PM_{2.5}, respectively) pose a serious health hazard, individually or in combination with other pollutants. More than half of the smallest particles inhaled get deposited in the lungs and can cause permanent lung damage. Respirable particles have been found to increase morbidity and mortality via the following adverse health effects: decreased lung function, aggravated asthma, exacerbation of lung and heart disease symptoms, chronic bronchitis and irregular heartbeats. In addition, respirable particles can act as a carrier of absorbed toxic substances.^[b] Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of PM, such as demolition and construction activities, are local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates also can damage materials and reduce visibility. In addition to directly emitted particulates, NO_x and SO_x are precursors of PM₁₀ and PM_{2.5}.
Ozone (O ₃)	Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving VOCs and nitrogen oxides (NO_x). Because VOC and NO_x in the atmosphere can cause O₃, these chemicals are known as precursor compounds for O₃. Significant O₃ production generally requires O₃ precursors to be present in a stable atmosphere with strong sunlight for approximately 3 hours. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions favorable to the formation and accumulation of secondary photochemical compounds, like O₃. Elevated O₃ concentrations have been shown to induce airway irritation, cause airway inflammation, induce wheezing and difficulty breathing, aggravate pre-existing respiratory conditions such as asthma, and can lead to permanent lung damage after repeated exposure to elevated concentrations.
Carbon Monoxide (CO)	Carbon monoxide is a colorless and odorless gas that is known to cause aggravation of various aspects of coronary heart disease, dizziness, fatigue, impairment to central nervous system functions, and possible increased risk to fetuses. CO is a non-reactive pollutant that is a product of incomplete combustion, and is mostly associated with motor vehicle traffic. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of

TABLE A4.3-REG-1 CRITERIA POLLUTANTS, THEIR PRECURSORS, SOURCES, AND RELATED HEALTH EFFECTS

Pollutant	Sources and Health Effects
	vehicle emissions. Motor vehicles also exhibit increased CO emission rates in cold weather.
Sulfur Dioxide (SO ₂)	Sulfur dioxide is known to cause irritation in the respiratory tract, shortness of breath, and can injure lung tissue when combined with fine PM. SO ₂ is a combustion product of sulfur or sulfur-containing fuels such as coal, which are restricted in the Bay Area. SO ₂ is also a precursor to the formation of atmospheric sulfate and PM (PM ₁₀ and PM _{2.5}), and contributes to potential atmospheric sulfuric acid formation that could become acid rain downwind.
Lead	Lead has a range of adverse neurotoxin health effects, and was formerly widely released into the atmosphere primarily via leaded gasoline. Other sources of lead include lead smelters, and lead battery manufacturing. The phase-out of leaded gasoline in California resulted in decreasing levels of atmospheric lead.
Nitrogen Dioxide (NO ₂)	Nitrogen dioxide is a reddish-brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO ₂ . NO ₂ may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high O ₃ levels. Long-term exposure to NO ₂ has the potential to decrease lung function and worsen chronic respiratory symptoms and diseases in sensitive populations. It has also been associated with cardiopulmonary mortality and emergency room asthma visits.

NO_x = oxides of nitrogen

SO_x = oxides of sulfur

VOC = volatile organic compound

Sources: EPA, 2012a, 2012c, 2013c.

CARB and EPA designate an area's attainment status with respect to the CAAQS and NAAQS, respectively. The purpose of these designations is to identify areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are "nonattainment," "attainment," and "unclassified." The "unclassified" designation is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards.

Table A4.3-REG-2 includes the NAAQS and CAAQS currently in effect for each of the criteria pollutants, and the most recent attainment designations with respect to the SFBAAB.

TABLE A4.3-REG-2 AMBIENT AIR QUALITY STANDARDS

Pollutant	Avg. Period	California Standard	Federal Standard	SFBAAB Attainment Status Under California Standard	SFBAAB Attainment Status Under Federal Standard
Ozone (O ₃)	1-hour	0.09 ppm (180 µg/m ³)	Revoked	Serious Nonattainment	--
	8-hour ^a	0.07 ppm (137 µg/m ³)	0.075 ppm (147 µg/m ³)	Nonattainment	Marginal Nonattainment
Respirable Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	150 µg/m ³	Nonattainment	Unclassified
	Annual	20 µg/m ³	Revoked	Nonattainment	--
Fine Particulate Matter (PM _{2.5})	24-hour	--	35 µg/m ³	--	Nonattainment
	Annual ^b	12 µg/m ³	12 µg/m ³	Nonattainment	Attainment/ Under review
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	Attainment	Attainment
	8-hour	9 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	Attainment	Attainment
Nitrogen Dioxide (NO ₂)	1-hour ^c	0.18 ppm (339 µg/m ³)	0.100 ppm (188 µg/m ³)	Attainment	Unclassified
	Annual	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	--	Attainment
Lead ^d	Rolling 3-Mo. Avg.	--	0.15 µg/m ³	--	Attainment
	30-Day Avg.	1.5 µg/m ³	--	Attainment	--
Sulfur Dioxide (SO ₂) ^e	1-hour	0.25 ppm (655 µg/m ³)	0.075 ppm (196 µg/m ³)	Attainment	Attainment
	3-hour ^f	--	0.5 ppm (1300 µg/m ³)	--	Attainment
	24-hour	0.04 ppm (105 µg/m ³)	--	Attainment	--
Hydrogen Sulfide (H ₂ S)	1-hour	0.03 ppm (42 µg/m ³)	--	Unclassified	--
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m ³)	--	--	--
Sulfates	24-hour	25 µg/m ³	--	Attainment	--
Visibility-Reducing Particles	8-hour	Extinction coefficient of 0.23 per kilometer (visibility of less than 10 miles due to particles when relative humidity is less than 70%)	--	Unclassified	--

TABLE A4.3-REG-2 AMBIENT AIR QUALITY STANDARDS

Pollutant	Avg. Period	California Standard	Federal Standard	SFBAAB Attainment Status Under California Standard	SFBAAB Attainment Status Under Federal Standard
------------------	------------------------	--------------------------------	-----------------------------	---	--

Notes: ppm = parts per million; $\mu\text{g}/\text{m}^3$ = micrograms per square meter

^a On March 27, 2008, the 8-hour national O_3 standard was lowered from 0.08 ppm to 0.075 ppm. This standard is expressed as the annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.

^b The EPA revised the primary standard on December 14, 2012 from 15 $\mu\text{g}/\text{m}^3$ to 12 $\mu\text{g}/\text{m}^3$. States are required to submit their area designation recommendations under the revised standard by December 13, 2013. The secondary standard is 15 $\mu\text{g}/\text{m}^3$.

^c The 1-hour national standard for NO_2 was promulgated on February 9, 2010. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb.

^d The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu\text{g}/\text{m}^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

^e On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

^f This is a secondary standard.

Sources: BAAQMD, 2013a; CARB, 2009, 2013b; EPA, 2012b, EPA, 2013b, 2013e.

The following sections summarize criteria pollutant-related plans, programs and regulations at the federal, state, regional and local levels that are relevant to the Facility.

1.1.2 Air Quality Plans

The FCAA and the CCAA require State Implementation Plans (SIPs) to be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the State PM_{10} standard). The SIP must integrate federal, state, and local actions and regulations to identify specific control measures to reduce pollution to attain the NAAQS by the required compliance date. Plans are also required under federal law for areas designated as “maintenance” for national standards. The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. Air quality plans usually define control strategies to reduce air pollutant emissions from industrial facilities, commercial processes, motor vehicles, and other sources. Control

strategies are typically implemented through a combination of regulations adopted and enforced by the air district, grant and incentive programs, public education and outreach, and partnerships with other agencies and stakeholders.

The responsibility for developing plans and programs for each air basin has been delegated to the regional air district responsible for attaining and maintaining air quality standards in that air basin. CARB is the agency responsible for developing the SIP in California. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their regional air districts. The EPA has responsibility to review all state SIPs to determine conformation to the mandates of the FCAA Amendments, and to determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

The Modernization Project is within the SFBAAB, which is an area designated as nonattainment for not meeting NAAQS for certain pollutants regulated under the FCAA (O_3 , $PM_{2.5}$), as shown in Table A4.3-REG-2. Currently, there are four plans for the Bay Area:

- **Ozone Attainment Plan for the 1-Hour National Ozone Standard** (ABAG, 2001), which was developed to meet federal O_3 air quality planning requirements. Bay Air Quality Management District (BAAQMD) prepares O_3 attainment plans for the national O_3 standard, and clean air plans for the California standard, both in coordination with the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). The most recent O_3 attainment plan was submitted in 2001 and was approved by the EPA in 2004. The EPA determined that the SFBAAB had attained the national 1-hour O_3 standard; this standard has since been replaced by an 8-hour standard.
- **Carbon Monoxide Maintenance Plan** (BAAQMD, 1994), which was developed to ensure continued attainment of the national CO standard;
- **Bay Area 2005 Ozone Strategy** (BAAQMD, 2006a), adopted by the BAAQMD Board of Directors on January 4, 2006, which reviews the region's progress over the years in reducing O_3 levels; describes current conditions and charts a course for future actions to further reduce O_3 and O_3 precursor levels in the Bay Area and achieve compliance with the State 1-hour O_3 standard. The control strategy includes stationary source measures, mobile source measures and transportation control measures.

- **Clean Air Plan** (BAAQMD, 2010), which serves to update the 2005 Bay Area Ozone Strategy and also provides an integrated, multi-pollutant strategy to improve air quality, protect public health, and protect the climate.

With respect to applicable air quality plans, BAAQMD prepared the 2010 Clean Air Plan to address nonattainment of the national 8-hour O₃ standard and nonattainment of the CAAQS in the SFBAAB. The purpose of the 2010 Clean Air Plan is to:

- Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the CCAA to implement all feasible measures to reduce O₃;
- Consider the impacts of O₃ control measures on PM, air toxics, and greenhouse gases in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented in the 2009-2012 timeframe.

The updated clean air plan describes current conditions, reviews the progress in reducing SFBAAB O₃ levels to attain State 1-hour and 8-hour O₃ standards, and describes how the proposed control strategy for the SFBAAB will fulfill the CCAA planning requirements for the State 1-hour O₃ standard and mitigation requirements for transport of O₃ and O₃ precursors to neighboring air basins. The 2010 Clean Air Plan also considers the impacts of O₃ control measures on PM, air toxics, and greenhouse gases in a single, integrated plan. The control strategies include stationary source control measures to be implemented through BAAQMD regulations; mobile source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through programs in cooperation with the MTC, local governments, transit agencies, and others.

1.1.3 Federal Stationary Source Regulations

1.1.3.1 Title V Operating Permit (40 CFR Part 70)

Title V of the 1990 FCAA Amendments requires all major sources and some minor sources of air pollution to obtain an operating permit. A Title V permit grants a source permission to operate, and includes all air pollution requirements that apply to the source, including emissions limits and monitoring, record keeping, and reporting requirements. It also requires that the source report its compliance status with respect to permit conditions to the permitting authority. The applicability threshold for a major source is dependent on whether the area is in attainment or nonattainment, and is based on the potential to emit criteria

pollutants. Title V permits are typically issued by state or local agencies, although a small number of permits are issued by the EPA (EPA, 2013f).

Title V permits in the Bay Area are issued by the BAAQMD. In the Bay Area, Title V requirements are implemented by Regulation 2 Rule 6 of the BAAQMD *Rules and Regulations*. In the BAAQMD, any source that emits or has the potential to emit 100 tons per year (tons/yr) or more of any CAP is a major source and must obtain a Title V operating permit. The Facility is a major facility as defined by BAAQMD Regulation 2-6-212, and hence is subject to the Operating Permit requirements of Title V of the FCAA, and BAAQMD Regulation 2, Rule 6 (Major Facility Review).

Chevron's current Title V permit was issued on August 11, 2011, by the BAAQMD and will expire on August 10, 2016. The permit regulates 297 sources including combustion sources (e.g., furnaces, heaters, boilers, and engines), tanks, cooling towers, flares, and Facility-specific process sources such as crude unit, rheniformers, hydrotreaters, and miscellaneous permitted sources such as H₂S plants, bio-reactor, and loading facilities. The permit also incorporates various abatement devices including precipitators, baghouses, scrubbers, tail gas units, carbon absorbers, thermal oxidizers, and diesel particulate filters. The permit also lists various exempt sources. The current Title V permit will be updated by BAAQMD to reflect Modernization Project changes upon completion of Modernization Project construction and when BAAQMD issues to Chevron the permits to operate for the Modernization Project.

1.1.3.2 Prevention of Significant Deterioration (40 CFR Part 52)

The Prevention of Significant Deterioration (PSD) regulations were first promulgated by the EPA (40 CFR 52) to prevent air quality degradation in those areas where CAP concentrations are below the ambient standards (i.e., attainment areas). The PSD permitting program sets forth preconstruction review requirements for major stationary sources (new construction or major modifications) to ensure that air quality in clean air areas does not significantly deteriorate, while maintaining a margin for future industrial growth. Currently, the federal PSD regulations are administered by BAAQMD on behalf of the EPA, as BAAQMD does not yet have its own, EPA-approved PSD program.¹ PSD requirements will apply if increased emissions resulting from proposed modifications to a major source due to the Modernization Project exceed PSD

¹ BAAQMD has approved a proposed PSD rule (embodied in revisions to BAAQMD Regulation 2, Rule 2) and submitted it to EPA for approval, which is still pending. If and when BAAQMD's PSD rule is approved by EPA, BAAQMD will assume responsibility for PSD implementation and enforcement for EPA. The BAAQMD PSD rule is more stringent than the EPA PSD rule currently in effect by applying an "actual to potential" emissions calculation test instead of the current "actual to projected actual" test applied under the federal PSD program (BAAQMD, 2012b).

threshold levels. PSD requires the installation of Best Available Control Technology (BACT), an air quality analysis, impacts modeling and analysis, and public involvement (EPA, 2013d).

Exceedance of a PSD trigger level requires a demonstration by dispersion modeling that the emissions will not interfere with the attainment or maintenance of any NAAQS at the point of maximum impact, and will not cause an exceedance of a PSD increment. The Facility is a “major source” for the purposes of the federal PSD program. The Modernization Project, however, does not amount to a “major modification” and thus will not be subject to PSD requirements. This is further discussed in the Engineering Evaluation, which is *Appendix 4.3-EE* to this report.

1.1.3.3 New Source Performance Standards (40 CFR Part 60)

The EPA promulgated New Source Performance Standards (NSPS) for major and minor sources on a category-by-category basis. NSPS are national emission standards that are progressively tightened over time to achieve a steady rate of air quality improvement without unreasonable economic disruption. The NSPS imposes uniform requirements on new and modified sources based on the best demonstrated technology (BDT). BDT refers to the best system of continuous emissions reduction that has been demonstrated to work in a given industry, considering economic costs and other factors, such as energy use. In other words, any new source of air pollution must install the best control system currently in use within that industry (EPA, 2013a). The NSPS program is implemented by the BAAQMD. Table A4.3-REG-3 summarizes NSPS regulations that are cited in the Facility’s current Title V Operating Permit.

The Modernization Project will include sources that will be subject to NSPS subpart Ja (Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007), which applies to fluid catalytic cracking units, fluid coking units, delayed coking units, flares, fuel gas combustion devices (e.g., process heaters), and sulfur recovery plants. The rule specifies PM, NO_x, SO₂, and CO emission limitations and monitoring requirements for fluid catalytic cracking units and fluid coking units; SO₂ emission limitations and annual maintenance hour limitation for sulfur recovery plants; SO₂ emission and fuel gas H₂S content limitations for fuel gas combustion devices; and NO_x emission limits for process heaters. This rule also describes testing, monitoring, recordkeeping and reporting requirements.

1.1.3.4 Flares

The EPA signed final amendments to NSPS subpart Ja for flares and process heaters at petroleum refineries on June 1, 2012 (NSPS Ja Final) (EPA, 2012d). The

TABLE A4.3-REG-3 SUMMARY OF SUBPARTS UNDER 40 CFR PART 60 (NEW SOURCE PERFORMANCE STANDARDS) LISTED IN THE FACILITY'S TITLE V OPERATING PERMIT

40 CFR Part 60		
Subpart	Description	Summary
A	General Provisions	Generally applies to any stationary source for which construction or modification is commenced after applicable date. Includes requirements for performance testing; compliance with standards and maintenance; monitoring; modification and reconstruction; general control device and work practice; and notification, recordkeeping and reporting.
D	Standards of Performance for Fossil-Fuel-Fired Steam Generators	Generally applies to steam generating units for which construction, modification, or reconstruction commenced after 1971, and that has a maximum design heat input capacity greater than or equal to 250 million British Thermal Units (MMBTU)/hour. Includes NO _x , SO ₂ and PM emission limits. Also covers compliance and performance test methods and procedures; emission monitoring requirements; and reporting and recordkeeping requirements.
Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units	Generally applies to steam generating units for which construction, modification, or reconstruction commenced after June 1984, and that have a maximum design heat input capacity greater than 100 MMBTU/hour. Includes NO _x , SO ₂ and PM emission limits. Also covers compliance and performance test methods and procedures; emission monitoring requirements; and reporting and recordkeeping requirements.
Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	Generally applies to steam generating units for which construction, modification, or reconstruction commenced after June 9, 1989, and that has a maximum design heat input capacity greater than or equal to 10 MMBTU/hour but less than or equal to 100 MMBTU/hour. Includes SO ₂ and PM emission limits, but does not have limits for units fired exclusively on natural gas. Also covers compliance and performance test methods and procedures for SO ₂ and PM; emission monitoring requirements for SO ₂ and PM; and reporting and recordkeeping requirements.
J ^a	Standards of Performance for Petroleum Refineries	Generally applies to fluid catalytic cracking unit catalyst regenerators or fuel gas combustion devices flares, and Claus sulfur recovery plant, which commenced construction, reconstruction, or modification between 1973 and 2008 (depending on the source type). The standard sets emission limits of PM, opacity, CO, SO ₂ ; and limits the fuel gas H ₂ S content to 0.1 grains per dry standard cubic foot (gr/dscf). The facility also needs to comply with monitoring,

TABLE A4.3-REG-3 SUMMARY OF SUBPARTS UNDER 40 CFR PART 60 (NEW SOURCE PERFORMANCE STANDARDS) LISTED IN THE FACILITY'S TITLE V OPERATING PERMIT

40 CFR Part 60		
Subpart	Description	Summary
		recordkeeping and reporting requirements for opacity, CO, SO ₂ emissions, fuel gas H ₂ S content, coke burn-off rate and/or hours of operation.
Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels	Generally applies to tanks greater than 75 m ³ built after 1984; certain exceptions apply. Sets standards regarding tank roofs, venting systems and control devices; provides direction on testing, recordkeeping, monitoring and reporting.
GG	Standards of Performance for Stationary Gas Turbines	Set standards for NO _x and SO ₂ on stationary gas turbines, as well as monitoring requirements.
VV ^b	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006	Sets design, operational and monitoring requirements for equipment used in VOC service (i.e., contains or contacts process fluid with 10% VOC by weight); also describes recordkeeping and reporting requirements.
GGG ^c	Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After 1/4/83 and on or Before 11/7/06	Sets design, operational and monitoring requirements for equipment used in VOC service (i.e., contains or contacts process fluid with 10% VOC by weight); also describes recordkeeping and reporting requirements.
QQQ	Standards of Performance for VOC Emission From Petroleum Refinery Wastewater Systems	Specifies design, operational and monitoring requirements for wastewater-related equipment such as oil-water separators; drain systems; closed vent systems; control devices; also describes monitoring, recordkeeping, and reporting requirements.

Notes: MMBTU = million British Thermal Units; VOC = volatile organic compound; gr/dscf = grains per dry standard cubic foot

^a Subpart Ja generally applies to fluid catalytic cracking units, fluid coking units, delayed coking units, fuel gas combustion devices (including process heaters), flares and sulfur recovery plants at petroleum refineries for which construction, reconstruction, or modification commenced after 2007 (depending on the source type). Additional information is provided later in this section.

^b Subpart VVa applies to construction, reconstruction, or modification after November 7, 2006.

^c Subpart GGGa applies to construction, reconstruction, or modification after November 7, 2006.

final rule re-defines a flare as a separate affected facility rather than a type of fuel gas combustion device, and requires refineries to: (1) develop and implement a flare management plan; (2) conduct root cause analyses and take corrective action when waste gas sent to the flare exceeds a certain flow rate above the baseline flow or contains sulfur that will emit more than 500 pounds of SO₂ in a 24-hour period; (3) optimize management of the fuel gas by limiting the short-term concentration of H₂S during normal operating conditions; and (4) equip flares with flow and sulfur monitors.

Facilities located in the BAAQMD may elect to comply with both BAAQMD Regulation 12, Rule 11 (Flare Monitoring and Petroleum Refineries) and BAAQMD Regulation 12, Rule 12 (Flares at Petroleum Refineries) as an alternative to complying with the requirements of subpart Ja.

1.1.3.5 Protection of Stratospheric Ozone: Recycling and Emissions Reduction (40 CFR Part 82 Subpart F)

The purpose of these regulations is to reduce emissions of class I and class II refrigerants and their substitutes to the lowest achievable level by restricting sales and maximizing the recapture and recycling during service, maintenance, repair, and disposal of appliances. It specifies certification of technicians, required practices, standards for recycling and recovery equipment, and reporting and recordkeeping requirements.

1.1.4 Federal Mobile and Marine Source Regulations

The EPA has adopted an array of regulations aimed to reduce emissions from mobile and marine sources. Generally, control of emissions from diesel fuel combustion focuses on two strategies: setting limits on the amount of sulfur in diesel fuel, and setting source-specific emissions standards, which are typically met through emissions control technologies. Both types of strategies are demonstrated in the regulations summarized below.

1.1.4.1 Diesel Fuel and Engine Regulations (Highway and Non-Road (Including Marine)) [40 CFR Parts 69, 80 and 86]

1.1.4.1.1 Mobile Sources

1.1.4.1.1.1 Emission Standards for Heavy-Duty Engines and Vehicles

To reduce emissions from on-road, heavy-duty diesel trucks, EPA established a series of increasingly strict emission standards for new engines, starting in 1988. The EPA promulgated the final and cleanest standards with the 2001 Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements Rule, more commonly known as the 2007 Highway Rule (EPA, 2001), which integrated engine and fuel controls as a system to gain the greatest emission reductions. This rule established a PM emission standard of 0.01 gram

per horsepower-hour (g/hp-hr) for new vehicles beginning with model year 2007. NO_x and non-methane hydrocarbon standards of 0.20 g/hp-hr and 0.14 g/hp-hr, respectively, were phased in together between 2007 and 2010 on a percent-of-sales basis: 50% from 2007 to 2009 and 100% in 2010.

1.1.4.1.1.2 Highway Diesel Fuel Sulfur Requirements

The 2007 Highway Rule also required refineries to begin producing highway diesel fuel that met a maximum sulfur standard of 15 parts per million (ppm), known as ultra-low sulfur diesel (ULSD), by June 2006. All 2007 and later model year diesel-fueled vehicles must be refueled with ULSD. By integrating fuel sulfur standards and advanced pollution control technologies, the 2007 Highway Rule reduces diesel particulate matter (DPM) and NO_x exhaust emissions of heavy-duty engines by more than 90% as compared to previous engine models. In addition, ULSD also enables emissions reductions from other diesel-powered highway vehicles, including cars, sport utility vehicles, and light-duty trucks.

1.1.4.1.1.3 Emission Standards for Non-road Diesel Engines

To reduce emissions from non-road diesel equipment, EPA established a series of emission standards, called Tiers, for new non-road diesel engines culminating in the 2004 Non-road Tier 4 Final Rule (EPA, 1998, 2004). The Tier standards apply to non-road engines such as engines found in construction, general industrial, and terminal equipment; but do not apply to locomotives or marine engines rated above 37 kilowatt (kW) (50 horsepower [HP]). The Tier 1, Tier 2, Tier 3, and Tier 4 standards require compliance with progressively more stringent emission limits. Tier 1 standards were phased in from 1996 to 2000 (year of manufacture), depending on the engine HP category. Tier 2 standards were phased in from 2001 to 2006 and the Tier 3 standards were phased in from 2006 to 2008. To meet these standards, engine manufacturers will produce new engines with advanced emissions control technologies similar to those already expected for on-road heavy-duty diesel vehicles. The Non-road Tier 4 standards are currently being phased in starting with smaller engines in 2008 until all but the very largest diesel engines meet NO_x and PM standards in 2015.

1.1.4.1.1.4 Non-road Diesel Fuel Sulfur Requirements

The Non-road Tier 4 Final Rule for non-road diesel engines also established fuel sulfur limits in order to integrate engine and fuel controls as a system to gain the greatest emission reductions. The rule required low sulfur (500 ppm) diesel fuel to be phased in starting in 2007, and requires ULSD (15 ppm) to be phased in over 2010-2012 for non-road, locomotive, and marine engines (though only for diesel fuel, not for marine residual fuel, which is more typically used by very large ocean-going vessels). The Tier 4 engine and fuel standards complement the 2007 Highway Rule for on-road heavy-duty engine and vehicles discussed above

by requiring 90% reductions in DPM and NO_x exhaust as compared to previous engine models. For the Modernization Project, this rule affects line-haul locomotives; the California Diesel Fuel Regulations (described below) generally pre-empt this federal rule for other sources such as intrastate locomotives, construction equipment, terminal equipment, and harbor craft engines. Under the Non-road Tier 4 Final Rule, the diesel fuel used by line-haul locomotives was limited to 500 ppm starting June 1, 2007, and was further limited to 15 ppm starting January 1, 2012.

1.1.4.1.2 Marine Engines

EPA has promulgated several emission standards and fuel sulfur requirements for marine diesel engines, which apply depending on the size of the engine.

1.1.4.1.2.1 Small Marine Diesel Engines (Less than 37 kW)

Marine diesel engines less than 37 kW (50 HP) are regulated under the Non-road Diesel Rule (EPA, 2004), described above. For marine diesel engines less than 37 kW or 50 HP, this rule established Tier emission standards and limits diesel fuel sulfur content to 500 ppm starting June 1, 2007 and 15 ppm starting January 1, 2012.

1.1.4.1.2.2 Marine Diesel Engines Less than 30 Liters per Cylinder Displacement

In 2008, EPA finalized a rule that established emission standards for marine diesel engines less than 30 liters per cylinder displacement (EPA, 2008a). The rule covers all types of marine diesel engines of this size, including commercial, recreational, propulsion, and auxiliary engines. Examples include propulsion engines on recreational vessels, small fishing boats, towboats, and tugboats, and auxiliary engines ranging from small to large generator sets on ocean-going vessels. The rule establishes a three part program: (1) establishes emission standards for existing remanufactured engines above 600 kW (800 HP); (2) establishes Tier 3 emission standards for newly built marine engines to be phased in starting in 2009, based on currently available technology; and (3) establishes Tier 4 standards for newly built marine engines to be phased in starting in 2014, based on high-efficiency catalytic after-treatment technology. When fully implemented, the rule will reduce PM emissions from these engines by as much as 90% and NO_x emissions by as much as 80%.

1.1.4.1.2.3 Category 3 Marine Diesel Engines (Greater than 30 Liters per Cylinder Displacement)

Category 3 marine diesel engines have per-cylinder displacement at or above 30 liters per cylinder, and are primarily used for propulsion power on ocean-going vessels such as container ships, tankers, bulk carriers, and cruise ships. Category 3 marine diesel engines typically range in size from 2,500 to 70,000

kW (3,000 to 100,000 HP). In an April 2010 rule (EPA, 2010), EPA adopted emission standards for Category 3 engines installed on U.S. vessels, and diesel fuel sulfur standards for marine diesel fuels produced and distributed in the United States. The rule establishes Tier 2 standards starting in 2011 and Tier 3 standards that will apply starting in 2016. It also adopts a regulatory program for implementing Annex VI to the International Maritime Organization (IMO) International Convention for the Prevention of Pollution from Ships in the United States (MARPOL), including engine and fuel sulfur limits, and extends the emission control area (ECA) engine and fuel standards to U.S. internal waters. These MARPOL requirements are described below. Finally, the rule also allows for the U.S. production and sale of diesel fuel with up to 1,000 ppm sulfur, which can be used in Category 3 marine vessels. All other marine engines are limited to diesel fuel with a maximum sulfur content of 15 ppm, as per the Nonroad Diesel Rule, described above.

1.1.4.1.2.4 Marine Diesel Engines Greater than 130 kW (175 HP) and 30 Liters per Cylinder Displacement, and All Marine Diesel and Residual Fuels

International emission standards apply to new marine diesel engines larger than 130 kW (175 HP) and all marine diesel and residual fuels. For vessels flagged and registered in the United States, EPA's diesel engine and fuel standards will apply for all but the very largest new marine diesel engines (those above 30 liters per cylinder displacement). For those engines above 30 liters per cylinder and for residual fuels, including new marine diesel engines and fuels on foreign vessels that operate in the U.S.'s coasts and ports, the IMO MARPOL Annex VI standards apply. EPA implemented the MARPOL Annex VI standards in Title 40 Code of Federal Regulations Part 1043 (EPA, 2008b).

The IMO is the United Nations agency concerned with maritime safety, security, and pollution prevention. The IMO first adopted MARPOL Annex VI standards in 1997, which included limits on NO_x and SO_x emissions from ship exhausts, and prohibited deliberate emissions of O₃ depleting substances. In October 2008, the IMO adopted amendments to MARPOL Annex VI that placed new NO_x limits on engines, and a global limit on marine fuel sulfur content (including both diesel and residual fuel) of 35,000 ppm (3.5%) by 2012, reduced to 5,000 ppm (0.5%) sulfur by 2020 (or 2025, pending a technical review in 2018).

The amendments also established additional, more stringent emission requirements for ships that operate in designated coastal areas where air quality problems are acute, called ECAs). Under the new geographic standards, ships operating in designated ECAs will be required to use engines that meet the most advanced technology-forcing standards for NO_x emissions beginning in 2016, use fuel with a sulfur content not exceeding 10,000 ppm (1%) in the first phase of the program (2010), and use 1,000 ppm (0.1%) in the second phase of the

program (2015). On March 26, 2010 the IMO amended MARPOL Annex VI by designating specific portions of U.S. waters as ECAs, including the Pacific coast. For this area, the effective date of the first-phase fuel sulfur standard was 2012, and the second phase begins in 2015. Beginning in 2016, NO_x after-treatment requirements become applicable.

Progressive reductions in NO_x emissions from marine diesel engines installed on ships are also included, with a "Tier II" emission limit for engines installed on or after 1 January 2011; then with a more stringent "Tier III" emission limit for engines installed on or after 1 January 2016 operating in ECAs (the IMO Tier III standards are only applicable within ECAs). Marine diesel engines installed on or after 1 January 1990 but prior to 1 January 2000 are required to comply with "Tier I" emission limits, if an approved method for that engine has been certified by EPA.

1.1.5 State Programs and Regulations

CARB is the State agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA. The CCAA, which was adopted in 1988, requires that all air districts in the State endeavor to achieve and maintain the CAAQS by the earliest practical date (Cal H&S Code Section 39000 et seq.). The CCAA specifies that districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

CARB is primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS and produces a major part of the SIP. In addition, the CARB is primarily responsible for statewide pollution sources, although local air districts are still relied upon to provide additional strategies for sources under their jurisdiction.

1.1.5.1 Control of Particulate Matter—Senate Bill 656

CARB and regional air districts are responsible for implementing the provisions of Senate Bill (SB) 656 (Sher, 2003), which seeks to reduce PM₁₀ and PM_{2.5} air pollution. As a first step, CARB developed and approved a list of readily available, feasible, and cost-effective control measures based on existing California rules, regulations, and programs for stationary, area-wide, and mobile sources. The regional air districts then identified schedules for implementation of selected measures, prioritizing measures based on the extent of the PM problem in their jurisdiction, as well as based on the cost-effectiveness of the selected measures. Currently, air districts are working on evaluating and adopting rules in their specific implementation schedules. These schedules, along with CARB's other programs, are designed to continue progressing towards reducing the public's

exposure to PM and towards attaining the state and federal ambient air quality standards (CARB, 2004e).

1.1.5.2 CARB Air Toxic Control Measure for Stationary Compression Ignition Engines (17 CCR 93115)

The CARB Air Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines was adopted in 2004 and amended in May 2011 (CARB, 2011b), with the goal of reducing criteria pollutant and DPM emissions from diesel-fueled stationary compression ignition engines. The ATCM outlines emission standards, fuel use requirements, and operational hour limitations for prime and emergency back-up engines. The 2011 amendments harmonized many of the ATCM requirements with the 2006 EPA Standards of Performance for Stationary Compression-Ignition Internal Combustion Engines (EPA, 2006) (NSPS Subpart IIII); however, some ATCM emission standards and other requirements are more stringent than the NSPS.

1.1.5.3 Regulation of Other Stationary Sources

Other diesel-fueled stationary combustion sources such as boilers and turbines are regulated in the state of California through regional air district rules. For the Modernization Project, the regulating air district is the BAAQMD. The BAAQMD rules applicable to stationary diesel combustion sources are discussed in this section.

1.1.5.4 CARB Airborne Toxic Control Measure for Portable Engines Rated at 50 HP and Greater

ARB promulgated an ATCM for portable diesel-fueled engines in 2004 and amended it in 2011 (CARB, 2011a) to reduce PM emissions from diesel-fueled engines with a rated brake HP of 50 and greater. If subject to the ATCM, portable engines must use CARB diesel fuel, a verified alternative diesel fuel that has been verified appropriately, or CARB diesel fuel utilizing verified fuel additives.

1.1.5.5 Statewide Portable Equipment Registration Program

Under CARB's Statewide Portable Equipment Registration Program (CARB, 2011h), owners/operators of portable engines greater than 50 brake HP such as back-up diesel generators and other specific equipment can register their equipment for operation throughout California. This voluntary program avoids the need of obtaining permits from the local air districts. The requirements of the program, which were most recently revised in February 2011, include meeting eligibility criteria, recordkeeping and reporting, and inspections.

1.1.5.6 State Mobile and Marine Source Regulations

Similar to the EPA, California has adopted an array of regulations aimed to reduce emissions from mobile and marine fuel combustion sources, including both fuel and source-specific emissions standards such as emissions control technologies. State regulations demonstrating both types of emissions reduction strategies are detailed below.

1.1.5.6.1 Diesel Fuel Regulations (Title 13, CCR, Section 2281, 2282, 2284, 2299; Title 17, CCR, Section 93117)

In 1988, CARB proposed an initial diesel fuel regulation limiting the sulfur content and aromatic hydrocarbon content of diesel fuel for motor vehicles. In 1998, CARB identified particulate emissions from diesel-fueled engines (DPM) as a TAC. CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (CARB, 2000a) and the Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines (CARB, 2000b) and approved these documents in September 2000. These documents proposed to reduce diesel particulate emissions and the associated health risk by 75% in 2010 and by 85% in 2020, and to require the use of state-of-the-art catalyzed diesel particulate filters and ultra-low sulfur diesel fuel. The 1988 initial diesel fuel regulation was subsequently amended, and additional regulations were passed. The Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines was also amended (CARB, 2002a). The current standards for diesel fuel in California are listed below (CARB, 2013c, 2013f).

- A. Sulfur Content of Diesel Fuel (CARB, 2004d) – This standard prohibited the sale of vehicular diesel fuel with a sulfur content exceeding 500 ppm by weight after 1993. Starting in 2006, the sulfur limit was reduced to 15 ppm to be phased in over June through September 2006.
- B. Aromatic Hydrocarbon Content of Diesel Fuel (CARB, 2004b) – This standard prohibited the sale or supply of any diesel fuel after 1993 if the aromatic hydrocarbon content exceeds 10% by volume.
- C. Lubricity of Diesel Fuel (CARB, 2004c) – This standard prohibits the sale or supply of any diesel fuel unless the fuel meets minimum lubricity level.
- D. Harborcraft and Locomotives (CARB, 2005c) – Starting in 2007, this amendment extended the definition (and associated requirements) of vehicular diesel fuel to diesel fuel used in harborcraft such as towboats and tugboats and intrastate locomotives (i.e., 90% of annual fuel consumption, hours of operation, or miles traveled occur within California, which would typically include short haul, switch, industrial, port, and terminal operations).

- E. Ocean-Going Vessels (CARB, 2011e) – This regulation, adopted in 2008 and amended in 2011, established low sulfur fuel requirements for marine engines, auxiliary engines, and auxiliary boilers within 24 nautical miles of the California coastline. Starting in 2009, the regulation required the use of marine gas oil (MGO) with a maximum sulfur content of 1.5% or marine diesel oil (MDO) with a maximum sulfur content of 0.5%. By August 1, 2012 the maximum allowable sulfur content of MGO and MDO are 1.0 and 0.5%, respectively. By January 1, 2014, the maximum allowable sulfur content of MGO and MDO is 0.1%.

These California regulations establish the same fuel sulfur content limits as the federal diesel fuel regulations described in Section 1.1.4.1 above (1,000 ppm [0.1%]) for ocean-going vessels fueled by MGO or MDO, and 15 ppm (0.0015%) for all other diesel-fueled engines); however, the California fuel regulations accelerate the effective dates of the requirements for non-highway applications within California by 3 to 5 years.

1.1.5.6.2 Heavy Duty Diesel Truck Idling Regulation

CARB adopted the in-use heavy duty diesel truck idling ATCM in July 2004. As a follow-up to this ATCM, CARB approved the Heavy Duty Diesel Truck Idling regulation (CARB, 2004a, 2013d), which affected heavy-duty diesel trucks starting in February 2005. The regulation requires in-state and out-of-state registered sleeper berth equipped trucks to shut down their engines if idling for longer than 5 minutes at a time, except in the case of queuing (if the queue is located beyond 100 feet from any homes or schools). The regulation also establishes engine performance standards, which require non-programmable engine shutdown systems on heavy-duty diesel engines of model year 2008 and later; these systems shut down the engine after 5 minutes of idling or, alternatively, the engines can optionally meet strict emission standards for NO_x emissions during idling. Trucks with engines of model year 2006 or older may use any California or federally certified diesel-fueled auxiliary power system or fuel-fired heaters.

1.1.5.6.3 CARB Statewide Truck and Bus Regulation

CARB adopted the Statewide Truck and Bus Regulation in December 2008 and amended it in December 2011 (CARB, 2011c, 2014c). The regulation requires heavy-duty vehicles to be retrofitted with PM filters beginning January 1, 2012, and requires older vehicles to be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses must have 2010 model year engines or equivalent.

1.1.5.6.4 California Exhaust Emission Standards and Test Procedures

CARB has adopted emission standards for on-road heavy-duty engines and vehicles and test procedures and amended it in December 2012 (CARB, 2002b, 2012a).

CARB Off-Road Emissions Regulation for Compression-Ignition Engines and Equipment

Engines designated as nonroad engines by EPA are known as off-road engines in California state regulations implemented by CARB. Similar to the EPA Nonroad Diesel Rule, the Off-Road Emissions Regulation for New Compression-Ignition Engines and Equipment (CARB, 2004f, 2012c) applies to diesel engines such as those found in construction, general industrial, and terminal equipment, but not locomotives or marine engines rated above 37 kW (50 horsepower (HP)). Initially adopted in 2000 and amended in 2004, the regulation establishes Tier emission standards, test procedures, and warranty and certification requirements. For some model years and engine size, the CARB Tier emission standards are more stringent than the EPA standards.

1.1.5.6.5 CARB In-Use Off-Road Diesel Vehicle Regulation

In July 2007 CARB adopted the In-Use Off-Road Diesel Vehicle Regulation and amended it in December 2011 (CARB, 2011g, 2013e). The regulation requires owners of off-road mobile equipment powered by diesel engines 25 HP or larger to meet the fleet average or BACT requirements for NO_x and PM emissions by January 1 of each year. The regulation also establishes idling restrictions, limitations on buying and selling older off-road diesel vehicles (Tier 0), reporting requirements, and retrofit and replacement requirements. The requirements and compliance dates vary by fleet size, with performance requirements for large fleets beginning in 2014, medium fleets in 2017, and small fleets in 2019. Requirements regarding idling, disclosure, reporting, and labeling took effect in 2008 and 2009. The Diesel Off-road On-line Reporting System (CARB, 2012b) is an online tool designed to help fleet owners report their off-road diesel vehicle inventories and actions taken to reduce vehicle emissions to the CARB, as required by the In-Use Off-Road Diesel Vehicle Regulation.

1.1.5.6.6 CARB Surplus Off-Road Opt-In for NO_x

The Surplus Off-Road Opt-In for NO_x (SOON) Program was originally adopted with the statewide Regulation for In-Use Off-Road Diesel Vehicles (Off-Road Rule) in 2008 and would apply to districts whose governing board elected to opt into the provision of the program. The SOON Program requires applicable fleets to meet a more stringent fleet-average NO_x target than the statewide Off-Road Rule on a compliance schedule. BAAQMD has elected not to opt into the SOON Program.

1.1.5.6.7 CARB/Railroad Statewide Agreement

In 2005, CARB entered into a voluntary agreement with Union Pacific Railroad and BNSF Railway (CARB, 2005b, 2011f). This agreement committed Union Pacific Railroad and BNSF Railway to reducing locomotive and associated DPM emissions near rail yards through 2008. In addition, the agreement included provisions for CARB to perform health risk assessments (HRA) at 17 rail yards in California, with the results of each used to develop long-term mitigation measures for each rail yard. In addition to this agreement, CARB is developing regulations to address on- and off-road vehicles at rail yards. The CARB/Railroad agreement and associated regulations is one of the efforts to achieve the goals of CARB's Diesel Risk Reduction Plan (described above). When fully implemented, the agreement is expected to achieve a 20% reduction in locomotive DPM emissions near rail yards.

1.1.5.6.8 Requirements for Intrastate Locomotive Fuel Use

In November 2004, the CARB approved a regulation (CARB, 2004g) placing standards on the fuel used in intrastate locomotives. Beginning January 1, 2007, diesel fuel sold for use in intrastate diesel-electric locomotives operating in California must meet the specifications of CARB diesel fuel, as discussed above in Section 1.1.4.6.1 (Diesel Fuel Regulations). Intrastate (diesel-electric) locomotives are defined as those locomotives that operate and fuel primarily (at or greater than 90% of annual fuel consumption, mileage, and/or hours of operation) within the boundaries of the state of California.

1.1.5.6.9 CARB Ocean-Going Vessels Fuel Sulfur and Other Operational Requirements

In July 2008, CARB approved a regulation (CARB, 2011e, 2013f) placing standards on the fuel sulfur content and operations of ocean-going vessels operating within 24 nautical miles of the California coast. The regulation and fuel sulfur requirements were amended in 2011, as described above in Section 1.1.4.6.1 (Diesel Fuel Regulations). The regulation also establishes recordkeeping, reporting, and monitoring requirements.

1.1.5.6.10 CARB At-Berth Ocean-Going Vessels Regulation

On December 6, 2007, CARB approved the California Port Regulations for At-Berth Ocean-Going Vessels (CARB, 2007, 2013g), which requires operators of vessels meeting specified criteria to turn off auxiliary engines for most of their stay in port. For terminals that are providing electrical power from the electrical grid, the regulation requires ship fleets to reduce NO_x and PM emissions from auxiliary engines while at berth by 50% starting January 1, 2014, 70% in 2017, and 80% starting January 1, 2020. This regulation does not apply to tankers.

1.1.5.6.11 CARB Commercial Harbor Craft Regulation

Adopted in November 2007 and amended in June 2011, this regulation (CARB, 2005c, 2011d, 2014a) limits DPM, NO_x, and SO_x emissions from diesel propulsion and auxiliary engines on commercial harbor craft such as towboats and tugboats operated within California waters and within 24 nautical miles of the California coast. This regulation requires that new and in-use diesel-fueled harbor craft comply with the low sulfur fuel use requirement when operating within regulated California waters, as discussed above in Section 1.1.4.6.1 (Diesel Fuel Regulations). It also sets emission standards for new engines, as well as requirements and a schedule for the replacement or otherwise bringing into compliance pre-Tier 1 and Tier 1 engines for in-use fleets (ferries, excursion vessels, tugboats, towboats, push boats and multipurpose harbor craft) (CARB, 2008a, 2008c).

1.1.6 Regional (BAAQMD) and Local Plans, Programs, and Regulations

The BAAQMD attains and maintains air quality conditions in the SFBAAB. As shown in Figure A4.3-REG-1, and described in the California Code of Regulations, Title 17, Section 60101, the BAAQMD's jurisdiction encompasses all of seven counties – Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Napa, and portions of two others – southwestern Solano and southern Sonoma. Figure A4.3-REG-2 shows the location of the Modernization Project.

The BAAQMD regulates air quality through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the public's understanding of air quality issues. The clean air strategy of BAAQMD includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. BAAQMD is the agency with permit, regulatory, and enforcement authority over most types of stationary emission sources in the Bay Area.

1.1.6.1 Summary of BAAQMD Rules and Regulations Related to Criteria Air Pollutants, Listed in the Facility's Title V Permit

There are many BAAQMD regulations that apply to the construction and operation of the Modernization Project. The regulations are contained in the BAAQMD Rules and Regulations, Volumes 1 and 2. The CAP regulations cited in the Facility's current Title V Operating Permit are detailed in Table 4.3-REG-4.

1.2 REGULATION OF TOXIC AIR CONTAMINANTS

Air quality regulations also focus on TACs (or in federal terminology, hazardous air pollutants [HAPs]). In California, TACs are defined by the CARB as those air



Source: BAAQMD, 2012c; BAAQMD, 2013c

Figure A4.3-REG-1
Chevron Refinery Modernization Project EIR
Map Showing Locations of BAAQMD Ambient Air Monitoring Locations

Page intentionally blank



3/13/2014 P:\GIS\11-005_CVRN\Data\ENVIRON\4.3 REG Maps\Figure A4.3-REG-2.mxd

Source: Chevron (T22r2, T38r1, T47Ar6, and T47Br3); Google, 2013

Figure A4.3-REG-2
Chevron Refinery Modernization Project EIR
Location of Project

TABLE A4.3-REG-4 SUMMARY OF BAAQMD RULES AND REGULATIONS RELATED TO CRITERIA AIR POLLUTANTS, LISTED IN THE FACILITY'S TITLE V OPERATING PERMIT

BAAQMD Rule	Description
Regulation 1: General Provisions & Definitions	Outlines general provisions and definitions that apply to all other District Rules and Regulations.
Regulation 1, Rule2: Notice to Comply	Establishes guidelines for implementing and conducting a Notice to Comply element within the enforcement program. Sets standards for minor violations, immediate correction of minor violations, testing, and failure to comply.
Regulation 2, Rule 1: General Requirements	Includes requirements to obtain authority to construct and permit to operate; fee requirements; applicability of CEQA; requirements for new or modified sources of TACs or HAPs; public nuisance source requirements; hazardous substance requirements; permit conditions; appeals process; public notice requirements; loss of exemption requirements; source pre-certification procedure; revocation procedure; procedure for ministerial evaluations; federal emissions statement requirements.
Regulation 2, Rule 2: New Source Review	Applies to all new and modified stationary sources that require an Authority to Construct or a Permit to Operate. Provides for the review of new and modified sources and provide mechanisms, including the use of BACT and emission offsets, by which authorities to construct such sources may be granted. Includes PSD rules for NO_x, POCs, SO₂, CO, and PM₁₀, and if PSD is triggered, provides additional restrictions on asbestos, beryllium, mercury, fluorides, sulfuric acid mist, H₂S, total reduced sulfur, and total reduced sulfur compounds. For sources that require an Authority to Construct or a Permit to Operate, if emissions from a new source or increase in emissions from a modified source has the potential to emit 10 pounds or more per highest day of POC, non-precursor organic compounds, NO_x, SO₂, PM₁₀, or CO, BACT is required to be applied. Emissions offsets are required for new NO_x and POC emissions in accordance with Regulation 2-2-302 (facilities that emit more than 35 tons/yr). Offsets are also required for PM₁₀ and SO₂ emissions in excess of 1.0 ton/year in accordance with Regulation 3-2-303. BAAQMD regulations do not require that increases in CO emissions be offset. While there is no threshold for providing offsets for CO emissions, dispersion modeling requirements are specified for facilities with a cumulative increase of CO emissions in excess of 100 tons/yr. Modeling must show that the proposed project would not interfere with attainment or maintenance of the state CO standards. Revisions to this rule have been adopted by BAAQMD's Board of Directors (December 19, 2012) and submitted to EPA for approval. The revisions establish new NSR requirements for PM_{2.5}, revise the definition of "modification," and establish a new PSD program for sources in the SFBAAB (currently BAAQMD simply administers the federal PSD rules). The revised rule will not become effective until EPA approves it.

TABLE A4.3-REG-4 SUMMARY OF BAAQMD RULES AND REGULATIONS RELATED TO CRITERIA AIR POLLUTANTS, LISTED IN THE FACILITY'S TITLE V OPERATING PERMIT

BAAQMD Rule	Description
Regulation 2, Rule 4: Emissions Banking	Provides for acquisition of emission offsets under the New Source Review regulation. Defines different types of bankable reductions, non-eligible emission reductions, and limitations on banking transactions. Includes guidelines for banking applications, decisions on applications, publication and public comment, and duration of deposits. Also includes guidelines on the creation and operation by the district of a small facility banking account to grant offsets to small facilities.
Regulation 2, Rule 6: Major Facility Review	Implements the operating permit requirements of Title V of the FCAA as amended in 1990. It requires any facility to apply for a Major Facility Review Permit if it has a potential to emit criteria pollutants in excess of 100 tons/yr, or any single hazardous air pollutant in excess of 10 tons/yr, or any combination of HAPs in excess of 25 tons/yr. A major facility review involves a plant-wide review of sources, emissions, and regulatory requirements. This rule also provides a means by which facilities may avoid the Title V or other requirements by limiting their potential to emit.
Regulation 2, Rule 9: Interchangeable Emission Reduction Credits	Provides a method to calculate and track the generation, use and trading of Interchangeable Emission Reduction Credits from stationary sources of NO _x , in order to provide an alternate means of compliance with certain District NO _x rules and regulations.
Regulation 4: Air Pollution Episode Plan	Describes system designed to reduce levels of air contaminants that may reach or have reached the level that may be harmful to health, and to protect that portion of the population at risk. Includes control and advisory procedures when specified pollutant concentrations have been reached.
Regulation 5: Open Burning	Prohibits open burning with certain exemptions including agricultural burning, hazardous materials disposal, fire training, and range/forest/wildlife management.
Regulation 6, Rule 1: General Requirements	Limits the quantity of PM in the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions, and opacity. Includes source specific requirements for tube cleaning, sulfuric acid manufacturing plants, and sulfur recovery units; sampling facilities and instruments requirements; and data, records, and reporting requirements.
Regulation 8, Rule 1: General Provisions	Limits the emissions of organic compounds to the atmosphere. Includes standards for surface preparation; clean-up; coating, ink, and paint removal; closed containers; and spray equipment clean-up.
Regulation 8, Rule 2: Miscellaneous Operations	Reduces emissions of POCs from miscellaneous operations. Includes limits on total carbon emissions on mass basis and concentration basis.
Regulation 8, Rule 3: Architectural Coatings	Limits the quantity of VOCs in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use with the District. Includes VOC content limits by coating category that apply before and after January 1, 2011; painting practices and requirements for solvent usage and storage; container labeling requirements; and monitoring and recordkeeping requirements.

TABLE A4.3-REG-4 SUMMARY OF BAAQMD RULES AND REGULATIONS RELATED TO CRITERIA AIR POLLUTANTS, LISTED IN THE FACILITY'S TITLE V OPERATING PERMIT

BAAQMD Rule	Description
Regulation 8, Rule 4: General Solvent and Surface Coating Operations	Limits VOC emissions from the use of solvents and surface coatings in such operations as: model making, printed circuit board manufacturing, electrical and electronic component manufacturing, surface coating of test panels, training facilities for coating, stencil coatings, coatings and coating activities exempt from other Regulation 8 Rules, or solvent usage not specified by other Regulation 8 Rules.
Regulation 8, Rule 5: Storage of Organic Liquids	Applies to facilities that store organic compounds. Depending on the size of the tank and the type of material stored, each tank is required to be equipped with a vapor loss control device with at least 95% abatement efficiency, in addition to other tank-specific requirements related to fittings, seals, and valves.
Regulation 8, Rule 6: Terminals and Bulk Plants	Limits emissions of certain organic compounds from transfer operations at non-gasoline organic liquid bulk terminals and bulk plants.
Regulation 8, Rule 7: Gasoline Dispensing Facilities	Limits organic compound emissions from gasoline dispensing facilities.
Regulation 8, Rule 8: Wastewater (Oil-Water) Separators	Limits emissions of organic compounds from wastewater collection and suspiration systems that handle liquid organic compounds from industrial processes.
Regulation 8, Rule 9: Vacuum Producing Systems	Limits emission of precursor organic compounds from vacuum producing systems.
Regulation 8, Rule 10: Process Vessel Depressurization	Applies to petroleum refineries and chemical plants with process vessels. Set operational requirements and restrictions for depressurization of process vessels, as well as recording and reporting requirements.
Regulation 8, Rule 15: Emulsified and Liquid Asphalts	Limit the emissions of VOCs associated with emulsified and liquid asphalt in paving materials and paving and maintenance operations.
Regulation 8, Rule 16: Solvent Cleaning Operations	Includes vapor solvent cleaner requirements; cold cleaner requirements; and recordkeeping requirements. Limited exemptions for various sources/operations.
Regulation 8, Rule 18: Equipment Leaks	Limits emissions of organic compounds and methane from leaking equipment at petroleum refineries, including those associated with, but not limited to, valves, connectors, pumps, compressors, pressure relief devices, diaphragms, hatches, sight-glasses, fittings, sampling ports, meters, pipes and vessels.
Regulation 8, Rule 19: Surface Preparation and Coating of Miscellaneous Metal Parts and Products	Limits VOC emissions from surface preparation and coating of miscellaneous metal parts and products.
Regulation 8, Rule 28: Episodic Releases from	Prevents episodic emissions of organic compounds from pressure relief devices on equipment handling gaseous organic compounds at petroleum refineries, and collects information on

TABLE A4.3-REG-4 SUMMARY OF BAAQMD RULES AND REGULATIONS RELATED TO CRITERIA AIR POLLUTANTS, LISTED IN THE FACILITY'S TITLE V OPERATING PERMIT

BAAQMD Rule	Description
Pressure Relief Devices at Petroleum Refineries and Chemical Plants	episodic organic and inorganic compound emissions from pressure relief devices at petroleum refineries and chemical plants.
Regulation 8, Rule 31: Surface Preparation and Coating of Plastic Parts and Products	Limits VOC emissions from the surface preparation and coating of plastic parts and products.
Regulation 8, Rule 32: Wood Products Coatings	Limits VOC emissions from the coating of wood products, including surface preparation, application of coatings, and cleanup.
Regulation 8, Rule 33: Gasoline Bulk Terminals and Gasoline Cargo Tanks	Limits VOC emissions associated with gasoline transfer operations at gasoline bulk terminals, and VOC emissions from gasoline cargo tanks.
Regulation 8, Rule 40: Aeration of Contaminated Soil and Removal of Underground Storage Tanks	Limit the emission of organic compounds from soil that has been contaminated by organic chemical or petroleum chemical leaks or spills, and to describe an acceptable procedure for controlling emissions from underground storage tanks during removal or replacement.
Regulation 8, Rule 44: Marine Tank Vessel Operations	Limits the emission of organic compounds into the atmosphere from marine tank vessel loading and lightering, ballasting, and venting operations to 2 pounds per 1,000 barrels of organic liquid loaded, or reduce emissions by at least 95% by weight from uncontrolled conditions. Also specifies recordkeeping requirements.
Regulation 8, Rule 47: Air Stripping and Soil Vapor Extraction Operations	Limit emissions of organic compounds from contaminated groundwater and soil; applies to new and modified air stripping and soil vapor extraction equipment used for the treatment of groundwater or soil contaminated with organic compounds.
Regulation 8, Rule 49: Aerosol Paint Products	Limits emissions of organic compounds from the use of hand-held aerosol paint products.
Regulation 8, Rule 51: Adhesive and Sealant Products	Limits the emissions of organic compounds from adhesive and sealant products. Any operation determined to be exempt from this Rule shall be subject to the provisions of Rule 4, if not already subject to another Rule of Regulation 8.
Regulation 9, Rule 1: Sulfur Dioxide	Sets SO ₂ emission limitations for all sources, including ships; and sets restrictions on fuel sulfur content. This rule also outlines specific requirements related to sulfur content and sulfur removal efficiencies for sulfur removal operations at petroleum refineries.
Regulation 9, Rule 2: Hydrogen Sulfide	Set limits on ground level H ₂ S concentrations, and specifies monitoring and recordkeeping requirements.

TABLE A4.3-REG-4 **SUMMARY OF BAAQMD RULES AND REGULATIONS RELATED TO CRITERIA AIR POLLUTANTS, LISTED IN THE FACILITY'S TITLE V OPERATING PERMIT**

BAAQMD Rule	Description
Regulation 9, Rule 3: Nitrogen Oxides from Heat Transfer Operations	Limits NO _x emissions from existing, new or modified heat transfer operations, by regulating NO _x level in exhaust.
Regulation 9, Rule 7: Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters	Limits NO _x and CO emissions from industrial, institutional and commercial boilers, steam generators and process heaters, by limiting concentrations in exhaust. Also sets stack gas temperature limits, and registration and recordkeeping requirements.
Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines	Limits NO _x and CO emissions from stationary internal combustion engines with an output rated by the manufacturer at more than 50 brake horsepower. Facilities are also required to comply with the monitoring and recordkeeping requirements.
Regulation 9, Rule 9: Nitrogen Oxides from Stationary Gas Turbines	Requires specific NO _x emission limits for gas turbines. Facilities are also required to comply with the monitoring and recordkeeping requirements.
Regulation 9, Rule 10: Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators, and Process Heaters in Petroleum Refineries	Applies NO _x and CO emission limits to industrial process heaters, and sets monitoring, recordkeeping, and reporting requirements.
Regulation 10: Standards of Performance for New Stationary Sources	Discussion is provided in paragraphs following this table.
Regulation 11, Rule 1: Lead	Requires a daily lead emission limit of 15 pounds, and limits ground level concentrations to 1.0 µg/m ³ averaged over 24 hours. Controls emissions of lead into the atmosphere. Includes daily lead emission limitation; ground level lead concentration limits with and without background; and monitoring.
Regulation 12, Rule 4: Sandblasting	Sets performance standards and Ringelmann limits for sandblasting operations other than permanent abrasive blasting operations or equipment.
Regulation 12, Rule 11: Flare Monitoring at Petroleum Refineries	Requires refineries to accurately monitor and submit reports of the flow and composition of vent gases sent to and combusted by a flare. Chevron is required to report reasons for significant flaring events (flow rate greater than 1 million scf in a 24-hour period) as well as any corrective actions taken to reduce or prevent them.

TABLE A4.3-REG-4 SUMMARY OF BAAQMD RULES AND REGULATIONS RELATED TO CRITERIA AIR POLLUTANTS, LISTED IN THE FACILITY’S TITLE V OPERATING PERMIT

BAAQMD Rule	Description
Regulation 12, Rule 12: Flares at Petroleum Refineries	Required refineries to prepare and implement a FMP on or before August 1, 2006. The FMP defines a series of measures intended to reduce flaring to the extent that is feasible without compromising safety and necessary Facility operations and practices. The key tools utilized are planning to minimize flaring, coupled with evaluation of the cause of any flaring events that do occur. The FMP also examines the costs and benefits of potential equipment modifications to increase flare gas recovery. The FMP for the Facility approved by BAAQMD. ⁴ In addition, refineries are required to identify reasons for reportable flaring events (flow rate greater than 500,000 scf or greater than 500 pounds SO ₂ emission in a calendar day) and take corrective actions to prevent them. This is consistent with the recently signed final NSPS subpart Ja, which requires root cause analysis and corrective actions for such events. Chevron’s FMP was last submitted to BAAQMD on June 14, 2012.
Proposed Regulation 12, Rule 15: Petroleum Refining Emissions Tracking	The proposed new BAAQMD rule would require that if refinery emissions (including criteria pollutants, TACs, and greenhouse gases) increase beyond specified trigger levels, the refinery would be required to reduce emission increases to below the trigger levels, based on a BAAQMD-approved emissions reduction plan. The rule would also require refineries to establish new monitoring systems to help better quantify and understand how refinery air emissions affect the public.

Notes: FMP = flare minimization plan
HAP = hazardous air pollutant
NSR = New Source Review
POC = precursor organic compound
scf = standard cubic feet
VOC = volatile organic compound
µg/m³ = micrograms per cubic meter

Sources: BAAQMD, 2013b, 2014; Chevron, 2010.

pollutants that “may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health” (CARB, 2014b). There are currently over 200 substances that have been identified by the CARB as TACs (CARB, 2011i). While most TACs originate from human sources such as fossil fuel combustion or dry cleaning facilities, natural sources such as forest fires and volcanic eruptions also contribute TACs to ambient air.

The nature and magnitude of the potential health effects of TACs depends on the substance, the concentration, and the period of exposure. Some TACs cause effects in response to short-term (acute) exposure; others cause effects only after sustained exposures over weeks, months, or years. The effects of acute exposure may be minor, such as watery eyes or respiratory irritation; or they

may involve damage such as to the reproductive system or nervous system. If exposure to a sufficient concentration occurs for a sufficient period, individuals may have an increased risk of developing cancer, or a greater likelihood of experiencing non-carcinogenic chronic adverse effects. These chronic non-carcinogenic health effects may be minor, such as nasal rhinitis or respiratory irritation; or they may involve long-term damage to the immune, neurological, reproductive, respiratory, or other systems (EPA, 2012e).

1.2.1.1 BAAQMD Standards of Performance for New Stationary Sources Listed in the Facility's Title V Permit

BAAQMD Regulation 10 (amended February 16, 2000) establishes emission and/or performance standards for new plants and other modified or reconstructed sources by incorporating the provisions of 74 subparts of 40 CFR 60. Table A4.3-REG-5 summarizes the federal regulatory subparts incorporated into this BAAQMD regulation that appear in the Facility's current Title V Permit. BAAQMD modifications to the performance standards are also listed in the table.

While some natural sources such as forest fires and volcanic eruptions contribute TACs to ambient air, most TACs originate from anthropogenic sources. Industrial facilities and mobile sources are significant sources of TACs. Various common urban facilities also produce TAC emissions, such as gasoline stations (benzene), hospitals (ethylene oxide), and dry cleaners (perchloroethylene). Automobile exhaust also contains TACs such as benzene and 1,3-butadiene. Most recently, DPM was identified as a TAC by CARB. DPM is a complex mixture of hydrocarbons, particulates, gases, and other compounds (OEHHA, 1998). DPM is emitted by diesel-fueled internal combustion engines, and the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Both California's Office of Environmental Health Hazard (OEHHA) and the EPA consider DPM to be a carcinogen (OEHHA, 2009; EPA, 2011a). Both agencies also recognize that exposure to DPM may cause non-cancer effects such as change(s) in lung function and airway inflammation. DPM is a component of PM, and recent scientific data have linked prolonged exposure to PM to premature mortality, respiratory effects, and cardiovascular disease (Krewski et al., 2000; Pope et al., 2004, 2002).

For TACs that do not cause cancer, threshold levels of chemicals are established by OEHHA, which are thought to be safe. However, in general, for those TACs that may cause cancer, even the smallest concentrations of chemicals may

TABLE A4.3-REG-5 SUMMARY OF SUBPARTS FROM 40 CFR PART 60 REFERENCED IN THE FACILITY'S CURRENT TITLE V PERMIT THAT ARE INCORPORATED INTO BAAQMD REGULATIONS

40 CFR Part 60		
Subpart	Description	BAAQMD Modification
A	General Provisions	–
D	Standards of Performance for Fossil-Fuel-Fired Steam Generators	–
Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units	The 30-day emissions averaging periods specified in the federal standard are deleted and replaced with 24-hour maximum emissions averaging periods for affected facilities in the BAAQMD.
Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	–
J	Standards of Performance for Petroleum Refineries	–
Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels	Any violation of provision 60.113.b, testing procedures, determined by air pollution control personnel, shall constitute a violation of subpart Kb.
GG	Standards of Performance for Stationary Gas Turbines	–
VV	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006	–
GGG	Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983 and on or Before November 7, 2006	–
QQQ	Standards of Performance for VOC Emission From Petroleum Refinery Wastewater Systems	–

Notes: VOC = volatile organic compound

present some risk of cancer. In other words, there is no threshold level below which adverse health risks, although potentially small, may not be estimated to occur for carcinogenic chemicals. This is in contrast with the CAPs, for which acceptable levels of exposure can be determined and for which ambient standards have been established (refer to Table A4.3-REG-2). The EPA and CARB regulate TACs through statutes and regulations that generally require the use of the maximum or best available control technology for toxics (Maximum Achievable Control Technology [MACT] and Best Available Control Technology for Toxics [T-BACT], respectively) to limit emissions. These, in conjunction with additional rules set forth by BAAQMD, establish the regulatory framework for TACs.

An example of a chronic, non-carcinogenic disorder exacerbated by air pollutants is asthma, which has been the focus of a number of recent studies. While there is only limited evidence that air pollution is the causative factor in asthma onset, there are considerable data that link air pollution to worsening of the disease. For example, living near traffic sources has been associated with both asthma occurrence and aggravation of the disease (Salam et al., 2008), and others reported a significant increase in hospital visits as exposure to traffic increased (Chang et al., 2009). Proximity to heavy traffic has also been linked to impaired lung development in children (Gauderman et al., 2007).

Unlike criteria pollutants, TACs do not have region-wide ambient concentration limits such as NAAQS or CAAQS; there is no equivalent to “attainment status” for TACs. Concentrations of TACs may be regulated indirectly based on results from a HRA. An HRA is a scientifically based tool used to determine if exposure to chemicals(s) pose a significant risk (cancer risk or non-cancer hazards) to human health. The effects of air toxic emissions are relatively localized, with concentrations tending to decrease markedly with distance from the source due to dilution and/or degradation. Due to this localized nature, HRAs tend to focus on receptors in the immediate vicinity of the point of release.

1.2.2 Federal Regulations

1.2.2.1 National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61 and 40 CFR Part 63)

The FCAA Amendments of 1970 required the EPA to identify and list all air pollutants (not already identified as criteria pollutants) that “may reasonably be anticipated to result in an increase in mortality or an increase in serious irreversible or incapacitating reversible illness.” The standards for TACs were considerably strengthened under the FCAA Amendments with the listing of 189 HAPs. For each HAP identified, the EPA was to then promulgate National Emissions Standards For Hazardous Air Pollutants (NESHAPs) at levels that would ensure the protection of the public health with an ample margin of safety and to

prevent any significant and adverse environmental effects, which may reasonably be anticipated, on wildlife, aquatic life, or other natural resources (EPA, 2011b). The NESHAPS can set different requirements for major and area sources. Major sources are defined as stationary sources with potential to emit more than 10 tons/yr of any HAP or more than 25 tons/yr of any combination of HAPs; all other sources regulated under Title III of the FCAA Amendments are considered area sources. Issuance of the emission standards occurs in two phases. The first phase consists of technology-based emission standards designed to produce a high level of emission reductions for major sources of HAPs, which are referred to as MACT standards. For area sources, the standards may be different, based on generally available control technology. In the second phase, the EPA must issue health risk-based emissions standards where such standards are deemed necessary to address risks remaining after implementation of the technology-based NESHAPS. These second-phase standards are generally referred to as “residual MACT” standards.

The FCAA Amendments also required the EPA to issue vehicle or fuel standards containing reasonable requirements to control HAP emissions, applying at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 of the FCAA Amendments also required the use of reformulated gasoline in selected U.S. cities (those with the most severe O₃ nonattainment conditions) to further reduce mobile-source emissions, including air toxics. Many of the regulations described in Section 1.1.3.6 of this appendix (Federal Mobile and Marine Source Regulations) were designed to address TACs as well as criteria pollutants.

The federal hazardous air pollutant regulations that are cited in the Facility’s current Title V Operating Permit are listed below and described in Table A4.3-REG-6.

1.2.2.2 Toxic Release Inventory (40 CFR Part 372)

Toxic Chemical Release Inventory Reporting is part of the Emergency Planning and Community Right-to-Know Act (EPCRA), which is intended to alert the public of emergency releases of chemicals by requiring facilities to report releases. This allows planning for emergencies, as well as addresses the public right-to-know. Under EPCRA, any facility with more than 10 employees that manufactures, processes, or otherwise uses certain chemicals in amounts greater than a specified threshold is required to submit an annual toxic chemical release report. The EPA then compiles these annual toxic chemical release forms and the national Toxic Release Inventory (TRI) database (EPA, 2014).

TRI database is the most comprehensive national source of information about toxic chemical releases. However, TRI may not accurately represent the actual

**TABLE A4.3-REG-6 SUMMARY OF FEDERAL HAPs REGULATIONS CITED IN FACILITY'S
TITLE V PERMIT**

CFR Part	Subpart	Description	Details
40 CFR Part 61	A	General Provisions	Lists designated hazardous air pollutants; requires notification and application for approval of construction and operation of sources; prohibits circumvention of sources; includes definitions and requirements for source reporting, emission testing, monitoring, recordkeeping and reporting, to which subparts can incorporate by reference or can override.
40 CFR Part 61	J	National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene	Sets design, operational and monitoring requirements for equipment used in benzene service (i.e., contains or contacts process fluid with 10% benzene by weight); also describes recordkeeping and reporting requirements.
40 CFR Part 61	M	National Emission Standard for Asbestos	Applies to each owner or operator of a demolition or renovation activity. Includes notification requirements and emission control procedures. Standards for waste disposal; visible emissions discharge restrictions; waste material disposal requirement; marking requirements for asbestos-containing waste material transporting vehicle; and record keeping requirements for asbestos-containing waste material transportation. Includes reporting requirements for emission control equipment for new sources, unreported existing sources, and existing source modifications. Some exemptions apply based on the removal amount of regulated asbestos-containing material and on the reason and purpose of the demolition.
40 CFR Part 61	V	National Emission Standards for Equipment Leaks (Fugitive Emission Sources)	Sets design, operational and monitoring requirements for equipment used in volatile hazardous air pollutant service (i.e., contains or contacts process fluid with 10% volatile hazardous air pollutants by weight); also describes recordkeeping and reporting requirements.
40 CFR Part 61	FF	National Emission Standards for Benzene Waste Operations	Sets requirements on management and treatment of waste containing benzene; operating and design requirements for equipment and processes associated with benzene waste operations; and monitoring, reporting and recordkeeping. Applies to chemical manufacturing plants, coke by-product recovery plants, and petroleum refineries.
40 CFR Part 63	A	General Provisions	Establishes applicability determination for stationary sources; prohibits circumvention and fragmentation of sources; includes definitions and requirements for preconstruction review and notification, performance testing, monitoring, recordkeeping and reporting, to which subparts

**TABLE A4.3-REG-6 SUMMARY OF FEDERAL HAPs REGULATIONS CITED IN FACILITY'S
TITLE V PERMIT**

CFR Part	Subpart	Description	Details
			can incorporate by reference or override.
40 CFR Part 63	H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks	Sets design, operational and monitoring requirements for equipment used in organic hazardous air pollutant service 300 hours or more during the calendar year; also describes recordkeeping and reporting requirements.
40 CFR Part 63	R	National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)	Sets operating and design standards on loading racks, storage vessels and equipment leaks associated with bulk gasoline terminals and pipeline breakout stations. Includes monitoring, recordkeeping and reporting requirements.
40 CFR Part 63	Y	National Emission Standards for Marine Tank Vessel Loading Operations	Sets operating and design standards for marine vessel loading, including monitoring, recordkeeping and reporting requirements.
40 CFR Part 63	CC	National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries	Set operating, design and emission standards as well as monitoring, recordkeeping and reporting requirements for various types of sources in a petroleum refinery, including miscellaneous process vents; storage vessels; equipment leaks; marine tank vessel loading operations; heat exchanger systems; and wastewater units. Includes cross-references to other Subparts.
40 CFR Part 63	UUU	National Emission Standards for Hazardous Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units	Establishes HAP emission standards from catalytic cracking units, catalytic reforming units, and sulfur recovery units (such as concentration limits from process vents), and establishes requirements for monitoring, recordkeeping, reporting/notification, and demonstrating compliance.
40 CFR Part 63	YYYY	National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines	Sets formaldehyde emission limit and operating conditions for stationary combustion turbines (such as in cogeneration units) and establishes requirements for monitoring, record keeping, reporting/notification, and demonstrating compliance.
40 CFR Part 63	ZZZZ	National Emission Standards for Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines	Start-up requirements for Reciprocating Internal Combustion Engines (RICE) at area sources; numerical CO emission standards (except during startup) for stationary non-emergency RICE at area sources; management practices (air/filter replacement schedule, inspection schedule) listed in this regulation (or in conjunction with an alternative management program administered by State permitting authorities), for

TABLE A4.3-REG-6 SUMMARY OF FEDERAL HAPs REGULATIONS CITED IN FACILITY'S TITLE V PERMIT

CFR Part	Subpart	Description	Details
			stationary emergency RICE and non-emergency RICE less than or equal to 300 HP; requirements for crankcase ventilation or emission control systems for stationary non-emergency RICE units greater than 300 hp; compliance testing and reporting and recordkeeping requirements.
40 CFR Part 63	DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters	Sets HAP emissions limitations and work practice standards for new and existing boilers and process heaters at major sources. This subpart also establishes requirements to demonstrate compliance with the emissions limitations and work practice standards.
40 CFR Part 63	GGGGG	National Emission Standards for Hazardous Air Pollutants: Site Remediation	Sets HAP emissions limitations and work practice standards for site remediation activities and associated equipment (e.g., tanks, process vents, surface impoundments, containers, separators). This subpart also establishes requirements to demonstrate compliance with the emissions limitations and work practice standards.

Notes: RICE = Reciprocating Internal Combustion Engines

Although 40 CFR 63 Subpart Q (MACT for Industrial Process Cooling Towers) is mentioned in the Title V permit, the Facility has not used chromium based water treatment since 1989, and thus is expected to continue to comply with the requirements of 40 CFR Part 63 Subpart Q.

amount released, because TRI reporting does not require emission monitoring and companies may estimate their releases using factors of varying quality. TRI is not inclusive of all the emission sources and some emissions sources may be excluded through de minimis exemption, as facilities are not required to report if a listed chemical is present at concentrations of less than 1.0% (or 0.1% for carcinogen) by weight in products received or manufactured by facilities.

TRI database categorizes the air releases of toxic chemicals as fugitive air and stack air. In the most recent TRI report year (2011), there are a total of 593 individually listed chemicals and 30 chemical categories that are subject to reporting. The EPA included these chemicals on the TRI list based on the acute human health risks, cancer or chronic (non-cancer) human health effects and/or environmental effects criteria set forth in EPCRA Section 313(d)(2). Some of the TRI chemicals are also TACs as defined by CARB and/or HAPs as defined by the EPA at the federal level (CDPH, 2010). There are currently over 200 TACs and

HAPs, with many of the pollutants overlapping as both a California TAC and a federal HAP.

1.2.2.3 Chemical Accident Prevention Provisions (40 CFR Part 68)

Section 112(r) of the 1990 FCAA Amendments requires facilities that handle listed substances to develop Risk Management Programs (RMPs), in order to prevent accidental releases of these chemicals. RMPs consist of three main elements: a hazards assessment, including off-site consequences analyses and a 5-year accident history; an accident prevention program; and an emergency response program. These programs are discussed in more detail in the Public Safety Section.

1.2.3 State Regulations

1.2.3.1 Tanner Air Toxics Act and AB 2588

TACs in California are primarily regulated through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, or the Hot Spots Act). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are necessary before CARB can designate a substance as a TAC. To date, CARB has adopted the EPA's list of HAPs as TACs and has identified more than 20 additional TACs.

Once a TAC is identified, CARB then adopts an ATCM for sources that emit that particular TAC. If there is a safe threshold at which there is no toxic effect from a substance, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate BACT to minimize emissions.

The Hot Spots Act, AB2588, requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emissions inventory and a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

1.2.3.2 California Accidental Release Prevention Program (CCR Title 19, Division 2, Chapter 4.5)

The California Health and Safety Code (Article 2, Chapter 6.95) requires facilities that handle listed substances above a specified threshold quantity to develop Risk Management Plans to prevent accidental releases of these chemicals and minimize the damage from accidental releases that do occur. These programs are discussed in more detail in the Public Safety section.

1.2.3.3 Proposition 65

The Safe Drinking Water and Toxic Enforcement Act of 1986, Proposition 65, was passed as a ballot initiative in 1986 and is intended to protect citizens and the State's drinking water from chemicals known to cause cancer or reproductive toxicity (including birth defects), as well as to notify citizens about their exposure to such chemicals.

The Facility provides Proposition 65 warnings for listed chemicals by posting warning signs at the Project site as well as by quarterly warning notices published by the Western States Petroleum Association in approximately 80 general circulation newspapers and periodicals. The Richmond Post, Contra Costa Times, Oakland Tribune, and San Francisco Chronicle are some of the local newspapers the Western States Petroleum Association notice is published in. The warnings include information about potential health effects of an exposure, locations of potential exposure, and a telephone number for people to call to obtain more information.

1.2.3.4 Diesel Risk Reduction Plan

In August 1998, the CARB identified DPM (i.e., PM from diesel-fueled engines) as a TAC. After identifying DPM as a TAC, CARB adopted a comprehensive Risk Reduction Plan in 2000 (CARB, 2000c). Pursuant to this Plan, CARB adopted diesel-exhaust control measures and stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In 2001, CARB adopted the Public Transit Bus Fleet Rule and Emissions Standards for New Urban Buses, which established emissions limits on 1985 and subsequent model year heavy-duty bus engines and vehicles for NO_x, CO, nonmethane hydrocarbons, PM, and formaldehyde. The emissions standards apply to all heavy-duty urban buses, including diesel-fueled buses. Therefore, the rule limits the emissions of two TACs identified by CARB: DPM and formaldehyde. In 2007, a low-sulfur diesel fuel requirement and tighter emission standards for heavy-duty diesel trucks was put into effect, followed in 2011 by the same standards being applied to off-road diesel equipment.

Over time, the replacement of older vehicles will result in a fleet that produces substantially lower levels of TACs than the replaced vehicles. Mobile-source emissions of TACs (e.g., benzene, 1,3-butadiene, DPM) decreased significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low-Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. The California Port Regulations for At-Berth Ocean-Going Vessels (approved in 2007) requires operators of vessels meeting specified criteria to turn off auxiliary engines for most of their stay in port. The Commercial Harbor Craft Regulation adopted in

November 2007 and amended in June 2011 limits DPM emissions from commercial harbor craft operating within California waters and within 24 nautical miles of the California coast. This regulation sets emission standards for new engines, as well as requirements for replacement or retrofitting of pre-Tier 1 and Tier 1 engines for in-use fleets (CARB, 2008b, 2008c).

With implementation of CARB's Risk Reduction Plan, DPM concentrations are expected to be reduced by 75% in 2010 and 85% in 2020 from the estimated year-2000 level. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced. Emissions from heavy-duty diesel equipment associated with Chevron would be required to comply with the rules outlined above. Details regarding the regulations adopted pursuant to the CARB's Risk Reduction Plan are discussed earlier in this appendix.

1.2.3.5 Air Quality and Land Use Handbook

CARB, 2005a provides guidance concerning land-use compatibility with TAC sources. Although not a law or adopted policy, the handbook offers recommendations for the siting of sensitive receptors (e.g., proposed residential units) near uses associated with TACs to help limit the exposure of children and other sensitive populations to TACs. The Modernization Project does not involve siting of new sensitive land uses.

1.2.4 Regional (BAAQMD) and Local Plans, Programs, and Regulations

1.2.4.1 BAAQMD CARE Program

Under the Community Air Risk Evaluation (CARE) program, BAAQMD aims to identify areas (referred to in this context as "priority" or "impacted" communities) with high TAC emissions and sensitive populations that could be affected by them, and to use this information to establish policies and programs to reduce TAC emissions and exposures (BAAQMD, 2011). The six impacted communities are located in Concord, Richmond/San Pablo, San Jose, eastern San Francisco, western Alameda County, and Redwood City/East Palo Alto (BAAQMD, 2006b).

The main objectives of the program are to:

- Evaluate potential health risks associated with exposure to TACs from both stationary and mobile sources;
- Assess potential exposures to sensitive receptors and identify impacted communities;
- Prioritize TAC reduction measures for significant TAC sources in impacted communities; and

- Develop and implement mitigation measures - such as grants, guidelines, or regulations - to improve air quality, focusing initially on priority communities.

During Phases I and II of the CARE program, BAAQMD developed a preliminary Bay Area-wide TAC emissions inventory, compiled demographic and health-statistics data, and conducted regional computer modeling of selected TAC species to identify communities that are disproportionately impacted from high concentrations of TACs. Details on these analyses are presented in *Appendix 4.3-PHYS*. During Phase III, BAAQMD will compare impacted communities with respect to risks from TACs, and identify sources that are the greater contributors to risk. BAAQMD will also pursue mitigation measures and develop methods to assess their effectiveness in reducing overall exposures.

1.2.4.2 BAAQMD Work Plan for Action Items Related to Accidental Releases from Industrial Facilities

Approved by BAAQMD in October 2012 in response to the August 6, 2012, fire at the Project site, this work plan identifies and sets an implementation schedule for action items, most of which were to begin implementation by early 2013. These action items include: reviewing and updating BAAQMD incident response procedures; evaluating enhancements to air quality monitoring capabilities, community outreach related to incidents, and incident response resources; amending fee regulations to fund incident response resources; developing a new rule for emissions tracking, mitigation, and community air monitoring at refineries; continuing the August 6th incident investigation to take appropriate enforcement action; and seeking authority to apply more substantial penalties for accidental releases (BAAQMD, 2012a). The draft Regulation 12, Rule 15: Petroleum Refining Emissions Tracking is one product of this work plan.

1.2.4.3 BAAQMD Rules and Regulations

BAAQMD has implemented specific rules and regulations that limit emissions from various sources, and that identify specific pollution reduction measures. Some emissions sources are further subject to legal requirements imposed through BAAQMD's permitting process.

Under BAAQMD Rule 2-1 (General Permit Requirements), Rule 2-2 (New Source Review [NSR]), and Rule 2-5 (NSR of TACs), all sources that have the potential to emit TACs are required to obtain permits from BAAQMD. Permits may be granted if the sources are constructed and operated in accordance with applicable regulations, including NSR standards and ATCMs. BAAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions, and on the proximity of the facilities to sensitive receptors. BAAQMD analyzes sources that require a permit (e.g., performs health risk assessments) based on their potential to emit TACs. If

it is determined that the Modernization Project's emissions would exceed BAAQMD's threshold of significance for TACs, as identified below, the source has to implement BACT for TACs (T-BACT) to reduce emissions. BAAQMD's T-BACT measures apply to sources such as petroleum refineries, including individual Facility sources, such as storage tanks, furnaces, boilers, oil-water separators, and other emissions sources at refineries. If a source cannot reduce the risk below the threshold of significance even after implementing T-BACT, then BAAQMD will deny the permit. According to the BAAQMD Engineering Report, which is contained in *Appendix 4.3-EE*, "[n]one of the individual source emissions result in a cancer risk that is greater than one in a million, nor a chronic hazard that is greater than 0.20. At these risk levels, none of the sources trigger the requirement for T-BACT (Best Available Control Technology for Toxics)." BAAQMD permit requirements help to reduce emissions and related health impacts from new emissions sources, as well as from existing emissions sources by requiring them to apply new technology when retrofitting.

BAAQMD's Rule 2-2 for Prevention of Significant Deterioration (PSD) includes PSD thresholds for a limited number of TACs. The Modernization Project will not trigger PSD requirements based on any of the TAC emissions, including H₂S, sulfuric acid mist, and lead compounds. BAAQMD's permitting process applies to stationary sources. Properties that are exposed to elevated levels of TACs from nonstationary sources, and the nonstationary sources themselves (e.g., on-road vehicles), are not subject to air quality permits. Emissions controls on mobile sources are subject to regulations implemented at the federal and State levels by EPA and California Air Resources Board (CARB). respectively.

In addition, many BAAQMD rules and regulations that appear in the Facility's current Title V Operating Permit – and that were previously discussed in the CAP section – also serve to reduce TAC emissions. These include:

- Regulation 8, Rule 1: General Provisions
- Regulation 8, Rule 2: Miscellaneous Operations
- Regulation 8, Rule 3: Architectural Coatings
- Regulation 8, Rule 4: General Solvent and Surface Coating Operations
- Regulation 8 Rule 5 (Storage of Organic Liquids)
- Regulation 8, Rule 6: Terminals and Bulk Plants
- Regulation 8, Rule 7: Gasoline Dispensing Facilities
- Regulation 8, Rule 8: Wastewater (Oil-Water) Separators
- Regulation 8, Rule 9: Vacuum Producing Systems
- Regulation 8 Rule 10: Process Vessel Depressurization

- Regulation 8, Rule 15: Emulsified and Liquid Asphalts
- Regulation 8, Rule 16: Solvent Cleaning Operations
- Regulation 8 Rule 18: Equipment Leaks
- Regulation 8, Rule 19: Surface Preparation and Coating of Miscellaneous Metal Parts and Products
- Regulation 8, Rule 28: Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants
- Regulation 8, Rule 31: Surface Preparation and Coating of Plastic Parts and Products
- Regulation 8, Rule 32: Wood Products Coatings
- Regulation 8, Rule 33: Gasoline Bulk Terminals and Gasoline Cargo Tanks
- Regulation 8 Rule 40: Aeration of Contaminated Soil and Removal of Underground Storage Tanks
- Regulation 8 Rule 44: Marine Tank Vessel Operations
- Regulation 8, Rule 47: Air Stripping and Soil Vapor Extraction Operations
- Regulation 8, Rule 49: Aerosol Paint Products
- Regulation 8, Rule 51: Adhesive and Sealant Products
- Regulation 9 Rule 2: Hydrogen Sulfide (BAAQMD, 1999)
- Regulation 11 Rule 1: Lead (BAAQMD, 1982)
- Regulation 12 Rule 11: Flare Monitoring at Petroleum Refineries (BAAQMD, 2003)
- Regulation 12 Rule 12: Flares at Petroleum Refineries

Some additional regulations related to TACs that are mentioned in the Facility's current Title V Operation Permit are listed in Table A4.3-REG-7 below:²

1.3 BAAQMD RULES AND REGULATIONS PERTAINING TO ODORS

With authorization from the state, BAAQMD has developed the following rules and regulations pertaining to odors:

² Regulation 11, Rule 10: Hexavalent Chromium Emissions from Cooling Towers is also mentioned in the Title V permit. The Refinery has not used chromium based water treatment since 1989, and is expected to continue to comply with the requirements of District Regulation 11, Rule 10.

TABLE A4.3-REG-7 BAAQMD REGULATIONS AND RULES RELATING TO TACs AND INCLUDED IN THE FACILITY'S TITLE V PERMIT

BAAQMD Rule	Description
Regulation 11, Rule 2: Asbestos Demolition, Renovation and Manufacturing	Requires EPA- and Cal/OSHA-certified inspector and take samples of suspected asbestos containing material (ACM) prior to commencing demolition or renovation. Specific work practices (e.g., wet methods) must be observed during any renovation, demolition or asbestos abatement involving any amount of regulated asbestos containing material (RACM).
Regulation 11, Rule 7: Benzene	Limits benzene emissions from the following sources intended to operate in benzene service; pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, flanges and other product accumulator vessels; and control devices or systems required by this Rule.
Regulation 11, Rule 12: National Emission Standard for Benzene Emissions from Benzene Transfer Operations and Benzene Waste Operations	Includes provisions from Title 40 of the Code of Federal Regulations Part 61 Subpart BB, "National Emission Standard for Benzene Emissions from Benzene Transfer Operations", and Subpart FF "National Emission Standard for Benzene Emissions from Benzene Waste Operations."

Source: BAAQMD, 2014.

- **Regulation 7 (Odorous Substances)** – This regulation places general limitations on odorous substances, and specific emission limitations on certain odorous compounds such as ammonia. These limitations are not applicable until 10 or more odor complaints are filed within a 90-day period and remain effective until no additional complaints have been filed for a year. In addition, maximum allowable emission concentrations for certain compounds are presented, and facilities are also required to comply with sample collection and analysis procedures.
- **Regulation 9, Rule 2** – This rule requires ground level H₂S emissions during a 24-hour period to be limited to 0.06 ppm or less for a 3-minute average, or 0.03 ppm or less for a 60-minute average.

1.4 POLICIES REGARDING ENVIRONMENTAL JUSTICE

1.4.1 Federal Executive Order 12898

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Population" (EO 12898 or the Executive Order) (February 11, 1994) directs federal agencies to the greatest extent practicable and permitted by law to achieve the goal of environmental justice. The Executive Order provides that the identified federal agencies should accomplish this goal "by identifying and addressing, as appropriate,

disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations...” (Federal Register, 1994).

A Presidential memorandum accompanying the Executive Order, further directs the heads of departments and agencies to analyze the environmental effects of federal actions, including human health, economic and social effects when required by the National Environmental Policy Act (NEPA) and to address potentially disproportionate adverse effects on minority and low-income communities.

Here, the Modernization Project does not require any federal action or permitting and is not reliant on any federal funds. Therefore, the Modernization Project is not subject to NEPA and is not subject to a federal environmental justice analysis.

1.4.2 State Regulations

The State of California has defined “Environmental Justice” as “the fair treatment of people of all races, income levels, and cultures with respect to the development, implementation and enforcement of environmental laws, regulations and policies.”³

1.4.2.1 CEQA Guidelines

Although the 2013 State of California CEQA Guidelines do not establish a requirement or a process for analyzing the environmental justice effects of projects subject to CEQA, in creating a new position within Cal/EPA, Assistant Secretary for Environmental Justice, the 2000-01 fiscal year budget established that the Assistant Secretary must:

*(a) Review the activities each [Board, Department or Office] within [Cal/EPA] undertakes to comply with Division 13 (commencing with section 21000) of the Public Resources Code [i.e., CEQA] to ensure that those activities take into account and address environmental justice considerations.*⁴

The California Attorney General has also recently stated that “[i]dentifying [disadvantaged and minority] communities is an essential part of describing the relevant CEQA setting” (State Attorney General, 2011).

³ California Code, Section 65040.12(c).

⁴ Stats. 2000, ch. 52, Item 0555-002-0001

The Attorney General has also stated in the context of pleadings (State Attorney General, 2012), that an EIR must:

- Disclose “information as to current levels of exposure by sensitive communities to the full range of... air pollution emissions,... [what] increases in potential exposure might be..., and what exposure levels will actually be.”
- Describe “environmentally related existing health conditions in these [sensitive] communities...”
- Disclose “the levels at which additional health damage can be expected...”
- “If the health of sensitive communities is already overburdened from existing air pollution and experiencing attendant harms to health, [consider whether] the additional pollution that the [proposed project] will cause... may produce significant harm in those communities.”

1.4.2.2 Senate Bill 115

SB 115 (Solis, 1998), among other things, requires the Cal/EPA to:

“[c]onduct its programs, policies, and activities that substantially affect human health or the environment in a manner that ensures the fair treatment of people of all races, cultures, and income levels, including minority populations and low-income populations of the state[;]” and “develop a model environmental justice mission statement for boards, departments, and offices within the agency.”

The Statute also requires Cal/EPA to ensure greater public participation in the agency’s development, adoption, and implementation of environmental regulations and policies.

1.4.2.3 Senate Bill 828

SB 828 (Alarcon, 2001) requires each board, department, and office within Cal/EPA to review its programs and identify gaps that may impede achievement of environmental justice by December 31, 2003.

1.4.2.4 Office of Environmental Health Hazard Assessment EnviroScreen Tool

In 2013, California's Office of Environmental Health Hazard Assessment (OEHHA) developed the *California Communities Environmental Health Screening Tool (EnviroScreen Tool)*. The *EnviroScreen Tool* uses existing environmental, health, demographic and socioeconomic data to assist Cal/EPA in fulfilling its environmental justice mission and to show “which portions of the state have higher pollution burdens and vulnerabilities than other areas, and therefore are most in need of assistance” (OEHHA, 2013).

The guidance document (OEHHA, 2013) accompanying the *EnviroScreen Tool*, issued by the Secretary of Cal/EPA, states that “[w]hile the data gathered in developing the tool could be useful for decision makers when assessing existing pollution sources in an area, more precise data are often available to local governments and would be more relevant in conducting such an examination.” The guidance document (OEHHA, 2013) also, notes that “EnviroScreen... cannot be used in lieu of performing an analysis of the potentially significant impacts of any specific project. Accordingly, a lead agency must determine independently whether a project's impacts may be significant under CEQA based on the evidence before it, using its own discretion and judgment.”

1.4.2.5 CARB Legal Memorandum

CARB has examined whether environmental justice may be evaluated under CEQA and received advice from legal counsel under a 2002 memorandum entitled “*CEQA and Environmental Justice*” (CARB, 2002c).

While CARB has noted that the memorandum does not necessarily reflect the current view of CARB, this memorandum states, in part,

For the reasons set forth below, we will conclude that CEQA can readily be adapted to the task of analyzing cumulative impacts/environmental justice whenever a public agency (including the CARB), the air pollution control districts, and general purpose land use agencies) undertakes or permits a Project or activity that may have a significant adverse impact on the physical environment. All public agencies in California are currently obliged to comply with the CEQA, and no further legislation would be needed to include an environmental justice analysis in the CEQA documents prepared for the discretionary actions public agencies undertake.

1.4.2.6 CARB Air Quality and Land Use Handbook

The *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) (CARB, 2005a) advises air quality districts and local land use planning organizations on, among other things, how to reduce community exposure to air pollution through siting of oil refineries. With respect to refineries the Handbook recommends, “[a]void siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate suspension.”

1.4.2.7 Assembly Bill 32

Under AB 32 (Pavley & Nunez, 2006) CARB must consider environmental justice objectives when implementing the Global Warming Solutions Act. Section 38562(b)(2) requires that, to the extent feasible and in furtherance of reducing

statewide greenhouse gas emissions, CARB must ensure that compliance activities do not disproportionately impact low-income communities. Section 38570(b) further requires that, prior to implementation of a market-based system for greenhouse gas reduction compliance, CARB must consider the potential for direct, indirect, and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution. It must also design any market-based compliance mechanism to prevent any increase in the emissions of TACs or CAPs.

The design and implementation of market based systems for greenhouse gas reduction (i.e., the cap-and-trade program), including provisions addressing environmental justice, are under the jurisdiction of the CARB and not the City of Richmond.

1.4.3 Local Plans, Programs, and Regulations

1.4.3.1 BAAQMD CARE Program

As discussed above in Section 1.2.3.1, BAAQMD initiated the CARE program to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from point sources, area sources and on-road and off-road mobile sources co-located with sensitive populations to help focus mitigation strategies. Under the program, BAAQMD developed a preliminary Bay Area-wide TAC emissions inventory, compiled demographic and health-statistics data, and conducted regional computer modeling of selected TAC species to identify communities that are disproportionately impacted from high concentrations of TACs. As part of the CARE Program, BAAQMD developed a methodology for identifying communities within the San Francisco Bay Area that are likely to face the highest health risks from TACs, based on identifying areas that: (1) are close to or within areas of high TAC emissions; (2) have sensitive populations, defined as youth and seniors, with significant TAC exposures; and (3) have significant poverty. BAAQMD included the City of Richmond as one of six high priority communities, based on its analysis of conditions.

1.4.3.2 Contra Costa County Environmental Justice Policy

In 2003 the County of Contra Costa Board of Supervisors adopted the following policy on environmental justice:

Costa County will conduct its programs, policies and activities that substantially affect human health or the environment, and promote enforcement of all health and environmental statutes under County jurisdiction in a manner that ensures the fair treatment of people of all races,

cultures and income levels, including minority populations and low-income populations of the County.

The City of Richmond does not have jurisdiction over the decisions of the Contra Costa County.

1.5 REFERENCES

Alarcon. 2001. *Bill Number: SB 828*. Accessed February 10, 2014.

http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_0801-0850/sb_828_bill_20011012_chaptered.html.

Association of Bay Area Governments (ABAG), 2001. *Revised San Francisco Bay Area 2001 Ozone Attainment Plan Staff Report*. Accessed February 2, 2014. http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Plans/2001%20Ozone%20Attainment%20Plan/staff_report_2001.ashx.

Attorney General for State of California. 2011. *Draft Environmental Impact Report for 2050 Regional Transportation Plan and Sustainable Communities Strategy*. September 16.

Attorney General for State of California. 2012. *Reply Brief Cleveland National Forest Foundation v. San Diego Association of Governments*, Case No. 2702011-001015930CU0TT0CTL. October 12.

Bay Area Air Quality Management District (BAAQMD), 1982. Regulation 11, Hazardous Pollutants, Rule 1 - Lead. March 17. <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Rules%20and%20Regs/reg%2011/rg1101.ashx?la=en>.

Bay Area Air Quality Management District (BAAQMD). 1994. *Proposed Final San Francisco Bay Area Redesignation Request and Maintenance Plan for the National Carbon Monoxide Standard*.

Bay Area Air Quality Management District (BAAQMD), 1999. Regulation 9, Inorganic Gaseous Pollutants, Rule 2 - Hydrogen Sulfide. October 6. <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Rules%20and%20Regs/reg%2009/rg0902.ashx?la=en>.

Bay Area Air Quality Management District (BAAQMD), 2003. Regulation 12, Miscellaneous Standards of Performance, Rule 11 - Flare Monitoring at Petroleum Refineries. June 4.

<http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Rules%20and%20Regs/reg%2012/rg1211.ashx?la=en>.

Bay Area Air Quality Management District (BAAQMD). 2006a. *Bay Area 2005 Ozone Strategy*. Accessed February 10, 2014.
<http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Bay-Area-Ozone-Strategy/2005-Bay-Area-Ozone-Strategy.aspx>.

Bay Area Air Quality Management District (BAAQMD). 2006b. *Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area*. Accessed August 2011.
http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CARE%20Program/care_p1_findings_recommendations_v2.ashx.

Bay Area Air Quality Management District (BAAQMD). 2010. *Bay Area 2010 Clean Air Plan*. Accessed February 10, 2014.
<http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx>.

Bay Area Air Quality Management District (BAAQMD). 2011. *CARE Program*. Accessed August 7, 2011. <http://www.baaqmd.gov/Divisions/Planning-and-Research/CARE-Program.aspx>.

Bay Area Air Quality Management District (BAAQMD). 2012a. *Air District approves action plan for response to catastrophic incidents*. Accessed May 6, 2013.
http://www.baaqmd.gov/~media/Files/Communications%20and%20Outreach/Publications/News%20Releases/2012/incidentworkplan_121017.ashx?la=en.

Bay Area Air Quality Management District (BAAQMD). 2012b. Proposed Amendments to Regulation 2 – ADOPTED. December.
<http://www.baaqmd.gov/Divisions/Engineering/Proposed-Reg-2-Changes.aspx>.

Bay Area Air Quality Management District (BAAQMD). 2012c. *California Environmental Quality Act Air Quality Guidelines*.
http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en.

Bay Area Air Quality Management District (BAAQMD). 2013a. *Air Quality Standards and Attainment Status*. February 12, 2014.
http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm#fourteen. Accessed

Bay Area Air Quality Management District (BAAQMD). 2013b. *Bay Area Air Quality Management District Draft Petroleum Refining Emissions Tracking Rule*. Accessed February 10, 2014.

http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Rules%20and%20Regs/Workshops/2013/1215_faq_032113.ashx?la=en.

Bay Area Air Quality Management District (BAAQMD) 2013c. *District Air Monitor Sites*. Accessed November 27, 2013.

http://hank.baaqmd.gov/tec/maps/dam_sites.htm.

Bay Area Air Quality Management District (BAAQMD). 2014. *Rules and Regulations*. Accessed February 12, 2014.

<http://www.baaqmd.gov/Divisions/Planning-and-Research/Rules-and-Regulations.aspx>.

California Air Resources Board (CARB). 2000a. *Final Diesel Risk Reduction Plan with Appendices*. Accessed April 2013.

<http://www.arb.ca.gov/diesel/documents/rrpapp.htm>.

California Air Resources Board (CARB). 2000b. *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines*. Accessed April 2013. <http://www.arb.ca.gov/diesel/documents/rmg.htm>.

California Air Resources Board (CARB). 2000c. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. Stationary Source Division and Mobile Source Division. Accessed February 12, 2014. <http://www.arb.ca.gov/diesel/documents/rrpFinal.pdf>.

California Air Resources Board (CARB). 2002a. *Amendment and Clarification to the Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines*. Accessed April 2013.

<http://www.arb.ca.gov/diesel/documents/amend032902.pdf>.

California Air Resources Board (CARB). 2002b. *California Exhaust Emission Standards and Test Procedures for 1985 through 2003 Model Heavy-Duty Diesel Engines and Vehicles*. 13 CCR, Section 1976.

California Air Resources Board (CARB). 2002c. CEQA and Environmental Justice. March 8.

California Air Resources Board (CARB). 2004a. *Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling*. Title 13 California Code of Regulations, Chapter 10, Section 2485. July.

- California Air Resources Board (CARB). 2004b. *Amendments to the California Diesel Fuel Regulations, Aromatic Hydrocarbon Content of Diesel Fuel*. Title 13 California Code of Regulations, Section 2282. May.
- California Air Resources Board (CARB). 2004c. *Amendments to the California Diesel Fuel Regulations, Lubricity of Diesel Fuel*. Title 13 California Code of Regulations, Section 2284. May.
- California Air Resources Board (CARB). 2004d. *Amendments to the California Diesel Fuel Regulations, Sulfur Content of Diesel Fuel*. Title 13 California Code of Regulations, Section 2281. May.
- California Air Resources Board (CARB). 2004e. *CARB and Air District Measures to Reduce PM*. Accessed April 2013.
<http://www.arb.ca.gov/pm/pmmeasures/pmmeasures.htm>.
- California Air Resources Board (CARB). 2004f. *Off-Road Compression-Ignition Engines and Equipment*. Title 13 California Code of Regulations, Sections 2420 and 2425.1. December.
- California Air Resources Board (CARB). 2004g. *Standards for Non-vehicular Diesel Fuel Used in Diesel-Electric Intrastate Locomotive and Harborcraft*. Title 13, California Code of Regulations, Section 2299, Title 17, CCR, Section 93117, and Title 13, CCR, Sections 2281, 2282, and 2284.
- California Air Resources Board (CARB). 2005a. *Air Quality and Land Use Handbook: A Community Health Perspective*. Accessed February 10, 2014.
<http://www.arb.ca.gov/ch/handbook.pdf>.
- California Air Resources Board (CARB). 2005b. *ARB/Railroad Statewide Agreement: Particulate Emissions Reduction Program at California Rail Yards*. June. Accessed April 2013.
<http://www.arb.ca.gov/railyard/ryagreement/083005mouexecuted.pdf>.
- California Air Resources Board (CARB). 2005c. *Proposed Extension of the California Standards for Motor Vehicle Diesel Fuel to Diesel Fuel Used for Intrastate Diesel-Electric Locomotives and Harborcraft*; Final Rule. Title 13 California Code of Regulations, Sections 2281, 2282, 2284, and 2299, and Title 17 Section 93117. May.
- California Air Resources Board (CARB). 2007. *Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port*. Title 17, California Code of Regulations, Chapter 1, Subchapter 7.5. December.

California Air Resources Board (CARB). 2008a. *Commercial Harbor Craft Regulation*; Fact Sheet. Accessed April 2013.
<http://www.arb.ca.gov/ports/marinevess/documents/chcfactsheet0508.pdf>.

California Air Resources Board (CARB). 2008b. *Fact Sheet: Commercial Harbor Craft Regulation*. Accessed June 2012.
<http://www.arb.ca.gov/ports/marinevess/documents/chcfactsheet0508.pdf>.

California Air Resources Board (CARB). 2008c. *Final Regulation Order: Airborne Toxic Control Measure for Diesel Engines on Commercial Harbor Craft Operated Within California Waters and 24 Nautical Miles of the California Baseline*. Accessed June 2012 and April 2013.
<http://www.arb.ca.gov/regact/2007/chc07/rev93118.pdf>.

California Air Resources Board (CARB). 2009. *California Ambient Air Quality Standards*. Accessed April 2013.
<http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm>.

California Air Resources Board (CARB). 2011a. *Airborne Toxic Control Measure for Diesel Particulate Matter From Portable Engines Rated at 50 Horsepower and Greater*. Title 17 California Code of Regulations, Section 93116. February.

California Air Resources Board (CARB). 2011b. *Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines*. Title 17 California Code of Regulations, Section 93115. May.

California Air Resources Board (CARB). 2011c. *Amendments to the Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from in-Use On-Road Diesel-Fueled Vehicles*. Title 13 California Code of Regulations, Chapter 1, Section 2025. December.

California Air Resources Board (CARB). 2011d. *Amendments to the Regulations to Reduce Emissions from Diesel Engines on Commercial Harbor Craft Operated Within California Waters and 24 Nautical Miles of the California Baseline*. Title 13, California Code of Regulations, Section 2299.5. June.

California Air Resources Board (CARB). 2011e. *Fuel Sulfur and Other Operational Requirements for Ocean-Going Vessels Within California Waters and 24 Nautical Miles of the California Baseline*. Title 13, California Code of Regulations, Section 2299.2. October.

California Air Resources Board (CARB). 2011f. *Locomotives*. Accessed April 2013.
<http://www.arb.ca.gov/msprog/offroad/loco/loco.htm>.

California Air Resources Board (CARB). 2011g. *Regulation for In-Use Off-Road Diesel-Fueled Fleets*. Title 13, California Code of Regulations, Section 2449.

California Air Resources Board (CARB). 2011h. *Regulation to Establish a Statewide Portable Equipment Registration Program*. Title 40, subpart 2340. Statewide Portable Equipment Registration Program, February.

California Air Resources Board (CARB). 2011i. *Toxic Air Contaminant Identification List*. Accessed February 2014.
<http://www.arb.ca.gov/toxics/id/taclist.htm>.

California Air Resources Board (CARB). 2012a. *California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles*. 13 CCR, Section 1976

California Air Resources Board (CARB). 2012b. DOORS User Guide. Accessed April 2013. <http://www.arb.ca.gov/msprog/ordiesel/documents/doors/reportingonlinescreens.pdf>.

California Air Resources Board (CARB). 2012c. New Off-Road Compression-Ignition (Diesel) Engines and Equipment. Accessed April 2013.
<http://arb.ca.gov/msprog/offroad/orcomp/orcomp.htm>.

California Air Resources Board (CARB). 2013a. *Airborne Toxic Control Measure for Diesel Engines on Commercial Harbor Craft Operated Within California Waters and 24 Nautical Miles of the California Baseline*; Final Regulation Order. Accessed April 2013.
<http://www.arb.ca.gov/regact/2007/chc07/rev93118.pdf>.

California Air Resources Board (CARB). 2013b. *Area Designations Maps / State and National*. Accessed April 2013.
<http://www.arb.ca.gov/desig/adm/adm.htm>.

California Air Resources Board (CARB). 2013c. *California Diesel Fuel Program*. Accessed April 2013. <http://www.arb.ca.gov/fuels/diesel/diesel.htm>.

California Air Resources Board (CARB). 2013d. *Heavy-Duty Vehicle Idling Emission Reduction Program*. Accessed February 12, 2014.
<http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm>.

- California Air Resources Board (CARB). 2013e. *In-Use Off-Road Diesel Vehicle Regulation*. Accessed April 2013.
<http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm>.
- California Air Resources Board (CARB). 2013f. *Ocean-Going Vessels – Fuel Rule*. Accessed February 12, 2014.
<http://www.arb.ca.gov/ports/marinevess/ogv.htm>.
- California Air Resources Board (CARB). 2013g. *Shore Power for Ocean-Going Vessels*. Accessed April 2013.
<http://www.arb.ca.gov/ports/shorepower/shorepower.htm>.
- California Air Resources Board (CARB). 2014a. *Commercial Harbor Craft Regulatory Activities*. Accessed April 2013.
<http://www.arb.ca.gov/ports/marinevess/harborcraft.htm>.
- California Air Resources Board (CARB). 2014b. *Glossary of Air Pollution Terms*. Accessed February 2014. <http://www.arb.ca.gov/html/gloss.htm#T>.
- California Air Resources Board (CARB). 2014c. *Truck and Bus Regulation: On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation*. Accessed February 12, 2014. <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>.
- California Department of Public Health (CDPH). 2010. *What are Air Contaminants?: Toxic Air Contaminants*. Accessed February 12, 2014.
http://www.ehib.org/page.jsp?page_key=149#categories_tacs.
- California Health and Safety Code (Cal H&S Code), Section 39000 et seq.
- Chang, J., R. Delfino, D. Gillen, T. Tioa, B. Nickerson, and D. Cooper. 2009. *Repeated Respiratory Hospital Encounters Among Children with Asthma and Residential Proximity to Traffic*. *Occup. Environ. Med* 66(2):90-98.
- Chevron Data Transmittal #22 (Rev #2): Project Locations, 2014.
- Chevron Data Transmittal #38 (Rev #1): APNs, 2013.
- Chevron Data Transmittal #47A (Rev #6): PDF Descriptions: Domes, LED, 2014.
- Chevron Data Transmittal #47B (Rev #3): Marine Engine Upgrades, Water Reuse, MCE, FCC CWT Motor Upgrade, 2014.
- Chevron Data Transmittal #56 (Rev #2): Cumulative Projects, 2013.

- Chevron, 2010. *Flare Minimization Plan Chevron Products Company - Richmond Refinery*. Accessed February 10, 2014.
<http://www.baaqmd.gov/~media/Files/Compliance%20and%20Enforcement/Flares/2010/Chevron1%202010%20-%203rd%20FMP.ashx?la=en>.
- Federal Register. 1994. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Vol. 59, No. 32, February 16.
- Gauderman, W. J., H. Vora, R. McConnell, K. Berhane, F. Gilliland, D. Thomas, F. Lurmann, E. Avol, N. Kunzli, M. Jerrett, and J. Peters. 2007. *Effect of Exposure to Traffic on Lung Development from 10 to 18 Years of Age: A Cohort Study*. *Lancet*. 369. pp. 571-577.
- Krewski, D., R. Burnett, M.S. Goldberg, K. Koover, J. Siemiatycki, M. Jerrett, et al. 2000. *Reanalysis of the Harvard Six Cities Study and the American Cancer Society Study of Particulate Air Pollution and Mortality*. Research Report of the Health Effects Institute.
- Office of Environmental Health Hazard Assessment (OEHHA), 1998. *Findings of the Scientific Review Panel on The Report on Diesel Exhaust*, as adopted at the Panel's April 22, 1998 meeting. Accessed February 12, 2014.
<http://www.arb.ca.gov/toxics/dieseltac/de-fnds.htm>.
- Office of Environmental Health Hazard Assessment (OEHHA). 2009. *Air Toxics Hot Spots Program Risk Assessment Guidelines: Part II Technical Support Document for Describing Available Cancer Potency Factors*. Accessed February 12, 2014.
http://www.oehha.ca.gov/air/hot_spots/2009/TSDCancerPotency.pdf.
- Office of Environmental Health Hazard Assessment (OEHHA). 2013. *California Communities Environmental Health Screening Tool, Version 1 (CalEnviroScreen 1.0) Guidance and Screening Tool*. April.
- Pavley and Nuñez. 2006. *Global Warming Solutions Act of 2006*. Accessed February 10, 2014. <http://www.arb.ca.gov/cc/docs/ab32text.pdf>.
- Pope, C.A., R.T. Burnett, M.J. Thun, E.E. Calle, D. Krewski, K. Ito, and G. Thurston. 2002. *Lung Cancer, Cardiopulmonary Mortality, and Long-Term Exposure to Fine Particulate Air Pollution*. *JAMA*. 287: 1123-1141.
- Pope, C.A., R.T. Burnett, G. D. Thurston, M. J. Thun, E. E. Calle, D. Krewski, and J. J. Godleski. 2004. *Cardiovascular Mortality and Long-Term Exposure to Particulate Air Pollution: Epidemiological Evidence of General Pathophysiological Pathways of Disease*. *Circulation*. 109: 71-77.

- Salam, M., T. Islam, and F. Gilliland. 2008. *Recent Evidence for Adverse Effects of Residential Proximity to Traffic Sources on Asthma*. Current Opinion in Pulmonary Medicine, 14:3–8.
- Sher. 2003. *Bill Number: SB 656*. Accessed February 20, 2014.
http://www.arb.ca.gov/pm/pmmeasures/sb_656.pdf.
- Solis. 1998. *Bill Number: SB 115*. Accessed February 10, 2014.
http://www.loginfo.ca.gov/pub/99-00/bill/sen/sb_0101-0150/sb_115_bill_19991010_chaptered.html.
- U.S. Environmental Protection Agency (EPA). 1998. *Control of Emissions of Air Pollution from Non-road Diesel Engines*; Final Rule. Title 40 Code of Federal Regulations, Parts 9, 86, and 89. October.
- U.S. Environmental Protection Agency (EPA). 2001. *Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*; Final Rule (“2007 Highway Rule”). Title 40 Code of Federal Regulations, Parts 69, 80, and 86. January 18.
- U.S. Environmental Protection Agency (EPA). 2004. *Control of Emissions of Air Pollution from Non-road Diesel Engines and Fuel*; Final Rule. Title 40 Code of Federal Regulations, Parts 9, 69, 80, 86, 89, 94, 1039, 1048, 1051, 1065, 1068. June.
- U.S. Environmental Protection Agency (EPA). 2006. *Standards of Performance for Stationary Compression-Ignition Internal Combustion Engines, 2006*. Title 40 Code of Federal Regulations, Part 60, Subpart IIII, July.
- U.S. Environmental Protection Agency (EPA). 2008a. *Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder*; Final Rule. Title 40 Code of Federal Regulations, Parts 9, 85, 86, 89, 92, 94, 1033, 1039, 1042, 1065, and 1068. May.
- U.S. Environmental Protection Agency (EPA). 2008b. *Control of NO_x, SO_x, and PM Emissions from Marine Engines and Vessels Subject to the MARPOL Protocol*. Title 40 Code of Federal Regulations, Part 1043. October.
- U.S. Environmental Protection Agency (EPA). 2010. *Control of Emissions from New Marine Compression-Ignition Engines at or Above 30 Liters per Cylinder*; Final Rule. Title 40 Code of Federal Regulations, Part 80, 85, 86,

94, 1027, 1033, 1039, 1042, 1043, 1045, 1048, 1051, 1054, 1060, 1065, and 1068. April.

U.S. Environmental Protection Agency (EPA). 2011a. *Integrated Risk Information System (IRIS)*. Accessed February 2014. <http://www.epa.gov/iris/>.

U.S. Environmental Protection Agency (EPA). 2011b. *National Emission Standard for Hazardous Air Pollutants*. Accessed February 2014.
<http://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol8/xml/CFR-2011-title40-vol8-part61.xml>.

U.S. Environmental Protection Agency (EPA). 2012a. *Ground Level Ozone Health Effects*. National Center for Environmental Assessment. Accessed February 12, 2014. <http://www.EPA.gov/air/ozonepollution/health.html>.

U.S. Environmental Protection Agency (EPA). 2012b. *National Ambient Air Quality Standards*. Accessed April 2013. <http://EPA.gov/air/criteria.html>.

U.S. Environmental Protection Agency (EPA). 2012c. *Six Common Air Pollutants*. EPA Office of Air & Radiation. Accessed February 12, 2014.
<http://www.EPA.gov/airquality/urbanair/>.

U.S. Environmental Protection Agency (EPA). 2012d. *Standards of Performance for Petroleum Refineries; Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007*; Final Rule, 2012. Title 40 Code of Federal Regulations, Part 60, September.

U.S. Environmental Protection Agency (EPA). 2012e. *Toxic Air Pollutants: About Air Toxics*. Accessed February 2014.
<http://www.epa.gov/oar/toxicair/newtoxics.html>.

U.S. Environmental Protection Agency (EPA). 2013a. *Background on Establishing New Source Performance Standards (NSPS) Under the Clean Air Act*. Accessed February 12, 2014. <http://www2.EPA.gov/sites/production/files/2013-09/documents/111background.pdf>.

U.S. Environmental Protection Agency (EPA). 2013b. *Fine Particle (PM_{2.5}) Designations*. <http://www.epa.gov/pmdesignations/>.

U.S. Environmental Protection Agency (EPA). 2013c. *Particle Pollution Health Effects*. National Center for Environmental Assessment. Accessed February 12, 2014. <http://www.EPA.gov/air/particlepollution/health.html>.

U.S. Environmental Protection Agency (EPA). 2013d. *Prevention of Significant Deterioration (PSD)*. Accessed February 12, 2014. <http://www.EPA.gov/nsr/psd.html>.

U.S. Environmental Protection Agency (EPA). 2013e. *The Green Book Nonattainment Areas for Criteria pollutants*. Federal standard attainment status as listed on the EPA website. Accessed April 2013. <http://www.EPA.gov/airquality/greenbk/>.

U.S. Environmental Protection Agency (EPA). 2013f. *Title V-Permits*. Accessed February 14, 2014. <http://www.EPA.gov/air/caa/title5.html>.

U.S. Environmental Protection Agency (EPA). 2014. *Toxic Release Inventory (TRI) Program*. Accessed February 12, 2014. <http://www.epa.gov/tri/>.

APPENDIX 4.3 - SG

SG: Effect of API Gravity and Sulfur on Process Unit Operations

APPENDIX 4.3-SG

EFFECT OF API GRAVITY AND SULFUR ON PROCESS UNIT OPERATIONS

1.1 INTRODUCTION

The Chevron Refinery Modernization Project (Modernization Project) will increase the flexibility of the Facility to refine more higher sulfur crude and gas oil blends. As a result, the Facility may also process more crude oil blends at the heavier end of the intermediate American Petroleum Institute (API) gravity range than were processed during the Baseline. The increases in refining of these feedstocks may result in changes to Facility process unit operations (e.g., additional heating) and corresponding increases in air emissions. This appendix describes the data and methods used to evaluate whether processing of heavier crude oil blends within the intermediate gravity range or increased sulfur levels in crude oil blends requires additional heating in the crude unit furnaces or in the hydrotreater furnaces.

The emission sources considered in this evaluation include the following crude unit and hydrotreater furnaces:

- Crude unit pre-heater furnaces F-1100A and B (Sources S-4070 and S-4071);
- Crude unit vacuum column heater furnace F-1160 (Source S-4072);
- Diesel hydrotreater furnace F-1610 (Source S-4068);
- Naphtha hydrotreater furnaces F-447 and F-410 (Sources S-4061 and S-4062);
- Jet hydrotreater furnaces F-247 and F-210A&B (Sources S-4059 and S-4060);

1.2 DATA AND ANALYSIS METHODOLOGY

In order to evaluate the effect of gravity and sulfur in the crude oil blends on crude unit and hydrotreater furnace operations, a statistical analysis of feed rate, firing rate, gravity and sulfur weight percent (wt.%) data in the imported crude oil blends during the 2008 – 2010 period for the above listed crude unit and hydrotreater furnaces during the 2008 – 2010 period was undertaken. As part of this analysis, potential correlations between the ratio of feed rate to firing rate data and gravity and sulfur wt.% data were examined. Chevron provided the following data for analysis (Chevron Data Transmittal #1 (Rev #1), 2014; Chevron Data Transmittal #2, 2011).

- Feed rate to each furnace or furnace pair, in units of thousands of barrels per day (MBPD); daily-average data were received from Chevron, that were then averaged on a monthly basis to obtain monthly averages;
- Firing rate for each furnace, in units of million British Thermal Units per day (MMBTU/D); daily-average data were received from Chevron, that were then averaged on a monthly basis to obtain monthly averages;
- Sulfur wt.% in the imported crude oil blends - monthly average data was received, along with daily-average data for the 30 highest and 30 lowest sulfur content values over the 3-year period between 2008 and 2010; and
- Gravity of the imported crude oil blends - monthly average data was received, along with daily-average data for the 30 highest and 30 lowest gravity values over the 3-year period between 2008 and 2010.

For each of the five furnaces or furnace pairs associated with the emission sources listed above, the initial step in the relationship analysis was to determine the ratio of firing rate to feed rate for each data point.

To perform this statistical analysis, the ratio of firing rate to feed rate was plotted against both sulfur content (in wt.% sulfur) and gravity (in API) for each furnace or furnace pair. Note that for each plot, the sulfur wt.% or gravity values are the characteristics of the imported crude oil blends and not necessarily the characteristics of the feed entering each furnace or furnace pair. A statistical relationship was evaluated in this analysis using the Pearson Product-Moment Correlation approach. To be able to use this approach, the data need to generally meet the following conditions:

- The variables must be either interval or ratio measurements.^{1,2} All the plotted data are ratio measurements.
- The variables must be approximately normally distributed, which appears to be generally true for the crude oil data.
- There is a linear relationship between the two variables. The plotted data are generally linear.
- Outliers are kept to a minimum. In this analysis, sub-datasets are studied in order to test the hypothesis of whether outliers might be masking a

¹ A interval variable is a measurement where the difference between two values is meaningful. For example, the difference between a temperature of 100 degrees (°) and 90° is the same difference as between 90° and 80°.

² A ratio variable has all the properties of an interval variable and also has a clear definition of 0.0. When the variable equals 0.0, there is none of that variable.

correlation or whether correlations exist within narrower bands within the entire data set. All these results were accounted for in the statistical relationship determinations.

- There is homoscedasticity of the data, which is generally true for the crude oil data.

A coefficient of determination was generated for each plot shown below. The coefficient of determination, denoted as R^2 , ranges from 0 (0%) to 1 (100%), denotes the strength of the linear association between two variables or how well the data points fit in a predictive linear relationship. For example, an R^2 value of 0.4 means that 40% of the total variation of a firing rate to feed rate ratio can be explained by the linear relationship between the primary variable (e.g., sulfur content or gravity) and the firing rate to feed rate ratio. The other 60% of the firing rate to feed rate ratio variation remains unexplained by this relationship, which implies the linear relationship has a high level of uncertainty, and this relationship cannot be used to make predictions of reasonably likely conditions.

As discussed above, R^2 is correlation of determination which is a measure of linear dependence between two variables (Yale University, 1997).³ Although there is no hard rule for describing correlation strength, ENVIRON considered the following general guidelines in this analysis (Taylor, 1990; Gerstman, 2014; University of Strathclyde, 2014):

- $R^2 \leq 0.1$ to indicate no correlations,
- $0.1 < R^2 < 0.5$ to indicate weak correlations, and
- $R^2 \geq 0.5$ to indicate moderate to strong correlations.

In this analysis, the statistical relationship between two parameters was determined as no correlation, weak correlation, or moderate to strong correlation based on the R^2 value. A moderate to strong correlation indicates a likely relationship exists as more than 50% of the variation can be explained by the linear relationship and predicted trends made using the linear relationship are more likely than not to occur. Thus, moderate to strong correlations are certain enough to provide predictions of reasonable likely changes with the Modernization Project. As weak correlation has greater than 50% unexplained variation, the data confirm some relationship, but the uncertainty is high. If 10%

³ The coefficient of determination is the square of the correlation coefficient r (ranged from -1 to 0 to +1). A r value of 0 indicates that no linear relationship between the two variables, and a r of -1 or +1 indicates a perfect linear relationship. The positive and negative signs of r explain whether the two variables change in the same or opposite directions, respectively.

or less of the correlation is explained by the relationship, no predictions can be made based on the parameter tested.

The scatter plots generated from the data analysis are presented in Figures A4.3-SG-1 to A4.3-SG-20.

1.3 EFFECT OF API GRAVITY ON PROCESS UNIT OPERATIONS

The acceptance of crude oil blends at the heavier end of the intermediate gravity range could require higher levels of processing (e.g., more heat) from certain operating units at the Facility and may require additional energy for pumping the crude oil. For example, additional heat could be required to heat, and then distill into various fractions, a heavier crude oil blend in the crude unit.

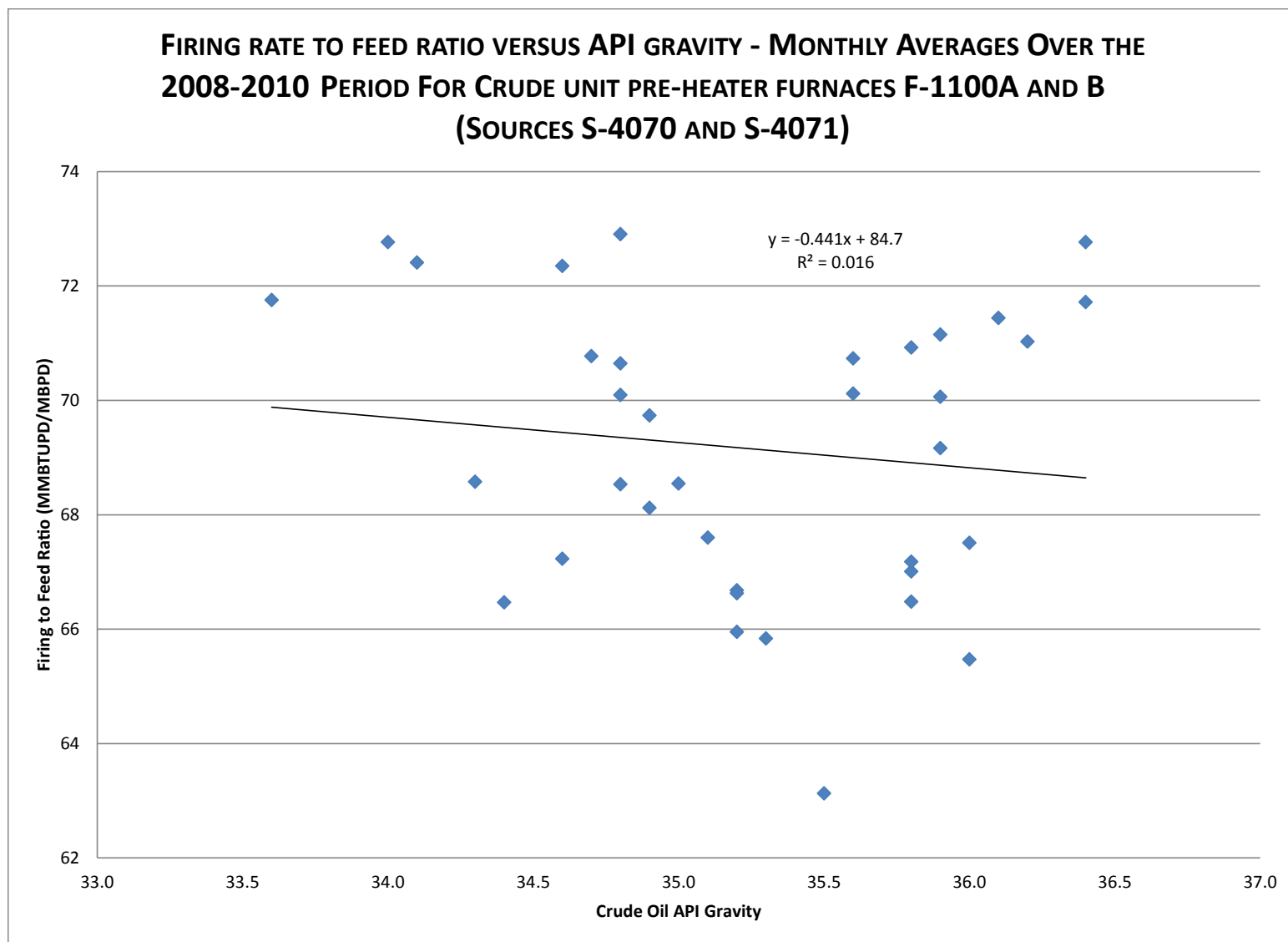
In order to evaluate the potential for the additional heating required to process heavier crude oil blends within the intermediate gravity range, Chevron provided data from 2008 – 2010 on heating rates as a function of imported crude oil gravity for various emission sources.

As shown in Figures A4.3-SG-1 through A4.3-SG-10, the effect of imported crude oil gravity on firing rates for various emission sources was variable across the five furnaces evaluated. The calculated R^2 values for monthly average data ranged from 0.02 (S-4070, S-4071) to 0.44 (S-4072), while for daily average data the R^2 values ranged from 0.03 (S-4058) to 0.64 (S-4072, S-4062). These calculated R^2 values indicate that the statistical relationship between crude blend gravity and firing/feed ratio is weak to moderate and varies from source to source. Thus, increases in the ratio of firing rate to feed rate are not reasonably likely to occur with heavier gravity crude oils expected with the Modernization Project given the lack of a strong correlation and variability among sources.

Nonetheless, this represents an uncertainty in the analysis as the imported crude oil gravity from 2008 - 2010 did not vary substantially.

1.4 EFFECT OF SULFUR ON PROCESS UNIT OPERATIONS

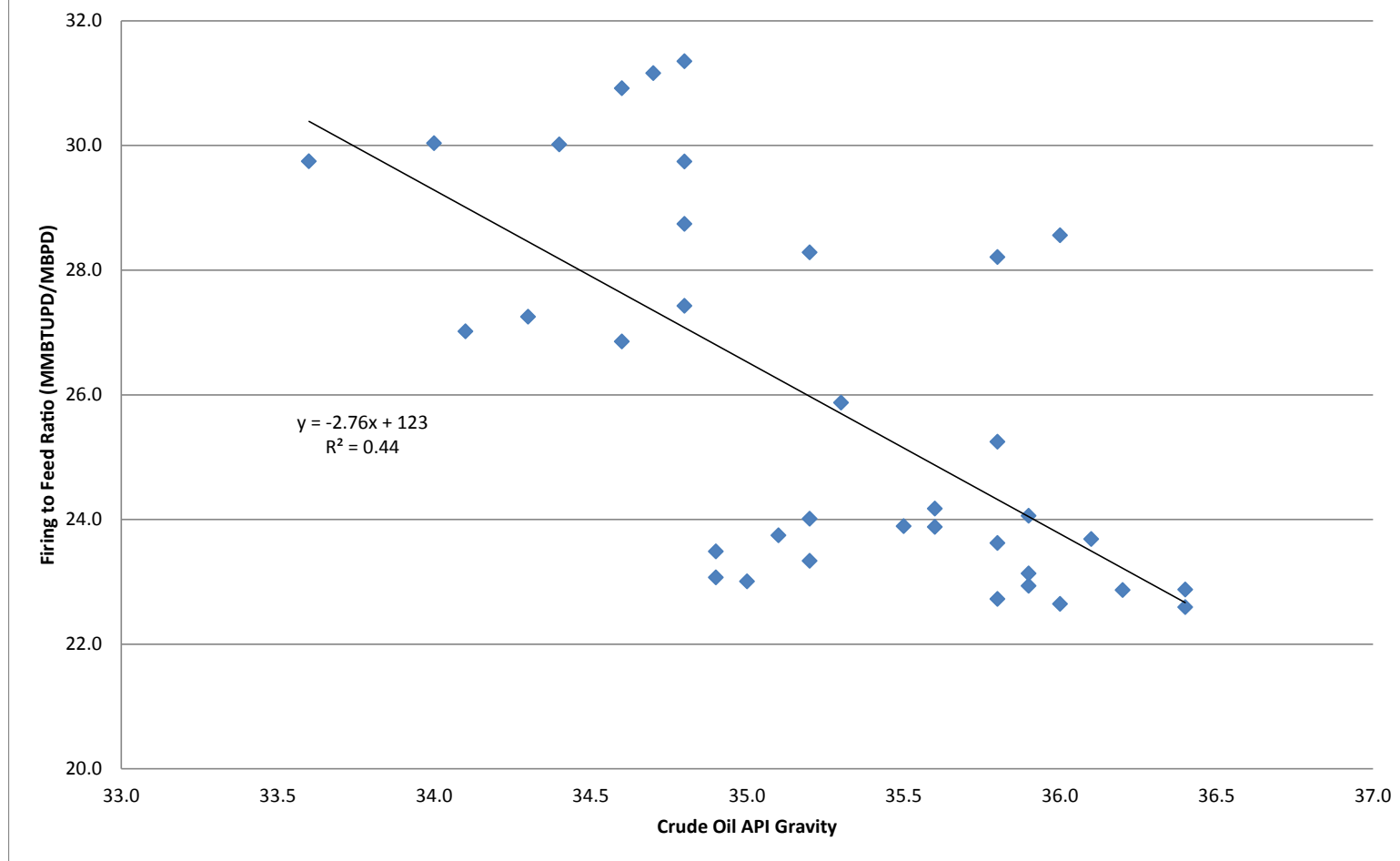
This analysis aims to provide a better understanding of whether more heat or other energy will be required to process increased sulfur levels in the imported crude oil and gas oil blends. Hydrotreating, which is the process of removing sulfur from the fuel oil by combining it with hydrogen, is an exothermic process (i.e., the process generates heat through the chemical reaction of sulfur with hydrogen) (EPA, 2000; Schuit et al., 1973). Because it is an exothermic process (i.e., heat would be generated by the reaction), it is unlikely that additional sulfur will require higher firing rates (i.e., additional external heat energy) in the hydrotreating units, because additional heat is generated by the reaction, which can displace heat required from furnaces.



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

Figure A4.3-SG-1
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus API Gravity-Monthly Averages over the 2008-2010 Period
for Crude Unit Pre-Heater Furnaces F-1100A and B (Sources S-4070 and S-4071)

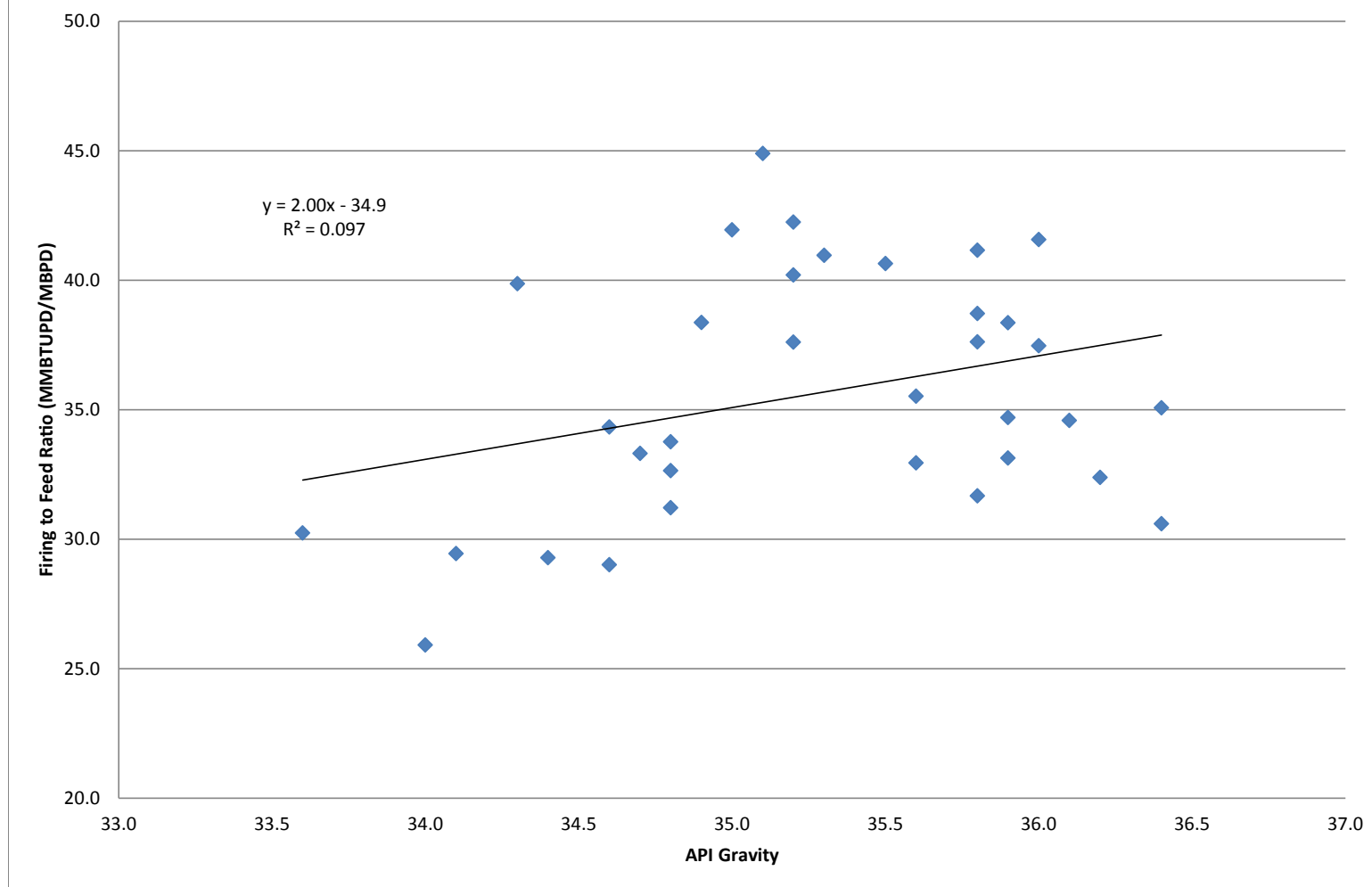
**FIRING RATE TO FEED RATIO VERSUS API GRAVITY – MONTHLY AVERAGES OVER THE
2008-2010 PERIOD FOR CRUDE UNIT VACUUM COLUMN HEATER FURNACE F-1160
(SOURCE S-4072)**



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

Figure A4.3-SG-2
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus API Gravity-Monthly Averages over the 2008-2010 Period
for Crude Unit Vacuum Column Heater Furnaces F-1160 (Source S-4072)

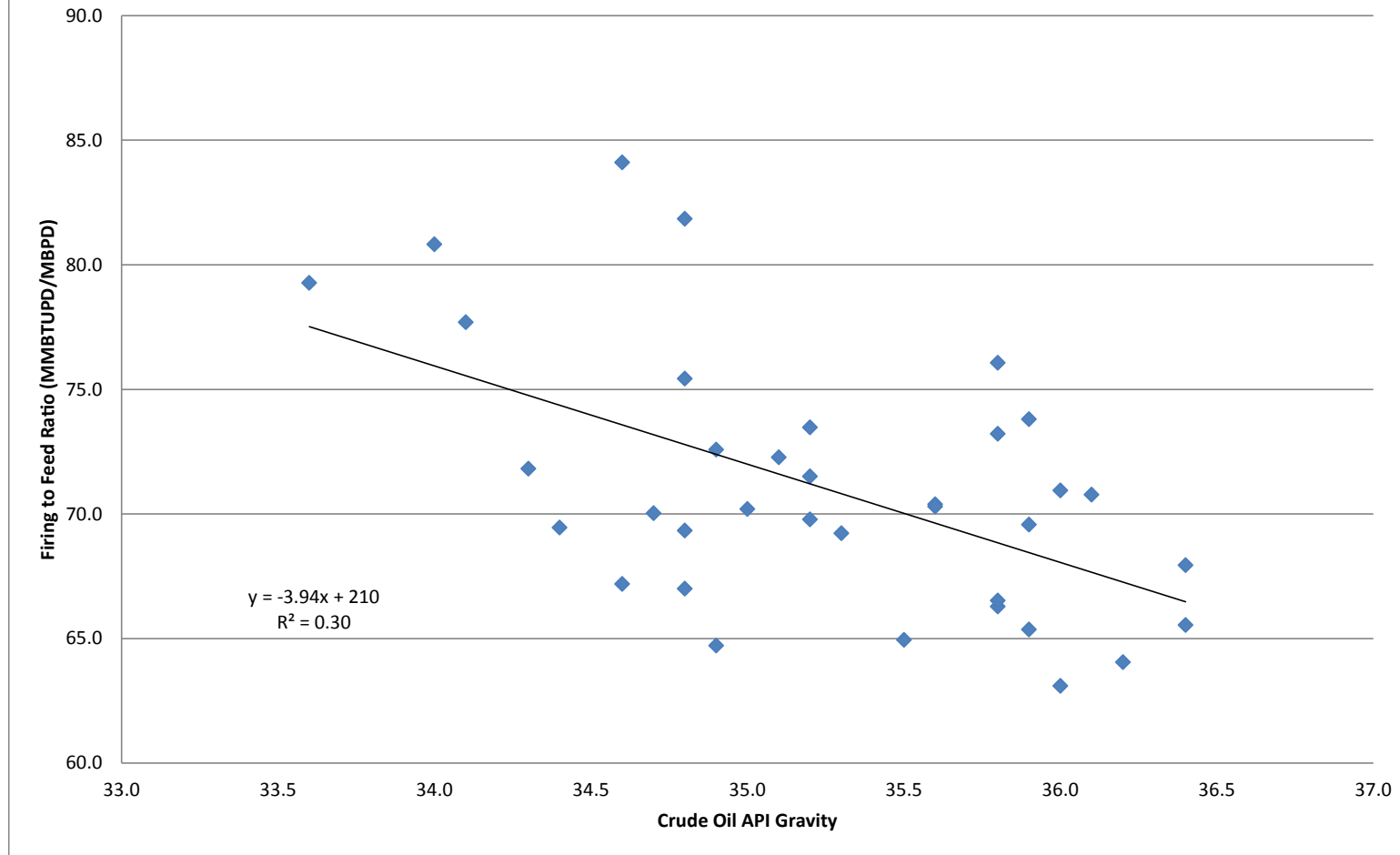
FIRING RATE TO FEED RATIO VERSUS API GRAVITY – MONTHLY AVERAGES OVER THE 2008-2010 PERIOD FOR DIESEL HYDROTREATER FURNACE F-1610 (SOURCE S-4068)



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

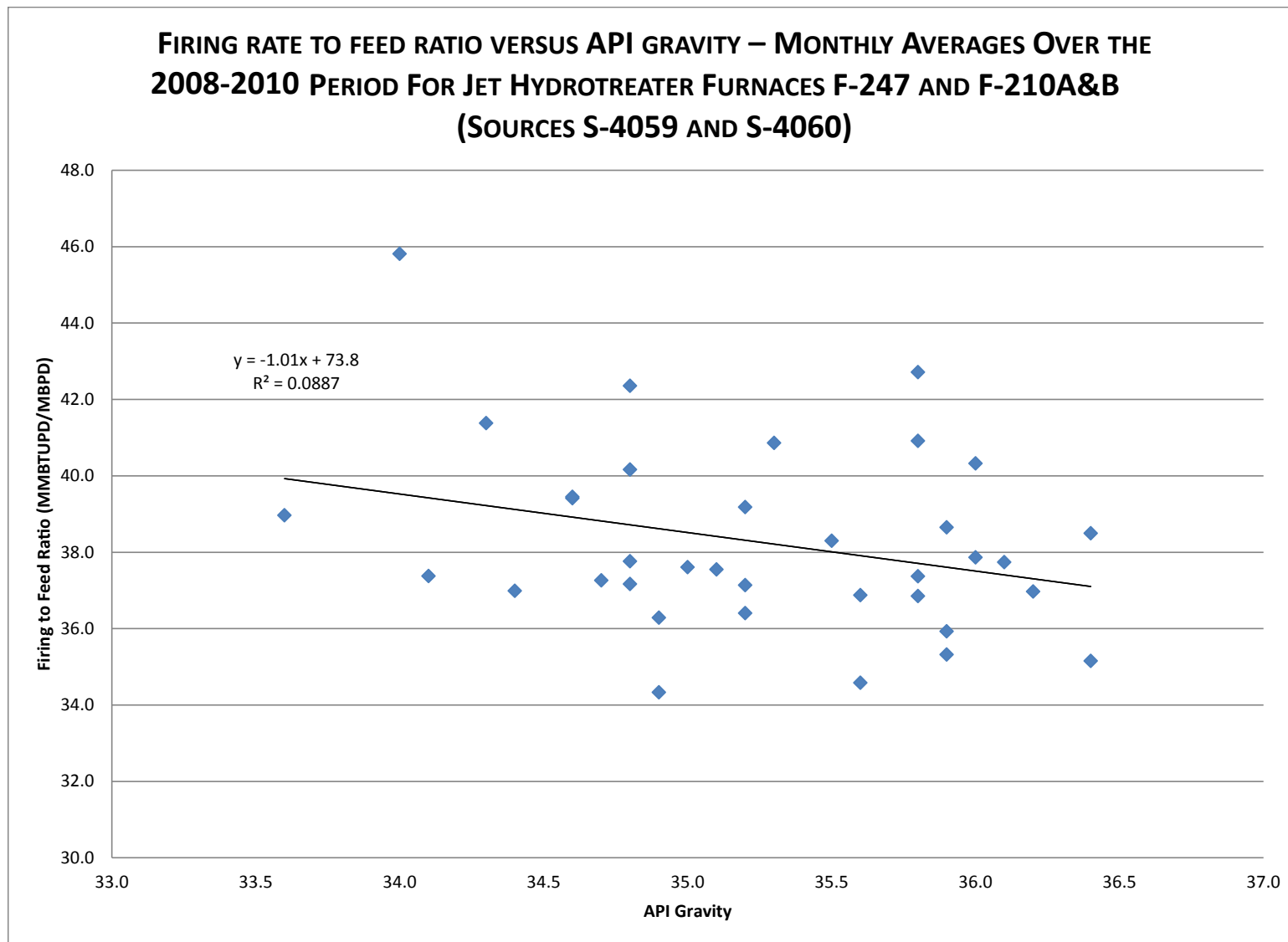
Figure A4.3-SG-3
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus API Gravity-Monthly Averages over the
2008-2010 Period for Diesel Hydrotreater Furnace F-1610 (Source S-4068)

**FIRING RATE TO FEED RATIO VERSUS API GRAVITY – MONTHLY AVERAGES OVER THE
2008-2010 PERIOD FOR NAPHTHA HYDROTREATER FURNACES F-447 AND F-410
(SOURCES S-40CM AND S-4062)**



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

Figure A4.3-SG-4
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus API Gravity-Monthly Averages over the 2008-2010 Period
for Naphtha Hydrotreater Furnace F-477 and F-410 (Sources S-4061 and S-4062)



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appt 4.3_AQ\AQ-SG Draft

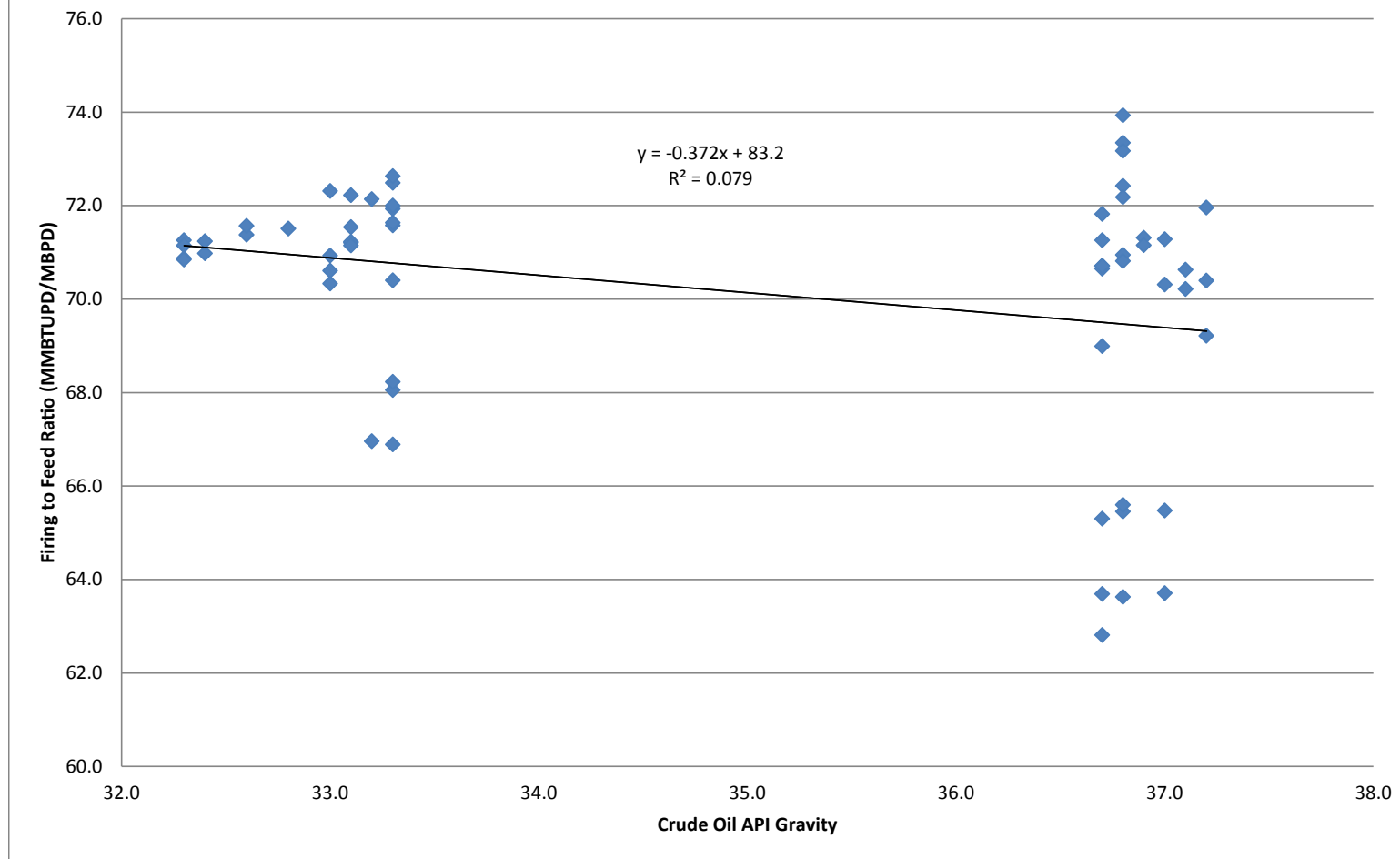
Source: Chevron (T1 and T2)

Figure A4.3-SG-5

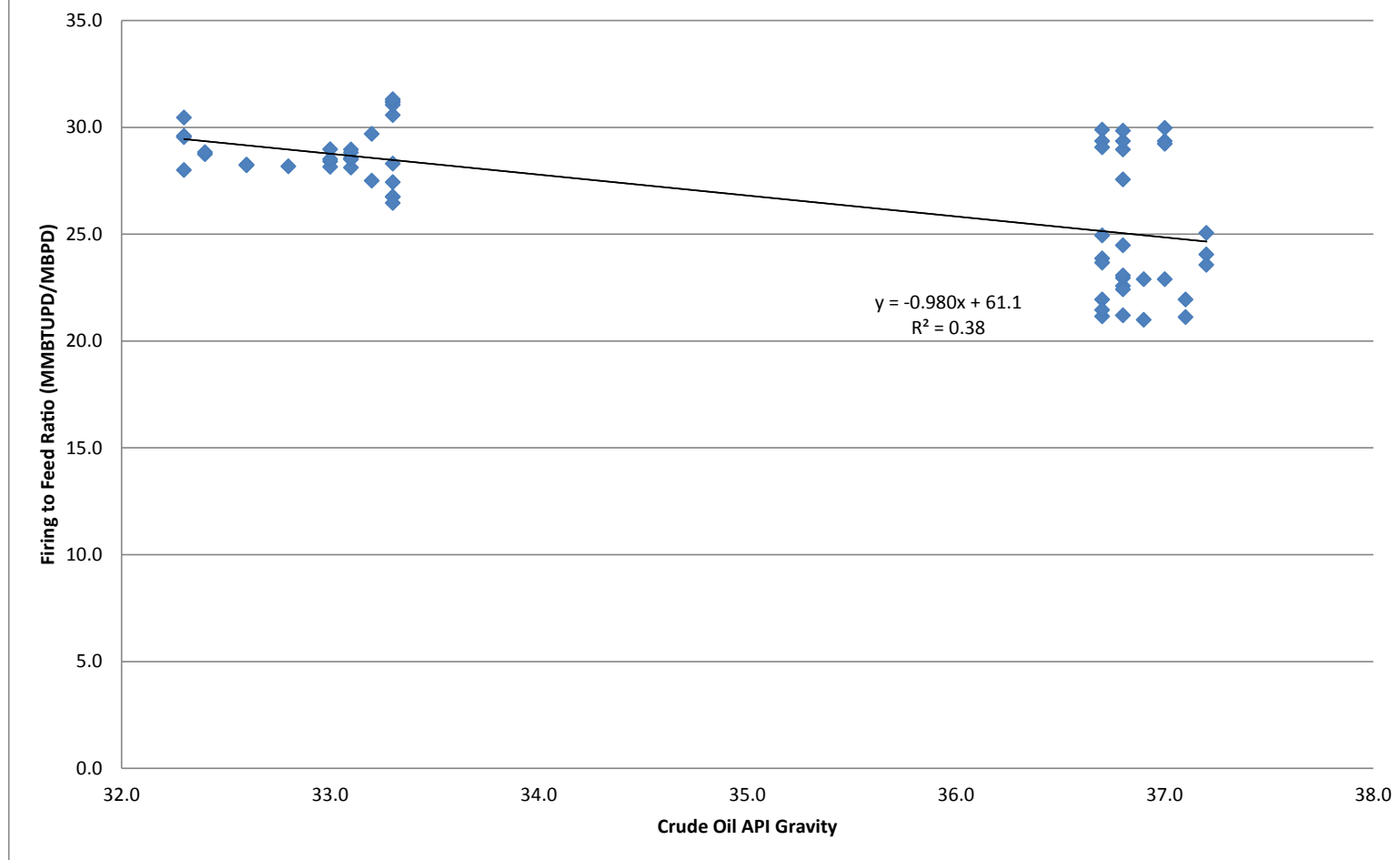
Chevron Refinery Modernization Project EIR

Firing Rate to Feed Ratio versus API Gravity-Monthly Averages over the 2008-2010 Period
for Jet Hydrotreater Furnace F-247 and F-210 A&B (Sources S-4059 and S-4060)

**FIRING RATE TO FEED RATIO VERSUS API GRAVITY - DAILY AVERAGES OVER THE
2008-2010 PERIOD FOR CRUDE UNIT PRE-HEATER FURNACES F-1100A AND B
(SOURCES S-4070 AND S-4071)**

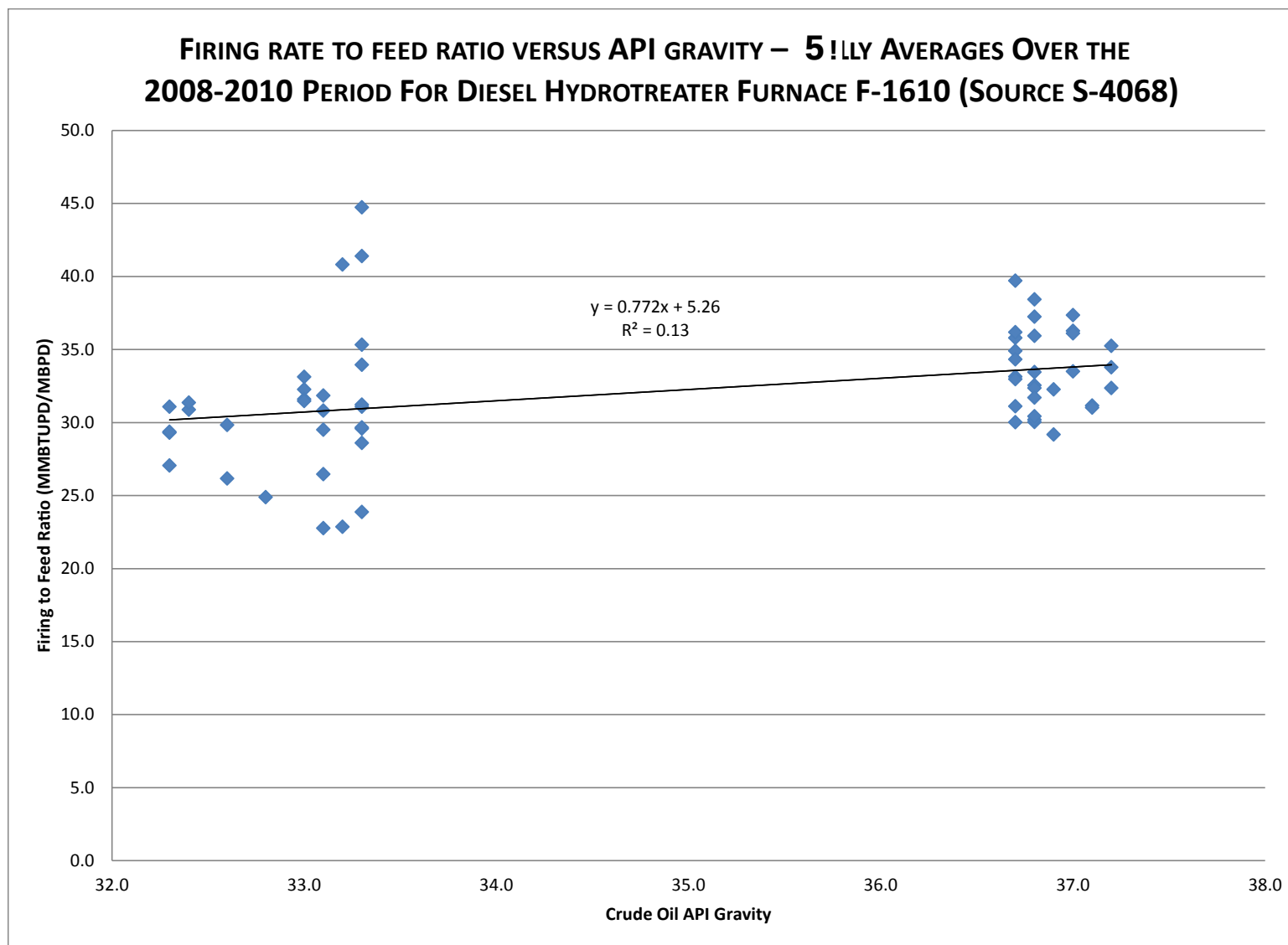


**FIRING RATE TO FEED RATIO VERSUS API GRAVITY – DAILY AVERAGES OVER THE
2008-2010 PERIOD FOR CRUDE UNIT VACUUM COLUMN HEATER FURNACE F-1160
(SOURCE S-4072)**



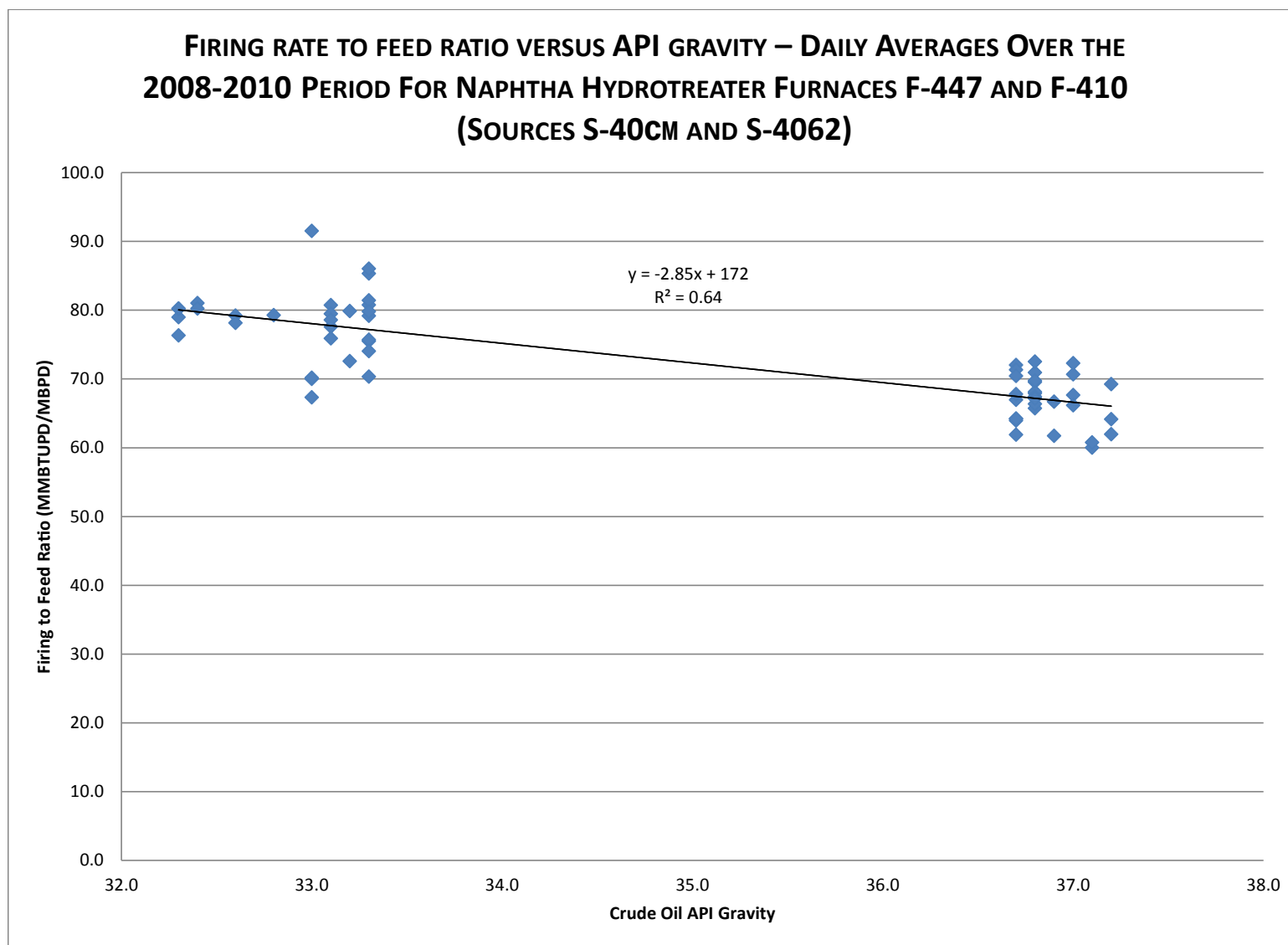
P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

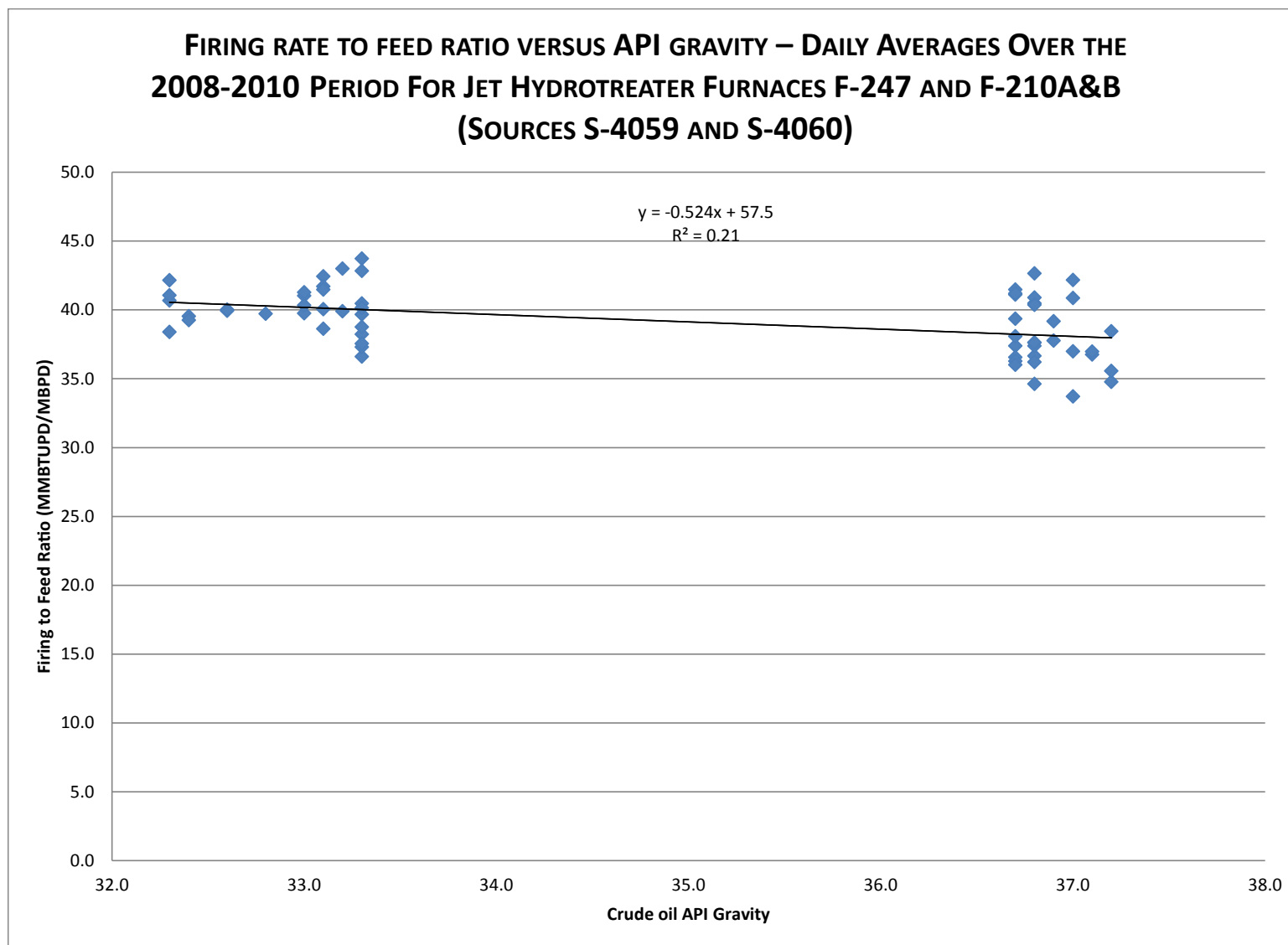
Figure A4.3-SG-7
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus API Gravity-Daily Averages over the 2008-2010
Period for Crude Unit Vacuum Column Furnaces F-1160 (Source S-4072)



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

Figure A4.3-SG-8
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus API Gravity-daily Averages over the
2008-2010 Period for Diesel Hydrotreater Furnace F-1610 (Source S-4068)

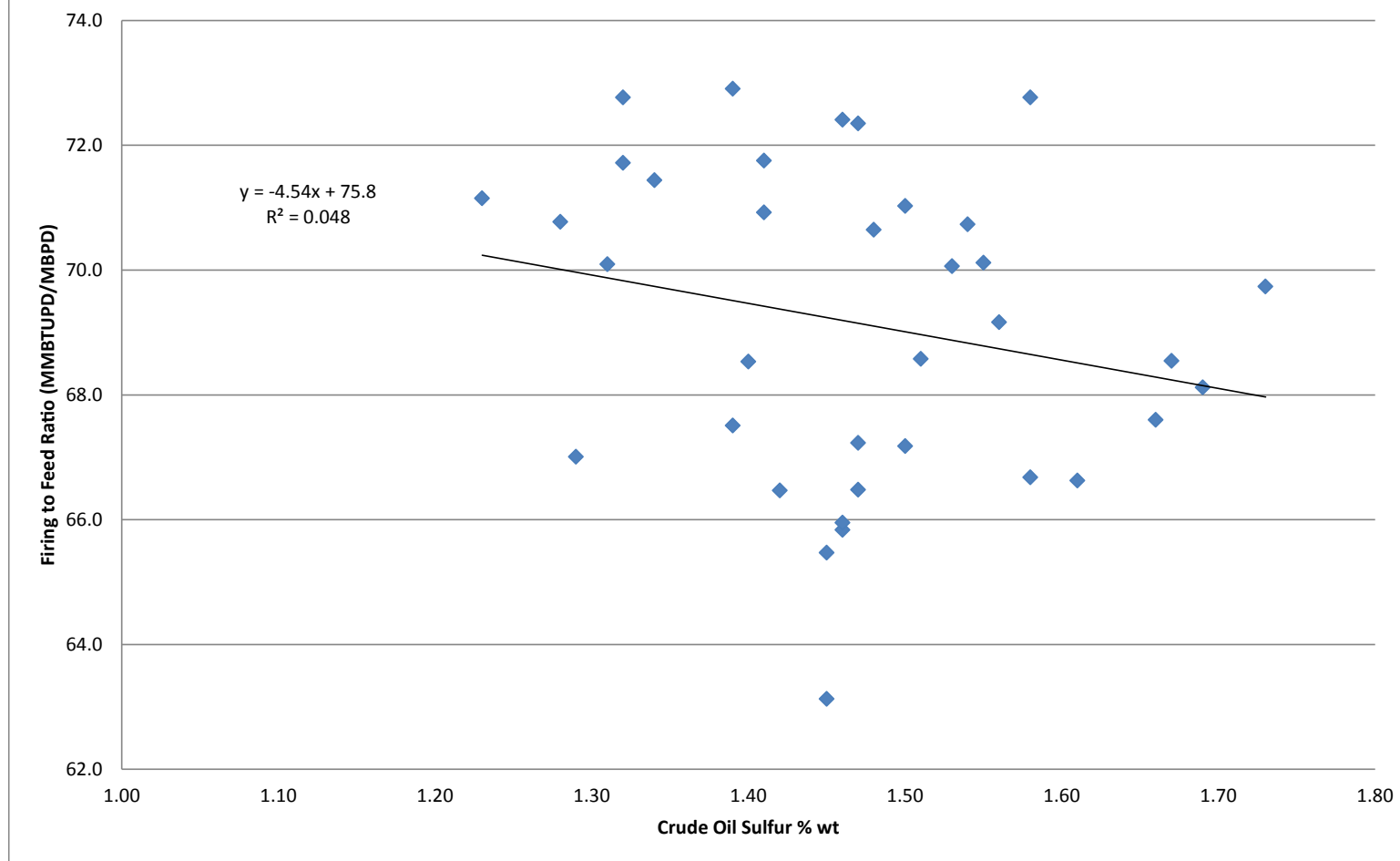




P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

Figure A4.3-SG-10
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus API Gravity-Daily Averages over the 2008-2010 Period
for Jet Hydrotreater Furnace F-247 and F-210 A&B (Sources S-4059 and S-4060)

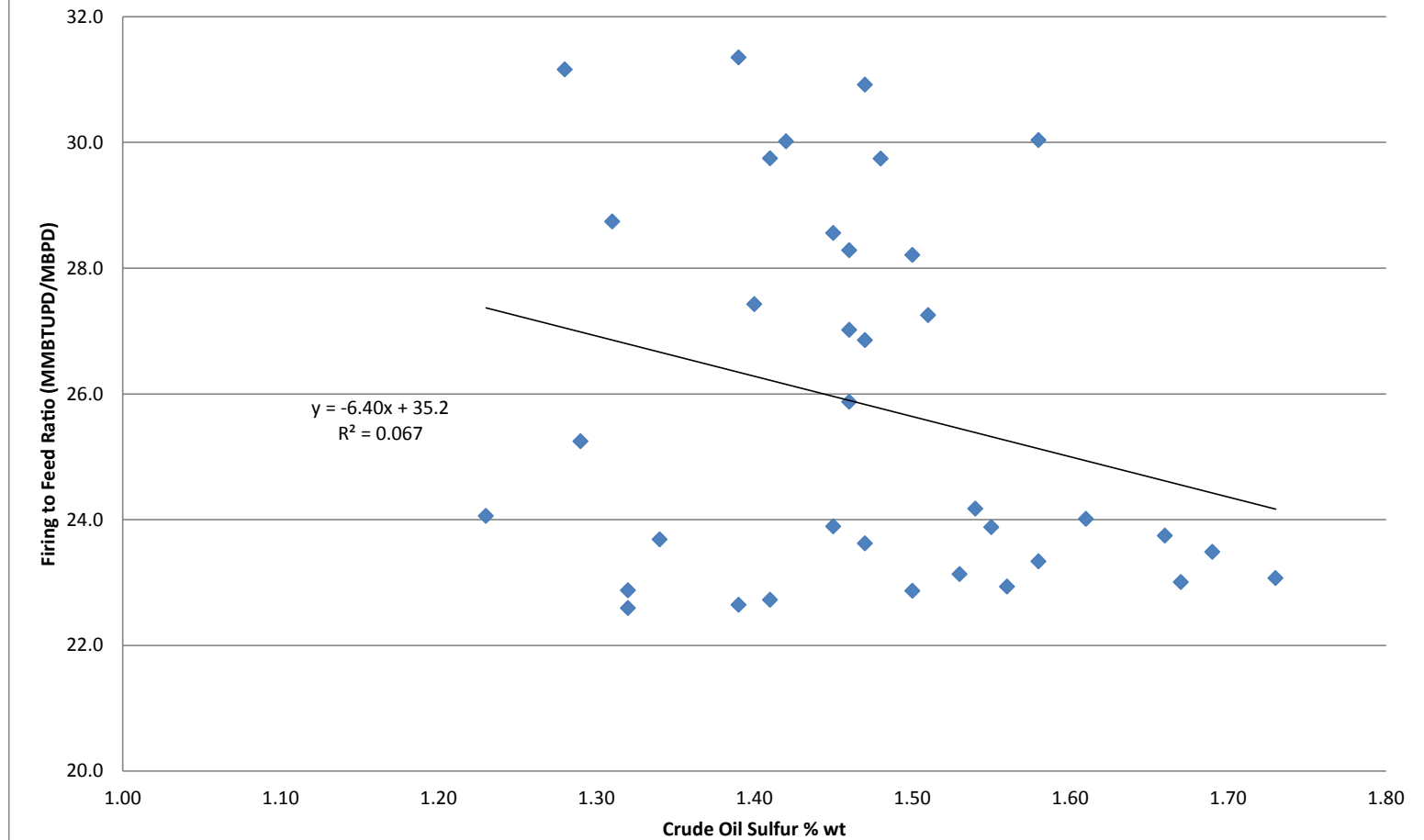
**FIRING RATE TO FEED RATIO VERSUS SULFUR WEIGHT PERCENT - MONTHLY AVERAGES
OVER THE 2008-2010 PERIOD FOR CRUDE UNIT PRE-HEATER FURNACES F-1100A AND
B (SOURCES S-4070 AND S-4071)**



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apix 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

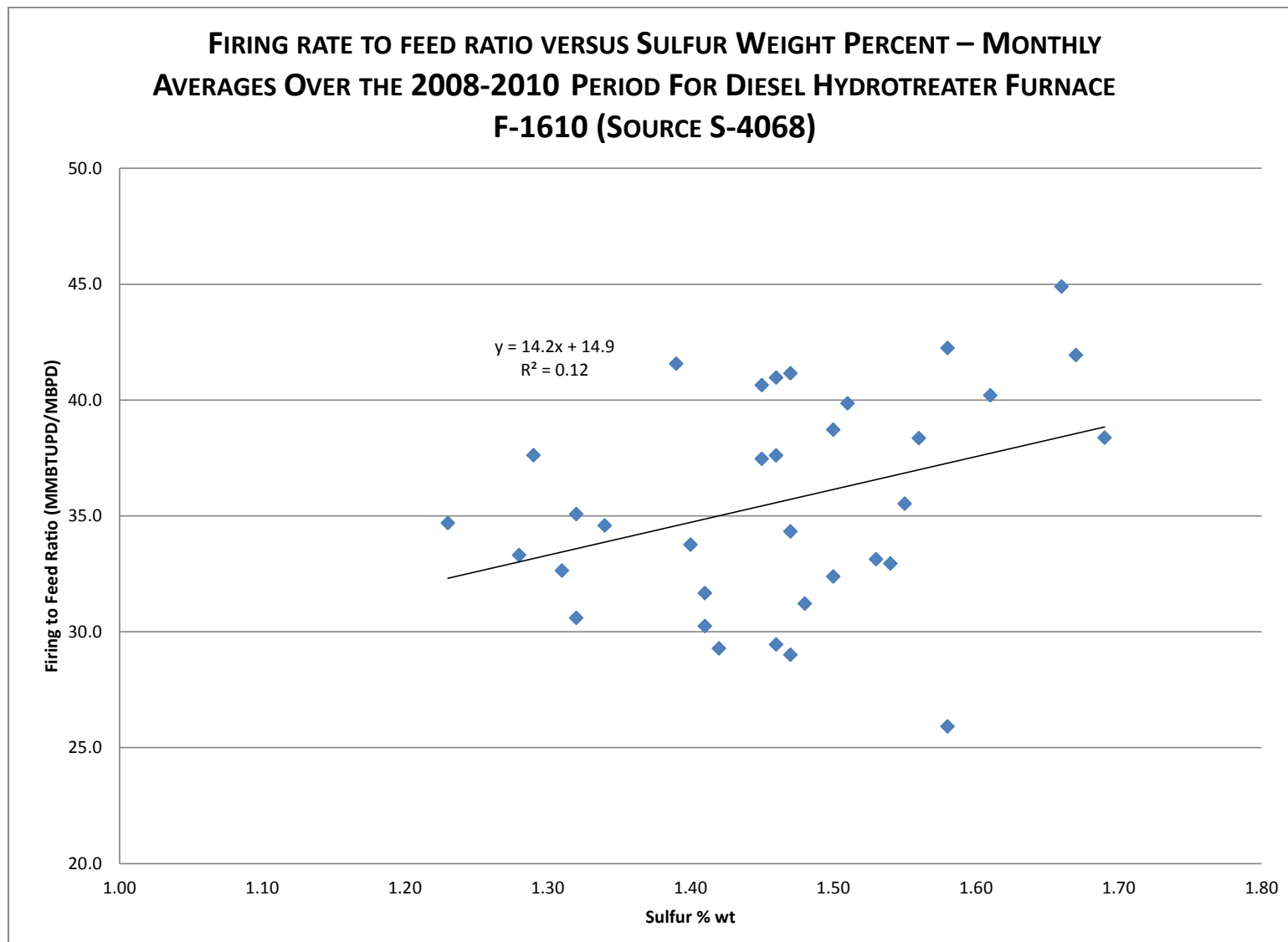
Figure A4.3-SG-11
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus Sulfur Weight Percent-Monthly Averages over the
2008-2010 Period for Crude Unit Pre-heater Furnaces F-1100A and B (Sources S-4070 and S-4071)

**FIRING RATE TO FEED RATIO VERSUS SULFUR WEIGHT PERCENT – MONTHLY
AVERAGES OVER THE 2008-2010 PERIOD FOR CRUDE UNIT BOTTOM VACUUM COLUMN
HEATER FURNACE F-1160 (SOURCE S-4072)**



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

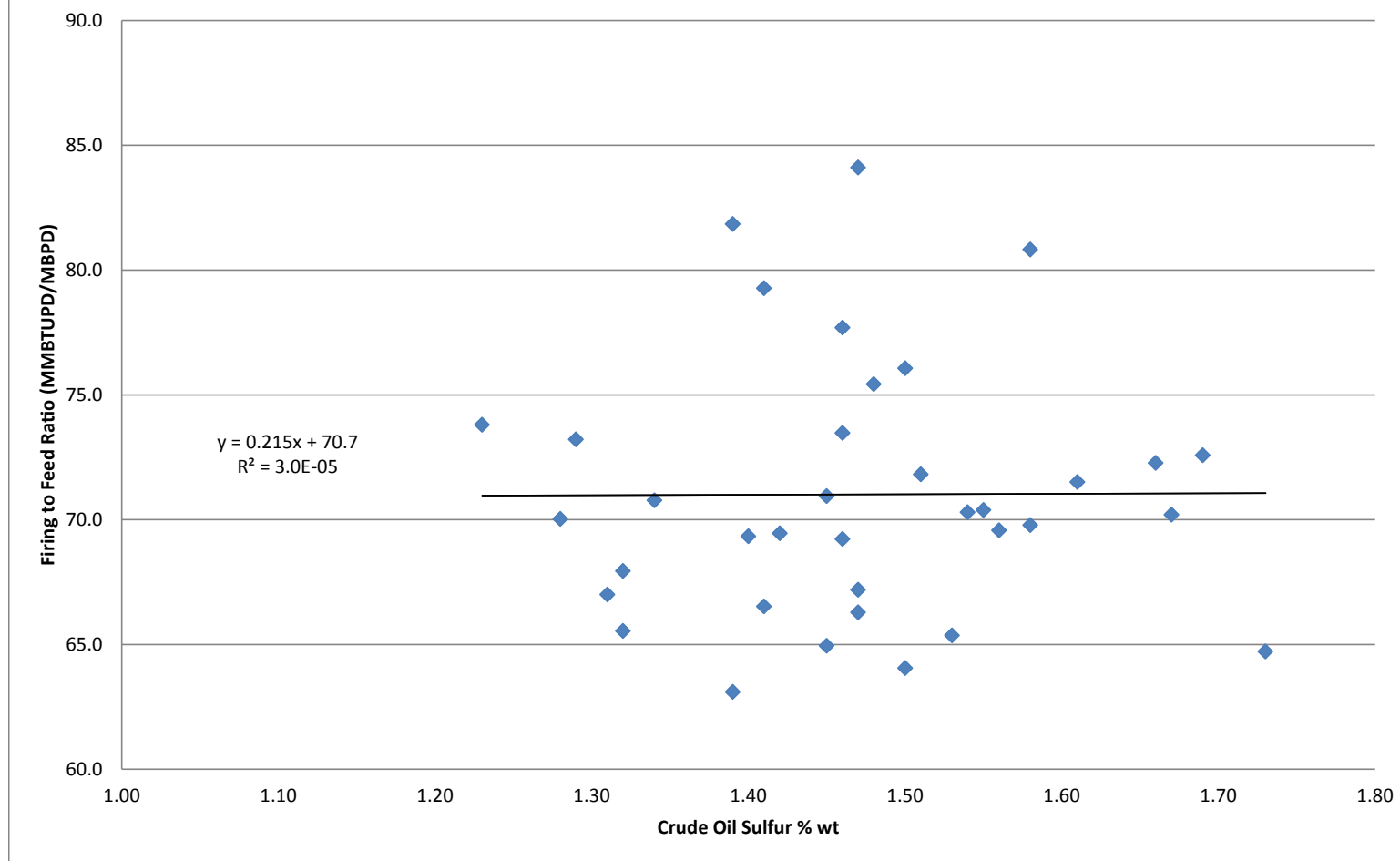
Figure A4.3-SG-12
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus Sulfur Weight Percent-Monthly Averages over the
2008-2010 Period for Crude Unit Vacuum Column Furnaces F-1160 (Source S-4072)



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

Figure A4.3-SG-13
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus Sulfur Weight Percent-Monthly Averages over the
2008-2010 Period for Diesel Hydrotreater Furnace F-1610 (Source S-4068)

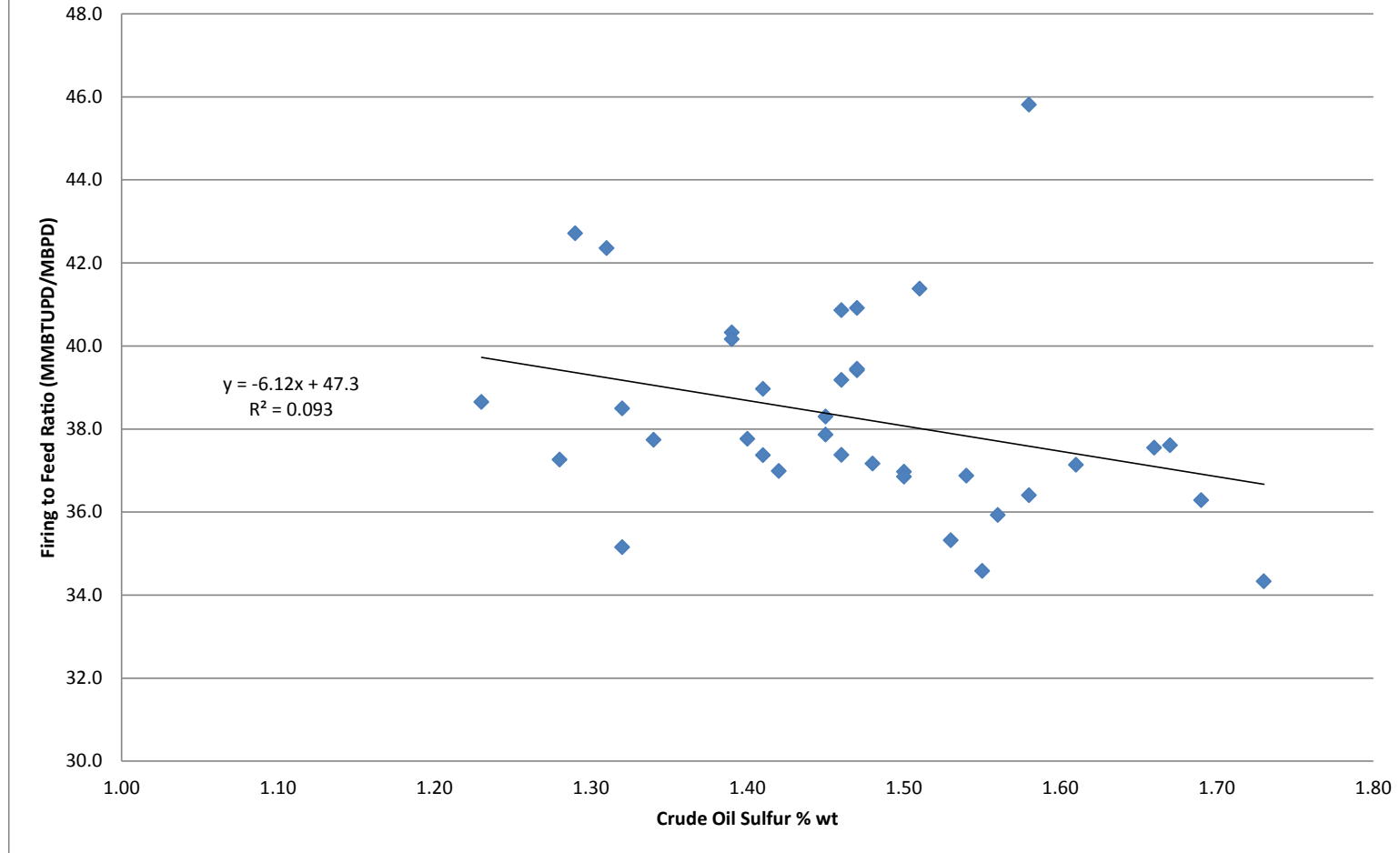
**FIRING RATE TO FEED RATIO VERSUS SULFUR WEIGHT PERCENT – MONTHLY
AVERAGES OVER THE 2008-2010 PERIOD FOR NAPHTHA HYDROTREATER FURNACES
F-447 AND F-410 (SOURCES S-40CM AND S-4062)**



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

Figure A4.3-SG-14
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus Sulfur Weight Percent-Monthly Averages over the
2008-2010 Period for Naphtha Hydrotreater Furnaces F-447 and F-410 (Sources S-4061 and S-4062)

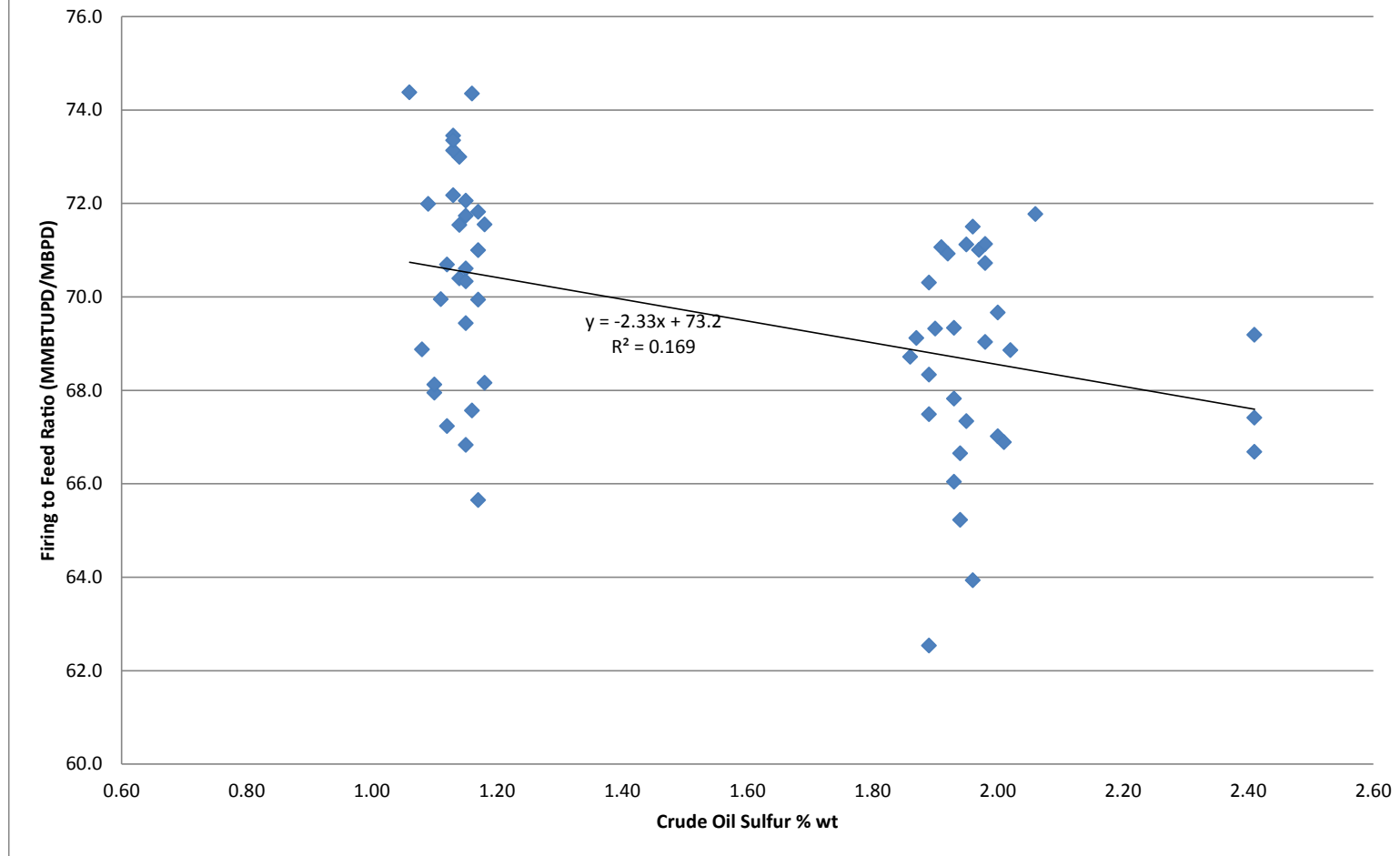
**FIRING RATE TO FEED RATIO VERSUS SULFUR WEIGHT PERCENT – MONTHLY
AVERAGES OVER THE 2008-2010 PERIOD FOR JET HYDROTREATER FURNACES F-247
AND F-210A&B (SOURCES S-4059 AND S-4060)**



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

Figure A4.3-SG-15
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus Sulfur Weight Percent-Monthly Averages over the 2008-2010
Period for Jet Hydrotreater Furnaces F-247 and F-210A&B (Sources S-4059 and S-4060)

**FIRING RATE TO FEED RATIO VERSUS SULFUR WEIGHT PERCENT - DAILY AVERAGES
OVER THE 2008-2010 PERIOD FOR CRUDE UNIT PRE-HEATER FURNACES F-1100A AND
B (SOURCES S-4070 AND S-4071)**



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Apex 4.3_AQ\AQ-SG Draft

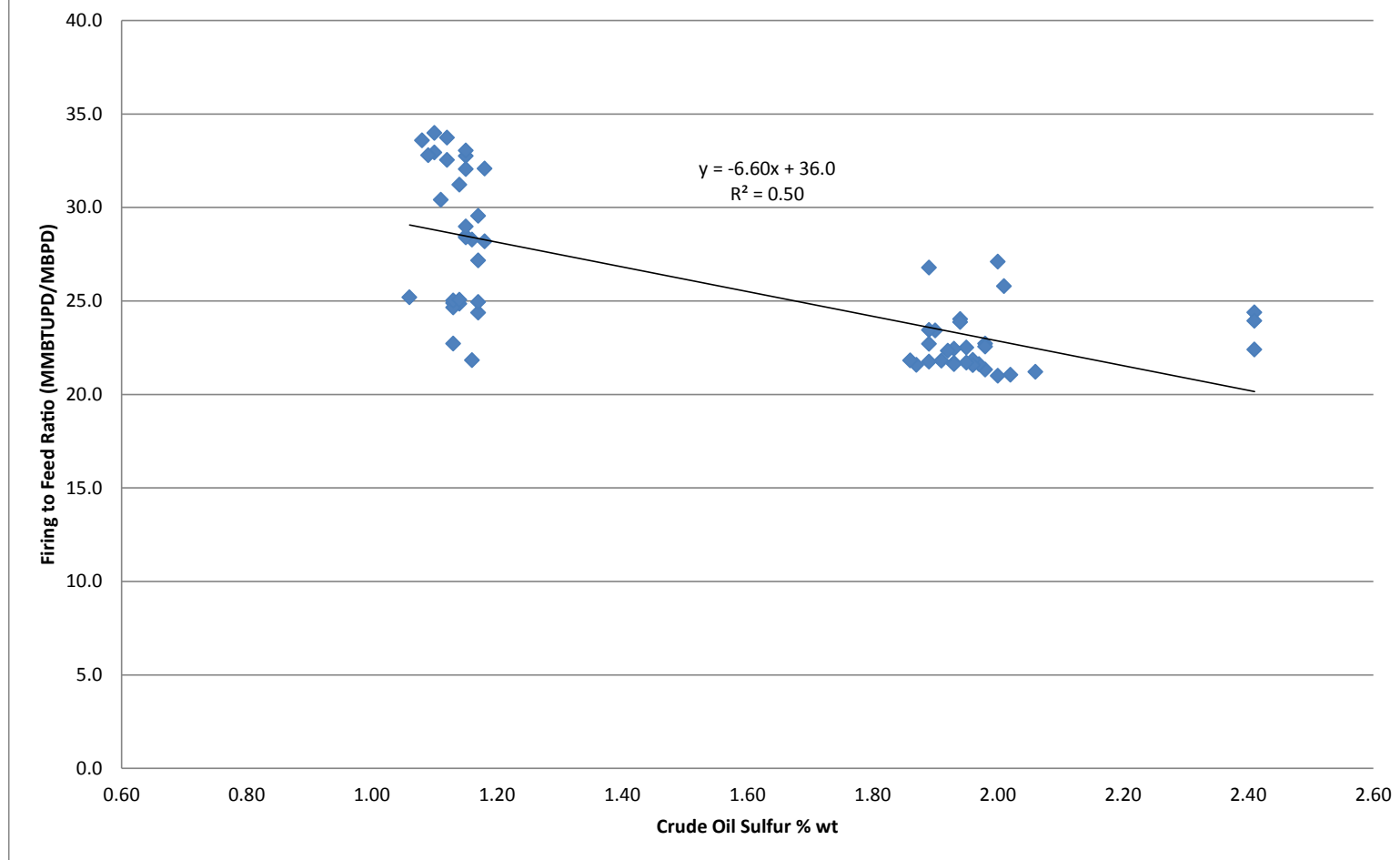
Source: Chevron (T1 and T2)

Figure A4.3-SG-16

Chevron Refinery Modernization Project EIR

Firing Rate to Feed Ratio versus Sulfur Weight Percent-Daily Averages over the 2008-2010 Period
for Crude Unit Pre-Heater Furnaces F-1100A and B (Sources S-4070 and S-4071)

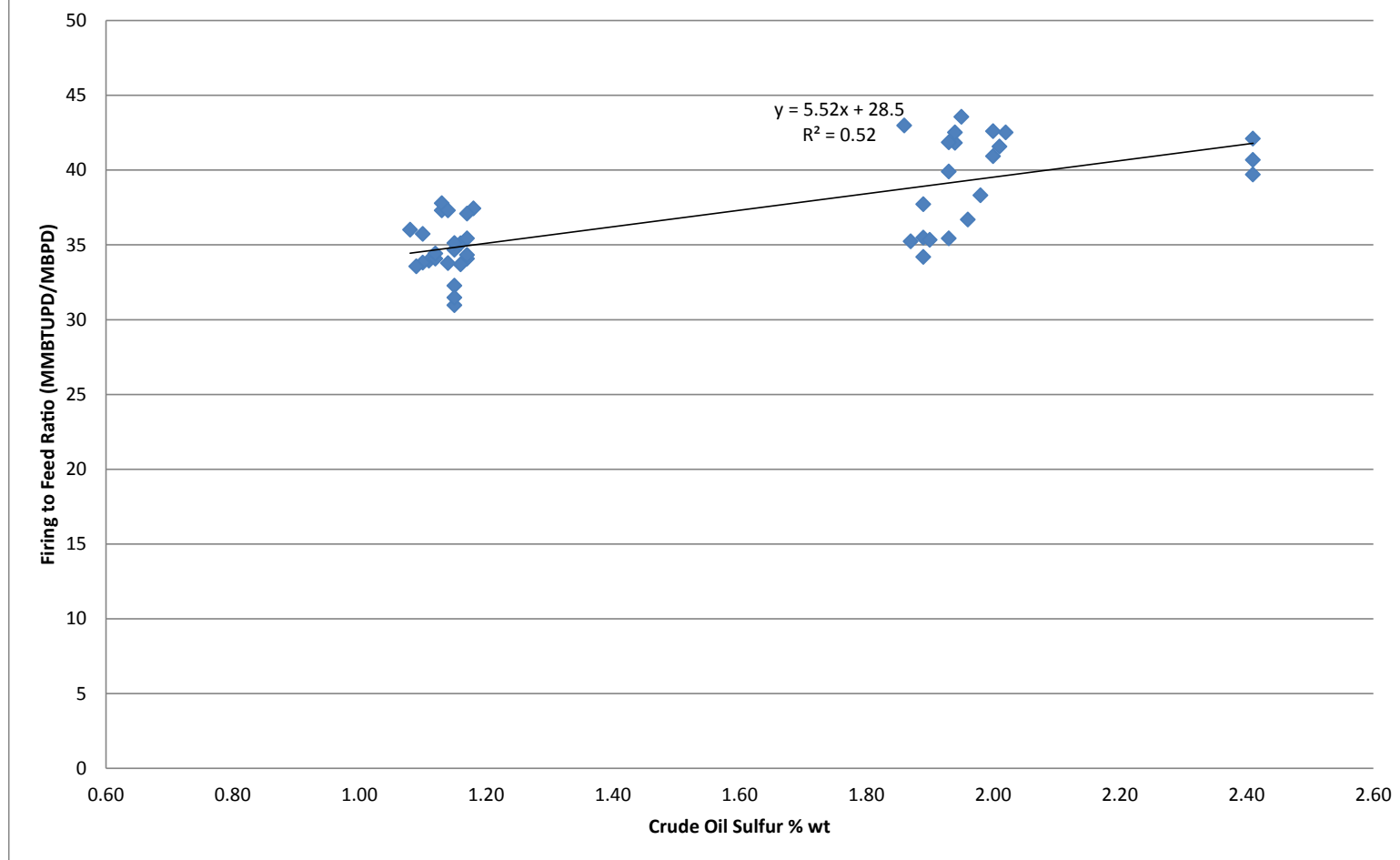
**FIRING RATE TO FEED RATIO VERSUS SULFUR WEIGHT PERCENT – DAILY AVERAGES
OVER THE 2008-2010 PERIOD FOR CRUDE UNIT BOTTOM VACUUM COLUMN HEATER
FURNACE F-1160 (SOURCE S-4072)**



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

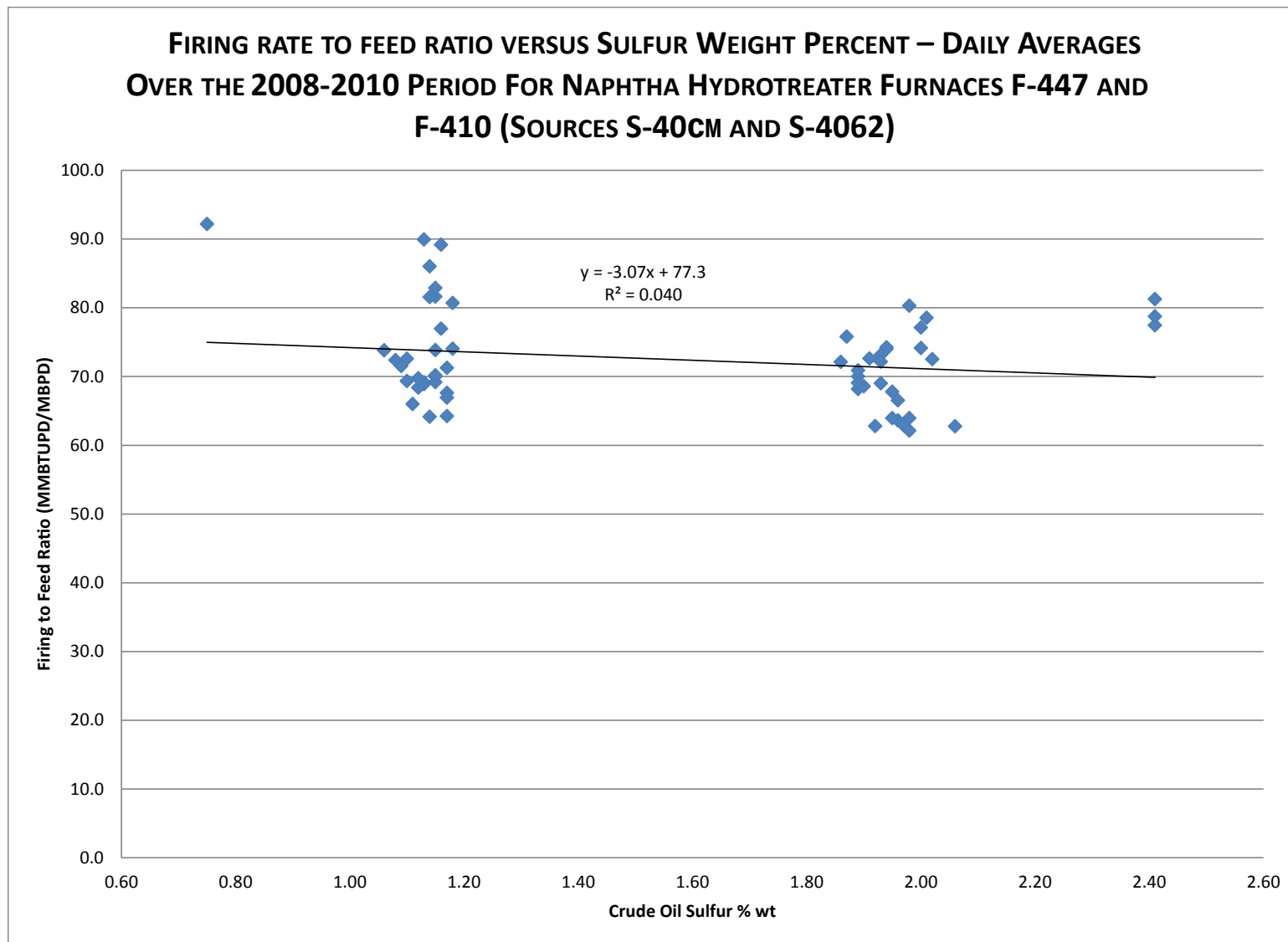
Figure A4.3-SG-17
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus Sulfur Weight Percent-Daily Averages over the
2008-2010 Period for Crude Unit Bottom Vacuum Column Heater Furnace F-1160 (Source S-4072)

**FIRING RATE TO FEED RATIO VERSUS SULFUR WEIGHT PERCENT – DAILY AVERAGES
OVER THE 2008-2010 PERIOD FOR DIESEL HYDROTREATER FURNACE F-1610
(SOURCE S-4068)**



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

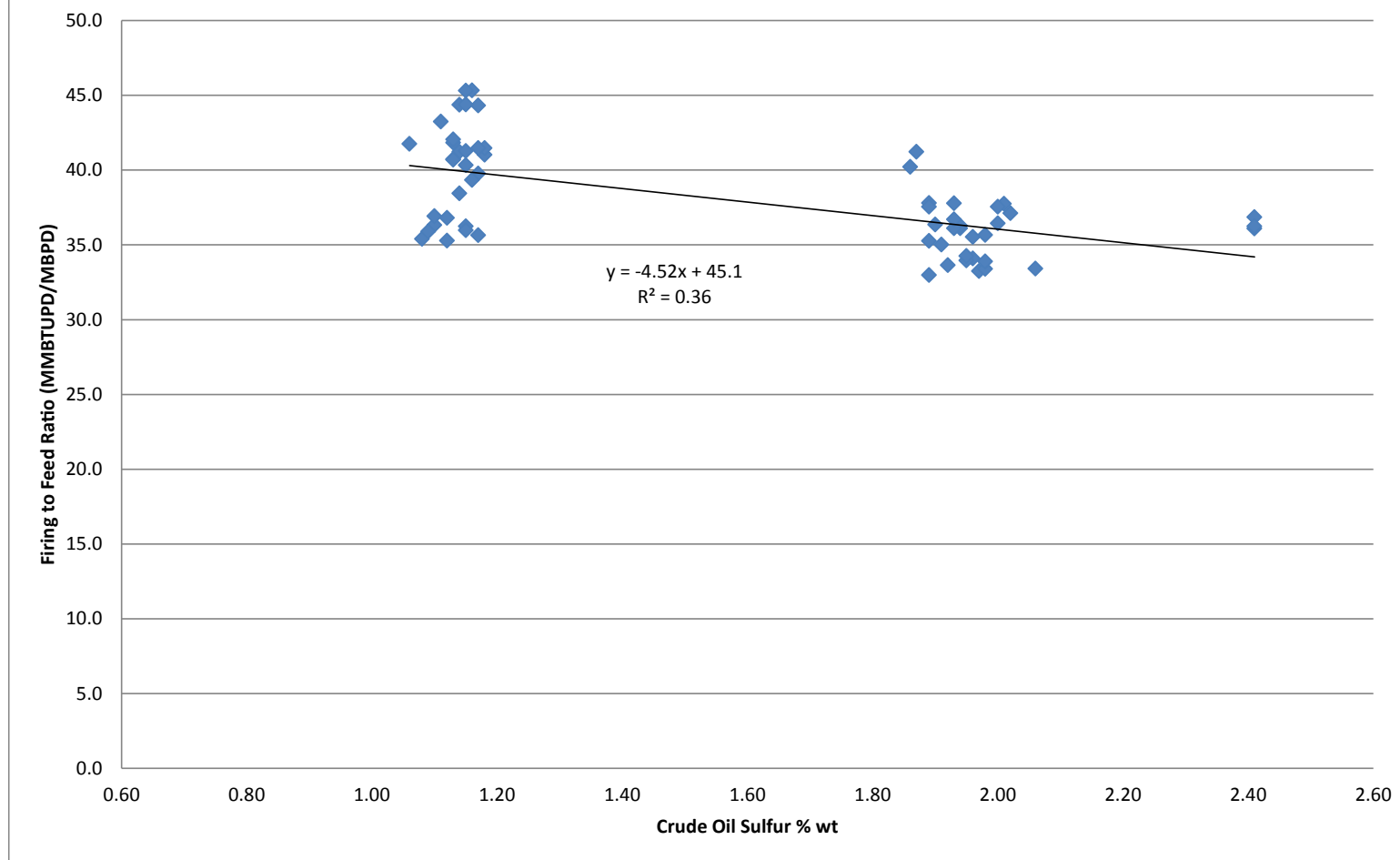
Figure A4.3-SG-18
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus Sulfur Weight Percent-Daily Averages
over the 2008-2010 Period for Diesel Hydrotreater Furnace F-1610 (Source S-4068)



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft
Source: Chevron (T1 and T2)

Figure A4.3-SG-19
Chevron Refinery Modernization Project EIR
Firing Rate to Feed Ratio versus Sulfur Weight Percent-Daily Averages over the 2008-2010
Period for Naphtha Hydrotreater Furnace F-447 and F-410 (Sources S-4061 and S-4062)

**FIRING RATE TO FEED RATIO VERSUS SULFUR WEIGHT PERCENT – DAILY AVERAGES
OVER THE 2008-2010 PERIOD FOR JET HYDROTREATER FURNACES F-247 AND
F-210A&B (SOURCES S-4059 AND S-4060)**



P:\11-005 CVRN\PRODUCTS\DEIR\Figures\Appx 4.3_AQ\AQ-SG Draft

Source: Chevron (T1 and T2)

Figure A4.3-SG-20

Chevron Refinery Modernization Project EIR

Firing Rate to Feed Ratio versus Sulfur Weight Percent-Daily Averages over the 2008-2010
Period for Jet Hydrotreater Furnace F-247 and F-210 A&B (Sources S-4059 and S-4060)

The 2008-2010 data were analyzed for a range of imported crude oil sulfur values. As is shown in Figures A4.3-SG-11 through A4.3-SG-20, the effect of sulfur on the firing rates for the different furnaces was variable, and shows uncertainty, but no clear trends. In more than half the cases, the energy required appeared to decrease with increasing sulfur, and in the other cases, the energy required appeared to increase with increasing sulfur. The calculated R^2 values for monthly average data ranged from 0.00003 (S-4072, S-4062) to 0.12 (S-4068), while for daily average data the R^2 values ranged from 0.02 (S-4059) to 0.52 (S-4068). These calculated R^2 values indicate that the relationship between the sulfur wt.% and firing/feed ratio is weak to moderate in strength, but that the direction of the variation is inconsistent. Thus, increases in the ratio of firing rate to feed rate are not reasonably likely to occur with increasing sulfur content crude oils expected with the Modernization Project given the lack of a strong correlation and variability among sources.

However, it is noted that the range of sulfur in the 2008-2010 data may not be sufficiently wide to show the variation that might be expected during the Modernization Project, as imported crude oil blends' sulfur wt.% is expected to increase above that from 2008 - 2010.

1.5 REFERENCES

- Chevron Data Transmittal #1 (Rev #1): Title V Throughput Limits and Barrel Balance Parameters, 2014.
- Chevron Data Transmittal #2: Historical Baseline Furnace Info, 2011.
- Gerstman, Burt. 14: *Correlation*. StatPrimer (Version 6.4). Accessed February 14, 2014. <http://www.sjsu.edu/faculty/gerstman/StatPrimer/correlation.pdf>.
- Schuit, G.C.A. and B.C. Gates, 1973. Chemistry and Engineering of Catalytic Hydrodesulfurization. In: *AIChE Journal*, Volume 19, No. 3, pp 417-38, May. Accessed November 20, 2013. http://www1.eere.energy.gov/manufacturing/resources/petroleum_refining/pdfs/bandwidth.pdf.
- Taylor, Richard. 1990. Interpretation of the Correlation Coefficient: A Basic Review. JDMS 1:35-39.
- University of Strathclyde. *Correlations: Direction and Strength*. Data Analysis in Educational Research, Unit 4 - Modelling Data Using Correlation and Regression. Accessed February 14, 2014. <http://www.strath.ac.uk/aer/materials/4dataanalysisineducationalresearch/unit4/correlationsdirectionandstrength/>.

U.S. Environmental Protection Agency (EPA), 2000. Fuel Standard Feasibility. In:
Heavy Duty Standards/Diesel Fuel, RIA EPA 420-R-00-026, 122 p.
<http://www.epa.gov/omswww/highway-diesel/regs/ria-iv.pdf>, page IV-16.

Yale University. 1997. *Correlation*. Yale University Department of Statistics.
Accessed February 14, 2014. <http://www.stat.yale.edu/Courses/1997-98/101/correl.htm>.

APPENDIX 4.3 - SHP

SHP: Shipping CAP, TAC, and GHG Emissions

APPENDIX 4.3-SHP

SHIPPING CAP, TAC, AND GHG EMISSIONS

This appendix outlines the methods, data, and assumptions used to estimate criteria air pollutant (CAP), toxic air contaminant (TAC), and greenhouse gas (GHG) emissions from shipping activities associated with the Modernization Project. Emissions associated with rail and on-road truck activity are discussed in *Appendix 4.3-TRANS*. Operational Refinery emissions are discussed in *Appendix 4.3-OP*. Emissions associated with construction are considered in *Appendix 4.3-CST*.

A summary discussion of shipping is presented here and is also in *Chapter 3, Project Description* of this EIR. A full description of the methods, data and assumptions used to estimate CAP, TAC and GHG emissions from shipping activities associated with the Modernization Project can be found in a report prepared by Chevron's contractor, ICF International (Chevron Data Transmittal #26F, 2014). The ICF International report fully documents all shipping emission estimates that were used to assess Air impacts for the EIR. The principal investigator for ICF International is Dr. Lou Browning who has prepared a number of shipping emission analyses including the report "Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories" (ICF, 2009) which was prepared for the U.S. Environmental Protection Agency.

The Facility imports crude oil, gas oil and some blendstocks and exports a portion of its refined products and some gas oil, blendstocks, and baseoils via ships and barges. This waterborne transport includes self-propelled ocean going vessels (OGVs – i.e., tanker ships) and vessels that are not self-propelled (i.e., barges) that dock at the Long Wharf and either unload and/or load liquid materials over the dock. Both the OGVs and barges require assistance from smaller ships called tugs (also called harbor craft). The OGVs, barges, and tugs utilize engines fueled by fossil fuels to perform their operations; thus emit CAP, TAC and GHG airborne emissions as part of their routine operation at the Long Wharf. Import and export volume is the primary activity that influences vessel activity (i.e. vessel calls to the Long Wharf).

Shipping emissions were developed for vessels calling the Long Wharf for the three scenarios listed below:

1. 2008-2010 period (Chevron Data Transmittal #47A (Rev #6), 2014): Shipping emission estimates based on baseline shipping activity (i.e. import and

export volumes and vessel calls) and regulations in the historical 2008 to 2010 time period.

2. Baseline Period (Chevron Data Transmittal #47A (Rev #6), 2014): Shipping emission estimates based on baseline shipping activity in the historical 2008 to 2010 time period with a fleet of 2016 vessels adhering to 2016 regulatory requirements.
3. Project Case (Chevron Data Transmittal #26F, 2014): Shipping emission estimates based on estimates of project shipping activity and regulations as of 2016 with a fleet of 2016 vessels adhering to 2016 regulatory requirements.

Table A4.3-SHP-1 presents the shipping vessel types, their emission sources, and describes the types of CAP and TAC emissions. All vessel types also emit GHGs.

TABLE A4.3-SHP-1 SUMMARY OF SHIPPING EMISSION SOURCES

Vessel Type	Emission Source	Criteria Air Pollutants Emitted with CEQA Mass Thresholds	Toxic Air Contaminants Emitted
OGVs	Propulsion Engine(s) Auxiliary Engine(s)	NO _x , PM ₁₀ ^a , PM _{2.5} , ROG	DPM ¹
	Boiler	NO _x , PM ₁₀ , PM _{2.5} , ROG	ROG, PM
Barges	Auxiliary Engines	NO _x , PM ₁₀ ¹ , PM _{2.5} , ROG	DPM ¹
Tugboats	Propulsion Engine(s) Auxiliary Engine(s)	NO _x , PM ₁₀ ¹ , PM _{2.5} , ROG	DPM ¹

^a For internal combustion, diesel engine emission sources, emissions of DPM, which is included as a toxic air contaminant, are assumed to be equivalent to emissions of PM₁₀, which are included as a criteria pollutant.

The methods used in the inventory are consistent with the design of other San Francisco Bay shipping emission inventories (ENVIRON, 2008; M&N and ENVIRON, 2010a,b,c,d) with some exceptions associated with Modernization Project-specific aspects, CEQA considerations, and Department of Homeland Security considerations as explained in *Chapter 3, Project Description*, of this EIR and ICF (Chevron Data Transmittal #26F, 2014)

The shipping emissions Baseline presented in this EIR differs from typical shipping emission inventories in the use of data from Chevron's proprietary Stock Transfer and Reconciliation (STAR) database which tracks activity at the Long Wharf including load and discharge times and volumes as well as time at-berth for each vessel call. The STAR database was used to estimate time at-berth and

volume and time of transfer by product for pumping. The STAR database is the only data source for this Chevron-specific data. The average time at berth provided by Chevron is consistent with public information available from the San Francisco Marine Exchange.

To avoid disclosure of shipping call data withheld in compliance with the United States Department of Homeland Security, this analysis employed averaged parameter values by ship, propulsion, and pump type. Call-specific parameter values are not reported. This means that certain inputs (e.g., main and auxiliary engine horsepower (HP), vessel service speed, ship capacity, pump capacity) are averaged values based on ship type, propulsion type, and pump type for the ship and barge calls made at the Long Wharf during the Baseline.

Total crude and gas oil volumes for the Modernization Project were estimated using the Unit Rate Model, as described in *Appendix 4.3-URM*. The feedstock volumes are dependent on the crude blend and Refinery Operations utilization rate. The product volumes for a given future scenario are estimated assuming the same volumetric ratio of product to feedstocks (ratio of 1.04) as during the baseline. The amounts of cutter and light product discharged tend to vary year-to-year and are not related to Refinery Operations utilization. These amounts are estimated to increase for future cases, relative to the Baseline; therefore, the Modernization Project assumes an increase over baseline in cutter and light product discharges. For the Modernization Project, two Refinery Operations utilization rates using Basrah + Arab Lt crude blend were considered: 93 percent and 100 percent.

Shipping emissions are not subject to CEMs monitoring, were not included in the BAAQMD Engineering Evaluation, and are not included in the BAAQMD Emission Inventory.

CAP and GHG emissions from shipping activities are estimated from the previous port of call to the Long Wharf and from the Long Wharf to the next port of call. Outside of San Francisco Bay, the shipping emissions account for emissions to and from the Pilot Buoy, located approximately 8 nautical miles west of Point Bonita near the entrance of the San Francisco Bay, to the entrance of the San Francisco Bay as determined in discussions with the BAAQMD. Shipping CAP and GHG emissions for the 2008-2010 baseline period and Project Crude Blend and the Lightest/Max Shipping Crude Blend cases are presented in Table A4.3-SHP-2.

TAC emissions were estimated for any shipping activity that occurs within the HRA boundary (i.e., within 5 nautical miles of the Long Wharf). The TAC emissions inventory includes chemicals emitted from sources that are included

TABLE A4.3-SHP-2 SHIPPING BASELINE AND MODERNIZATION PROJECT CAP AND GHG EMISSIONS, WITH PDFs

Emissions Case	Emissions (tons/year)						GHGs (Tonnes CO ₂ e/year)	Change from Baseline (tons/year)						GHGs (Tonnes CO ₂ e/year)
	CO	NO _x	PM ₁₀	PM _{2.5}	SO _x	VOC		CO	NO _x	PM ₁₀	PM _{2.5}	SO _x	VOC	
2008-2010	98	478	19	18	125	29	41,333	--	--	--	--	--	--	--
Baseline	108	491	15	14	20	34	40,910	--	--	--	--	--	--	--
Project Crude Blend, 100% Utilization	122	515	17	15	24	38	48,064	13	24	2	2	4	4	7,154
Project Crude Blend, 93% Utilization	114	479	16	14	22	35	44,741	5	-11	1	1	2	1	3,831
Sourest Crude Blend, 100% Utilization	121	513	17	15	24	37	47,927	13	23	2	2	4	4	7,017
Sourest Crude Blend, 93% Utilization	112	473	16	14	22	35	44,191	3	-17	1	1	2	1	3,281
Heaviest Crude Blend, 100% Utilization	119	506	17	15	24	37	47,210	11	15	2	1	3	3	6,300
Heaviest Crude Blend, 93% Utilization	110	465	15	14	22	34	43,444	2	-25	0	0	2	0	2,534
Lightest/Max Shipping, 100% Utilization	128	552	18	16	26	40	50,817	20	61	3	3	5	6	9,907
Lightest/Max Shipping, 93% Utilization	123	531	17	16	24	38	48,595	15	40	2	2	4	5	7,686
Max Sour	121	513	17	15	24	37	47,911	13	23	2	2	4	4	7,001
Max Heavy	87	367	12	11	17	27	34,294	-22	-123	-3	-3	-3	-7	-6,616
Max Light	118	501	16	15	23	37	46,737	10	10	2	1	3	3	5,827

Note: carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM₁₀ & PM_{2.5}), sulfur dioxide (SO₂), volatile organic compounds (VOCs).

for consideration in HRAs consistent with BAAQMD Regulation 2, Rule 5. The TAC emissions inventory for shipping is based on diesel particulate matter (DPM)

emissions from internal combustion propulsion and auxiliary engines and on PM_{10} and reactive organic compounds (ROGs) for boilers. The PM_{10} emissions from internal combustion propulsion and auxiliary engines were assumed to be equivalent to DPM in the emissions estimation. TACs associated with boiler combustion are evaluated by speciating ROG emissions (i.e., dividing total ROG into individual TAC compounds that are in ROG) according to California Air Resources Board (CARB) emissions profile #504, and PM emissions according to EPA emissions profiles #5676 and #127102.5, based on consultation with and direction from the BAAQMD. Shipping TAC emissions for the 2008-2010 baseline period and Project Crude Blend and the Lightest/Max Shipping Crude blend cases are presented in Table A4.3-SHP-3. For air dispersion modeling, emissions need to be spatially allocated based on where and how they will be emitted. More details on emissions apportionment is provided in *Appendix 4.3-HRA*.

1.1 SHIPPING EMISSIONS QUALITY ASSURANCE

ENVIRON reviewed the shipping emissions estimation methodology described in the ICF report and shipping emission estimates (Chevron Data Transmittal #47A (Rev #6), 2014; Chevron Data Transmittal #26F, 2014). ENVIRON took the following steps to evaluate the emission inventory:

- Confirmed that applied emission factors are consistent with CARB estimates (CARB, 2010; CARB, 2011) for all diesel-fueled engines. Confirmed that applied boiler emission factors are consistent with boiler emission rates by fuel-type in the 2011 Port of Los Angeles emission inventory (Starcrest, 2013).
- Confirmed that vessel transit speeds in the San Francisco Bay are reasonably consistent with estimates in M&N and ENVIRON (2010a,b,c,d).
- Compared vessel horsepower and service speed estimates to other studies (Table A4.3-SHP-4). Comparisons indicate that Long Wharf estimates are reasonably consistent with other studies.
- Confirmed that applied engine load factors are consistent with other studies.
 - In-transit OGV propulsion engine load-factors were estimated based on the propeller law consistent with load factor estimates for other OGV inventories.
 - OGV auxiliary engine load factors are consistent with a 2010 Port of Long Beach inventory (Starcrest, 2011).

TABLE A4.3-SHP-3 SHIPPING BASELINE AND MODERNIZATION PROJECT TAC EMISSIONS, WITH PDFs

Chemical	Emissions (lbs/year)					Change in Emissions (lbs/year)			
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest/Max Shipping Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest/Max Shipping Crude Blend, Max Hydrogen Production, 100% Utilization	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest/Max Shipping Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest/Max Shipping Crude Blend, Max Hydrogen Production, 100% Utilization
Ammonia	213.69	268.44	288.86	283.22	299.54	54.75	75.17	69.53	85.85
Arsenic	0.07	0.09	0.09	0.09	0.10	0.02	0.02	0.02	0.03
Benzene	54.74	68.76	74.00	72.55	76.73	14.03	19.26	17.81	21.99
Cadmium	0.10	0.12	0.13	0.13	0.14	0.03	0.03	0.03	0.04
Chlorine	1.93	2.42	2.61	2.56	2.71	0.49	0.68	0.63	0.78
Chlorobenzene	1.27	1.59	1.71	1.68	1.78	0.32	0.45	0.41	0.51
Copper	0.17	0.22	0.23	0.23	0.24	0.04	0.06	0.06	0.07
DPM	18,474.46	18,656.89	20,004.43	20,276.86	21,149.68	182.43	1,529.97	1,802.40	2,675.22
Ethylbenzene	1.77	2.23	2.40	2.35	2.49	0.45	0.62	0.58	0.71
Formaldehyde	2.53	3.18	3.43	3.36	3.55	0.65	0.89	0.82	1.02
Isomers of Xylene	8.62	10.82	11.65	11.42	12.08	2.21	3.03	2.80	3.46
Lead	1.10	1.39	1.49	1.46	1.55	0.28	0.39	0.36	0.44
m-Xylene	11.40	14.33	15.42	15.12	15.99	2.92	4.01	3.71	4.58
Naphthalene	1.77	2.23	2.40	2.35	2.49	0.45	0.62	0.58	0.71
n-Hexane	40.29	50.62	54.47	53.41	56.48	10.32	14.17	13.11	16.19
Nickel	24.75	31.09	33.45	32.80	34.69	6.34	8.71	8.05	9.94

TABLE A4.3-SHP-3 SHIPPING BASELINE AND MODERNIZATION PROJECT TAC EMISSIONS, WITH PDFs

Chemical	Emissions (lbs/year)					Change in Emissions (lbs/year)			
	Baseline	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest/Max Shipping Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest/Max Shipping Crude Blend, Max Hydrogen Production, 100% Utilization	Project Crude Blend, Max Hydrogen Production, 93% Utilization	Project Crude Blend, Max Hydrogen Production, 100% Utilization	Lightest/Max Shipping Crude Blend, Max Hydrogen Production, 93% Utilization	Lightest/Max Shipping Crude Blend, Max Hydrogen Production, 100% Utilization
o-Xylene	7.86	9.87	10.62	10.41	11.01	2.01	2.76	2.56	3.16
Propene	115.56	145.17	156.21	153.17	161.99	29.61	40.65	37.60	46.43
Selenium	0.07	0.09	0.09	0.09	0.10	0.02	0.02	0.02	0.03
Silicon	30.67	38.53	41.47	40.66	43.00	7.86	10.79	9.98	12.32
Sulfate	1,522.58	1,912.69	2,058.20	2,018.03	2,134.31	390.11	535.62	495.45	611.73
Toluene	54.49	68.45	73.65	72.22	76.38	13.96	19.17	17.73	21.89
Vanadium	63.10	79.27	85.30	83.64	88.46	16.17	22.20	20.53	25.35

TABLE A4.3-SHP-4 COMPARISON OF MODERNIZATION PROJECT SHIPPING EMISSIONS INVENTORY ENGINE HORSEPOWER AND VESSEL SERVICE SPEED TO OTHER EMISSION INVENTORY STUDIES

Ship Type	Engine Type	Pump Type	Owner	Main Engine Rated Power (kWh)			Auxiliary Engine Rated Power (kWh)			Service Speed (Knots)		
				RLW	POLA Marine Crude Oil Terminal ^a	Port of Long Beach ^a	RLW	POLA Marine Crude Oil Terminal	Port of Long Beach	RLW	POLA Marine Crude Oil Terminal ^b	Port of Long Beach ^c
Aframax	SSD	Steam	Chevron	13,086	12,477	13,319	2,117	3,600	2,432	14.8	15.6	14.6
		Steam	Non-Chevron	12,639			2,162			14.9		
Chemical	MSD	Diesel	Non-Chevron	5,325	NA	8,386	2,030	NA	2,839	14.0	NA	14.2
	SSD	Diesel	Non-Chevron	7,251			2,130			14.5		
Panamax	SSD	Diesel	Non-Chevron	12,894	10,300	11,060	4,007	3,600	2,627	14.9	15.3	14.3
		Steam	Non-Chevron	11,042			2,390			15.1		
Product	SSD	Diesel	Chevron	9,849	NA	NA	2,600	NA	NA	16.0	NA	NA
		Steam	Chevron	7,340			2,062			14.5		
		Diesel	Non-Chevron	10,800			3,056			14.8		
		Steam	Non-Chevron	10,196			2,358			14.8		
Suezmax	SSD	Steam	Chevron	18,660	16,000	18,587	2,820	3,600	5,056	15.1	16.5	14.8
	SSD	Steam	Non-Chevron	21,751			2,894			16.5		
	MSD-ED	Steam	Non-Chevron	25,200			3,931			15.3		

Notes: SSD = slow speed diesel engine, MSD = medium speed diesel engine, MSD-ED = medium speed diesel engine driving an electric generator, RLW = Richmond Long Wharf, kWh = kilowatt, POLA = Port of Los Angeles.

^a Port of Los Angeles, 2014.

^b Starcrest, 2013.

- Tug and barge engine load factors are consistent with estimates used in the 2011 Port of Los Angeles emission inventory (Starcrest, 2013).
- Confirmed that applied low load adjustment factors are consistent with the 2011 Port of Los Angeles emission inventory (Starcrest, 2013).
- Confirmed that OGV boiler loads were estimated based on the best available information.
 - Boiler load estimates for maneuvering, low speed transit and anchorage are consistent with tanker boiler load of 371 kilowatts based on 2011 Port of Los Angeles (POLA) emission inventory (Starcrest, 2013).
 - Boiler load estimates for at-berth unloading pumping were estimated based on pumping energy calculations from first principles.
- Confirmed that vessel calls were consistent with the ratio of total import volumes to average parcel size.

ENVIRON also performed the calculations described below to assure the accuracy of the inventory:

- Emissions, time-in-mode, horsepower, and load factors were used to back calculate emission factors which were confirmed to be consistent with the applied emission factors.
- 40-year and 70-year emission factors were compared to the base year emission factors to assure that these 40-year and 70-year estimates correctly accounted for future changes to vessel fleets (e.g. turnover to new tug engines in compliance with CARB Harbor Craft replacement requirements in 17 CCR Section 93118.5) and fuel regulations (e.g. OGV fuel sulfur content requirements per CARB regulations in 13 CCR Section 2299.2).

ENVIRON also reviewed third party sources of information to confirm maneuvering time and berthing time information provided by Chevron in the ICF report.

ICF estimated a maneuvering time of 40 minutes one-way for each OGV to maneuver into and out of a berth (Chevron Data Transmittal #26F, 2014). ENVIRON obtained Automatic Identification System (AIS) ship position data for the 2009 to 2010 period (36 maneuvering events analyzed) and 2013 data (14 maneuvering events analyzed). AIS data, therefore, cannot be used to precisely determine maneuvering end or start time because the main engine can remain running or have started when the ship is stationary at or near the berth. The maneuvering time determined from the AIS data underestimates the total time the main propulsion engine is operating because the engine will operate after

reaching the berth or before leaving the berth. Based on the AIS data, ENVIRON estimated an average maneuvering time of 30 minutes for the 2009 to 2010 calls and 23 minutes for the 2013 calls. The ICF estimate of 40 minutes of maneuvering time one-way, is reasonably consistent with the results ENVIRON compiled from the AIS data.

ICF includes estimates of vessel time-at-berth which can be combined into a call weighted average time-at-berth of 40 hours per call across all vessel calls (ICF, 2014). ENVIRON analyzed Richmond Long Wharf call data for 2008 to 2010 from the Marine Exchange of the San Francisco Bay Region and estimated average at-berth time for a limited number of calls. Data for 538 OGV calls to the Long Wharf allowed for direct estimation of at-berth time based on time stamps for arrival to and departure from the Richmond Long Wharf. For 163 calls, times of arrival to and departure from the Long Wharf were not available; for these calls departure and arrival times were able to be estimated based on Golden Gate Bridge time stamps adjusted for the average transit time between the Golden Gate and the Richmond Long Wharf. Consistent with ICF (2014), average time at-berth was estimated to be 40 hours for the 701 total calls analyzed.

1.2 REFERENCES

California Air Resources Board (CARB). 2010. *Updates on the Emissions Inventory for Commercial Harbor Craft Operating in California*.

California Air Resources Board (CARB). 2011. *Emissions Estimation Methodology for Ocean-Going Vessels*. May.

Chevron Data Transmittal #26F: Shipping Report, 2014.

Chevron Data Transmittal #47A (Rev #6): PDF Descriptions: Domes, LED, 2014.

ENVIRON, 2008. *Port of Oakland 2005 Seaport Air Emissions Inventory*, prepared for the Port of Oakland. March.

ICF International. 2009. *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories*. April.

Moffitt & Nichols and ENVIRON. 2010a. *SF Bay Area Seaports Air Emission Inventory -- Port of San Francisco 2005 Emissions Inventory*, prepared for the Bay Planning Coalition. June.

Moffitt & Nichols and ENVIRON. 2010b. *SF Bay Area Seaports Air Emission Inventory -- Port of Richmond 2005 Emissions Inventory*, prepared for the Bay Planning Coalition. June. 2010.

Moffitt & Nichols and ENVIRON. 2010c. *SF Bay Area Seaports Air Emission Inventory -- Port of Benicia 2005 Emissions Inventory*, prepared for the Bay Planning Coalition. June.

Moffitt & Nichols and ENVIRON. 2010d. *SF Bay Area Seaports Air Emission Inventory -- Port of Redwood City 2005 Emissions Inventory*, prepared for the Bay Planning Coalition. June.

Starcrest Consulting Group, LLC (Starcrest). 2011. *Port of Long Beach Air Emissions Inventory – 2010*. July.

Starcrest Consulting Group, LLC (Starcrest). 2012. *Port of Long Beach 2011 Emission Inventory*. July.

Starcrest Consulting Group, LLC (Starcrest). 2013. *Port of Los Angeles Inventory of Air Emissions – 2012*. July.

The Port of Los Angeles. 2014. *Final SEIS/SEIR – Pacific L.A. Marine*.
http://www.portoflosangeles.org/EIR/PacificLAMarine/FEIR/feir_pacificLA_marine.asp.

APPENDIX 4.3 - TRANS

Trans: Rail and Truck Emissions

APPENDIX 4.3

TRANS: RAIL AND TRUCK EMISSIONS

This appendix describes the methods used to estimate emissions from rail and truck transportation to and from the Facility. Emissions estimation methods are contained for the Baseline and the Modernization Project.

The 2008 – 2010 emissions were adjusted to reflect what the emissions associated with activities would be if they took place in 2016. Therefore the fuel consumption for the Baseline is identical to 2008 – 2010 but the emission factors correspond to the 2016 operations. For the Modernization Project, the fuel consumption is scaled from the 2008 – 2010 emissions based on the transportation activities.

Both rail and trucking operations emit particulate matter <10 microns (PM_{10}) and particulate matter < 2.5 microns ($PM_{2.5}$). For the purposes of this EIR, for rail, $PM_{2.5}$ is conservatively assumed to be equal to PM_{10} . Therefore, throughout the rail section of this appendix, reference will be made to $PM_{10}/PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions were estimated separately for trucking.

4.1 RAIL EMISSIONS

This section explains the emissions calculation methodology for rail transportation associated with Facility operations for the 2008-2010 period, Baseline, and the Modernization Project. The rail emissions are calculated based on the fuel consumption and United States Environmental Protection Agency (EPA) locomotive emission factors (EPA, 2009), and the methodology is identical for the Baseline and Modernization Project. This section details the emissions calculation for all aspects of rail operations, including switching inside the Facility fenceline, switching at the BNSF railyard, and line haul. In addition, the potential for volatile emissions during rail transport is also addressed.

4.1.1 Chevron Rail Operations

Certain materials are transported by rail to and from the Project site. Materials transported by rail include liquefied petroleum gases, lubricant base oils, lubricants, lubricant additives, and ammonia. During the 2008-2010 period and years since, the Facility did not receive gas oils or crude oil by rail. Chevron has also attested that it will not receive gas oils or crude oil by rail as a result of the Modernization Project (Chevron Data Transmittal #36G (Rev #1), 2013).

4.1.2 Source Identification

Criteria air pollutants (CAPs), toxic air contaminants (TACs), and greenhouse gases may be emitted as a result of the following rail activities associated with Facility operations:

- Volatilization of constituents carried in rail cars via railcar dome openings (i.e., vent and safety valves for maintaining a stable pressure) and loading emissions;
- Engine exhaust resulting from switching operations within the Facility fenceline;
- Engine exhaust resulting from switching operations at the BNSF railyard outside the Facility fenceline; and
- Engine exhaust resulting from line haul operations (i.e., rail transportation between the adjacent railyards and other major rail terminals within the Bay Area Air Quality Management District [BAAQMD] jurisdiction boundary). As discussed later in this section, the longest possible rail route within the BAAQMD jurisdiction boundary was used for the emissions calculation.

Railcar dome openings and loading emissions associated with the transportation of lubricants and lubricant-related materials from railcars are negligible because the typical vapor pressure of these materials is less than 0.02 pounds per square inch absolute (psia) (BAAQMD, 2006). Materials with low vapor pressure, such as lubricants, have low volatility and are less likely to vaporize and generate evaporative emissions. Railcars that carry pressurized materials, such as LPG and ammonia, do not have railcar dome openings. Therefore, loading emissions associated with the transportation of LPG and ammonia from pressurized railcars are negligible because they operate under a closed system with vapor return back to LPG spheres, ammonia bullets, or other process vessels.

4.1.3 General Methodology and Equation for Rail Emissions Calculation

The locomotives of switchers and line haul trains are both fueled with diesel fuel, and CAPs, TACs, and greenhouse gases are emitted as a result of diesel fuel combustion in the engines. CAPs include carbon monoxide (CO), volatile organic compounds (VOCs), nitrogen oxides (NO_x), sulfur dioxide (SO_2), and $\text{PM}_{10}/\text{PM}_{2.5}$. As discussed below, diesel particulate matter (DPM) is the only TAC considered here that is emitted from the combustion of diesel fuel. Finally, the emitted greenhouse gases include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Emissions from diesel combustion are calculated based on the fuel consumption using the following general formula:

$$E_i = EF_i \times FC \times K$$

Where:

E_i : emissions of constituent i in tons/year for CAP and TAC and in metric tonnes/year for greenhouse gas

EF_i : emission factor of constituent i in grams per gallon (g/gal) of diesel

FC = Fuel Consumption: in gallons/year

K: unit conversion from grams to tons or metric tonnes

4.1.4 TAC Emissions from Railway Exhaust

Diesel exhaust is a complex mixture that includes hundreds of individual constituents (Cal/EPA, OEHHA, 1998), and it is identified by the State of California as a known carcinogen (Cal/EPA, CARB, 2011). Under California regulatory guidelines, DPM is used as a surrogate measure of carcinogen exposure for the mixture of chemicals that make up diesel exhaust as a whole (Cal/EPA, CARB, 2011). Cal/EPA and other proponents of using the surrogate approach to quantifying cancer risks associated with the diesel mixture indicate that this method is preferable to use of a component-based approach. A component-based approach involves estimating risks for each of the individual components of a mixture. Critics of the component-based approach believe it will underestimate the risks associated with diesel as a whole mixture because the identity of all chemicals in the mixture may not be known and/or exposure and health effects information for all chemicals identified within the mixture may not be available. Furthermore, Cal/EPA has concluded that “potential cancer risk from inhalation exposure to whole diesel exhaust will outweigh the multi-pathway cancer risk from the speciated components” (Cal/EPA, OEHHA, 2003). In this section, the emissions of DPM are assumed to be the same as the emissions of $PM_{10}/PM_{2.5}$ in diesel exhaust and are not calculated separately.

4.1.5 2008 – 2010

Emissions during 2008 – 2010 are based on activity data (number of railcars coming to and leaving from the Project site) and emissions factors. This is further described below.

4.1.5.1 Activity Data

During 2008 – 2010, the Facility accepted 227,900 barrels of crude oil and 48,000 barrels of gas oil per day as shown in Table A4.3-TRANS-1. Though the

crude oil and gas oil are not transported by rail, the Facility throughput directly affects the quantities of material needed (i.e., LPG and additives) and produced (i.e., LPG, lubes, and ammonia) that are transported to and from the Facility by rail.

As shown in Table A4.3-TRANS-1, the Facility received 2,034 railcars of LPG and 279 railcars of additives averaged annually during 2008 – 2010. The Facility also exported 1,485 railcars of LPG, 1,445 railcars of lubricant, and 112 railcars of ammonia averaged annually during 2008 - 2010. As presented later in Table A4.3-TRANS-7, a railcar can carry 64 tons of liquefied LPG or ammonia and 77 tons of lubricants or lubricants-related material (e.g., additives) (Chevron Data Transmittal #36G (Rev #1), 2013). This results in an average of 5,243 loaded railcars that were needed for material input and product deliveries per year during 2008 - 2010.

4.1.6 Emissions Calculation for Switching inside the Fenceline

A switcher is a small locomotive used for assembling a train for a line haul locomotive or for disassembling a train that has been brought in. A switcher usually moves railcars around within a railyard and is not intended for moving trains over a long distance. The switchers inside the Facility fenceline are owned by Chevron and only serve the trains going to and from the Project site.

4.1.6.1 Emission Factors

CO, total hydrocarbons (HC), NO_x, and PM₁₀/PM_{2.5} (or DPM) emissions associated with the switchers are calculated based on EPA's fuel-based emission factors (EPA, 2009). Note that HCs, or total hydrocarbons, is converted to VOCs using the EPA's conversion factor (EPA, 2005). For locomotives manufactured after 1973, the EPA's locomotive engine Tier standards described in 40 CFR Part 92 and 1033 apply based on the year in which the locomotive was originally manufactured. For pre-1973 locomotives, to which the Tier standards do not apply, the uncontrolled emission factors are selected.

The switcher trains operated by the Facility inside the Facility fenceline were originally manufactured in the 1960s, and therefore the Tier standards do not apply. In this calculation, the EPA's uncontrolled switcher emission factors are used as presented in Table A4.3-TRANS-2.

The SO₂ emission factor is calculated based on the regulatory diesel sulfur content of 15 parts per million (EPA, 2012), assuming 100% of the sulfur in diesel is converted to SO₂. The detailed calculation is explained in Table A4.3-TRANS-2.

Greenhouse gas emissions from diesel combustions include CO₂, CH₄ and N₂O. The units CO₂ and greenhouse gas (or CO₂e) are used interchangeably for diesel engine emissions because CH₄ and N₂O are assumed to contribute a negligible amount of global warming potential (GWP) when compared to the CO₂ emissions (CCAR, 2009). The fuel based CO₂ emission factor is calculated by converting EPA's heat input-based emission factor in kilogram (kg) per million British thermal units (MMBtu) to kg per gallon (kg/gal) of diesel used using the diesel high heating value (HHV) in MMBtu/gal (EPA, 2011). The details are explained in Table A4.3-TRANS-2.

4.1.6.2 Fuel Consumption

The fuel consumption for the switching activity for 2008 – 2010 was provided directly by the Facility (Chevron Data Transmittal #36G (Rev #1), 2013). The switcher consumed an average of 32,689 gallons diesel per year during 2008 – 2010 as presented in Table A4.3-TRANS-3.

4.1.6.3 Emissions

As shown in Table A4.3-TRANS-3, the switching inside the fenceline during 2008 – 2010 generated 1.0 ton of CO, 0.6 tons of VOC, 9.5 tons of NO_x, 0.003 tons of SO_x, and 0.2 tons of PM₁₀/PM_{2.5} and DPM, and 334 metric tons of CO₂ per year.

4.1.7 Switching at the BNSF Railyard

Switching activities also occur in the BNSF railyard outside the Facility fenceline. The switchers in the BNSF railyard are owned by BNSF and serve both Chevron trains and non-Chevron trains. The BNSF railyard activities were used to estimate the off-site switching emissions.¹

4.1.7.1 Emission Factor

The BNSF switch engines at the BNSF railyard are also assumed to be 100% uncontrolled given that there was no information provided on the BNSF fleet. The emission factors for switching at the BNSF railyard are same as those for switching inside the fenceline summarized in Table A4.3-TRANS-2.

4.1.7.2 Fuel Consumption

The BNSF railyard serves a number of locations, including the Facility. Only a fraction of the switching activities at the BNSF railyard are Facility related. The

¹ In order to simplify the analysis and due to limited availability of data, switching operations data from BNSF were used to determine emissions for all switchers outside of the fenceline that service Chevron's railcars (even though Union Pacific also has switchers that service Chevron's rail cars).

fuel consumption for switching at the BNSF railyard that is associated with the Facility was scaled from the total switching diesel usage at the BNSF railyard using the ratio of the number of locomotives to and from the Facility from the BNSF railyard.

The BNSF switch fuel usage is estimated based on the total switch operational time provided in the Richmond Railyard TAC Emissions Inventory (ENVIRON, 2006) and switcher fuel consumption rate provided in the Port of Oakland Seaport Air Emissions Inventory (ENVIRON, 2008). The detailed calculation is presented in Table A4.3-TRANS-4. Based on information provided in these reports, 186,159 gallons of diesel fuel were used at the BNSF railyard for switching.

The number of locomotives to and from the Facility is estimated based on the total number of railcars that served the Facility, as discussed previously, number of railcars per unit train, and number of locomotives per unit train.² A unit train is a freight train moving a large tonnage of single bulk products between two terminals. Unloaded upon arrival and returned promptly for another load, the unit train is more cost efficient because it eliminates intermediate yarding and switching. The detailed calculation presented in Table A4.3-TRANS-5 conservatively assumes that all trains are loaded and unloaded at the BNSF railyard, the trains that transport the input materials leave the Facility empty, and trains that transport products arrive at the Facility empty. This assumption maximizes the number of locomotive trips as well as the switching services associated with the Facility. As shown in Table A4.3-TRANS-5, the Facility operation needs 655 locomotive trips per year at the BNSF railyard for transporting input material and delivering products. A total of approximately 10,725 locomotives arrive and depart the BNSF railyard based on the Richmond Railyard TAC Emissions Inventory.

Approximately 11,376 gallons of fuel per year were consumed by switching at the BNSF railyard associated with the Facility operations during 2008 – 2010 as shown in Table A4.3-TRANS-5.

4.1.7.3 Emissions

As shown in Table A4.3-TRANS-5, switching at the BNSF railyard during 2008 – 2010 generated 0.3 tons of CO, 0.2 tons of VOC, 3.3 tons of NO_x, 0.001 tons of SO₂, and 0.07 tons of PM₁₀/PM_{2.5} and DPM, and 116 metric tons of CO₂ per year.

² The number of railcars, buffer cars, and locomotives per unit train are from Chevron Transmittal #36G (Rev #1), Attachment 2, 2013.

4.1.8 Line Haul

Line haul refers to the transportation of materials or products over long distances (e.g., between two major cities or terminals).

4.1.8.1 Emission Factor

The fuel consumption based line haul NO_x , HC, and $\text{PM}_{10}/\text{PM}_{2.5}$ emission factors for 2008 – 2010 is the average of 2008, 2009, and 2010 EPA emission factors (EPA, 2009). The CO emission factor is a constant for all Tiers so it does not vary by year. The SO_2 and CO_2 emission factors are calculated following the same methodology as for the switching activities. The emission factors are summarized in Table A4.3-TRANS-6.

4.1.8.2 Fuel Consumption

The fuel consumption associated with LPG receipts, additive receipts, LPG and ammonia shipments, and lubricant shipments is estimated separately based on the annual gross ton-mile (GTM) and average fuel efficiency of the train.

GTM is a common unit used in rail transportation, and it is the product of total weight (including the weight of locomotives, railcars, and buffer cars)³ and the distance traveled by a train. For the trains arriving loaded and departing empty, the inbound annual total weight include the weight of the materials (e.g., additives), locomotives, railcars, and buffer cars. Each incoming train (loaded) consists of 6 locomotives, 96 railcars, and 4 buffer cars (Chevron Data Transmittal #36G (Rev #1), Attachment 2, 2013). The unit weight of each component of the train as well as for the material in a railcar is listed in Table A4.3-TRANS-7. The outbound train has the same number of railcars and buffer cars but only three locomotives.¹⁵ In addition, the railcars of an outbound train are empty so the weight of the material is excluded. Similarly, for the trains arriving empty and departing loaded, the outbound train includes the product, 6 locomotives, 96 railcars, and 4 buffer cars, and the inbound train consists of 3 locomotives and the same number of railcars and buffer cars but no product. The total inbound and outbound annual gross weights are estimated based on the materials transported by rail to and from the Facility, as summarized in Table A4.3-TRANS-7.

The GTM is then calculated by multiplying the gross weight by the traveled distance. To be conservative, the one-way trip distance of 65 miles (the longest

³ Buffer cars are to be placed between the locomotive engine and shipments as required by federal regulations for safety purposes (e.g., to isolate explosives from ignition sources and from the train crew).

rail distance from the Project site to the boundary of the BAAQMD [i.e., from the Project site to Davis, CA] by rail) was used (BNSF, 2013).

The average fuel efficiency of 955 GTM/gal is estimated by dividing the total GTM by the total diesel consumption reported in the BNSF Railway Class I Railroad Annual Report Restatement.⁴ The fuel consumption associated with the line haul portion of rail transport of material to and from the Facility is calculated by dividing the total GTM by the average fuel efficiency. The line haul activities are estimated to consume 58,887 gallons of fuel per year during 2008 – 2010.

4.1.8.3 Emissions

As shown in Table A4.3-TRANS-7, the line haul activities during 2008 – 2010 generated 1.7 tons of CO, 0.6 ton of VOC, 10.6 tons of NO_x, 0.006 tons of SO₂, and 0.3 tons of PM₁₀/PM_{2.5} and DPM, and 601 metric tons of CO₂ per year.

4.1.9 Emissions Summary

Table A4.3-TRANS-8 summarizes the CAP, greenhouse gas, and TAC emissions from switching inside fenceline, switching at the BNSF railyard, and line haul during 2008 – 2010. The 2008 – 2010 rail activities emitted 3.1 tons of CO, 1.4 tons of VOC, 23.5 tons of NO_x, 0.01 tons of SO₂, and 0.6 tons of PM₁₀/PM_{2.5} and DPM, and 1,051 metric tons of CO₂ per year.

4.1.10 Baseline

The 2008 – 2010 emissions were adjusted to reflect what the emissions associated with activities would be if they took place in 2016. As discussed below, the only adjustment made to the 2008 – 2010 rail emission is to substitute in the 2016 line haul emission factors for long distance locomotives as approved by EPA. No adjustments are made to emission factors for localized switching locomotives. Changes to line haul emission factors from 2008 – 2010 to the Baseline result in an overall reduction in emissions of both CAPs and TACs.

EPA's locomotive engine tier standards described in 40 CFR Part 92 and 1033 are not applicable to the switching engines inside the fenceline. The same is true for switching engines in the BNSF railyard. There is no information from either

⁴ A Class I Railroad Annual Report (usually called R1 report) is required for every class I railroad operating within the United States. The reported figures need to be an accurate and honest assessment of the railroads activity. The national fuel efficiency in the BNSF R1 report undergoes strict accounting practices. While not specific to California, the estimates include in-yard, maintenance, and line-haul activity in California. No other public data source has undergone the level of review as the fuel efficiency reported in the R1 report.

BNSF or Chevron indicating that they are upgrading their switching fleets between now and 2016. Accordingly, 2008 – 2010 emission factors will be used for the CAP, greenhouse gas, and TAC emissions from switching both within the Project site and at the BNSF railyard. Therefore, the CAP, greenhouse gas, and TAC emissions from switching at the Facility and at the BNSF railyard are identical to those during 2008 – 2010 (Tables A4.3-TRANS-2 to -5).

The line haul emissions are calculated following the same methodology as 2008 – 2010 but using the EPA's 2016 fleet average emission factor (Tables A4.3-TRANS-6 and -7).

4.1.11 Total Baseline Emissions Summary

The total rail emissions for the Baseline are summarized in Table A4.3-TRANS-8. The overall rail activities in this scenario emit 3.1 tons of CO, 1.1 tons of VOC, 20.7 tons of NO_x, 0.01 tons of SO₂, 0.5 tons of PM₁₀/PM_{2.5} and DPM, and 1,051 metric tons of CO₂ per year. Compared to the actual emissions during 2008 – 2010, the VOC, NO_x, and PM₁₀/PM_{2.5} (DPM) emissions are lower due to more stringent emission standard. CO, SO₂, and CO₂ emission factors are not affected by the 2016 standard, so the emissions for those pollutants are the same as the actual emissions during 2008 – 2010.

4.1.12 Project Emissions

There are three categories of change to the Baseline that must be evaluated in estimating Modernization Project emissions. The first is the physical changes to Facility equipment that result in new or different emissions. The second is the increase in emissions that would result from the change from the Baseline utilization to a reasonably foreseeable utilization. The third is the change in emissions that would result from the processing of higher sulfur crude oils and crude oils at the lower and higher ends of the intermediate-light gravity range. The third category of change does not impact rail emissions, as it does not change the volumes or types of materials shipped by rail, as the Facility does not receive feedstock, nor ship product by rail.

Emissions associated with a Modernization Project scenario are calculated based on the emission factors of the Modernization Project's commencement year of 2016, which are identical to those of the Baseline. Since the fuel consumption is directly related to the rail activity, the emissions as well as the fuel consumption for the Modernization Project are scaled from the Baseline based on the rail activity.

4.1.13 Activity Data

Table A4.3-TRANS-1 summarizes the rail activity data including the Facility crude oil and gas oil throughput, number of railcars of LPG and additive received, and number of railcars of lubricant, ammonia, and LPG delivered for various Modernization Project scenarios.

4.1.14 Switching Inside the Fenceline

As discussed earlier, the emission factors for the switching engine are uncontrolled and do not vary by year. The fuel consumption as well as the CAP, TAC, and greenhouse gas emissions of a Modernization Project scenario are scaled from those of the Baseline based on the ratio of the total crude and gas oil throughput. Table A4.3-TRANS-3 summarizes the scaled emissions associated with switching inside the Facility fenceline for various Modernization Project scenarios.

4.1.15 Switching at the BNSF Railyard

As discussed earlier, the emission factors for the switching engine are uncontrolled and do not vary by year. The fuel consumption as well as the CAP, TAC, and greenhouse gas emissions of a Modernization Project scenario are scaled from those of the Baseline based on the total number of railcars. Table A4.3-TRANS-5 summarizes the scaled emissions associated with switching at the BNSF railyard for various Project scenarios.

4.1.16 Line Haul

The Modernization Project line haul emission factors are the same as those used for the Baseline. The fuel consumption as well as the CAP, TAC, and greenhouse gas emissions of a Modernization Project scenario are scaled from those of the Baseline based on the LPG receipts, additive receipts, LPG and ammonia shipments, and lubricant shipments as presented in Table A4.3-TRANS-7.

4.1.17 Total Emissions Summary

The total rail emissions for various Modernization Project scenarios are summarized in Table A4.3-TRANS-8. The comparisons of CAP, greenhouse gas, and TAC emissions between the Modernization Project scenarios and the Baseline are presented in Table A4.3-TRANS-9.

4.2 OPERATIONAL ON-ROAD MOBILE CAP, GHG AND TAC EMISSIONS

This section describes the methods, data and assumptions used to estimate CAP, GHG and TAC emissions from operational on-road mobile activities associated with the Modernization Project. The Modernization Project includes on-road mobile emission-generating sources such as propane and other chemicals delivery trucks, and sulfur, sodium bisulfite, products, and solid and hazardous wastes shipment trucks. CAP, GHG and TAC emissions from on-road worker vehicles were not included as the increase in workers (i.e., 29 additional workers) and associated increases in worker vehicle trips and emissions due to the Modernization Project are assumed to be negligible. In addition, roadway dust emissions associated with trucks travel on paved roads were also not included as they are assumed to be negligible.

Trucking emissions for the Modernization Project are impacted both by the increase in emissions that would result from the change from Baseline utilization to a reasonably foreseeable utilization, and by the processing of a wider variety of fuels, as sulfur produced by the Facility is removed by trucking. In addition to increasing the trucking emissions to account for the increase in Facility utilization, additional trucks are considered for the additional sulfur produced by the Facility. Similar to the rail analysis, the increased hydrogen plant utilization that is considered as the Modernization Project and the maximum unit rate model (URM) case would not impact trucking activities or emissions.

Figure A4.3-TRANS-1 shows the truck routes from the highway ramps to the Facility boundary. Figures A4.3-TRANS-2 through A4.3-TRANS-8 show the truck routes within the Facility boundary associated with the Modernization Project. CAP and GHG emissions due to on-road trucking resulting from the transport of materials from the on-site delivery areas to the off-site vendors or customer sites were estimated up to the BAAQMD boundary. DPM emissions (a surrogate for TAC emissions, as discussed below) were calculated for on-road trucks from on-site laydown areas to the highway ramps. Additional details are provided in the sections below.

4.2.1 On-Road Mobile Sources CAP and GHG Emissions

4.2.1.1 Source Identification, Physical Scope and Temporal Scenarios for On-Road Mobile Sources' Emissions

This section discusses the emissions estimation of CAPs and GHGs associated with on-road mobile sources. As indicated above, on-road mobile sources include material delivery trucks and product shipment trucks. NO_x , PM_{10} , $\text{PM}_{2.5}$, SO_x , CO ,



02.20.2014 P:\GIS\11-005_CVRN\Data\ENVIRON\4.3 Trans Maps\CVRN_A4.3-TRANS-1_Operational Truck Trips ETC_Rev.mxd

Source: Chevron Transmittals

Figure A4.3-TRANS-1
Chevron Refinery Modernization Project EIR
Operational Truck Trips: trips from highways through
Richmond Parkway and through Castro St.



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-TRANS\CVRN_A4.3-TRANS-2 oxygen trucks.mxd

Source: Chevron Transmittals

Figure A4.3-TRANS-2
Chevron Refinery Modernization Project EIR
Oxygen Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-TRANS\CVRN_A4.3-TRANS-3 sulfur trucks.mxd

Source: Chevron Transmittals

Figure A4.3-TRANS-3
Chevron Refinery Modernization Project EIR
Sulfur Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-TRANS\CVRN_A4.3-TRANS-4 marketing rack trucks.mxd

Source: Chevron Transmittals

Figure A4.3-TRANS-4
Chevron Refinery Modernization Project EIR
Marketing Rack Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-TRANS\CVRN_A4.3-TRANS-5 Propane trucks.mxd

Source: Chevron Transmittals

Figure A4.3-TRANS-5
Chevron Refinery Modernization Project EIR
Propane Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-TRANS\CVRN_A4.3-TRANS-6 HAZ trucks.mxd

Source: Chevron Transmittals

Figure A4.3-TRANS-6
Chevron Refinery Modernization Project EIR
Solid Hazardous Waste Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-TRANS\CVRN_A4.3-TRANS-7 Tally room trucks.mxd

Source: Chevron Transmittals

Figure A4.3-TRANS-7
Chevron Refinery Modernization Project EIR
Tally Room Truck Trips



02.20.2014 U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\AQ-TRANS\CVRN_A4.3-TRANS-8 Lubricant trucks.mxd

Source: Chevron Transmittals

Figure A4.3-TRANS-8
Chevron Refinery Modernization Project EIR
Lubricant Truck Trips

ROG, CH₄, N₂O and CO₂ emissions from on-site and off-site activities were calculated for on-road mobile sources.

4.2.1.2 Definition of On-Site and Off-Site Activity

In this section, any on-road mobile activity that occurs within the Facility boundary shown in Figures A4.3-TRANS-2 through A4.3-TRANS-8 is defined as on-site activity. Similarly, any activity that occurs outside of the Facility boundary is defined as off-site activity. “On-site” and “off-site” are terms that refer to the location where emissions occur. The location of TAC emissions is important for the health risk analysis (HRA), as will be discussed later in this section.

4.2.1.3 Physical Domain for CAP and GHG Emissions Inventory

CAP and GHG emissions from operational on-road trucks included emissions from truck on-site and off-site activities from the truck trip origin/destination up to the BAAQMD boundary. Truck trip lengths from the Facility to the trip origin/destination, limited to the distance within the BAAQMD boundary, were provided by Chevron in Chevron Data Transmittal #18 (Rev #2), 2013 and are shown in Table A4.3-TRANS-10.

4.2.1.4 Temporal Scenarios: 2008-2010, Baseline, and Modernization Project

For this analysis, on-road mobile emissions were analyzed for the 2008-2010, Baseline, and the Modernization Project. 2008-2010 period characterizes the actual emissions for the period from 2008 to 2010, and the Baseline projects the 2008-2010 period emissions to the Modernization Project’s commencement year of 2016. The adjustment from the 2008-2010 period emissions to Baseline scenario emissions takes into account more stringent emission controls in newer engines, and reduces the emissions of both CAPs, GHGs and TACs for purposes of the Baseline scenario. The Modernization Project emissions assume that operations begin in 2016.

4.2.2 Overview of On-Road Mobile Sources CAP and GHG Emissions Estimation

On-road mobile emissions were estimated using methods consistent with CalEEMod™, using emission factors from the California Air Resource Board (CARB) Emission Factor 2011 (EMFAC2011) database. EMFAC is California’s model for estimating emissions from on-road vehicles operating in California, and EMFAC2011 is the latest version of that model. The data required to estimate on-road mobile emissions include trip counts and trip lengths, fuel type, fleet mix, model years, and travel speeds. The emissions calculated for trucks include running, idling, brake wear, and tire wear emissions. The truck startup emissions were not quantified because EMFAC2011 does not provide

startup emission factors for diesel trucks. For annual CAP and GHG emissions estimation, the 2008-2010 period emissions were estimated using 2010 emission factors with 2008-2010 activity data. The Baseline emissions was adjusted by projecting 2008-2010 period emissions to the year 2016. Modernization Project and other scenario emissions were estimated for year 2016. Modernization Project and other scenario annual emissions were conservatively estimated for the year 2016 because each subsequent year will have lower emissions from on-road mobile sources than 2016 due to cleaner fleets in subsequent years. 2008-2010 emissions were conservatively estimated for year 2010 because 2010 provides the lowest emissions for any year from 2008 to 2010.

Table A4.3-TRANS-11 shows the emission calculation methodologies for on-road mobile emission sources. More details regarding emissions estimation of operational on-road mobile CAPs and GHGs are provided below, with a discussion of activity data followed by emission factors.

4.2.3 CAP and GHG Inventories On-Site On-Road Mobile Sources Activities: Emission Sources

4.2.3.1 On-Road Mobile Sources

The following sections describe quantification of on-road mobile source emissions emitted on-site; later sections will describe on-road mobile source emissions that are emitted off-site.

4.2.3.1.1 On-Site On-Road Mobile Sources Activity Data

Activity data used to estimate emissions from on-road vehicles include trip counts, trip lengths, and vehicle types. 2008-2010 period and Baseline have the same activity data (for years 2008-2010, inclusive). However, the two scenarios use different sets of emission factors, as described in more detail in sections below. 2008-2010, Baseline and Modernization Project trip lengths were provided by Chevron. The 2008-2010 period trip counts were provided by Chevron, and the Modernization Project trip counts were estimated based on the 2008-2010 period trip counts and the unit rate model (URM) crude oil, gas oil and sulfur production throughputs as described in more detail in Table A4.3-TRANS-14. One-way vehicle trip counts for the Baseline scenario are assumed to be equal to the 2008-2010 period's trip counts.

Delivery and shipment trucks that travel from the Facility to off-site areas have both on-site and off-site on-road activities. This section describes the methodology used to estimate emissions from the on-site activities (i.e., activities that occur between the Facility boundary and the on-site loading/delivery areas). Delivery trucks transport materials from off-site vendors to the

Facility and shipment trucks transport materials from the Facility to off-site customers. The different shipment and delivery trip types and their respective loading/delivery areas within the Facility are presented in Table A4.3-TRANS-12. Emissions were estimated based on trip counts and trip lengths. On-site trip lengths were measured on an aerial photograph based on the trip routes from the Facility boundary to the different truck types' respective on-site loading/delivery areas. Table A4.3-TRANS-10 shows the round trip mileages for trucks that travel both on-site and off-site. Tables A4.3-TRANS-13 and A4.3-TRANS-14 show the trip counts for the 2008-2010, Baseline, and Modernization Project (at both 93% and 100% Utilization Scenarios).

4.2.3.1.2 *On-Site On-Road Mobile Sources Idling Emissions*

For the CAP and GHG inventories, on-road trucks including all delivery and shipment trucks were assumed to idle for 10 minutes at each of two stopping points along their respective on-site travel routes. The delivery and shipment trucks that travel both on-site and off-site were assumed to idle at Facility main gate when entering and exiting the Facility.

This assumption of idling for 10 minutes doubles the maximum allowable⁵ idling scenario under CARB's Heavy-Duty Vehicle Idling Emission Reduction Program (Cal/EPA, CARB, 2013) requirement. The exceptions to the idling limit under CARB's rules, such as for actively moving lines, allow for this method. This approach will also yield conservative results as it is unlikely that a delivery or shipment truck will idle for up to 10 minutes at all points mentioned above during a round trip.

4.2.3.1.3 *On-Site On-Road Mobile Sources Emission Factors*

The emission factors for on-road vehicles were obtained from EMFAC2011. Annual emission rates for EMFAC vehicle class T7 (heavy-heavy duty trucks) were downloaded for Contra Costa County. EMFAC2011 includes emission factors for NO_x, PM₁₀, PM_{2.5}, ROG, TOG,⁶ CO, SO_x, CH₄, N₂O and CO₂. Carbon Dioxide equivalent (CO₂e) emission factors were then estimated using the global warming potentials (GWPs) and CH₄, CO₂ and N₂O emission factors. Global warming potentials are from Appendix E of CARB's LGOP. As specified in the Protocol, the

⁵ Exceptions to the idling rule are detailed in California Code of Regulations Title 13 Chapter 10 Section 2485(d), and include but are not limited to idling periods when the vehicle is queuing at a distance greater than 100 feet from any zoned residential area with at least one residential unit; when the vehicle must remain motionless due to official traffic signals or traffic/weather conditions beyond the control of the driver; and when buses have passengers onboard.

⁶ The TOG class includes all organic gases emitted into the atmosphere. The VOC class does not contain compounds that are exempt from regulation. Thus, TOG may contain more hydrocarbons than VOC from the same source.

Intergovernmental Panel on Climate Change (IPCC)'s Second Assessment Report (SAR) global warming potentials are still used by international convention and in the United States, and are therefore used here. Emission factors for CH₄ and N₂O were not provided in the online emissions database. However, ARB provided methodologies for estimating CH₄ and N₂O emission factors on its EMFAC frequently asked question webpage. CH₄ emission factors were derived by multiplying the TOG emission factors given in EMFAC 2011 online database by 0.058821. N₂O emission factors were calculated using the following formula: 0.3316 g/gallon fuel x gallon fuel for all diesel vehicles / miles traveled for all diesel vehicles. Both the gallons of fuel used for all diesel vehicles in the country and miles traveled for all diesel vehicles in the county can be obtained from the online EMFAC emissions database. All delivery and shipment trucks were conservatively assumed to be diesel-fueled vehicles. To reflect the variability of travel speeds anticipated, the “Aggregated Speeds” option was chosen in EMFAC2011 to estimate emission factors. Emission factors for year 2010 were used for the 2008-2010 period and 2016 emission factors were used for the Baseline, and the Modernization Project. Table A4.3-TRANS-15 summarizes the emission factors used for on-road vehicles for the CAP and GHG emissions inventories.

4.2.3.1.4 On-Site On-Road Mobile Sources Emissions

Table A4.3-TRANS-16 summarizes the combined CAP and GHG on-site and off-site emissions from operational on-road mobile source emissions for the 2008-2010, Baseline, and the Modernization Project 93% and 100% Utilization Scenarios.

4.2.4 CAP and GHG Inventories Off-Site On-Road Mobile Sources Activities: Emission Sources

4.2.4.1 On-Road Mobile Sources

4.2.4.1.1 Off-Site On-Road Mobile Sources Activity Data

There are two general types of vehicles with off-site on-road activity:

- Delivery trucks that transport materials (such as oxygen, lubricants and reagents) from off-site vendors to the Facility boundary. Emissions were estimated based on trip counts and trip lengths. The activity data provided by Chevron included one-way vehicle trip counts for a year for the 2008-2010 period and the combined on-site and off-site trip length of each delivery truck route. Off-site trip lengths were calculated by subtracting the on-site trip lengths (measured using aerial photograph) from the total trip lengths for each type of delivery truck. One-way vehicle trip counts for the Baseline scenario are assumed to be equal to the 2008-2010 period. One-way vehicle trip counts for the Modernization Project and potential future

cases were estimated from the 2008-2010 period one-way trip count based on the URM crude oil, gas oil and sulfur volumes as described in Table A4.3-TRANS-14.

- Shipment trucks that transport materials (such as light products, lubricants and propane) from the Facility boundary to off-site customers. Emissions were estimated based on trip counts and trip lengths. The activity data provided by Chevron included one-way vehicle trip counts for a year for the 2008-2010 period and the combined on-site and off-site trip lengths of each delivery truck route. Off-site trip lengths were calculated by subtracting the on-site trip lengths (measured using aerial photograph) from the total trip lengths for each type of delivery truck. One-way vehicle trip counts for the Baseline scenario are assumed to be equal to the 2008-2010 period. One-way vehicle trip counts for the Modernization Project and potential future cases were estimated from the 2008-2010 period one-way trip count based on the URM crude oil, gas oil and sulfur volumes, as described in Table A4.3-TRANS-14.

Tables A4.3-TRANS-10, -13, and -14 show the activity data for off-site on-road delivery trucks and shipment trucks.

4.2.4.1.2 Off-Site On-Road Mobile Sources Idling Emissions

For the CAP and GHG emissions inventories, ENVIRON assumes that there will be two 10- minute stopping points at each vendor/customer facility. Together with the two on-site 10-minute stopping points, the total idling time for each round trip is 40 minutes.

4.2.4.1.3 Off-Site On-Road Mobile Sources Emission Factors

Because the vehicles that travel off-site also travel on-site, the emission factor values and assumptions used for the on-site on-road mobile source emissions from these vehicles (shown in Tables A4.3-TRANS-15) were also used for their off-site on-road mobile source emissions.

4.2.4.2 Total On-Road Mobile Sources CAP and GHG Emissions

Table A4.3-TRANS-16 summarizes the combined on-site and off-site emissions from operational on-road mobile source emissions for the 2008-2010, Baseline, and the Modernization Project 93% and 100% Utilization Scenarios.

4.2.5 On-Road Mobile Sources Toxic Air Contaminant Emissions

4.2.5.1 Source Identification, Physical Scope and Temporal Scenarios for On-Road Mobile Sources Emissions

This section discusses the emissions estimation of TACs associated with on-road operational mobile sources. Emissions of TACs are estimated to be used in a health risk assessment to assess the health impacts of the Modernization Project. This is further described in *Appendix 4.3-HRA*. Table A4.3-TRANS-17 summarizes the scope of the TAC emission inventory, the details for which are presented in the sections below.

4.2.5.1.1 Physical Domain for TAC Emissions Inventory

Only emissions that are used in the HRA are estimated. Because of this, while the physical domain for the TAC emissions inventory includes all on-site TAC sources, the physical extent of off-site TAC emissions included for the HRA is smaller than the extent of off-site emissions included for the CAP and GHG inventories.

As further discussed in *Appendix 4.3-HRA*, the number of Modernization Project-related trucks on highways is very small relative to highway background traffic; because of this, their emissions will not have a significant adverse health impact on the sensitive population located along the highways. Accordingly, receptors that are exposed only due to their proximity to a highway that may be used by trucks going to and from the Facility were not included in the HRA. The TAC inventory does include Modernization Project-related truck emissions associated with travel along Richmond Parkway, Castro Street, and the highway ramps taken by the vehicles to get on or off the highways.

4.2.5.1.2 Temporal Scenarios: 2008-2010, Baseline, and the Modernization Project

TAC emission inventories were developed for the following scenarios: 2008-2010, Baseline, and the Modernization Project. The emissions were established in the same manner as was done for criteria pollutants. This has the effect of conservatively overstating TAC emissions from trucks for the 70-year period of the HRA, as trucks are getting cleaner.

4.2.5.2 Identification of TACs Generated by the Modernization Project

The TAC emissions inventory includes chemicals emitted from sources that are included for consideration in HRAs consistent with BAAQMD Regulation 2, Rule 5. The TAC emissions inventory for operational on-road mobile emissions includes DPM emissions from diesel on-road vehicles.

Diesel exhaust, a complex mixture that includes hundreds of individual constituents (Cal/EPA, OEHHA, 1998), is identified by the State of California as a known carcinogen (Cal/EPA, OEHHA, 2011). Under California regulatory guidelines, DPM is used as a surrogate measure of carcinogen exposure for the mixture of chemicals that make up diesel exhaust as a whole. Cal/EPA and other proponents of using the surrogate approach to quantifying cancer risks associated with the diesel mixture indicate that this method is preferred over the use of a component-based approach. A component-based approach involves estimating risks for each of the individual components of a mixture. Critics of the component-based approach believe it will underestimate the risks associated with diesel as a whole mixture because the identity of all chemicals in the mixture may not be known and/or exposure and health effects information for all chemicals identified within the mixture may not be available. Furthermore, Cal/EPA has concluded that “potential cancer risk from inhalation exposure to whole diesel exhaust will outweigh the multi-pathway cancer risk from the speciated components” (Cal/EPA, OEHHA, 2003). The PM_{10} emissions from the diesel on-road vehicles were assumed to be equivalent to DPM in the emissions estimation.

4.2.5.3 TAC Emissions from On-Site On-Road Mobile Sources

On-site sources of TAC emissions are diesel on-road vehicles. These sources do not have emission factors specifically for DPM in CARB’s EMFAC 2011 database. DPM is a subset of PM_{10} . PM_{10} engine exhaust emissions from on-site on-road vehicles that were calculated for the CAP inventory for on-site sources were used as conservative, surrogate estimates for DPM. Total $PM_{2.5}$ emissions estimated for the CAP on-site on-road mobile inventory were used for the TAC emission inventory. Table A4.3-TRANS-18 shows the emission factors and Tables A4.3-TRANS-13, A4.3-TRANS-14, and A4.3-TRANS-19 provide the activity data and assumptions. Sections above provide details on the methodology used to estimate PM_{10} and $PM_{2.5}$ emissions.

Table A4.3-TRANS-20 summarizes DPM and $PM_{2.5}$ emissions for all on-road vehicles for both on-site and off-site activities for the 2008-2010, Baseline, and the Modernization Project 93% and 100% Utilization Scenarios.

4.2.5.4 TAC Emissions from Off-Site On-Road Mobile Sources

Off-site sources of TAC emissions are the same as the off-site sources of CAP and GHG emissions discussed in the CAP and GHG inventories section: delivery trucks and shipment trucks. As described previously for the on-site sources, PM_{10} emissions from on-road vehicles that were calculated for the CAP inventory for off-site sources were used as surrogates for DPM. $PM_{2.5}$ emissions calculated for CAP inventory are also used for the TAC inventory. However, for the health risk

analysis, only a subset of the off-site emissions estimated for the CAP inventory were included in the TAC inventory. As described previously, for emissions estimation and dispersion modeling of TACs, off-site on-road mobile source emissions were modeled along the off-site segments of Richmond Parkway, Castro Street, and the highway ramps only.

Additionally, unlike the CAP and GHG inventories, which assumes 20 minutes of idling time for off-site idling activities, no off-site idling activity emissions are considered for the TAC inventory. This is because the idling activities for each round trip at each vendor/customer facility (20 minutes) fall outside of the domain considered for the HRA; see section above for the discussion on the HRA domain. Therefore, for the TAC emissions inventory, each round trip only includes 20 minutes of on-site idling time.

Table A4.3-TRANS-20 summarizes DPM and PM_{2.5} for all on-road vehicles from both on-site and off-site activities for the 2008-2010, Baseline, and the Modernization Project 93% and 100% Utilization Scenarios.

4.2.6 Calculation of Maximum Hourly Emission Rates for Acute Non-Cancer Hazard Analysis

Because DPM as a whole does not have an established Acute Hazard threshold, maximum hourly TAC emissions were not calculated for acute non-cancer hazard evaluation.

4.3 REFERENCES—APPENDIX 4.3-TRANS

Bay Area Air Quality Management District (BAAQMD). 2006. *Regulation 8, Rule 5, Section 117, Limited Exemption, Low Vapor Pressure*. Accessed November 21, 2013. <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Rules%20and%20Regs/reg%2008/rg0805.ashx?la=en>.

BNSF Railway Company (BNSF). 2012. *BNSF Railway Class I Railroad Annual Report Restatement*. <http://www.bnsf.com/about-bnsf/financial-information/surface-transportation-board-reports/pdf/12R1.pdf>

BNSF Railway Company (BNSF). 2013. *California Operating Division Boundary – System Maintenance and Planning*. Accessed November 21, 2013. http://www.bnsf.com/customers/pdf/maps/div_ca.pdf.

California Air Resources Board (ARB). 2011. *EMFAC2011*. <http://www.arb.ca.gov/msei/modeling.htm>.

California Climate Action Registry (CCAR). 2009. *General Reporting Protocol*. Version 3.1.

California Environmental Protection Agency (Cal/EPA), Office of Environmental Health Hazard Assessment (OEHHA). 1998. *Findings of the Scientific Review Panel on The Report on Diesel Exhaust*, as adopted at the Panel's April 22, 1998 meeting.

California Environmental Protection Agency (Cal/EPA), Office of Environmental Health Hazard Assessment (OEHHA). 2003. *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment.

California Environmental Protection Agency (Cal/EPA), Office of Environmental Health Hazard Assessment (OEHHA). 2011. *OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values*. Accessed February, 14. <http://www.arb.ca.gov/toxics/healthval/contable.pdf>.

California Environmental Protection Agency (Cal/EPA), California Air Resources Board (CARB). 2013. *Heavy-Duty Vehicle Idling Emission Reduction Program*. Accessed February 27, 2014. <http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm>.

Chevron Data Transmittal #18 (Rev #2): Baseline and Future Trucking Data, 2013.

Chevron Data Transmittal #36C (Rev #3): Project Component Table, 2014.

Chevron Data Transmittal #36G (Rev #1): Rail Transportation Data, 2013.

ENVIRON. 2006. *Richmond Railyard TAC Emissions Inventory*. Accessed February 27, 2014. http://www.arb.ca.gov/railyard/hra/env_rich_ei_122006.pdf, p. 3-4.

ENVIRON. 2008. *Port of Oakland Seaport Air Emissions Inventory*. Accessed February 27, 2014. http://www.portofoakland.com/pdf/environment/airEmissions_Inventory.pdf, p. 6-7.

United States Environmental Protection Agency (EPA). 2005. *Conversion Factors for Hydrocarbon Emission Components*. Accessed February 27, 2014. <http://www.epa.gov/otaq/models/nonrdmdl/nonrdmdl2005/420r05015.pdf>.

United States Environmental Protection Agency (EPA). 2009. *Emission Factors for Locomotives*. Accessed November 20, 2013.

<http://www.epa.gov/nonroad/locomotv/420f09025.pdf>.

United States Environmental Protection Agency (EPA). 2011. *Emission Factors for Greenhouse Gas Inventories*. Accessed February 27, 2014.

<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>.

United States Environmental Protection Agency (EPA). 2012. 40 CFR 80.

Regulation of Fuels and Fuel Additives: Modifications to the Transmix Provisions under the Diesel Sulfur Program. Accessed February 27, 2014.

<http://www.gpo.gov/fdsys/pkg/FR-2012-12-26/pdf/2012-30960.pdf>.

United States Environmental Protection Agency (EPA). 2013. *Diesel Fuel Regulation and Standards*.

<http://www.epa.gov/OTAQ/fuels/dieselfuels/regulations.htm>.

Table A4.3-TRANS-1
Rail Activity Associated with Chevron Project Operation
Chevron Modernization Project
Richmond, California

Pollutant	2008 - 2010/Baseline	100% Crude and 100% Gas Oil					93% Crude and 93% Gas Oil					Very Heavy Crude Oil Case: 100% Eocene Crude Oil	Very Light Crude Oil case: 100% Bakken Crude Oil	Maxium Sulfur Case, 15% Arab Light, 85% Basrah Blend
		BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken & Basrah	HEAVIEST BLEND Eocene & Arab Lt	MOST SOUR BLEND			
Crude ¹	227.9	257.2	257.2	257.2	257.2	257.2	239.2	239.2	239.2	239.2	205	239.2	257.2	1000 B/D
Gas Oil ¹	45.4	65.2	58	67.1	52.4	57.1	60.4	53.7	66.3	45.7	80.9	53.7	55.1	1000 B/D
LPG Receipt Railcars ²	2,034	2,399	2,346	2,414	2,304	2,339	2,230	2,180	2,274	2,120	2,128	2,180	2,324	Railcars/year
Additive Receipt Railcars ²	279	329	322	331	316	321	306	299	312	291	292	299	319	Railcars/year
LPG Delivery Railcars ²	1,485	1,752	1,713	1,762	1,682	1,708	1,628	1,592	1,660	1,548	1,554	1,592	1,697	Railcars/year
Lubes Delivery Railcars ²	1,445	1,705	1,667	1,715	1,637	1,662	1,584	1,549	1,615	1,506	1,512	1,549	1,651	Railcars/year
Ammonia Delivery Railcars ²	112	132	129	133	127	129	123	120	125	117	117	120	128	Railcars/year
Total Railcars ²	5,243	6,185	6,047	6,222	5,940	6,030	5,748	5,619	5,861	5,466	5,485	5,619	5,991	Railcars/year

Notes:

1. The Project data are based on the Unit Rate Model.
2. Provided in Transmittal #36G

Table A4.3-TRANS-2
Switch Emission Factors
Chevron Modernization Project
Richmond, California

Criteria Pollutants

Pollutants	Emission Factors	
	(g/bhp-hr) ¹	(g/gal) ^{2,3}
CO	1.8	27.8
HC ⁴	1.0	15.4
NOx	17.4	264
SOx	--	0.1
PM ₁₀ /PM _{2.5}	0.44	6.7

Greenhouse Gas

Pollutants	Emission Factors	
	(kg/MMBtu) ⁵	(kg/gal) ⁶
CO ₂	73.96	10.2

Toxic Air Contaminant

Pollutants	Emission Factors ⁷	
	(g/bhp-hr)	(g/gal)
DPM	0.44	6.7

Notes:

1. The emission factors for CO, HC, NOx, and PM₁₀ were provided in USEPA's Emission Factor for Locomotives. PM_{2.5} were conservatively assumed to be equal to PM₁₀.
2. The emission factors for CO, HC, NOx, and PM₁₀ were converted into grams per gallon using the switching conversion factor of 15.2 bhp-hr/gal provided in USEPA's Emission Factor for Locomotives.
3. The SOx emission factor were calculated based on the regulatory diesel sulfur content of 15ppm and diesel density of 3.18 kg/gal using the following equation:

$$EF = \text{sulfur content} \times \text{diesel density} \times \text{SO}_2 \text{ molecular weight (64g/mole)} / \text{sulfur molecular weight (32 g/mole)} / 1,000,000 * 1000 \text{ (g/kg)}$$
4. HC is converted to VOC using EPA recommended conversion factor of 1.053.
5. From USEPA Emission Factors for Greenhouse Gas Inventories.
6. Converted based on the high heating value of No.2 fuel oil (0.138 MMBtu/gal) based on USEPA Emission Factors for Greenhouse Gas Inventories.
7. The DPM emission factor is assumed to be same as PM₁₀ emission factor.

Abbreviations:

bhp: brake horsepower
g: gram
gal: gallon
hr: hour
kg: kilogram
MMBtu: million British thermal units

References:

USEPA. 2009. Emission Factors for locomotives. Available at:
<http://www.epa.gov/nonroad/locomotiv/420f09025.pdf>
USEPA. 2005. Conversion Factors for Hydrocarbon Emission Components. Available at:
<http://www.epa.gov/otaq/models/nonrdmdl/nonrdmdl2005/420r05015.pdf>
USEPA. 2013. Diesel Fuel Regulation and Standards. Available at:
<http://www.epa.gov/OTAQ/fuels/dieselfuels/regulations.htm>
USEPA. 2011. Emission Factors for Greenhouse Gas Inventories. Available at:
<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>

Table A4.3-TRANS-3
Criteria Pollutant and Greenhouse Gas Emissions Calculation Associated with Switching Activity Inside the Project Fenceline
Chevron Modernization Project
Richmond, California

Fuel Consumption ¹	2008 - 2010/Baseline	100% Crude and 100% Gas Oil						93% Crude and 93% Gas Oil						No Project, Baseline Crude Slate, 100%	No Project, Baseline Crude Slate, 93%
		BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken & Basrah	HEAVIEST BLEND Eocene & Arab Lt	Project Blend 2.5% sulfur, 100% UH, 750 Lf/D SP Limit	Project Blend 2.5% sulfur, 93% UH, 750 Lf/D SP Limit			
													(gal/yr) ²		
	32,689	38,562	37,701	38,789	37,031	37,593	35,834	35,033	36,540	34,076	34,196	35,033	37,354	35,404	

Criteria Pollutants Emissions

Pollutants	2008 - 2010/Baseline	Emissions ³													No Project, Baseline Crude Slate, 100%	No Project, Baseline Crude Slate, 93%
		BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	100% Crude and 100% Gas Oil			BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	93% Crude and 93% Gas Oil			Project Blend 2.5% sulfur, 93% UH, 750 Lf/D SP Limit				
				LIGHTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND			LIGHTEST BLEND w Bakken & Basrah	HEAVIEST BLEND Eocene & Arab Lt	Project Blend 2.5% sulfur, 100% UH, 750 Lf/D SP Limit					
													(toms/yr)			
CO	1.0	1.2	1.2	1.2	1.1	1.2	1.1	1.1	1.1	1.0	1.0	1.1	1.1			
VOC	0.58	0.69	0.67	0.69	0.66	0.67	0.64	0.62	0.65	0.61	0.61	0.62	0.67			
NOx	9.5	11.2	11.0	11.3	10.8	11.0	10.4	10.2	10.7	9.9	10.0	10.2	10.9			
SOx	0.0034	0.0041	0.0040	0.0041	0.0039	0.0040	0.0038	0.0037	0.0038	0.0036	0.0036	0.0037	0.0039			
PM ₁₀ /PM _{2.5}	0.24	0.28	0.28	0.29	0.27	0.28	0.26	0.26	0.27	0.25	0.25	0.26	0.28			

Greenhouse Gas Emissions

Pollutants	Emissions ³														No Project, Baseline Crude Slate, 100%	No Project, Baseline Crude Slate, 93%	
	2008 - 2010/Baseline	100% Crude and 100% Gas Oil					93% Crude and 93% Gas Oil										
		BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken & Basrah	HEAVIEST BLEND Eocene & Arab Lt	Project Blend 2.5% sulfur, 100% UH, 750 Lf/D SP Limit						
		(metric tons/yr)															
CO ₂	334	394	385	396	378	384	366	358	373	348	349	358	381	361			

Toxic Air Contaminant

Pollutants	Emissions ³														
	2008 - 2010/Baseline	100% Crude and 100% Gas Oil					93% Crude and 93% Gas Oil								
		BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken & Basrah	HEAVIEST BLEND Eocene & Arab Lt	Project Blend 2.5% sulfur, 100% UH, 750 Lt/D SP Limit	Project Blend 2.5% sulfur, 93% UH, 750 Lt/D SP Limit	No Project, Baseline Crude Slate, 100%	No Project, Baseline Crude Slate, 93%	
		(tons/yr)													
DPM	0.24	0.28	0.28	0.29	0.27	0.28	0.26	0.26	0.27	0.25	0.25	0.26	0.28	0.26	

Notes:

1. Fuel consumption provided in Transmittal #36G.
2. Predicted by scaling from the 2008 - 2010 Base Fuel consumption based on the total number of railcars presented in Table A4.3-TRANS-1.
3. Calculated using the following formula:
Emissions = Emission Factor (g/gal or kg/gal) x Fuel Consumption (gal/yr) x unit conversion

Abbreviations:

g: gram
gal: gallon
kg: kilogram
yr: year

Table A4.3-TRANS-4
Calculation of 2006 BNSF Switch Diesel Usage
Chevron Modernization Project
Richmond, California

Total Hours	Time in Notch (hr) ¹									
	Idle	DB	1	2	3	4	5	6	7	8
17,520	59.80%	0.12%	13.45%	13.93%	6.44%	3.12%	1.29%	0.63%	0.24%	1.00%
	10477.0	20.6	2355.9	2439.8	1128.5	547.1	225.4	110.0	41.2	174.6

Model Group	Fuel Consumption Rate (lb/hr) ²									
	Idle	DB	1	2	3	4	5	6	7	8
Switchers	26.00	80.00	41.00	95.00	167.00	249.00	332.00	419.00	529.00	630.00
GP-3x	32.00	103.00	55.00	137.00	226.00	331.00	442.00	567.00	710.00	854.00

Model Group	Fleet Fraction	Fuel (gal) ³										
		Idle	DB	1	2	3	4	5	6	7	8	Total
Switchers	67%	25,759	156	9,134	21,918	17,821	12,881	7,077	4,357	2,063	10,400	111,565
GP-3x	33%	15,852	100	6,127	15,804	12,058	8,562	4,711	2,948	1,384	7,049	74,594
Total												186,159

Diesel Density 7.05 lb/gal

Notes:

1. Data from 2006 Richmond Railyard TAC Emissions Inventory.
2. Fuel consumption rate from Port of Oakland and 2005 Seaport Air Emissions Inventory.
3. Calculated based on the following formula:

$$\text{Fuel (gal)} = \text{Time in Notch (hr)} \times \text{Fuel Consumption Rate (lb/hour)} / \text{Diesel Density (lb/gal)}$$

Abbreviations:

gal: gallon
hr: hour
lb: pound

References:

ENVIRON. 2006. Richmond Railyard TAC Emissions Inventory. Available at: http://www.arb.ca.gov/railyard/hra/env_rich_ei_122006.pdf
ENVIRON. 2008. Revised Port of Oakland and 2005 Seaport Air Emissions Inventory. Available at:
http://www.portofoakland.com/pdf/environment/airEmissions_Inventory.pdf

Table A4.3-TRANS-5
Criteria Pollutant and Greenhouse Gas Emissions Calculations Associated with Switching Activity Outside the Project Fenceline
Chevron Modernization Project
Richmond, California

Switching Activity Outside the Fenceline	2008 - 2010/Baseline	100% Crude and 100% Gas Oil					93% Crude and 93% Gas Oil					Project Blend 2.5% sulfur, 100% US#, 750 L/D SP Limit	Project Blend 2.5% sulfur, 93% US#, 750 L/D SP Limit	No Project, Baseline Crude Slate, 100%	No Project, Baseline Crude Slate, 93%
		BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken & Bessarab	HEAVIEST BLEND Eocene & Arab Lt					
Total Railcars ¹	5,243	6,185	6,047	6,222	5,940	6,030	5,748	5,619	5,861	5,466	5,485	5,619	5,619	5,991	5,679
# of Railcar per Unit Train ²	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96
# of Locomotives per Unit Train (loaded) ³	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Chevron Locomotives ⁴	655	773	756	778	742	754	718	702	733	683	686	702	749	710	710
Fuel Consumption (gal/yr) ⁵	11,376	13,420	13,120	13,499	12,887	13,083	12,471	12,192	12,716	11,859	11,900	12,192	12,999	12,321	12,321

Criteria Pollutants Emissions

Pollutants	100% Crude and 100% Gas Oil					Emissions ⁶					93% Crude and 93% Gas Oil					Project Blend 2.5% sulfur, 93% US#, 750 L/D SP Limit	No Project, Baseline Crude Slate, 100%	No Project, Baseline Crude Slate, 93%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
						2008 - 2010/Baseline					Project Crude Blend At 2.5% Sulfur								Project Crude Blend At 2.5% Sulfur																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	Baseline Crude Slate					Lightest Blend w Bakken plus Arab Lt					Heaviest Blend Arab Light plus Eocene					Most Sour Blend					Baseline Crude Slate					Project Crude Blend At 2.5% Sulfur					Lightest Blend w Bakken & Bessarab					Heaviest Blend Eocene & Arab Lt					Project Blend 2.5% sulfur, 100% US#, 750 L/D SP Limit																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

Greenhouse Gas Emissions

Pollutants	Emissions ⁶													
	2008 - 2010/Baseline	100% Crude and 100% Gas Oil					93% Crude and 93% Gas Oil					Project Blend 2.5% sulfur, 93% US#, 750 L/D SP Limit	No Project, Baseline Crude Slate, 100%	No Project, Baseline Crude Slate, 93%
		BASLINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASLINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken & Bessarab	HEAVIEST BLEND Eocene & Arab Lt				
							(metric tons/yr)							
CO ₂	116	137	134	138	132	134	127	124	130	121	121	124	133	126

Toxic Air Contaminant

Pollutants	Emissions ^{6A}										Project Blend 2.5% sulfur, 100% US#, 750 L/D SP Limit	No Project, Baseline Crude Slate, 100%	No Project, Baseline Crude Slate, 93%	
	2008 - 2010/Baseline	100% Crude and 100% Gas Oil					93% Crude and 93% Gas Oil							
		BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken & Bessarab	HEAVIEST BLEND Eocene & Arab Lt				
(metric tons/yr)														
DPM	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.08	0.08	

Other Data

2006 BNSF Total Locomotives Arriving & Departure⁷

10,725

2006 BNSF Switch Diesel usage⁷

186,159 gal/yr

11369.14519

Notes:

1. Provided in Transmittal #36G
2. Calculated using the following formula:
Chevron Locomotives = Total Railcars / # of Railcar per Unit Train x # of Locomotives per Unit Train x 2
This calculation conservative assumes that the inbound train and the outbound train are not the same train (e.g., trains arrive loaded and leave unloaded) by multiplying the total railcars by 2.
3. Scaled from the 2006 BNSF Switch diesel usage (186,159 gal/yr) using the ratio of Chevron locomotives (655) and total BNSF locomotives (10,725).
4. Calculated using the following formula:
Emissions = Emission Factor (lb/gal or kg/gal) x Fuel Consumption (gal/yr) x unit conversion
5. Assume to be same as PM₁₀.
6. Data from 2006 Richmond Railyard TAC Emissions Inventory.
7. See Table A4.3-Rail-4

Abbreviations:

g: gallon
gal: gallon
kg: kilogram
yr: year

Reference:

ENVIRON. 2006. Richmond Railyard TAC Emissions Inventory. Available at: http://www.arb.ca.gov/railyard/rira/env_rich_en_122006.pdf

Table A4.3-TRANS-6
Line Haul Emission Factors
Chevron Modernization Project
Richmond, California

Criteria Pollutants

Pollutants	Emission Factors	
	2008 - 2010	Baseline and Project
	(g/gal) ^{1,2,3}	
CO	26.6	26.6
HC ⁴	8.7	5.1
NOx	164	121
SOx	0.10	0.10
PM ₁₀ /PM _{2.5}	4.9	3.1

Greenhouse Gas

Pollutants	Emission Factors	
	(kg/gal) ^{5,6}	
CO ₂	10.2	10.2

Toxic Air Contaminant

Pollutants	Emission Factors ⁷	
	(g/gal)	
DPM	4.9	3.1

Notes:

1. The emission factors for CO, HC, NOx, and PM₁₀ were provided in USEPA's Emission Factor for Locomotives. The emission factors for Baseline are the average of 2008, 2009, and 2010 factors and those for 2016 Baseline and Project scenarios are the 2016 factors. Note that the EPA's CO emission factor is a constant for all Tiers so it does not vary by year. PM_{2.5} were conservatively assumed to be equal to PM₁₀.
2. The emission factors for CO, HC, NOx, and PM₁₀/PM_{2.5} were converted into grams per gallon using the switching conversion factor of 15.2 bhp-hr/gal provided in USEPA's Emission Factor for Locomotives.
3. The SOx emission factor were calculated based on the regulatory diesel sulfur content of 15ppm and diesel density of 3.18 kg/gal using the following equation:

$$EF = \text{sulfur content} \times \text{diesel density} \times \text{SO}_2 \text{ molecular weight (64g/mole)} / \text{sulfur molecular weight (32 g/mole)} / 1,000,000 * 1000 \text{ (g/kg)}$$
4. HC is converted to VOC using EPA recommended conversion factor of 1.053.
5. From USEPA Emission Factors for Greenhouse Gas Inventories.
6. Converted based on the high heating value of No.2 fuel oil (0.138 MMBtu/gal) based on USEPA Emission Factors for Greenhouse Gas Inventories.
7. Assume to be same as PM₁₀.

Abbreviations:

bhp: brake horsepower
g: gram
gal: gallon
hr: hour
kg: kilogram
MMBtu: million British thermal units

References:

USEPA. 2009. Emission Factors for locomotives. Available at:
<http://www.epa.gov/nonroad/locomotiv/420f09025.pdf>
USEPA. 2005. Conversion Factors for Hydrocarbon Emission Components. Available at:
<http://www.epa.gov/otaq/models/nonrdmdl/nonrdmdl2005/420r05015.pdf>
USEPA. 2013. Diesel Fuel Regulation and Standards. Available at:
<http://www.epa.gov/OTAQ/fuels/dieselfuels/regulations.htm>
USEPA. 2011. Emission Factors for Greenhouse Gas Inventories. Available at:
<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>

Table A4.3-TRANS 7
Criteria Pollutant and Greenhouse Gas Emissions Calculation Associated with Line Haul
Chevron Modernization Project
Richmond, California

Line Haul Activities	2008 - 2010	Baseline	100% Crude and 100% Gas Oil					93% Crude and 93% Gas Oil					Project Blend 2.5% sulfur, 100% UH ₂ 750 L/D SP Limit	Project Blend 2.5% sulfur, 93% UH ₂ 750 L/D SP Limit	No Project, Baseline Crude Rate, 100%	No Project, Baseline Crude Rate, 93%
			BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTTEST BLEND w Bakken plus Arab LI	HEAVTEST BLEND Arab Light plus Ecene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTTEST BLEND w Bakken & Basrah	HEAVTEST BLEND Ecene & Arab LI	Project Blend 2.5% sulfur, 100% UH ₂ 750 L/D SP Limit				
LPG Receipts	Weight of LPG Product per Train (tons) ¹	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194
	Unit Train Gross Weight - Inbound (ton-mi) ²	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924
	Unit Train Gross Weight - Outbound (ton-mi) ²	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205
	# Unit Trains/Year ³	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
	Annual Gross Ton Miles - Inbound (ton-mi/yr) ⁴	15,044,947	15,044,947	15,044,947	15,044,947	15,044,947	15,044,947	15,044,947	15,044,947	15,044,947	15,044,947	15,044,947	15,044,947	15,044,947	15,044,947	15,044,947
	Annual Gross Ton Miles - Outbound (ton-mi/yr) ⁴	5,791,073	5,791,073	5,791,073	5,791,073	5,791,073	5,791,073	5,791,073	5,791,073	5,791,073	5,791,073	5,791,073	5,791,073	5,791,073	5,791,073	5,791,073
	Fuel Consumption (gal/yr) ⁵	21,818	21,818	21,818	21,818	21,818	21,818	21,818	21,818	21,818	21,818	21,818	21,818	21,818	21,818	21,818
Additive Receipts	Weight of Additive per Train (tons)	7,362	7,362	7,362	7,362	7,362	7,362	7,362	7,362	7,362	7,362	7,362	7,362	7,362	7,362	7,362
	Unit Train Gross Weight - Inbound (tons)	12,092	12,092	12,092	12,092	12,092	12,092	12,092	12,092	12,092	12,092	12,092	12,092	12,092	12,092	12,092
	Unit Train Gross Weight - Outbound (tons)	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205
	# Unit Trains/Year	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
	Annual Gross Ton Miles - Inbound (ton-mi/yr)	2,384,336	2,384,336	2,384,336	2,384,336	2,384,336	2,384,336	2,384,336	2,384,336	2,384,336	2,384,336	2,384,336	2,384,336	2,384,336	2,384,336	2,384,336
	Annual Gross Ton Miles - Outbound (ton-mi/yr)	794,351	794,351	794,351	794,351	794,351	794,351	794,351	794,351	794,351	794,351	794,351	794,351	794,351	794,351	794,351
	Fuel Consumption (gal/yr)	3,224	3,224	3,224	3,224	3,224	3,224	3,224	3,224	3,224	3,224	3,224	3,224	3,224	3,224	3,224
LPG and Ammonia Shipments ⁶	Weight of LPG and Ammonia per Train (tons)	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194	6,194
	Unit Train Gross Weight - Inbound (tons)	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205
	Unit Train Gross Weight - Outbound (tons)	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924	10,924
	# Unit Trains/Year	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
	Annual Gross Ton Miles - Inbound (ton-mi/yr)	4,547,356	4,547,356	4,547,356	4,547,356	4,547,356	4,547,356	4,547,356	4,547,356	4,547,356	4,547,356	4,547,356	4,547,356	4,547,356	4,547,356	4,547,356
	Annual Gross Ton Miles - Outbound (ton-mi/yr)	11,813,862	11,813,862	11,813,862	11,813,862	11,813,862	11,813,862	11,813,862	11,813,862	11,813,862	11,813,862	11,813,862	11,813,862	11,813,862	11,813,862	11,813,862
	Fuel Consumption (gal/yr)	17,132	17,132	17,132	17,132	17,132	17,132	17,132	17,132	17,132	17,132	17,132	17,132	17,132	17,132	17,132
Lubes Shipments ⁷	Weight of Lubes per Train (tons)	7,378	7,378	7,378	7,378	7,378	7,378	7,378	7,378	7,378	7,378	7,378	7,378	7,378	7,378	7,378
	Unit Train Gross Weight - Inbound (tons)	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205	4,205
	Unit Train Gross Weight - Outbound (tons)	12,108	12,108	12,108	12,108	12,108	12,108	12,108	12,108	12,108	12,108	12,108	12,108	12,108	12,108	12,108
	# Unit Trains/Year	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	Annual Gross Ton Miles - Inbound (ton-mi/yr)	4,114,111	4,114,111	4,114,111	4,114,111	4,114,111	4,114,111	4,114,111	4,114,111	4,114,111	4,114,111	4,114,111	4,114,111	4,114,111	4,114,111	4,114,111
	Annual Gross Ton Miles - Outbound (ton-mi/yr)	11,846,746	11,846,746	11,846,746	11,846,746	11,846,746	11,846,746	11,846,746	11,846,746	11,846,746	11,846,746	11,846,746	11,846,746	11,846,746	11,846,746	11,846,746
	Fuel Consumption (gal/yr)	15,713	15,713	15,713	15,713	15,713	15,713	15,713	15,713	15,713	15,713	15,713	15,713	15,713	15,713	15,713
TOTAL Fuel Consumption (gal/yr)			58,887	58,887	58,887	58,887	58,887	58,887	58,887	58,887	58,887	58,887	58,887	58,887	58,887	58,887

Criteria Pollutants Emissions

Pollutants	2008 - 2010	Baseline	100% Crude and 100% Gas Oil					Emissions ⁸					Project Blend 2.5% sulfur, 100% UH ₂ 750 L/D SP Limit	Project Blend 2.5% sulfur, 93% UH ₂ 750 L/D SP Limit	No Project, Baseline Crude Rate, 100%	No Project, Baseline Crude Rate, 93%
			BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTTEST BLEND w Bakken plus Arab LI	HEAVTEST BLEND Arab Light plus Ecene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTTEST BLEND w Bakken & Basrah	HEAVTEST BLEND Ecene & Arab LI	Project Blend 2.5% sulfur, 100% UH ₂ 750 L/D SP Limit				
CO	3.7	3.7	2.0	2.0	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9
CO ₂	0.39	0.39	0.41	0.41	0.41	0.39	0.40	0.38	0.37	0.39	0.36	0.37	0.36	0.40	0.38	0.38
NO _x	10.6	10.6	9.3	9.3	9.3	8.9	8.9	8.4	8.4	8.4	8.2	8.2	8.4	9.0	8.5	8.5
SO _x	0.0062	0.0062	0.0073	0.0073	0.0073	0.0070	0.0071	0.0068	0.0066	0.0069	0.0065	0.0066	0.0065	0.0071	0.0067	0.0067
PM ₁₀ /PM _{2.5}	0.32	0.32	0.24	0.24	0.24	0.23	0.23	0.22	0.22	0.23	0.21	0.22	0.21	0.23	0.21	0.21

Greenhouse Gas Emissions

Pollutants	2008 - 2010	Baseline	100% Crude and 100% Gas Oil					Emissions ⁸					Project Blend 2.5% sulfur, 100% UH ₂ 750 L/D SP Limit	Project Blend 2.5% sulfur, 93% UH ₂ 750 L/D SP Limit	No Project, Baseline Crude Rate, 100%	No Project, Baseline Crude Rate, 93%
			BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTTEST BLEND w Bakken plus Arab LI	HEAVTEST BLEND Arab Light plus Ecene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTTEST BLEND w Bakken & Basrah	HEAVTEST BLEND Ecene & Arab LI	Project Blend 2.5% sulfur, 100% UH ₂ 750 L/D SP Limit				
CO ₂	601	601	709	693	713	681	691	659	644	672	627	629	644	687	651	651

Truck Air Contaminant

Pollutants	2008 - 2010	Baseline	100% Crude and 100% Gas Oil					Emissions ⁸					Project Blend 2.5% sulfur, 100% UH ₂ 750 L/D SP Limit	Project Blend 2.5% sulfur, 93% UH ₂ 750 L/D SP Limit	No Project, Baseline Crude Rate, 100%	No Project, Baseline Crude Rate, 93%
			BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTTEST BLEND w Bakken plus Arab LI	HEAVTEST BLEND Arab Light plus Ecene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTTEST BLEND w Bakken & Basrah	HEAVTEST BLEND Ecene & Arab LI	Project Blend 2.5% sulfur, 100% UH ₂ 750 L/D SP Limit				
CO	0.32	0.32	0.24	0.23	0.24	0.23	0.23	0.22	0.22	0.22	0.21	0.21	0.22	0.23	0.21	0.21

Input Material and Product Weight⁹

Weight of LPG/Ammonia in a Railcar 64 tons

Weight of Lubricants or Lubricants Related Material in a Railcar 77 tons

Unit Car Weight¹⁰

Railcar Weight 35 tons

Locomotive Weight 175 tons

Buffer Car Weight 80 tons

of Cars and Locomotives per Unit Train¹¹

Locomotive/Unit Train (Loaded) 6

Locomotive/Unit Train (Unloaded) 3

Railcar/Unit Train 96

Buffer Car/Unit Train 4

Other Data

One-Way Distance in Air Basin¹² 65 miles

Average Fuel Efficiency¹³ 955 gross ton-miles/gal

Notes:

- Calculated by multiplying the weight of LPG in a railcar by the number of railcar per unit train from Table A4.3-Rail.1.
- The sum of the LPG, locomotives (loaded), railcars, and buffer cars per train.
 - Weight of LPG per train (e.g., 6,194 tons)÷ weight of LPG in a railcar (e.g., 64 tons) = railcars per unit train (96)
 - Weight of locomotives (e.g., 1,650 tons)÷ locomotive weight (e.g., 175 tons) = locomotives per unit train (loaded) (e.g., 6)
 - Weight of railcars (1,360 tons)÷ railcar weight (35 tons) = railcars per unit train (96)
 - Weight of buffer cars (80 tons)÷ buffer car weight (80 tons) = buffer cars per unit train (8)
- The sum of the locomotives (unloaded), railcars, and buffer cars per train.
- LPG receipt railcars (e.g., 2,014 from Table A4.3-Rail.1) ÷ # railcars per unit train (96)
- Unit train gross weight (inbound) (e.g., 10,924 tons) × unit train per year (e.g., 21.19) × One-way distance in air basin (65 miles)
- Unit train gross weight (outbound) (e.g., 4,205 tons) × unit train per year (e.g., 21.19) × One-way distance in air basin (65 miles)
- Annual gross ton-miles (inbound) (e.g., 15,044,947 ton-mi/yr) + outbound (e.g., 5,791,073 ton-mi/yr) ÷ Average fuel efficiency (955 gross ton-mi/gal)
- See footnotes 1-7
- Calculated using the following formula:
 - Emissions = Emission Factor (g/gal or kg/gal) × Fuel Consumption (gal/yr) × unit conversion
- Provided in Transmittal # 862.
- The longest oil route from Chevron to the boundary of BAAQMD (i.e., from Chevron to Davis).
- Calculated based on the data from 2012 BNSF Railway Class 1 Railroad Annual Report Restatement:
 - Average fuel efficiency (955 gross ton-mi/gal) = 2012 gross ton-mi (1,225,380,290,000) ÷ 971 / 2012 BNSF total diesel consumption (1,287,318,157 gals from freight) ÷ 911

Abbreviations:

g: gram
gal: gallon
yr: year

Reference:

BNSF. 2012. BNSF Railway Class 1 Railroad Annual Report Restatement. Available at: <http://www.bnsf.com/about-bnsf/financial-information/surface-transportation-board-reports/pdf/1281.pdf>

Table A4.3-TRANS-8
Summary of Criteria Pollutant and Greenhouse Gas Emissions Associated with Rail Activities
Chevron Modernization Project
Richmond, California

Criteria Pollutants Emissions

Criteria Pollutants Emissions		Emissions ¹														
Pollutants	2008 - 2010	Baseline	100% Crude and 100% Gas Oil					93% Crude and 93% Gas Oil								
			BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken & Basrah	HEAVIEST BLEND Eocene & Arab Lt	Project Blend 2.5% sulfur, 100% Utl, 750 Lf/D SP Limit	Project Blend 2.5% sulfur, 93% Utl, 750 Lf/D SP Limit	No Project, Baseline Crude Slate, 100%	No Project, Baseline Crude Slate, 93%	
(tons/yr)																
CO	3.1	3.1	3.6	3.6	3.7	3.5	3.5	3.4	3.3	3.4	3.2	3.2	3.3	3.5	3.3	
VOC	1.4	1.1	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.3	1.2	1.2	1.2	1.3	1.2	
NOx	23.5	20.7	24.4	23.9	24.6	23.5	23.8	22.7	22.2	23.1	21.6	21.7	22.2	23.7	22.4	
SOx	0.011	0.011	0.013	0.012	0.013	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.012	0.012	0.012	
PM ₁₀ /PM _{2.5}	0.63	0.51	0.61	0.59	0.61	0.58	0.59	0.56	0.55	0.57	0.54	0.54	0.55	0.59	0.56	

Greenhouse Gas Emissions

Greenhouse Gas Emissions																
Pollutants	2008 - 2010	Baseline	Emissions ¹													
			100% Crude and 100% Gas Oil						93% Crude and 93% Gas Oil							
			BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken & Basrah	HEAVIEST BLEND Eocene & Arab Lt	Project Blend 2.5% sulfur, 100% Utl, 750 Lf/D SP Limit	Project Blend 2.5% sulfur, 93% Utl, 750 Lf/D SP Limit	No Project, Baseline Crude Slate, 100%	No Project, Baseline Crude Slate, 93%	
(metric tons/yr)																
CO ₂	1,051	1,051	1,240	1,212	1,247	1,190	1,208	1,152	1,126	1,175	1,095	1,099	1,126	1,201	1,138	

Toxic Air Contaminant

Pollutants			Emissions ¹												
2008 - 2010	Baseline	100% Crude and 100% Gas Oil					93% Crude and 93% Gas Oil								
		BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTEST BLEND w Bakken & Basrah	HEAVIEST BLEND Eocene & Arab Lt	Project Blend 2.5% sulfur, 100% Utl, 750 Lf/D SP Limit	Project Blend 2.5% sulfur, 93% Utl, 750 Lf/D SP Limit	No Project, Baseline Crude Slate, 100%	No Project, Baseline Crude Slate, 93%	
(tons/yr)															
DPM	0.63	0.51	0.61	0.59	0.61	0.58	0.59	0.56	0.55	0.57	0.54	0.54	0.55	0.59	0.56

Notes:

1. Sum of emissions from switching inside the fenceline, switching outside the fenceline, and line haul.

Abbreviation:

yr- year

Table A4.3-TRANS-9
Emissions Comparison between Future Scenarios and the 2016 Baseline
Chevron Modernization Project
Richmond, California

Criteria Pollutants Emissions

Pollutants	Emissions Increment over 2016 Baseline												
	100% Crude and 100% Gas Oil					93% Crude and 93% Gas Oil					Very Heavy Crude Oil Case: 100% Eocene Crude Oil	Very Light Crude Oil case: 100% Bakken Crude Oil	Maxium Sulfur Case, 15% Arab Light, 85% Basrah Blend
	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR (toms/yr)	LIGHTTEST BLEND w Bakken & Basrah	HEAVIEST BLEND Eocene & Arab Lt	MOST SOUR BLEND			
CO	0.55	0.47	0.57	0.41	0.46	0.30	0.22	0.36	0.13	0.14	0.22	0.44	0.26
VOC	0.20	0.17	0.21	0.15	0.17	0.11	0.08	0.13	0.05	0.05	0.08	0.16	0.094
NOx	1.7	1.3	1.9	1.7	1.1	1.0	1.5	1.4	0.9	1.0	1.5	3.0	1.7
SOx	0.0019	0.0017	0.0020	0.0014	0.0016	0.0010	0.0008	0.0013	0.0005	0.0005	0.0008	0.0015	0.0009
PM ₁₀	0.092	0.079	0.096	0.068	0.077	0.049	0.037	0.060	0.022	0.024	0.037	0.073	0.043

Greenhouse Gas Emissions

Pollutants	Emissions Increment over 2016 Baseline												
	100% Crude and 100% Gas Oil					93% Crude and 93% Gas Oil					Very Heavy Crude Oil Case: 100% Eocene Crude Oil	Very Light Crude Oil case: 100% Bakken Crude Oil	Maximum Sulfur Case, 15% Arab Light, 85% Basrah Blend
	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR (metric tons/yr)	LIGHTTEST BLEND w Bakken & Basrah	HEAVIEST BLEND Eocene & Arab Lt	MOST SOUR BLEND			
CO2	189	161	196	140	158	101	75	124	45	48	75	150	87.3

Toxic Air Contaminant

Pollutants	Emissions Increment over 2016 Baseline												
	100% Crude and 100% Gas Oil					93% Crude and 93% Gas Oil					Very Heavy Crude Oil Case: 100% Eocene Crude Oil	Very Light Crude Oil case: 100% Bakken Crude Oil	Medium Sulfur Case, 15% Arab Light, 85% Basrah Blend
	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTTEST BLEND w Bakken plus Arab Lt	HEAVIEST BLEND Arab Light plus Eocene	MOST SOUR BLEND	BASELINE CRUDE SLATE	PROJECT CRUDE BLEND AT 2.5% SULFUR	LIGHTTEST BLEND w Bakken & Basrah	HEAVIEST BLEND Eocene & Arab Lt	MOST SOUR BLEND			
DPM	0.09	0.08	0.10	0.07	0.08	0.05	0.04	0.06	0.02	0.02	0.04	0.07	0.04

Abbreviation:
yr: year

Table A4.3-TRANS-10
On-road Mobile Truck Onsite and Offsite Round-trip Mileages (CAP and GHG
Inventories)
Chevron Modernization Project
Richmond, California

Truck Types	Round-Trip Mileage ¹
	Miles
Sodium Bisulfite Shipments	84
Chemical Deliveries	100
Propane Shipments	168
Oxygen Deliveries	110
Sulfur Shipments	110
Solid/Hazardous Waste Shipments	110
Marketing Racks Transmix Shipments	168
Marketing Ethanol Deliveries	110
Marketing Racks Shipments (Gasoline, Diesel, Jet and Aviation gas)	44
Tally Room Deliveries	168
Lubricants Shipments	168
Lubricants Deliveries	168

Notes:

1. Trip mileage information were provided by Chevron.

Abbreviations:

CAP - criteria air pollutants

TRANS - transportation

References:

Chevron Data Transmittal #18 Rev #2

Table A4.3-TRANS-11
Methodology of Emissions Calculations Associated with Operational On-road Mobile Activities - Exhaust, Brakewear and Tirewear Emissions
Chevron Modernization Project
Richmond, California

Source	Emission Category	Methodology and Formula	Reference
On-Road Mobile Sources ¹	Exhaust - Running	$E_R = \sum (EF_{Ri} * VMT_i * C)$, where $VMT_i = \text{Trip Length}_i * \text{Trip Number}_i$	EMFAC2011
	Brakewear and Tirewear - Running	$E_W = \sum (EF_{Wi} * VMT_i * C)$, where $VMT_i = \text{Trip Length}_i * \text{Trip Number}_i$	EMFAC2011
	Exhaust - Startup	$E_S = \sum (EF_{Si} * \text{Trip Number}_i)$	EMFAC2011
	Exhaust - Idling	$E_I = \sum (EF_{Ii} * \text{Trip Number}_i)$	EMFAC2011

Notes:

1. On-road mobile sources include all operational onsite (i.e., within Project boundary) and offsite trips. Emissions associated with mobile sources were calculated using equations above and the following parameters and assumptions:

E_R : running exhaust emissions (lb).

EF_{Ri} : running emission factor (g/mile) for vehicle i. From EMFAC2011 online "Emission Rates Database", for all model years of vehicle class T7 in Contra Costa County in 2016 for the Baseline, Project and in 2010 for the 2008-2010 period scenario.

Assumed "AllSpeeds"

VMT_i : vehicle miles traveled for vehicle i

The calculation involves the following data and assumptions:

(1) All shipping and delivery trucks are heavy-heavy duty trucks (EMFAC Category T7).

(3) Trip Length_i: The one-way trip length depends on the vehicle's offsite starting/ending point. Emissions outside the extent of BAAQMD's domain were not considered, as the thresholds were developed assuming that all emission were within the BAAQMD domain, see Table A4.3-TRANS-10 for CAP and Table A4.3-TRANS-19 for TAC.

(4) Trip Number_i: Chevron provided vehicle trip data in Transmittal #18 Rev #2, see Table A4.3-TRANS-13 and Table A4.3-TRANS-14.

E_W : running brakewear and tirewear emissions (lb).

EF_{Wi} : brakewear and tirewear emission factor (g/mile) for vehicle i. From EMFAC2011 online "Emission Rates Database", for all model years of vehicle class T7 in Contra Costa County in 2016 for the Baseline, Project and in 2010 for the 2008-2010 period scenario.

Assumed "AllSpeeds"

VMT_i : vehicle miles traveled for vehicle i

The calculation involves the same data and assumptions used in E_R calculations.

E_S : vehicle startup emissions (lb).

EF_{Si} : vehicle startup emission factor (g/trip) for vehicle i. From EMFAC2011, which reports startup emissions in tons/day. The emission factor (g/trip) is calculated by dividing the emissions by the total number of trips per day for each vehicle category.

E_I : vehicle idling emissions (lb).

EF_{Ii} : vehicle idling emission factor (g/trip) for vehicle i. From EMFAC2011, which reports emission factors in g/hr-vehicle. The emission factor is calculated to assume an average idling time per trip. For CAP emissions inventory, it was assumed that four 10-minute idling points occur for a round trip. For TAC emissions inventory, it was assumed that two 10-minute idling points occur for a round trip.

C: unit conversion factor (lb/g).

Abbreviations:

ARB - California Air Resources Board

AQ - air quality

CAP - criteria air pollutant

EF - Emission Factor

EMFAC - Emission FACtor Model

g - gram

lb - pound

mi - mile

min - minute

TAC - toxic air contaminant(s)

T7 - EMFAC Category for Heavy Heavy Duty Truck

TRANS - transportation

VMT - vehicle miles traveled

References:

Table A4.3-TRANS-12
On-road Mobile Truck Type Loading / Laydown (Origin / Destination) Areas
Chevron Modernization Project
Richmond, California

Truck Types	Deliveries or Shipments?	Refinery Loading or Laydown Area (i.e., Origin or Destination) ¹
Sodium Bisulfite Shipments	Shipment	Sulfur Loading Rack
Propane Shipments		LPG Tank Truck Loading Area
Sulfur Shipments		Sulfur Loading Rack
Solid/Hazardous Waste Shipments		Southern Edge of the No. 1 Oxidation Pond
Marketing Racks Transmix Shipments		Marketing Rack
Marketing Racks Shipments (Gasoline, Diesel, Jet and Aviation gas)		Marketing Rack
Lubricants Shipments		Rich Lube Plant
Chemical Deliveries	Delivery	Half to Process Area/Half to Tally Room
Oxygen Deliveries		#6 H ₂ S Plant
Marketing Ethanol Deliveries		Marketing Rack
Tally Room Deliveries		Tally Room
Lubricants Deliveries		Rich Lube Plant

Notes:

1. All refinery loading and laydown area locations information were provided by Chevron.

Abbreviations:

H₂S - Hydrogen Sulfide

LPG - liquefied petroleum gas

No - number

TRANS - transportation

Table A4.3-TRANS-13
On-road Mobile Truck 2008-2010 Period and Baseline Scenario Trip Counts
Chevron Modernization Project
Richmond, California

Truck Types	2008 ^{1,2}		2009 ^{1,2}		2010 ^{1,2}		2008-2010 Average ^{1,2}	
	Round Trips	One-Way Trips	Round Trips	One-Way Trips	Round Trips	One-Way Trips	Round Trips	One-Way Trips
Sodium Bisulfite Shipments ³	647	1,294	701	1,402	688	1,376	679	1,357
Chemical Deliveries ⁴	540	1,080	540	1,080	540	1,080	540	1,080
Propane Shipments ³	5,828	11,656	5,230	10,460	5,454	10,908	5,504	11,008
Oxygen Deliveries	-	-	-	-	-	-	-	-
Sulfur Shipments ³	6,108	12,216	6,301	12,602	6,014	12,028	6,141	12,282
Solid/Hazardous Waste Shipments ³	954	1,908	1,760	3,520	1,507	3,014	1,407	2,814
Marketing Racks Transmix Shipments ⁵	637	1,274	496	992	544	1,088	559	1,118
Marketing Ethanol Deliveries ⁵	1,572	3,144	1,954	3,908	1,139	2,278	1,555	3,110
Marketing Racks Shipments (Gasoline, Diesel, Jet and Aviation gas) ⁵	32,934	65,868	31,915	63,830	31,033	62,066	31,961	63,921
Tally Room Deliveries	1,800	3,600	1,800	3,600	1,800	3,600	1,800	3,600
Lubricants Shipments ⁵	6,194	12,388	4,653	9,306	5,377	10,754	5,408	10,816
Lubricants Deliveries ⁵	737	1,474	818	1,636	672	1,344	742	1,485

Notes:

1. Round trips and one-way trip count information were provided by Chevron. One-way trip count is round trip count multiplied by 2.
2. 2016 Baseline scenario uses the same trip count information as the existing setting Baseline scenario.
3. Actual truck counts from Chevron.
4. Truck counts were estimated by Chevron Refinery Transportation Manager.
5. Truck counts were estimated by Chevron based on actual volumes and typical truck loads.
6. Chevron estimated truck counts by scaling Feb-Dec 2010 actual truck counts up to 12 months; all other baseline records are no longer available.

Abbreviations:

TRANS - transportation

References:

Chevron Data Transmittal # 18 Rev # 2

Table A4.3-TRANS-14
On-road Mobile Truck Project and Other Scenario Trip Counts
Chevron Modernization Project
Richmond, California

Truck Types	100% Crude and 100% Gas Oil Utilization								93% Crude and 93% Gas Oil Utilization								Max Sour		Max Heavy		Max Light		Estimation Method for Future Round Trips ²
	Project Crude Blend 100% Utilization, Max H ₂		Sourest Crude Blend 100% Utilization, Max H ₂		Heaviest Crude Blend 100% Utilization, Max H ₂		Lightest Crude Blend 100% Utilization, Max H ₂		Project Crude Blend 93% Utilization, Max H ₂		Sourest Crude Blend 93% Utilization, Max H ₂		Heaviest Crude Blend 93% Utilization, Max H ₂		Lightest Crude Blend 93% Utilization, Max H ₂								
	Round Trips	One-Way Trips ¹	Round Trips	One-Way Trips ¹	Round Trips	One-Way Trips ¹	Round Trips	One-Way Trips ¹	Round Trips	One-Way Trips ¹	Round Trips	One-Way Trips ¹	Round Trips	One-Way Trips ¹	Round Trips	One-Way Trips ¹	Round Trips	One-Way Trips ¹					
Sodium Bisulfite Shipments	1,414	2,828	1,525	3,050	1,392	2,784	1,025	2,050	1,313	2,626	1,508	3,016	1,368	2,736	1,003	2,006	1,537	3,074	1,537	3,074	642	1,284	Scales with sulfur production
Chemical Deliveries	617	1,234	616	1,232	606	1,212	635	1,270	574	1,148	568	1,136	558	1,116	598	1,196	615	1,230	441	882	600	1,200	Estimated to scale with crude and gas oil feed
Propane Shipments	6,289	12,578	6,271	12,542	6,177	12,354	6,470	12,940	5,844	11,688	5,782	11,564	5,684	11,368	6,095	12,190	6,269	12,538	4,487	8,974	6,115	12,230	Estimated to scale with crude and gas oil feed
Oxygen Deliveries	2,920	5,840	3,650	7,300	2,920	5,840	0	0	2,190	4,380	3,650	7,300	2,555	5,110	0	0	3,650	7,300	3,650	7,300	0	0	Sulfur production dependent; zero trucks at s600 long tons/day sulfur, 10 trucks at s892 long tons/day sulfur
Sulfur Shipments	12,786	25,572	13,790	27,580	12,585	25,170	9,265	18,530	11,875	23,750	13,635	27,270	12,369	24,738	9,065	18,130	13,898	27,796	13,898	27,796	5,806	11,612	Scales with sulfur production
Solid/Hazardous Waste Shipments	1,608	3,216	1,603	3,206	1,579	3,158	1,654	3,308	1,494	2,988	1,478	2,956	1,453	2,906	1,558	3,116	1,603	3,206	1,147	2,294	1,564	3,128	Estimated to scale with crude and gas oil feed
Marketing Racks Transmix Shipments	639	1,278	637	1,274	628	1,256	658	1,316	594	1,188	588	1,176	578	1,156	619	1,238	637	1,274	456	912	621	1,242	Estimated to scale with crude and gas oil feed
Marketing Ethanol Deliveries	1,777	3,554	1,772	3,544	1,745	3,490	1,828	3,656	1,651	3,302	1,634	3,268	1,606	3,212	1,722	3,444	1,771	3,542	1,268	2,536	1,728	3,456	Estimated to scale with crude and gas oil feed
Marketing Racks Shipments (Gasoline, Diesel, Jet and Aviation gas)	36,514	73,028	36,410	72,820	35,865	71,730	37,568	75,136	33,930	67,860	33,572	67,144	33,004	66,008	35,390	70,780	36,398	72,796	26,054	52,108	35,506	71,012	Estimated to scale with crude and gas oil feed
Tally Room Deliveries	1,818	3,636	1,818	3,636	1,818	3,636	1,818	3,636	1,818	3,636	1,818	3,636	1,818	3,636	1,818	3,636	1,818	3,636	1,818	3,636	1,818	3,636	Assumed 1% increase in all post-project cases
Lubricants Shipments	6,179	12,358	6,161	12,322	6,069	12,138	6,357	12,714	5,742	11,484	5,681	11,362	5,585	11,170	5,989	11,978	6,159	12,318	4,409	8,818	6,008	12,016	Estimated to scale with crude and gas oil feed
Lubricants Deliveries	848	1,696	846	1,692	833	1,666	873	1,746	788	1,576	780	1,560	767	1,534	822	1,644	846	1,692	605	1,210	825	1,650	Estimated to scale with crude and gas oil feed

Notes:
1. One-way trip count is round trip count multiplied by 2.
2. Chevron provided the methodology to scale the 2008-2010 period trip counts to obtain the Project trip counts.

Abbreviations:
H₂ - Hydrogen
Max - maximum
TRANS - transportation

References:
Chevron Data Transmittal #18 Rev #2

Table A4.3-TRANS-15
On-road Mobile Truck Emission Factors (CAP and GHG Inventories)
Chevron Modernization Project
Richmond, California

	EF Category	Units	CAP						GHG			
			ROG ^{1,2}	NOx ^{1,2}	CO ^{1,2}	SO _x	PM ₁₀ ^{1,2}	PM _{2.5} ^{1,2}	CO ₂ ^{1,2}	CH ₄ ³	N ₂ O ⁴	CO ₂ e ⁵
							Exhaust	Exhaust				
2008-2010 Period (2010 EF)	Running Exhaust	g/mile	0.65	14	2.9	0.017	0.45	0.42	1,758	0.030	0.059	1,777
	Brakewear	g/mile	N/A	N/A	N/A	N/A	0.060	0.026	N/A	N/A	N/A	N/A
	TireWear	g/mile	N/A	N/A	N/A	N/A	0.035	0.009	N/A	N/A	N/A	N/A
	Idling Exhaust	g/minute-veh	0.15	1.6	0.72	0.0011	0.018	0.016	116	0.0069	N/A	116
Baseline and Future (2016 EF)	Running Exhaust	g/mile	0.25	6.3	1.1	0.017	0.088	0.081	1,690	0.012	0.059	1,709
	Brakewear	g/mile	N/A	N/A	N/A	N/A	0.060	0.026	N/A	N/A	N/A	N/A
	TireWear	g/mile	N/A	N/A	N/A	N/A	0.035	0.0088	N/A	N/A	N/A	N/A
	Idling Exhaust	g/minute-veh	0.10	1.0	0.56	0.0011	0.0027	0.0025	113	0.0046	N/A	113

Notes:

1. Except for CH₄ and N₂O, all emission factors were extracted from EMFAC2011 online "Emission Rates Database", for all model years of vehicle class T7, for all speed, for Contra Costa County. Calendar year was 2010 for existing setting Baseline scenario, and 2016 for the 2016 Baseline and Project.
2. EMFAC2011 splits the heavy-heavy duty trucks (EMFAC Category T7) to various sub-categories. However the EMFAC2011 online database has an option of generating emission factors for EMFAC2007 categories where sub-categories are grouped. The emission factors for the T7 categories used for this analysis were generated by that option.
3. Per ARB's guidance, CH₄ emission factors were derived by multiplying the TOG emission factors given in EMFAC 2011 by 0.058821.
4. Per ARB's guidance, N₂O emission factors were calculated using the following formula: 0.3316 g/gallon fuel x gallon fuel for all diesel vehicles / miles traveled for all diesel vehicles.
5. CO₂e emission factors include the sum of CO₂, N₂O and CH₄ emission factors multiplied by their respective global warming potentials, as follows: CO₂e = (CO₂ x 1) + (CH₄ x 21) + (N₂O x 310). Global warming potentials are from Appendix E of CARB's LGOP. As specified in the Protocol, the Intergovernmental Panel on Climate Change (IPCC)'s Second Assessment Report (SAR) global warming potentials are still used by international convention and in the United States, and are therefore used here.

Abbreviations:

CARB - California Air Resources Board
CAP - criteria air pollutant
CO - Carbon Monoxide
CO₂ - Carbon Dioxide
CO₂e - Carbon Dioxide equivalent
CH₄ - Methane
EF - Emission Factor
EMFAC - Emission FACTor Model
g - gram
GHG - greenhouse gas
IPCC - Intergovernmental Panel on Climate Change
LGOP - Local Government Protocols
N₂O - Dinitrogen Oxide
NOx - Nitrogen Oxides
PM₁₀ - coarse particulate matter
PM_{2.5} - fine particulate matter
ROG - reactive organic gas
SAR - Second Assessment Report
SO₂ - Sulfur Dioxide
T7 - EMFAC Category for Heavy Heavy Duty Truck
TRANS - transportation

References:

ARB. 2011. EMFAC2011. September. Available at: <http://www.arb.ca.gov/msei/modeling.htm>

Table A4.3-TRANS-16
On-road Mobile Truck CAP and GHG Emissions
Chevron Modernization Project
Richmond, California

Year	Case Name	Units	CAP						GHG			
			CO	NOX	PM ₁₀	PM _{2.5}	SO _x	ROG	CO ₂	CH ₄	N ₂ O	CO ₂ e
2010	2008-2010	tons/year	17.5	77	3.0	2.5	0.093	3.9	9,728	0.18	0.32	9,831
2016	Baseline	tons/year	7.4	36	0.99	0.63	0.093	1.6	9,361	0.07	0.32	9,462
2016	Heaviest Crude Blend 100% Utilization, Max H2	tons/year	9.8	48	1.3	0.83	0.12	2.1	12,352	0.10	0.42	12,484
2016	Lightest Crude Blend 100% Utilization, Max H2	tons/year	9.0	44	1.2	0.76	0.11	1.9	11,376	0.09	0.39	11,498
2016	Sourest Crude Blend 100% Utilization, Max H2	tons/year	10.2	50	1.4	0.87	0.13	2.2	12,905	0.10	0.44	13,044
2016	Project Crude Blend 100% Utilization, Max H2	tons/year	9.9	49	1.3	0.84	0.12	2.1	12,548	0.10	0.43	12,682
2016	Heaviest Crude Blend 93% Utilization, Max H2	tons/year	9.2	45	1.2	0.78	0.11	2.0	11,564	0.09	0.39	11,689
2016	Lightest Crude Blend 93% Utilization, Max H2	tons/year	8.6	42	1.1	0.73	0.11	1.8	10,827	0.09	0.37	10,943
2016	Sourest Crude Blend 93% Utilization, Max H2	tons/year	9.7	47	1.3	0.82	0.12	2.1	12,214	0.10	0.42	12,345
2016	Project Crude Blend 93% Utilization, Max H2	tons/year	9.2	45	1.2	0.78	0.11	2.0	11,589	0.09	0.40	11,714
2016	Max Sour	tons/year	10.2	50	1.4	0.87	0.13	2.2	12,927	0.10	0.44	13,066
2016	Max Heavy	tons/year	8.3	41	1.1	0.71	0.10	1.8	10,535	0.08	0.36	10,649
2016	Max Light	tons/year	8.1	39	1.1	0.68	0.10	1.7	10,111	0.08	0.34	10,219

Notes:

1. Emissions are calculated based on the methodologies provided in Table A4.3-TRANS-12, emission factors provided in Table A4.3-TRANS-15 and activity data provided in Tables A4.3-TRANS-10, A4.3-TRANS-13 and A4.3-TRANS-14.
2. CO₂e emissions include the sum of CO₂, N₂O and CH₄ emissions multiplied by their respective global warming potentials, as follows: CO₂e = (CO₂ x 1) + (CH₄ x 21) + (N₂O x 310). Global warming potentials are from Appendix E of CARB's LGOP. As specified in the Protocol, the Intergovernmental Panel on Climate Change (IPCC)'s Second Assessment Report (SAR) global warming potentials are still used by international convention and in the United States, and are therefore used here.

Abbreviations:

CARB - California Air Resources Board
CAP - criteria air pollutant
CO - Carbon Monoxide
CO₂ - Carbon Dioxide
CO₂e - Carbon Dioxide equivalent
CH₄ - Methane
EF - Emission Factor
EMFAC - Emission FACTor Model
GHG - greenhouse gas
IPCC - Intergovernmental Panel on Climate Change
LGOP - Local Government Protocols
N₂O - Dinitrogen Oxide
NO_x - Nitrogen Oxides
PM₁₀ - coarse particulate matter
PM_{2.5} - fine particulate matter
ROG - reactive organic gas
SAR - Second Assessment Report
SO₂ - Sulfur Dioxide
T7 - EMFAC Category for Heavy Heavy Duty Truck
TRANS - transportation

Reference:

CARB. 2010. Local Government Operations Protocol. Version 1.1. May. Available online at:
http://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf

Table A4.3-TRANS-17
Summary of On-road Mobile TAC Emission Sources
Chevron Modernization Project
Richmond, California

Source Category	Examples	Toxic Air Contaminant(s) Included in Inventory	Emitting Location
On-road Mobile Sources (Diesel)	Trucks	DPM (Diesel Engines)	Onsite and offsite
		PM _{2.5}	

Abbreviations:

DPM - diesel particulate matter

PM_{2.5} - fine particulate matter

TAC - toxic air contaminant

TRANS - transportation

Table A4.3-TRANS-18
On-road Mobile Truck Emission Factors (TAC Inventory)
Chevron Modernization Project
Richmond, California

Year ¹	DPM ^{1,2,3}		PM _{2.5} ^{1,2}			
	Running Exhaust	Idling Exhaust	Running Exhaust	Idling Exhaust	Brake Wear	Tire Wear
	g/mile	g/minute	g/mile	g/minute	g/mile	g/mile
2010	0.45	0.02	0.418	0.016	0.026	0.0088
2016	0.088	0.003	0.0811	0.0025	0.026	0.0088

Notes:

1. Emission factors were extracted from EMFAC2011 online "Emission Rates Database", for all model years of vehicle class T7, for all speed, for Contra Costa County. Calendar year was 2010 for the 2008-2010 baseline period, and 2016 for Project and 2016 Baseline scenarios.
2. EMFAC2011 splits the heavy-heavy duty trucks (EMFAC Category T7) to various sub-categories. However the EMFAC2011 online database has an option of generating emission factors for EMFAC2007 categories where sub-categories are grouped. The emission factors for the T7 categories used for this analysis were generated by that option.
3. Since EMFAC 2011 does not give DPM emission factors, ENVIRON conservatively used PM₁₀ exhaust emission factors as the surrogate for DPM emission factors.

Abbreviations:

ARB - California Air Resources Board
DPM - diesel particulate matters
EMFAC - Emission FACTor Model
g - gram
PM₁₀ - coarse particulate matter
PM_{2.5} - fine particulate matter
T7 - EMFAC Category for Heavy Heavy Duty Truck
TAC - toxic air contaminant
TRANS - transportation

References:

ARB. 2011. EMFAC2011. September. Available at: <http://www.arb.ca.gov/msei/modeling.htm>

Table A4.3-TRANS-19
On-road Mobile Truck Onsite and Offsite Round-trip Mileages (TAC Inventory)
Chevron Modernization Project
Richmond, California

Truck Types	Round-Trip Mileage ^{1,2,3}
	Miles
Sodium Bisulfite Shipments	7.6
Chemical Deliveries	13
Propane Shipments	6.5
Oxygen Deliveries	22
Sulfur Shipments	22
Solid/Hazardous Waste Shipments	19
Marketing Racks Transmix Shipments	3.9
Marketing Ethanol Deliveries	18
Marketing Racks Shipments (Gasoline, Diesel, Jet and Aviation gas)	11
Tally Room Deliveries	6.1
Lubricants Shipments	4.6
Lubricants Deliveries	4.6

Notes:

1. Round trip mileage for each truck trip type is the distance between the highway exit/entrance ramp and the onsite destination/origin (measured using aerial imageries). Unlike the CAP and GHG emissions inventories, the emissions from traveling on roads beyond the highway exit/entrance ramps (e.g., on the highway) were not considered in the TAC analysis.
2. In instances where a truck trip type uses multiple paths to get to its destination (or to depart from its origin), ENVIRON averaged the distances among the different paths.
3. The origins/destinations information for the different truck types were provided by Chevron, see Table A4.3-TRANS-12.

Abbreviations:

AQ - air quality
CAP - criteria air pollutant
GHG - greenhouse gases
HRA - health risk analysis
TAC - toxic air contaminant
TRANS - transportation

Table A4.3-TRANS-20
On-road Mobile Truck TAC Emissions
Chevron Modernization Project
Richmond, California

Year	Case Name	Emissions tons/year ¹	
		DPM ²	PM _{2.5}
2010	2008-2010	0.338	0.33
2016	Baseline	0.065	0.083
2016	Heaviest Crude Blend 100% Utilization, Max H2	0.091	0.118
2016	Lightest Crude Blend 100% Utilization, Max H2	0.080	0.10
2016	Sourest Crude Blend 100% Utilization, Max H2	0.097	0.125
2016	Project Crude Blend 100% Utilization, Max H2	0.093	0.12
2016	Heaviest Crude Blend 93% Utilization, Max H2	0.086	0.111
2016	Lightest Crude Blend 93% Utilization, Max H2	0.076	0.099
2016	Sourest Crude Blend 93% Utilization, Max H2	0.092	0.119
2016	Project Crude Blend 93% Utilization, Max H2	0.085	0.11
2016	Max Sour	0.097	0.125
2016	Max Heavy	0.081	0.105
2016	Max Light	0.069	0.090

Notes:

1. Emissions are calculated based on the methodologies provided in Table A4.3-TRANS-11, emission factors provided in Table A4.3-TRANS-18 and activity data provided in Tables A4.3-TRANS-13, A4.3-TRANS-14, and A4.3-TRANS-19.
2. Since EMFAC 2011 does not give DPM emission factors, ENVIRON conservatively used PM₁₀ exhaust emission factors as the surrogate for DPM emission factors.

Abbreviations:

ARB - California Air Resources Board
AQ - air quality
DPM - diesel particulate matters
EMFAC: EMISSION FACTOR Model
H₂ - hydrogen
NO_x - Nitrogen Oxides
PM₁₀ - coarse particulate matter
PM_{2.5} - fine particulate matter
TAC - toxic air contaminant
TRANS- transportation

APPENDIX 4.3 - URM

URM: Unit Rate Model

February 26, 2014

Ms. Shari Libicki
Environ
201 California St. #1280
San Francisco, CA 94111

Re: EIR for the Chevron Richmond Refinery Revised Renewal Project - Unit Rate Model Development and Use

Dear Shari:

Turner, Mason & Co. was engaged by Environ to provide refinery technical expertise to the City of Richmond for the development of an environmental impact report (EIR) for the Chevron Richmond Revised Renewal Project. The major changes in the refinery associated with the project include:

1. Construction of a new hydrogen plant to replace the existing plant (approximately 244 mmscf/d replacing a nominal 170 mmscf/d),
2. Increase the capacity of the FCC FHT from 65,000 b/d to 80,000 b/d, and
3. Increase the capacity of the sulfur recovery units from a nominal 600 long tons per day (lt/d) to 900 lt/d.

In addition to other tasks, TM&C was asked to develop a refinery unit rate model (URM) to 1) determine process unit rates in the refinery related to the use of different crude oil input blends, as well as, 2) expected sulfur recovery rates based on the sulfur content of crude and gas oil used by the refinery, and 3) the hydrogen production that the refinery would use from the proposed new hydrogen plant. TM&C was also asked to conduct several URM runs that included a range of potential crude oil blend inputs, and crude and gas oil sulfur contents, under pre- and post- Modernization Project conditions. TM&C developed the URM and conducted several URM runs over the period 2011-2014. The primary sources used to develop the model include:

Chevron Transmittal # 1, Revision #1

Chevron Transmittal #3C Rev. #2

Robert A Meyers, Handbook of Petroleum Refining Processes, Third Edition, (McGraw-Hill, 2004) page 10.27 and page 14.36.

M. D. Edgar, A. D. Johnson, J. T. Pistorius and T. Varadi, "Troubleshooting on Hydrotreating Units," National Petroleum Refiners Association Meeting, paper no. AM-84-38, page 7 (1984).

February 26, 2014

Page 2

The technical report describing the URM, and several pre- and post- Modernization Project URM runs, is attached to this letter. The report accurately describes the URM, and accurately summarizes the URM results TM&C obtained for each of the scenarios in the report.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Hogan", with a stylized, cursive script.

Thomas R. Hogan
Senior Vice President
Turner, Mason & Co

APPENDIX 4.3

URM: UNIT RATE MODEL TECHNICAL APPENDIX

4.1 OVERVIEW

This technical appendix describes the unit rate model (URM) that was developed to estimate how the Chevron Richmond Refinery's (Facility's) processing units could potentially be used under post-Modernization Project conditions. The URM generates estimates of the daily average throughput or production of various Facility process units in relation to: (a) the amount of crude and gas oil inputs into the Facility; (b) the API gravity and fractional characteristics¹ of the crude oil inputs; and (c) the sulfur content of the crude and gas oil inputs.

Information used in the model was derived from the Facility's average daily operational activity and crude and gas oil inputs for the 3-year period 2008-2010 (the "Baseline Period"). The Baseline Period data was utilized to estimate how crude oil fractions and externally sourced, or purchased, gas oil would be allocated to specific process units. Applicable process unit throughputs were adjusted in the URM to reflect proposed post-Modernization Project permit limits, including a reduction in the permitted throughput limit of the Facility's solvent de-asphalting (SDA) unit to an annual average of 50,000 barrels per day (b/d).

The URM was designed to determine the volume of gas oil purchased by the Facility based on: (a) the amount of gas oil obtained from the crude oil blend used by the Facility; and (b) the percentage of total permitted gas oil capacity used by the five units that can initially process purchased gas oil in the Facility (the "gas oil gateway units"). As discussed below, the air quality analysis in the EIR considers URM cases that maximize total crude and gas oil use assuming that the crude and gas oil gateway units operate at 100% and 93% of post-Modernization Project permitted capacity.² The Facility did not operate at 100%

¹ As discussed in Chapter 4.0 of this EIR, crude oil is input to the Facility and distilled in the crude unit into specific fractions of oil defined by boiling temperatures. The phrase "fractional characteristics" refers to the relative proportion of each fraction in the crude oil that enters the Facility crude unit.

² A 93% utilization rate is used in the Modernization Project EIR based on annual refinery utilization data for the western United States (Petroleum Administration Defense District Region V, or "PADD V") by the U.S. Energy Information Administration (EIA). Annual average PADD V refinery utilization rates are available for 1985-2012 (http://www.eia.gov/dnav/pet/pet_pnp_unc_dcu_r50_a.htm, accessed February 17, 2014) and averaged approximately 86.7% per year over this period. The highest annual average

or 93% of existing capacity during the entire Baseline Period, and for a variety of reasons refineries typically do not, or are not able to continuously operate at full capacity for annual durations. As a result, the URM results based on 100% and 93% crude unit and gas oil gateway unit capacity utilization provide a conservative estimate of the extent to which the Facility could be operated under post-Modernization Project conditions.

Table A4.3-URM-1 lists the Facility process units analyzed in the URM. Figure A4.3-URM-1 graphically depicts the relationship between the processing units analyzed in the URM.

TABLE A4.3-URM-1 FACILITY OPERATING UNITS INCLUDED IN THE URM

Crude Unit – Atmospheric Column	Polymerization Unit (Poly)
Crude Unit – Vacuum Column	Hydrocracker
Naphtha Hydrotreater (NHT)	Richmond Lube Oil Plant (RLOP)
Catalytic Reformers	LNC--light neutral hydrocracker
Pen/Hex Isomerization Unit (Pen/Hex)	LNF-light neutral hydrofinisher
Jet Hydrotreater (JHT)	HNC--heavy neutral hydrocracker
Diesel Hydrotreater (DHT)	HNF--heavy neutral hydrofinisher
Fluidized Catalytic Cracker Feed Hydrotreater (FCC FHT)	Solvent De-Asphalting (SDA) Unit
Fluid Catalytic Cracker (FCC) Unit	Sulfur Recovery Unit (SRU)
Gasoline Hydrotreater (GHT)	Hydrogen Plant
Alkylation Unit	

As shown in Figure A4.3-URM-1, gas oil obtained from the crude unit, and high- and low-sulfur gas oil purchased by and shipped to the Facility, is initially processed by one of five gas oil gateway units: the fluidized catalytic cracker feed hydrotreater (FCC FHT); the fluid catalytic cracker (FCC); the hydrocracker; and the light neutral hydrocracker (LNC) and heavy neutral hydrocracker (HNC) in

utilization rate was approximately 92.7% in 1998. To provide a conservative assessment, the EIR includes the analysis of 93% utilization cases to reflect the highest PADD V annual average refinery utilization rate reported by the EIA over 1985-2012.



Figure A4.3-URM-1
Chevron Refinery Modernization Project EIR
General Facility Unit Flow Chart

the Richmond Lube Oil Plant (RLOP), which is a part of the Facility that produces lubricating oils. The percentage of total gas oil gateway unit permitted capacity that is utilized under future conditions is an input to the URM in each case. The model determines how much of the applicable gas oil gateway unit capacity will be supplied from the crude oil blend used by the Facility, and calculates how much additional gas oil must be purchased to achieve the specified utilization rate. In a 100% scenario, for example, the URM calculates the amount of gas oil the Facility would need to purchase, in addition to gas oil obtained from the applicable crude oil blend, to operate the gas oil gateway units at 100% of permitted capacity.

Several units, primarily the Facility hydrocrackers and hydrotreaters, use hydrogen to assist in the cracking process and remove sulfur in the form of hydrogen sulfide gas. These units are supplied with hydrogen produced by the Facility's catalytic reformers and the hydrogen plant, as well as hydrogen recovered from Facility process gas. The hydrogen sulfide gas created as a result of sulfur removal is separated from the hydrocarbon stream, conveyed to the sulfur recovery unit (SRU) and is recovered as elemental sulfur. The recovered sulfur is sold as "sulfur product" for agricultural and other uses.

The URM calculates SRU use rates under post-Modernization Project conditions as a function of the sulfur load into the refinery less the sulfur contained in the fuel oil blendstock that exits the Facility from the SDA. To provide a conservative assessment of emissions related to hydrogen production for extracting sulfur from various units, the URM assumes that all of the net sulfur load (crude blend sulfur minus the sulfur that exits the Facility as fuel oil blendstock from the SDA) to the Facility will be processed and recovered by the SRU, although very small amounts of sulfur exit the Facility as sulfur dioxide, due to the combustion of small amounts of sulfur in the Facility fuel gas, or in finished products. The heavy bottom discharge from the FCC unit also contains sulfur that is not further processed in the Facility or recovered by the SRU, but represents a small amount of the total sulfur input as well.

The URM was utilized to calculate Facility process unit throughput, sulfur recovery and hydrogen plant production levels under post-Modernization Project conditions using a representative selection of crude data to understand the effect of processing a range of heavier and lighter crude oil blends, higher or lower crude and gas oil sulfur contents, and greater or lower purchased crude and gas oil volumes. To provide a conservative assessment, while the crude blends analyzed in the "Modernization Project Related Cases" (see *Section 4.3.1.A*) are meant to be representative of crude blends that could be processed under post-Modernization Project operating conditions, the crude blends for these and other URM cases were generally considered without regard to feasibility due to factors such as accessibility, fractional properties that are

incompatible with the range of crudes that the Facility is designed to process, or chemical properties, such as excessive acidity that would damage certain Facility processing units (see *Chapter 4.13, Public Safety*).

As discussed below, the Modernization Project EIR focuses on eight representative cases derived from the URM, including: (a) four cases based on 100% crude and gas oil gateway unit capacity utilization (100% Utilization scenarios); and (b) four cases based on 93% crude and gas oil gateway unit capacity utilization (93% Utilization scenarios). This URM appendix also discusses (a) three cases that illustrate model results based on Facility use of extremely light, extremely heavy and very high sulfur content crude oil; (b) two no-Modernization Project cases considered in the alternatives sections of the EIR assuming the Facility operates at 93% and 100% of the crude and gas oil gateway unit capacity without Modernization Project changes and using the average daily crude oil blends and gas oils from the Baseline Period; and (c) two “limited sulfur capacity” cases considered in the alternatives sections of the EIR assuming the Facility operates at 93% and 100% of the crude and gas oil gateway unit capacity under post-Modernization Project conditions but with a lower SRU capacity of 750 long tons per day (lt/d). For informational purposes, several other URM analysis results that were considered during the preparation of the Modernization Project EIR are included in Attachment 3.

4.2 URM METHODOLOGY

This section discusses the principal URM analysis methods for evaluating the post-Modernization Project process unit throughput rates related to processing heavier or lighter crude oil, crude or gas oil with higher or lower sulfur contents and different crude and gas oil capacity utilization levels, including: (1) the approach used to develop the URM from Baseline Period operational data; and (2) the methodologies used to estimate the volume of crude and gas oil use, sulfur removal and production, and hydrogen demand and production by the Facility under post-Modernization Project conditions.

4.2.1 Unit Rate Model Development

As illustrated in Figure A4.3-URM-1, crude oil blends enter the Facility through the crude unit and are distilled by heating into various fractions. These fractions are then fed to other process units within the Facility. The amount of each fraction is determined by the crude oil feedstock blend that enters the crude unit. Crude and gas oil feedstocks also contain varying amounts of sulfur that must be processed and removed from the Facility’s products. Sulfur removal requires the use of hydrogen gas produced by other Facility operations and the hydrogen plant. The URM was developed to analyze how crude blend feedstocks with different fractional characteristics, and crude and gas oil feedstocks with different sulfur contents, would affect each unit’s throughput volume. The

results were utilized to calculate processing volume-related emissions considering a variety of potential future crude blend and gas oil use scenarios.

The URM was developed by using publicly available technical resources and historical, average daily Facility crude and gas oil use and process unit throughputs provided by the Modernization Project applicant for 2008-2010 (the “Baseline Period”), including the average crude oil blend fractional characteristics and the sulfur content of the Facility feedstocks. Table A4.3-URM-2 summarizes the fractional characteristics and sulfur content of the average crude oil blend and the sulfur content of the purchased gas oil (gas oil shipped to the refinery to supplement gas oil obtained from the crude oil feedstock) during the Baseline Period.

TABLE A4.3-URM-2 BASELINE PERIOD CRUDE OIL BLEND CHARACTERISTICS AND CRUDE AND GAS OIL SULFUR CONTENT

Fraction (Boiling Point, °F)	Volume of Crude Supply (%)
Crude Oil Fractional Characteristics	
Butane and Lighter Fractions	2.21
Naphtha (55-290)	19.29
Kerosene (290-510)	22.12
Diesel (510-625)	11.16
Gas Oil (625-770)	12.99
Heavy Gas Oil (770-1020)	17.25
Residuum (1020+)	14.99
Weight and Sulfur Content	
Crude Oil API Gravity (degrees)	33.7
Crude Oil Specific Gravity	0.857
Crude Oil Sulfur Content (wt. %)	1.58%
Sour Gas Oil Sulfur Content (wt. %)	1.5%
Sweet Gas Oil Sulfur Content (wt. %)	0.3%

As shown in Table A4.3-URM-2, during the Baseline Period, the Facility generally processed crude oil blends with an average gravity in the light end of the intermediate range and with an average API gravity of approximately 33.7

degrees (°). The crude oil sulfur content by weight during the Baseline Period was approximately 1.58% by weight.³ The Facility also purchased “sweet” gas oil with an approximate sulfur content by weight of 0.25% for FCC unit processing, and “sour” gas oil with an approximate sulfur content by weight of 1.5% for processing by other gas oil units (see Table A4.3-URM-1 for process unit acronym definitions).

The crude oil fractional characteristics, gravity⁴ and sulfur content data summarized in Table A4.3-URM-2 are inputs required by the URM to complete the analysis of each case and are derived from applicable crude oil assay data. These and other URM inputs are listed in Attachment 1 and include: (1) the crude oil blend fractional characteristics (percent of each fraction in the crude oil blend); (2) the crude oil blend sulfur content by percent weight; (3) the crude oil blend specific gravity; (4) the amount of total crude oil sulfur contained in the residuum and processed in the SDA; and (5) gas oil sulfur content by percent weight. These inputs will vary with different crude oil blends and gas oils that may be purchased for the Facility. As discussed below, the URM also uses the specific gravity of gas oil as an input to calculate the amount of sulfur recovered by the SRU, but this value is assumed to be 0.91.⁵

Table A4.3-URM-3 summarizes the average daily volume of crude and gas oil and unit throughput rates for the Facility during the Baseline Period and compares these rates to the applicable unit annual average permit limit under Title V of the federal Clean Air Act. During the Baseline Period, the Facility used approximately 227,900 b/d of crude oil and approximately 45,400 b/d of gas oil, including 34,500 b/d of “sweet” gas oil. Total crude and gas oil inputs were approximately 273,300 b/d. On an average daily basis, none of the Facility units included in the URM operated at applicable permitted limits during the Baseline Period.

³ All references to sulfur content in this technical appendix are expressed in terms of percent sulfur by weight.

⁴ The API and specific gravity of a crude oil are different methods for expressing the same measure of weight or crude oil gravity. For calculation purposes, the URM uses the applicable specific gravity. For ease of reference, crude oil weights are generally described in terms of °API in the text of this appendix.

⁵ The Modernization Project applicant has indicated that the gas oil purchased typically ranges from 22-36 °API. A specific gravity of 0.91 (24 °API) is near the lower end (heavier) of the API range and therefore provides a conservative estimate of the gas oil specific gravity used in the Facility.

TABLE A4.3-URM-3 BASELINE PERIOD FACILITY AVERAGE DAILY OPERATIONS

Oil Source	Input Rate (b/d)	Existing (pre-Modernization Project) Annual Average Daily Limit (b/d)	Percent Existing Permit Limit Utilized
Crude and Gas Oil Inputs			
Crude Oil	227,900	257,200	88.6%
Sweet Gas Oil	34,500	N/A	
Sour Gas Oil	10,900	N/A	
TOTAL	273,300		
Operating Unit	Use Rate (b/d Except Where Noted)	Existing (pre-Modernization Project) Annual Average Daily Limit (b/d)	Percent Existing Permit Limit Utilized
Process Unit Throughput/Production Rates			
Crude Unit – Atmospheric Column	227,900	257,200	88.6%
Crude Unit – Vacuum Column ^a	89,900	N/A	
NHT	49,800	57,600	86.5%
Catalytic Reformers	45,500	68,700	66.2%
Pen/Hex Isomerization Unit	24,600	65,000	37.8%
Butane Isomerization (Butamer) Unit ^b		12,000	
JHT	61,100	96,000	63.6%
DHT	28,800	64,800	44.4%
FCC FHT	36,300	65,000	55.8%
FCC	70,500	80,000	88.1%
GHT	17,200	64,800	26.5%
Alkylation Unit	27,700	36,000	76.9%
Polymerization Unit	6,700	8,000	83.8%
Hydrocracker	45,000	51,300	87.7%
Richmond Lube Oil Plant (RLOP)			
<i>LNC – light neutral hydrocracker</i>	12,600	16,500	76.4%

TABLE A4.3-URM-3 BASELINE PERIOD FACILITY AVERAGE DAILY OPERATIONS

Oil Source	Input Rate (b/d)	Existing (pre-Modernization Project) Annual Average Daily Limit (b/d)	Percent Existing Permit Limit Utilized
<i>LNF – light neutral hydrofinisher</i>	15,400	22,000	70.0%
<i>HNC – heavy neutral hydrocracker</i>	20,600	26,000	79.2%
<i>HNF – heavy neutral hydrofinisher</i>	6,000	12,000	50.0%
Solvent De-Asphalting (SDA) Unit	33,900	56,000	67.8%
Sulfur Recovery Unit (SRU)(long tons/day)	398	600	66.3%
Hydrogen Plant production (mmscfd)	164	181.1 ^c	90.6%

Note: b/d = barrels per day; mmscfd= million standard cubic feet per day.

^a The Baseline Period throughput level for the crude unit - vacuum column is a URM model estimate based on the average crude oil blend assay data and total feed to the crude unit.

^b The butane isomerization (butamer) unit does not have an associated furnace and does not generate combustion-related emissions. As discussed below, the unit has been included in the analysis of hydrogen demand and does not otherwise affect the URM. The butamer unit permit limit is included for informational purposes in Table A4.3-URM-4.

^c The permit limit for the existing hydrogen plant is not adjusted for purity. Existing hydrogen plant production is approximately 94% hydrogen. As a result, the actual amount of hydrogen available for Facility use at the existing plant's full capacity is approximately 170.2 mmscfd.

Based on the Baseline Period data provided by the Modernization Project applicant and other technical sources, the URM allocates crude and gas oil feedstocks to the Facility process units using the parameters listed in Attachment 2. The URM also incorporates the increased throughput limits for the FCC FHT, the new hydrogen plant and the SRU, and the 50,000 b/d limit on the SDA throughput, that would result from the proposed Modernization Project. These throughput limit changes are listed in Table A4.3-URM-4.

4.2.2 Crude Unit Capacity Utilization

The Facility is permitted to process up to 257,200 b/d of crude oil and this limit would not be modified by the Modernization Project. The percentage of the crude unit's capacity that is used in each case is specified as an input to the URM (see Attachment 1). A 93% utilization scenario, for example, analyzes Facility unit throughput volumes that result from using 93% of the crude unit's permitted capacity, or approximately 239,200 b/d.

**TABLE A4.3-URM-4 EXISTING AND POST-PROJECT UNIT THROUGHPUT PERMIT LIMITS
(CHANGES IN BOLD)**

Process Unit (b/d except where noted)	Existing Permit Limit	Post- Modernization Project Permit Limit	Post- Modernization Project Change
Crude Unit – Atmospheric Column	257,200	257,200	0
Crude Unit Vacuum Column ^a	n/a	n/a	n/a
NHT	57,600	57,600	0
Catalytic Reformers	68,700	68,700	0
Pen/Hex Unit	65,000	65,000	0
Butane Isomerization Unit (Butamer)	12,000	12,000	0
JHT	96,000	96,000	0
DHT	64,800	64,800	0
FCC FHT	65,000	80,000	15,000
FCC	80,000	80,000	0
GHT	64,800	64,800	0
Alkylation Unit	36,000	36,000	0
Polymerization Unit	8,000	8,000	0
Hydrocracker	51,300	51,300	0
Richmond Lube Oil Plant (RLOP)			
<i>LNC--light neutral hydrocracker</i>	16,500	16,500	0
<i>LNF--light neutral hydrofinisher</i>	22,000	22,000	0
<i>HNC--heavy neutral hydrocracker</i>	26,000	26,000	0
<i>HNF--heavy neutral hydrofinisher</i>	12,000	12,000	0
SDA Unit	56,000	50,000	-6,000
SRU Plant (lt/d)	600	900	300
Hydrogen Plant production (mmscfd)	181.1^b	244	63

Note: b/d = barrels per day; mmscfd= million standard cubic feet per day; lt/d = long tons per day.

^a The Crude Unit's vacuum column only receives feed directly from the crude unit's atmospheric column.

^b The permit limit for the existing hydrogen plant is not adjusted for purity. Existing hydrogen plant production is approximately 94% hydrogen. As a result, the actual amount of hydrogen available for Facility use at the existing plant's full capacity is approximately 170.2 mmscfd.

The Facility's ability to process crude oil that is much heavier or lighter than the crude oil blend used during the Baseline Period is subject to two existing constraints that would not be affected by the Modernization Project: (1) the SDA throughput limit for heavier crude oils, and (2) the NHT throughput limit for lighter crude oils.

In general, heavier crude oil contains a proportionately larger share of heavier fractions, including the heaviest fraction, the residuum. The entire residuum fraction in the crude blend feedstock to the Facility is routed from the crude unit to the SDA unit for further processing. In the SDA unit, the residuum is separated into either de-asphalted oil (DAO), which is then routed to other Facility units, or fuel oil blendstock, which exits the Facility from the SDA. The SDA annual average throughput limit under existing permits is 56,000 b/d, but equipment limitations and other factors do not allow the unit to operate at more than an annual average throughput of 50,000 b/d. The Facility is not equipped with alternative process units or sufficient storage and treatment facilities to manage the residuum other than by routing this fraction to the SDA unit. The Modernization Project will not add any additional residuum processing or storage capacity to the Facility, and the Facility will commit to limiting SDA throughput by permit to 50,000 b/d on an annual average basis as a result of the Modernization Project. Consequently, under post-Modernization Project conditions, the Facility will be unable to process crude oil blends up to the permitted maximum of 257,200 b/d that contain more than 50,000 b/d of residuum on an annual average basis.

The Facility's ability to process much lighter crude blends than during the Baseline Period is constrained by the NHT throughput permit limit of 57,600 b/d. The NHT processes all of the naphtha fraction separated by the crude unit and receives additional feed from other Facility process units (see Attachment 2). The Facility is not equipped with alternative process units or sufficient storage and treatment facilities to process or store naphtha other than by routing these fractions to the NHT. The Modernization Project will not add any additional naphtha processing or storage capacity to the Facility, and the existing NHT throughput limit will not be modified by the Modernization Project. Consequently, under post-Modernization Project conditions, the Facility will be unable to process crude oil blends up to the permitted maximum of 257,200 b/d that, in combination with naphtha from other Facility units, would exceed 57,600 b/d of naphtha.

Table A4.3-URM-5 illustrates how the volume of heavier and lighter crudes could be constrained by the SDA and NHT unit throughput limits. Heavier crudes (e.g., Eocene crude with an approximate API of 18.3°) can contain more residuum than can be processed by the SDA at maximum crude rates. Eocene crude assay data, for example, indicates that 37.2% of the crude oil consists of residuum. The

Facility would be unable to process more than approximately 135,000 b/d of this crude oil blend without exceeding the SDA unit's 50,000 b/d limit.

Lighter crudes, (e.g., 100% Bakken crude with an approximate API of 41°) that contain a significantly higher amount of the naphtha fraction would, in combination with feeds routed from other Facility units, also be processed through the crude unit at a lower rate than the permitted limit. As illustrated in Table A4.3-URM-5, 100% Bakken crude assay data indicates that approximately 25% of the crude oil consists of the naphtha fraction. Feed from other Facility units also accounts for a portion of the NHT throughput. The Facility would be unable to process more than approximately 199,300 b/d of Bakken crude oil without exceeding the NHT unit's 57,600 b/d capacity.

In summary, to provide a conservative assessment, the URM is designed to use as much crude oil as possible up to the level of the crude unit's capacity utilization that is input to the model. The model can be iteratively run to identify crude oil blends that can be used by the Facility up to the 50,000 b/d SDA, the 57,600 b/d NHT, or any other unit's permit limit that might be exceeded before the specified level of crude unit capacity could be fully utilized.

4.2.3 Gas Oil Capacity Utilization

As discussed in *Chapter 4.0* of this EIR, gas oil is separated from crude oil by the crude unit and DOA is separated from the residuum by the SDA unit. There are no permit limits on the amount of gas oil that can be purchased for Facility use, and the total volume of gas oil utilization is limited by the capacity of the gas oil gateway units. Throughput limits for four gas oil gateway units—the FCC, the hydrocracker; the LNC and the HNC—would not be modified by the Modernization Project. The Modernization Project would increase the permitted throughput limit of the FCC FHT, the fifth gas oil gateway unit, by 15,000 b/d, which would increase the Facility's total gas oil processing capacity by approximately 1,200 b/d (see EIR *Chapter 3.0, Project Description, Section 3.3.2.1*). The URM accounts for the gas oil processing capacity increases that would result from the Modernization Project under future conditions.

The percentage of the gateway gas oil units' capacity that is used in each case is specified as an input to the URM (see Attachment 1). A 93% Utilization scenario, for example, analyzes Facility unit throughput volumes that result from using 93% of the crude unit and the gas oil gateway unit capacities. The amount of gas oil purchased for Facility use is calculated in the following manner:

1. Calculate the amount of gas oil required to operate the gas oil gateway units under post-Modernization Project conditions at the specified utilization level (e.g., 93%, 100% etc.);

TABLE A4.3-URM-5 ILLUSTRATION OF POTENTIAL CRUDE OIL USE CONSTRAINTS

Fraction Name and Boiling Point (°F)	Percent of Crude Supply	Volume of Each Fraction (b/d, rounded to nearest 100)	Does the volume of a crude oil fraction result in a Facility feed that exceeds a processing unit throughput permit limit?
Baseline Period Crude Oil Blend (API = 33.7°)			
Butane and Lighter Fractions	2.21	5,700	NO
Naphtha (55-290)	19.29	49,600	NO
Kerosene (290-510)	22.12	56,900	NO
Diesel (510-625)	11.16	28,700	NO
Gas Oil (625-770)	12.99	33,400	NO
Heavy Gas Oil (770-1020)	17.25	44,400	NO
Residuum (1020+)	14.99	38,600	NO
<i>Volume Crude Oil Use Without Exceeding a Processing Unit Throughput Limit</i>		257,200	
Heavier Crude Oil (e.g., Eocene crude, API = 18.3°)			
Butane and Lighter Fractions	0.67	900	NO
Naphtha (55-290)	7.07	9,500	NO
Kerosene (290-510)	12.72	17,200	NO
Diesel (510-625)	9.24	12,500	NO
Gas Oil (625-770)	12.30	16,600	NO
Heavy Gas Oil (770-1020)	20.98	28,300	NO
Residuum (1020+)	37.02	50,000	YES: SDA
<i>Volume Crude Oil Use Without Exceeding a Processing Unit Throughput Limit</i>		135,000	
Light Crude Oil (e.g., 100% Bakken, API = 41°)			
Butane and Lighter Fractions	2.87	5,700	NO
Naphtha	25.20	50,200 ^a	YES: NHT^a
Kerosene (290-510)	26.54	52,900	NO
Diesel (510-625)	11.61	23,100	NO
Gas Oil (625-770)	11.82	23,600	NO

TABLE A4.3-URM-5 ILLUSTRATION OF POTENTIAL CRUDE OIL USE CONSTRAINTS

Fraction Name and Boiling Point (°F)	Percent of Crude Supply	Volume of Each Fraction (b/d, rounded to nearest 100)	Does the volume of a crude oil fraction result in a Facility feed that exceeds a processing unit throughput permit limit?
Heavy Gas Oil (770-1020)	15.20	30,300	NO
Residuum (1020+)	6.77	13,500	NO
<i>Volume Crude Oil Use Without Exceeding a Processing Unit Throughput Limit</i>		199,300	

^a The throughput total includes Facility feeds from other units as well as the naphtha fraction from the crude oil feedstock. If 100% Bakken crude with the fractional characteristics identified in Table A4.3-URM-5 was used by the Facility, the URM indicates that total NHT throughput from all feed sources would reach the 57,600 b/d NHT processing limit. The amount in the table is the naphtha feed from the crude unit alone not including feed from other Facility units.

2. Calculate the amount of gas oil supplied from crude oil based on the fractional characteristics of the crude oil blend used in the applicable scenario and the specified crude unit utilization (e.g., 93%, 100%, etc.);
3. Calculate the amount of gas oil that is an intermediate product of other internal Facility process units (e.g. hydrotreated gas oil from FCC FHT or DAO recovered from residuum by the SDA); and
4. Calculating the total maximum volume of purchased gas oil by subtracting (a) the amount of gas oil obtained from crude oil and from internal Facility processes from (b) the amount of gas oil required to operate the gas oil gateway units under post-Modernization Project conditions at the specified utilization level.

To provide a conservative assessment, the URM assumes that all of the purchased gas oil under post-Modernization Project conditions will consist of “sour” feedstock with higher sulfur content except for purchased gas oil routed directly to the FCC. To meet product sulfur content specifications, the FCC only processes low-sulfur, “sweet” gas oils. Based on the URM model parameters listed in Attachment 2, and to provide a conservative assessment of the amount of sulfur in purchased gas oil, the URM assumes that approximately 4,000 b/d of sweet gas oil will be purchased under post-Modernization Project conditions to operate both the FCC and the FCC FHT at full permitted capacity (the amount of sweet gas oil is scaled by the specified level of utilization in cases that assume

less than 100% utilization). In comparison, the Facility purchased approximately 34,500 b/d of sweet gas oil during the Baseline Period.

The method by which the URM calculates gas oil imports is illustrated in Table A4.3-URM-6 for a scenario that assumes 100% of the gas oil gateway unit capacity is utilized and that the crude oil feedstock has the same fractional characteristics as during the Baseline Period (see Table A4.3-URM-3).

Approximately 253,800 b/d of gas oil would be required to operate the gas oil gateway units at full capacity. Approximately 77,800 b/d of gas oil would be obtained from the crude oil feedstock, and 110,800 b/d would be produced by other Facility processing units. Crude oil and internal Facility processing would therefore generate a gas oil supply of 188,600 b/d. As a result, approximately 65,200 b/d of gas oil would be purchased to operate the gas oil gateway units at full capacity (253,800-188,600 b/d). The amount of gas oil purchased under post-Modernization Project conditions varies with (a) the fractional characteristics of the crude oil feedstock, (b) the percentage of the crude unit's total capacity use, and (c) the percentage of total gas oil gateway unit capacity use that are entered as inputs to the URM (see Attachment 1).

4.2.4 Sulfur Content and SRU Analysis

The Modernization Project would increase the Facility's sulfur recovery or sulfur production limit from approximately 600 lt/d⁶ to 900 lt/d. The crude and gas oil used in the Facility contains sulfur that must be removed during the refining process. The URM assumes that all sulfur entering the Facility in crude or gas oil will exit the Facility either in the fuel oil blendstock produced by the SDA unit, or as elemental sulfur recovered by the SRU. This methodology maximizes the energy required to treat and remove sulfur.

For crude oil, the URM estimates the total sulfur content (by weight) in the crude oil purchased for the Facility, and the weight of the sulfur that will exit the Facility in the fuel oil blendstock produced by the SDA. To determine the amount of sulfur in the fuel oil blendstock, the URM estimates the amount of total crude oil sulfur contained in the residuum fraction processed in the SDA. The residuum sulfur content varies with the characteristics of each crude oil purchased for the Facility. The ratio of the sulfur contained in the residuum to the total amount of sulfur in the crude oil sulfur is entered as an input to the URM based on applicable assay data for each case (see Attachment 1). In general, the residuum contains from 20% to 60% of the total sulfur in the crude oil feedstock.

⁶ A long ton is 2,240 pounds.

TABLE A4.3-URM-6 GAS OIL DEMAND

	Barrels per Day
Gas Oil Gateway Unit Capacity at 100% Utilization	
FCC FHT	80,000
FCC	80,000
Hydrocracker	51,300
LNC	16,500
HNC	26,000
<i>Total Gas Oil Gateway Unit Demand at 100% of Capacity</i>	<i>253,800</i>
Gas Oil Supply from Crude and Refining	
Gas Oil from Crude Unit	(77,800)
DAO from SDA	(27,800)
Gas Oil Feed from FCC FHT to FCC	(73,600)
Gas oil from HNC	(2,400)
Gas Oil from FCC to Hydrocracker	(4,000)
Recycled Gas Oil from FCC to FCC FHT	(3,000)
<i>Total Gas Oil from Crude Imports and Facility Processing</i>	<i>(188,600)</i>
Gas Oil Import Volume	
TOTAL	65,200
<i>Low Sulfur (Sweet) Gas Oil (for FCC Operation)</i>	<i>4,000</i>
<i>High Sulfur (Sour) Gas Oil</i>	<i>61,200</i>

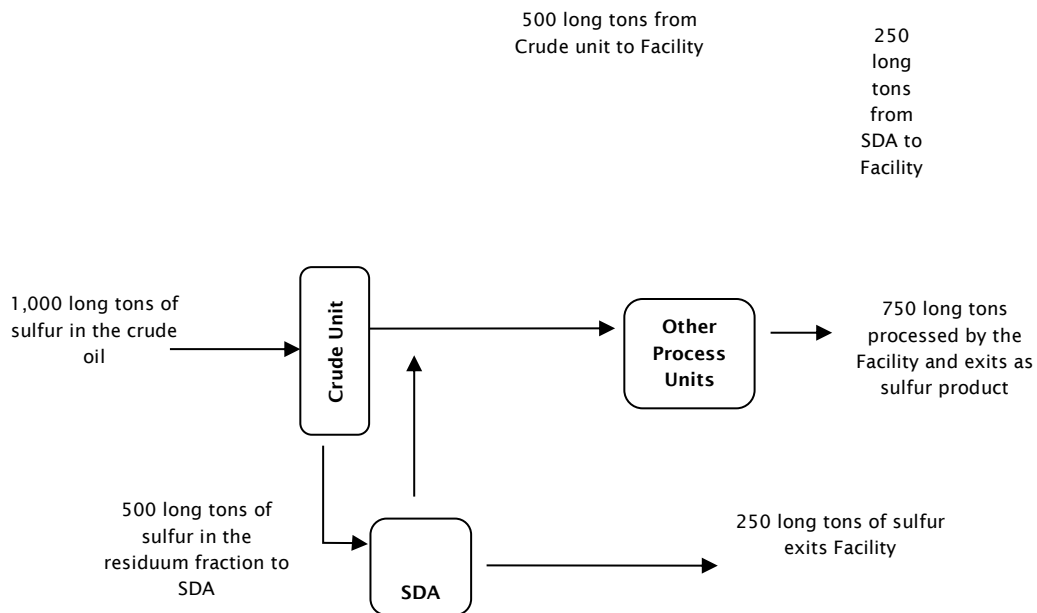
Note: Assuming (1) 100% gas oil unit and crude unit capacity use; and (2) crude oil with baseline period characteristics (see Table A4.3-URM-3) (barrels per day).

The URM then calculates the percentage of sulfur in the residuum that will exit the Facility in the fuel oil blendstock produced by the SDA and not further processed. Published information indicates that approximately 50% of the sulfur in the residuum will exit the Facility in the fuel oil blendstock,⁷ and the URM utilizes this ratio assumption for all cases (see Attachment 2).

⁷ Robert A Meyers, Handbook of Petroleum Refining Processes, Third Edition, (McGraw-Hill, 2004) p 10.27.

Figure A4.3-URM-2 illustrates the relationships between the crude unit, the SDA, and the rest of the Facility assuming that the crude oil feedstock contains 1000 long tons of sulfur and 50% of the total sulfur in the crude oil is contained in the residuum fraction. Under these assumptions, the URM calculates that 50% of the sulfur in the import crude oil (500 long tons) is contained in the fractions sent directly from the crude unit to other process units. The remaining 50% of the sulfur (500 long tons) is contained in the residuum and processed in the SDA. Half of the residuum sulfur content (250 long tons) will exit the refinery in the form of fuel oil blendstock produced by the SDA, and half (250 long tons) will be included in the gas oil produced by the SDA and sent to other Facility units for further processing. The total amount of sulfur processed by the Facility (not including the sulfur in the fuel oil blendstock) is 750 long tons. The URM assumes that all of the 750 long tons will be recovered by the SRU and will exit the Facility as elemental sulfur or sulfur product.

FIGURE A4.3-URM-2 ILLUSTRATION OF FACILITY SULFUR LOAD FROM CRUDE OIL FEEDSTOCK (1,000 LONG TONS OF SULFUR IN CRUDE OIL; 50% OF CRUDE OIL SULFUR IN RESIDUUM)



For gas oil, the URM assumes that all of the sulfur in purchased gas oil will be further processed within the Facility and exit as sulfur product from the SRU. The sulfur load attributable to purchased gas oil is calculated by estimating the total sulfur content by weight in sweet and sour gas oil based on the purchased volumes calculated by the URM.

Tables AQ-URM-7 and AQ-URM-8 illustrate the URM sulfur calculation methodology using model inputs that assume: (a) the crude oil feedstock has an API of approximately 31° and a sulfur content by weight of 2.75%; (b) purchased gas oil has a sulfur content by weight of 2.66%; (c) based on assay data, 19.44% of the crude oil feedstock consists of residuum and 55% of the total crude oil sulfur is contained in the residuum; and (d) the crude and gas oil gateway units are operated at 100% of capacity. As shown in Table A4.3-URM-7, the URM calculates that the Facility could process 257,200 b/d of crude oil, the permit maximum, without exceeding the NHT or the SDA throughput limits. In addition, approximately 57,000 b/d of purchased gas oil would be required to operate the gas oil gateway units at full capacity.

The total amount of sulfur introduced into the Facility is calculated using the crude and gas oil feedstock volumes, applicable crude and gas oil specific gravity data, and the percentage of sulfur by weight for each feedstock. Using this information, the URM calculates that the crude oil would contain approximately 962 lt/d of sulfur and that 55% of this amount (540 lt/d) will be routed to and processed in the SDA. The URM assumes that 50% of the sulfur processed in the SDA (265 lt/d) will exit the Facility in the fuel oil blendstock produced by the SDA without further processing.⁸ The remaining half of the sulfur in the SDA (265 lt/d) will be routed to other Facility process units in the gas oil produced by the SDA. As shown in Table A4.3-URM-8, the total amount of sulfur from crude oil processed in the Facility will be 698 lt/d (962-265 lt/d).

The amount of sulfur in the purchased gas oil is calculated by using the gas oil specific gravity factor (0.91) assumed in the URM (see Attachment 1) and the percentage of sulfur by weight in sour and sweet gas oil purchased by the Facility. Based on this information, the URM calculates that the purchased sour gas oil will contain approximately 201 lt/d, and the purchased sweet gas oil will contain about 1 lt/d, or a total of 202 lt/d. The total sulfur processed in the Facility from both purchased import crude and gas oil, less the sulfur in the fuel oil blendstock produced by the SDA, would be 900 lt/d (698 + 202 lt/d). Under these conditions, the SRU would operate at its full post-Modernization Project

⁸ From Robert A Meyers, Handbook of Petroleum Refining Processes, Third Edition, (McGraw-Hill, 2004) p 10.27.

TABLE A4.3-URM-7 ILLUSTRATION OF URM UNIT RATE CALCULATIONS

Unit	Unit Rate (b/d)
Crude Oil	257,200
Purchased Gas Oil	57,000
<i>Sweet Gas Oil</i>	<i>4,000</i>
<i>Sour Gas Oil</i>	<i>53,000</i>
Total	314,200

Process Unit	Throughput Rate (b/d)
Crude Unit – Atmospheric Column	257,200
Crude Unit – Vacuum Column	116,700
NHT	52,000
Catalytic Reformers	48,800
Pen/Hex Isomerization Unit	27,000
JHT	64,100
DHT	31,300
FCC FHT	80,000
FCC	80,000
GHT	19,500
Alkylation Unit	27,700
Polymerization Unit	7,600
Hydrocracker	51,300
Richmond Lube Oil Plant (RLOP)	
<i>LNC – light neutral hydrocracker</i>	<i>16,500</i>
<i>LNF – light neutral hydrofinisher</i>	<i>22,000</i>
<i>HNC – heavy neutral hydrocracker</i>	<i>26,000</i>
<i>HNF – heavy neutral hydrofinisher</i>	<i>12,000</i>
Solvent De-Asphalting (SDA) Unit	50,000

Notes: Except where noted; numbers are rounded to nearest 100.

Crude oil feedstock API = 31° and consists of 19.44% residuum. Crude and gas oil gateway units operating at 100% of capacity.

Table A4.3-URM-7 is based on Basrah/Arab Light crude blend.

**TABLE A4.3-URM-8 ILLUSTRATION OF URM SULFUR CONTENT AND SRU ANALYSIS
CRUDE AND GAS OIL GATEWAY UNITS OPERATING AT 100% OF
CAPACITY**

Crude Oil Sulfur Load	
Crude Oil Density, API Gravity	31.0
Crude Oil Specific Gravity	0.871
Crude Oil Sulfur Content by Weight	2.75%
Crude Oil Volume (b/d)	257,200
Total Sulfur in Crude (lt/day)	962
Sulfur Exiting Facility in Fuel Oil Blendstock from SDA (lt/day)	(265)
<i>Percent Total Crude Sulfur by Weight in Residuum Processed in SDA</i>	<i>55%</i>
<i>Percent Sulfur Load Exiting Facility in Fuel Oil Blendstock from SDA</i>	<i>50%</i>
Net Sulfur in Crude Oil Entering Facility excluding SDA Discharge (lt/day)	698
Gas Oil Sulfur Load	
Gas Oil (sweet and sour) Specific Gravity	0.91
"Sweet" Gas Oil Sulfur Content by Weight	0.25%
"Sweet" Gas Oil Volume (b/d)	4,000
"Sour" Gas Oil Sulfur Content by Weight	2.66%
"Sour" Gas Oil Volume (b/d)	53,000
Long tons per day Sulfur in Gas Oil	202
<i>Total Sulfur in "Sweet" Gas Oil (lt/day)</i>	<i>1</i>
<i>Total Sulfur in "Sour" Gas Oil (lt/day)</i>	<i>201</i>
Total Sulfur Processed by SRU in Facility (lt/day)	900

capacity and recover 900 lt/d from the Facility process units. The amount of sulfur the Facility processes varies with differences in the sulfur content, feedstock volumes, crude oil specific gravity, and the percentage of total crude oil sulfur contained in the residuum fraction for each case.

4.2.5 Post-Modernization Project Hydrogen Plant Production Calculation Methodology

Hydrogen is used within Facility process units for (a) the removal of sulfur and other naturally occurring impurities, and (b) "cracking" or otherwise changing

crude oil fractions. As shown in Figure A4.3-URM-1, hydrogen is supplied to several units and is produced by the Facility during the catalytic reforming process. Hydrogen is also recovered from various process gas streams and produced by the hydrogen plant for Facility use. Table A4.3-URM-9 lists the Facility process units that use hydrogen, and the hydrogen producing and recovery Facility activities analyzed in the URM.

The URM calculates post-Modernization Project hydrogen plant production for Facility use by subtracting the amount of hydrogen obtained from the Facility's catalytic reformers and process gas recovery from the total Facility hydrogen demand. Total Facility hydrogen demand is calculated by: (a) calculating per-barrel hydrogen demand for each hydrogen-using process unit, assuming crude and purchased sour gas oil has the same sulfur content as during the Baseline Period; and (b) adjusting the hydrogen demand as necessary to reflect increases or decreases from Baseline Period crude and purchased sour gas oil sulfur levels. The amount of hydrogen supplied by the production plant for Facility use is the difference between total Facility hydrogen demand adjusted for applicable sulfur content levels, and the amount of hydrogen available from other Facility operations.

Table A4.3-URM-10 illustrates the URM hydrogen plant production calculation methodology using the same model inputs in Tables AQ-URM-7 and AQ-URM-8, including a crude oil feedstock sulfur content of 2.75% and a purchased sour gas oil sulfur content of 2.66%. A per-barrel hydrogen demand factor for each of the Facility process units that use hydrogen was derived technical sources and Baseline Period operational data and integrated into the URM. Under Baseline Period conditions, for example, the NHT was estimated to use approximately 95 standard cubic feet (scf) of hydrogen per barrel and approximately 5.3 million scf per day (mmscfd) of hydrogen at a daily throughput of 56,200 b/d. The hydrocracker was estimated to use approximately 2,150 scf of hydrogen per barrel and approximately 110.3 mmscfd at a daily throughput of 51,300 b/d (see Attachment 2 for the hydrogen demand factors estimated for applicable units in the URM).

The URM adjusts the Facility's hydrogen demand by calculating the difference between the percentage of sulfur by weight in the crude oil (net of the sulfur that exits the Facility in the SDA fuel oil blendstock) and purchased gas oil compared with Baseline Period levels. If the sour gas oil content in a certain case is 2.5%, for example, the difference between the Baseline Period gas oil sulfur content level of 1.5% is +1.0%. Based on available technical information, approximately 100 scf per barrel per day is required to change the sulfur content of a barrel of

TABLE A4.3-URM-9 LIST OF FACILITY UNITS THAT USE OR PRODUCE HYDROGEN

Refinery Units that Use Hydrogen	Refinery Operations that Produce or Recover Hydrogen
NHT	Catalytic Reformers ^a
JHT	Hydrogen Recovery from Process Gas
DHT	Hydrogen Plant – Hydrogen Production
FCC FHT	
Hydrocracker	
GHT	
Pen/Hex Isomerization Unit	
Richmond Lube Oil Plant (RLOP)	
<i>LNC – light neutral hydrocracker</i>	
<i>LNF – light neutral hydrofinisher</i>	
<i>HNC – heavy neutral hydrocracker</i>	
<i>HNF – heavy neutral hydrofinisher</i>	
Butamer Unit	

^a The catalytic reformers use and produce hydrogen and are a net hydrogen producer. As a result, these units are included in the list of refinery operations that produce or recover hydrogen.

TABLE A4.3-URM-10 ILLUSTRATION OF URM HYDROGEN DEMAND ANALYSIS

	Barrels per Day^a	Demand or Production (scf per Barrel)	Total H2 Demand or Production (mmscfd)
Hydrogen Demand			
NHT	52,000	95	4.9
JHT	64,000	145	9.3
DHT	31,300	425	13.3
FCC FHT	80,000	-	
<i>Purchased gas oil+ vacuum gas oil</i>	<i>41,000</i>	<i>630</i>	<i>25.8</i>
<i>SDA-Produced DAO + recycled gas oil</i>	<i>39,000</i>	<i>950</i>	<i>37.1</i>
Hydrocracker	51,300	2,150	110.3

TABLE A4.3-URM-10 ILLUSTRATION OF URM HYDROGEN DEMAND ANALYSIS

	Barrels per Day^a	Demand or Production (scf per Barrel)	Total H2 Demand or Production (mmscfd)
GHT	19,500	60	1.2
Pen/Hex Isomerization and Benzene Saturation Unit	27,000	295	8.0
Richmond Lube Oil Plant (RLOP)			
LNC – light neutral hydrocracker	16,500	1,100	18.2
LNF – light neutral hydrofinisher	22,000	150	3.3
HNC – heavy neutral hydrocracker	26,000	1,100	28.6
HNF – heavy neutral hydrofinisher	12,000	250	3.0
Butamer Unit Use ^b		0.30	0.3
Sulfur Adjustment (100 SCF/Barrel per percent change from Baseline Period Sulfur Content)^c			
<i>Crude Oil Sulfur Content Adjustment (mmscfd)</i>			21.6
<i>Gas Oil Sulfur Content Adjustment (mmscfd)</i>			6.1
Total Facility Hydrogen Demand			291.0
Hydrogen Supply From Refinery Operations			
Hydrogen Produced by the Catalytic Reformers	48,800	850	(41.5)
Hydrogen Recovered from Process Gas/Percent Recovery	34.18	90%	(30.8)
Total Hydrogen Supply from Operations			(72.3)
Total Hydrogen Plant Production for Facility Use			218.8

^a See Table 7, rounded to nearest 100.^b The URM assumes that the butamer unit will have constant demand of 0.3 mmscfd.^c Adjustment factors from M.D. Edgar, et. al. 1984.

oil by 1% (M.D. Edgar, et. al., 1984).⁹ As a result, the URM assumes that processing gas oil with a sulfur content of 2.5% would require 100 scf per barrel more hydrogen than gas oil with a Baseline Period sulfur content of 1.5%.

⁹ The adjustment factor is consistent with estimates of theoretical hydrogen usage, that show that the amount of hydrogen required to remove one incremental percent

Table A4.3-URM-11 illustrates the URM hydrogen demand adjustment summarized in Table A4.3-URM-10 in more detail. Excluding the sulfur exiting the Facility from the SDA, the sulfur content in the Baseline Period crude oil blend was 1.26% by weight. The sulfur content in the crude oil analyzed in Table A4.3-URM-11 is 2.15% excluding the sulfur exiting the Facility from the SDA, an increase of 0.89% from Baseline Period levels. Based on this differential, the URM increases total Facility hydrogen demand by 21.6 mmscfd given a total import crude volume of 238,714 b/d to the Facility excluding the volume of fuel oil blendstock discharged from the SDA. The sulfur content in Baseline Period sour gas oil was 1.5% compared to the value of 2.66% assumed in AQ-URM-Table 11. Based on this differential, the URM increases total Facility hydrogen demand by 6.1 mmscfd utilizing the calculated purchased sour gas oil volume of 53,000 b/d (see Table A4.3-URM-8).

Including these adjustments, the URM calculates that the total Facility hydrogen demand will be 291 mmscfd (see Table A4.3-URM-10).

The URM solves for the amount of hydrogen that the hydrogen plant supplies to the Facility by comparing total demand to internally-generated Facility hydrogen supplies. The Facility produces hydrogen from two internal sources: (a) the catalytic reformers at an assumed post-Modernization Project rate of approximately 850 scf per barrel of throughput; and (b) hydrogen recovered from process gas in the pressure swing absorption unit. Based on information supplied by the Modernization Project applicant, the hydrogen content available for recovery from process gas using Baseline Period crude and gas oil is approximately 30 mmscfd. The URM also assumes 90% of the fuel gas hydrogen will be recovered under post-Modernization Project conditions for use in the Facility.¹⁰ Under the assumptions used in Tables AQ-URM-7 to AQ-URM-11, the

of sulfur per barrel would be 34-40 scf. This range was calculated via the following equation:

$$H = SG_{crude} \times \rho_{water} \times 42 \frac{gallons}{barrel} \times 1\%S \times \frac{1 lb-mol}{32.07 lb S} \times \frac{1 lb-mol S}{1 lb-mol H_2} \times \frac{1 scf}{0.0026412 lb-mol}$$

Where:

H = scf H₂/barrel/%Sulfur

SG_{crude} = Specific Gravity (ratio of a material's density to that of water) of crude oil; ranges from 0.8203-0.97 for crudes considered in this EIR (unitless)

ρ_{water} = density of water (8.3 lbs/gallon)

This assumes that it would take exactly one mole of hydrogen to remove one mole of sulfur. However, the hydrogen gas can be consumed in other chemical reactions, or simply may not react at all, requiring a greater amount of hydrogen than under ideal calculations.

¹⁰ The URM estimates the fuel gas hydrogen content by multiplying the per unit hydrogen demand prior to adjustment by 13%. This produces 30 mmscfd under post-

TABLE A4.3-URM-11 ILLUSTRATION OF FACILITY HYDROGEN DEMAND ADJUSTMENT

Crude Oil Hydrogen Demand Adjustment	
Sulfur in Crude Oil Excluding Fuel Oil Blendstock Produced by the SDA	2.15%
Baseline Period Sulfur in Crude Oil Net of SDA Fuel Oil Blendstock	1.26%
Difference from Baseline Period	0.89%
Hydrogen Demand Per Barrel Per Percent Sulfur Content by Weight (SCF)	100
Crude Oil Excluding the Fuel Oil Blendstock Produced by the SDA (b/d)	238,714
Crude Oil Sulfur Content Adjustment (mmscfd)	21.6
Gas Oil Hydrogen Demand Adjustment	
Sulfur in Sour Gas Oil	2.66%
Baseline Period Sour Gas Oil Sulfur Content	1.50%
Difference from Baseline Period	1.16%
Hydrogen Demand Per Barrel Per Percent Sulfur Content by Weight (SCF)	100
Sour Gas Oil (b/d)	53,000
Gas Oil Sulfur Content Adjustment (mmscfd)	6.1

reformers and process gas recovery process would generate 72.2 mmscfd of hydrogen for Facility use compared with a Facility demand of 291 mmscfd. The URM calculates the difference between the available internal Facility hydrogen supply and total Facility demand, or 218.8 mmscf (291-72.2 mmscf) and assumes that all of the difference in demand will be met by hydrogen supplied from the hydrogen plant. The total amount of hydrogen used in the Facility, and the hydrogen plant's level of production, will vary with the level of crude and gas oil sulfur content, crude and purchased gas oil feedstock volumes, the amount of sulfur in the fuel oil blendstock produced by the SDA that exits the Facility, and crude oil specific gravity applicable to each case.

Modernization Project, maximum use conditions assuming crude and purchased gas oil with the same characteristics as during the Baseline Period. The available hydrogen in fuel gas will vary with calculated unit throughputs and is scaled in all cases by the 13% factor derived from Baseline period data. As shown in Table 9, when applicable unit throughput rates are higher than the results obtained from using Baseline Period crude and gas oil, the amount of hydrogen recovered from fuel gas can be slightly higher (i.e., 34.18 mmscf) than 30 mmscf.

4.2.6 2011 Facility Data and URM Analysis Results

This section compares the URM gas oil purchase, unit rate, and sulfur and hydrogen production calculations with actual refinery operations in 2011. The Notice of Preparation for the Modernization Project was issued in 2011, and the prior 3 years of operational information was used to evaluate the Facility's existing annualized operations. After the URM was developed, one more year of annualized operational data became available for 2011.¹¹ The actual 2011 Facility operating data was compared with model calculations using 2011 inputs to evaluate the accuracy of the URM. As discussed above, the URM requires certain inputs to calculate unit rates, sulfur recovery by the SRU, hydrogen demand and total crude and purchased gas oil use. Table A4.3-URM-12 summarizes the URM crude oil inputs from 2011 operational data provided by the Modernization Project applicant.

TABLE A4.3-URM-12 2011 CRUDE OIL VOLUME, WEIGHT AND FRACTIONAL DATA INPUT TO THE URM

Crude Oil Utilization (b/d)	195,600
Crude Oil API Gravity (degrees)	34
Specific Gravity	0.855
Fraction (Boiling Point, °F)	Percent of Total Crude Oil
Butane and Lighter Fractions	2.09
Naphtha (55-290)	19.11
Kerosene (290-510)	22.46
Diesel (510-625)	11.30
Gas Oil (625-770)	13.17
Heavy Oil (770-1020)	17.37
Residuum (1020+)	14.51

The refinery utilized approximately 195,600 b/d of crude oil during 2011 with gravity of approximately 34° API. The fractional characteristics of the 2011 crude oil feedstock were estimated on the basis of applicable assay data.

¹¹ The Facility crude unit was not operated for portions of 2012 and 2013 due to a fire in August 2012. As a result, 2012 and 2013 do not reflect the Facility's typical annualized operations.

Table A4.3-URM-13 summarizes the sulfur content inputs for 2011 entered into the URM.

TABLE A4.3-URM-13 2011 SULFUR CONTENT DATA INPUT TO THE URM

Crude Oil Sulfur Content	1.50%
Sour Gas Oil Sulfur Content	1.50%
Sweet Gas Oil Sulfur Content	0.25%
Crude Oil Sulfur in Residuum Fraction Processed in SDA	50%

Based on crude oil blend summaries provided by the Modernization Project applicant, the sulfur content of the crude oil was estimated to be approximately 1.50% by weight in 2011. The sulfur content in 2011 gas oil purchased by the Facility was estimated on the basis of consultations with the Modernization Project applicant and was approximately 0.25% by weight for sweet gas oil and approximately 1.50% by weight for sour gas oil. Based on assay data, approximately 50% of the crude oil sulfur content was contained in the residuum processed by the SDA during 2011, approximately the same ratio as the Baseline Period.

Table A4.3-URM-14 summarizes the gas oil gateway unit utilization rates for 2011 that were input to the URM.

TABLE A4.3-URM-14 2011 GAS OIL GATEWAY UNIT THROUGHPUT DATA INPUT TO THE URM

Gas Oil Gateway Unit	2011 Utilization (b/d)	Percent of 2011 Permitted Capacity
FCC FHT	33,800	52%
Hydrocracker	44,500	87%
FCC	70,400	88%
RLOP Hydrocrackers		
<i>LNC – light neutral hydrocracker</i>	10,200	62%
<i>HNC – heavy neutral hydrocracker</i>	18,800	72%

Note: Totals rounded to nearest 100.

The percentage of available capacity for the five gas oil gateway units varied from 52% for the FCC FHT to 88% for the FCC. Based on information provided by the Modernization Project applicant, the Facility purchased approximated 48,000 b/d of gas oil, including 38,000 b/d of sweet and 10,000 b/d of sour gas oil.

The URM was used to calculate unit rates, sulfur recovery and hydrogen demand, and purchased gas oil for the Facility based on the 2011 inputs summarized in Tables AQ-URM-12 to AQ-URM-14. The analysis results are presented in Table A4.3-URM-15 and compared with the operational data for 2011. The shaded rows identify the six units (the crude unit and the five gas oil gateway units) that function as URM inputs. The unshaded rows are units or other refinery operational results that are calculated by the URM.

As shown in Table A4.3-URM-15, in almost all instances the URM results are higher, and therefore more conservative, than the 2011 data for each unit and Facility activity calculated by the model. The Facility's gas oil purchases, sulfur recovery, and hydrogen plant demand were all lower in 2011 than calculated by the URM. The average daily throughput in the crude unit vacuum column, NHT, catalytic reformers, pen/hex isomerization unit, JHT and DHT was also lower during the year than calculated by the URM. The model results were lower for only three units, including the GHT and the small polymerization unit which has negligible effect on total refinery activity. Model results were also approximately 2% lower for the SDA and within the range of assay data variability that can occur over a year. The URM sulfur recovery and hydrogen demand calculations were within 0.86% and 1.16% of the 2011 operational results. As a result, the URM provides a more conservative analysis of 2011 Facility activity compared with operational data for that year.

4.3 SUMMARY OF URM SCENARIOS

This section summarizes the URM scenarios that have been developed during the preparation of the Modernization Project EIR, including:

1. Eight scenarios that are representative of crude oil blends and gas oil that could be processed by the Facility under post-Project conditions assuming that proposed Modernization Project improvements have been completed and conservative 93% and 100% of crude and gas oil gateway unit capacity utilization rates;
2. Three scenarios that analyze potential Facility operations under future conditions assuming the proposed improvements have been completed, the use of crude oil that is much heavier, much lighter and that has a higher sulfur content than Baseline Period and the Modernization Project-related cases above;

TABLE A4.3-URM-15 URM RESULTS AND 2011 FACILITY DATA

	URM Results (b/d)	2011 Unit Rates (b/d)	2011 Unit Rate vs. URM Results (%)
Crude Oil	195,600	195,600	NA
Gas Oil	58,100	48,000	-21.04%
Total	253,700	243,600	-4.15%
Process Unit Throughput			
Crude Unit – Atmospheric Column	195,600	195,600	NA
NHT	42,200	38,300	-10.18%
Catalytic Reformers	40,400	38,400	-5.21%
Pen/Hex Isomerization Unit	22,100	21,900	-0.91%
JHT	52,300	50,900	-2.75%
DHT	26,500	25,700	-3.11%
FCC FHT	33,800	33,800	NA
FCC	70,400	70,400	NA
GHT	17,200	18,500	7.03%
Polymerization Unit	6,700	7,000	4.29%
Hydrocracker	44,500	44,500	NA
Richmond Lube Oil Plant (RLOP)			
<i>LNC – light neutral hydrocracker</i>	10,200	10,200	NA
<i>HNC – heavy neutral hydrocracker</i>	18,800	18,800	NA
Solvent De-Asphalting (SDA) Unit	28,400	29,000	2.07%
Sulfur Recovery Unit (SRU) (lt/day)	351	348	-0.86%
Hydrogen Plant Demand (mmscfd)	148	146.3	-1.16%

Note: Numbers rounded to nearest 100.

3. Two scenarios that analyze potential Facility operations under no-Modernization Project future conditions (i.e., no changes to the Facility related to the Modernization Project occur) assuming 93% and 100% of the crude and gas oil gateway unit capacity is utilized; and
4. Additional scenarios provided for informational purposes in Attachment 3 that analyze various crude oil blends that are highly unlikely or technically

infeasible to be used the Facility due to factors such as cost, availability, accessibility, fractional properties that are incompatible with the range of crudes that the Facility is designed to process, or chemical properties, such as excessive acidity that would damage certain Facility processing units.

4.3.1 Modernization Project-Related Cases

This section summarizes the URM analysis of a range of project cases that are representative of potential crude oil blends and gas oils that could be run by the refinery post-Modernization Project, and assumes that the Facility operates at 93% and 100% of the permitted capacity of the crude and gas oil gateway units and after the Modernization Project improvements have been completed. The analysis is conservative because the Facility utilized only 89% of the crude unit capacity on an average daily basis over the Baseline Period,¹² and refineries cannot practicably operate crude and gas oil processing units at 100% of capacity for more than short intervals of time.

Four representative crude blends were analyzed at both the 93% and 100% utilization levels, including:

1. A “project crude blend” case with a higher sulfur content than the Baseline Period blend (2.5% versus 1.58% during the Baseline Period) and an API gravity that is slightly lower than the Baseline Period (31.6° API versus 33.7° API during the Baseline Period);
2. A “lightest crude blend” case with the highest API that can achieve the specified 93% and 100% utilization rates without exceeding the NHT unit’s processing capacity;
3. A “heaviest crude blend” case with the lowest API that can achieve the specified 93% and 100% utilization rates without exceeding the SDA unit’s processing capacity; and
4. A “most sour crude blend” case that can achieve the specified 93% and 100% utilization rates and that would recover sulfur in an amount that approximates the maximum SRU limit of 900 lt/d that is part of the Modernization Project.

The crude oil blends that were used in each case were identified by considering a range of potential crude oil supplies, and optimizing the crude blends to meet the specific 93% and 100% Utilization scenarios and that contain sulfur in amounts consistent with the Modernization Project’s objective of increasing the

¹² As discussed in Attachment 5, on an average daily basis the Facility utilized 76% of the crude unit during 2011.

sulfur processing capacity of the Facility. Potential crude oil blends that generate significantly less sulfur than the Facility's current processing capacity of 600 lb/d, for example, could be used under current conditions and without upgrading the SRU and related facilities as proposed by the Modernization Project. Crude oils that, for reasons including cost, accessibility, reliability and chemistry (such as excessive acidity) that are highly unlikely or that cannot reliably be used by the Facility as currently configured were also not considered because such crudes are not representative of crude oil feedstocks that might be used under reasonably foreseeable post-Modernization Project operating conditions.

Table A4.3-URM-16 summarizes the crude oil blends used in the URM analysis of reasonably foreseeable future operations at 93% utilization of the crude and gas oil gateway unit capacity.

TABLE A4.3-URM-16 CRUDE OIL BLENDS, 93% CRUDE AND GAS OIL GATEWAY UNIT UTILIZATION (BARRELS PER DAY)

Crude Oil Source	Project Crude Blend	Lightest Crude Blend	Heaviest Crude Blend	Most Sour Crude Blend
Arab Light	96,910	-	180,100	-
Basrah	142,290	127,200	-	228,200
Bakken	-	112,000	-	-
Eocene	-	-	59,100	11,000
TOTAL	239,200	239,200	239,200	239,200

Note: All numbers rounded to 100.

As discussed in Section II, the URM requires several inputs, including the level of crude and gas oil gateway unit capacity utilization, and crude oil fractions and crude and gas oil sulfur content information based on assay data. Table A4.3-URM-17 summarizes the inputs used in the URM analysis of reasonably foreseeable future operations at 93% utilization of the crude and gas oil gateway unit capacity.

Table A4.3-URM-18 summarizes the amount of crude oil and purchased gas oil, and the average daily unit rates (b/d processed by each unit) for each of the four representative cases assuming 93% utilization of the crude and gas oil gateway unit capacity.

TABLE A4.3-URM-17 URM INPUTS, PROJECT-RELATED CASES, 93% CRUDE AND GAS OIL GATEWAY UNIT UTILIZATION

	Project Crude Blend	Lightest Crude Blend	Heaviest Crude Blend	Most Sour Crude Blend
Crude and Gas Oil Gateway Unit Capacity Utilization (%)	93%	93%	93%	93%
Crude Oil Fractions (% Each Boiling Point Range from Assay Data, °F)				
Butane and Lighter Fractions	1.93	2.53	1.29	2.16
Naphtha (55-290)	17.36	21.01	14.87	16.85
Kerosene (290-510)	21.11	23.17	20.04	19.87
Diesel (510-625)	10.62	10.85	10.76	10.14
Gas Oil (625-770)	12.58	11.93	13.13	12.03
Heavy Oil (770-1020)	18.11	16.65	19.01	18.07
Residuum (1020+)	18.30	13.87	20.90	20.91
Feedstock Input Characteristics (% Weight, Unless Otherwise Specified)				
Crude Oil API Gravity (degrees)	31.6	35.3	29.2	30.0
Crude Oil Specific Gravity	0.868	0.848	0.881	0.876
Crude Oil Sulfur Content	2.50	1.68	2.61	2.98
Sour Gas Oil Sulfur Content	2.25	2.25	2.25	2.25
Sweet Gas Oil Sulfur Content	0.25	0.25	0.25	0.25
Crude Oil Sulfur in Residuum Fraction Processed in SDA	55	55	55	60

TABLE A4.3-URM-18 URM PROJECT-RELATED CASE CALCULATIONS, 93% CRUDE AND GAS OIL GATEWAY UNIT UTILIZATION

	Project Crude Blend	Lightest Crude Blend	Heaviest Crude Blend	Most Sour Crude Blend
Crude and Purchased Gas Oil Use (b/d)				
Crude Oil	239,200	239,200	239,200	239,200
Sweet Gas Oil	3,700	3,700	3,700	3,700
Sour Gas Oil	50,000	62,600	42,000	46,900
TOTAL	292,900	305,500	284,900	289,800

TABLE A4.3-URM-18 URM PROJECT-RELATED CASE CALCULATIONS, 93% CRUDE AND GAS OIL GATEWAY UNIT UTILIZATION

	Project Crude Blend	Lightest Crude Blend	Heaviest Crude Blend	Most Sour Crude Blend
Refinery Unit Rates (b/d)				
Crude Unit– Atmospheric Column	239,200	239,200	239,200	239,200
Crude Unit - Vacuum Column	106,700	91,600	115,900	111,900
NHT	48,500	57,600	42,400	47,100
Catalytic Reformers	45,500	51,300	41,500	44,500
Pen/Hex Isomerization Unit	25,200	29,400	22,300	24,500
JHT	60,800	65,800	58,300	57,800
DHT	29,900	30,500	30,300	28,800
FCC	74,400	74,400	74,400	74,400
FCC FHT	74,400	74,400	74,400	74,400
GHT	18,200	18,200	18,200	18,200
Alkylation Unit	25,800	25,800	25,800	25,800
Polymerization Unit	7,100	7,100	7,100	7,100
Hydrocracker	47,700	47,700	47,700	47,700
Richmond Lube Oil Plant (RLOP)				
<i>LNC – light neutral hydrocracker</i>	15,300	15,300	15,300	15,300
<i>LNF – light neutral hydrofinisher</i>	20,500	20,500	20,500	20,500
<i>HNC – heavy neutral hydrocracker</i>	24,200	24,200	24,200	24,200
<i>HNF – heavy neutral hydrofinisher</i>	11,200	11,200	11,200	11,200
Solvent De-Asphalting (SDA) Unit	43,800	33,200	50,000	50,000
Sulfur Recovery Unit (SRU)(lt/day)	749	587	758	834
Hydrogen Plant production (mmscfd)	197	178	202	205

Note: Numbers rounded to 100.

As shown in Table A4.3-URM-18, the crude and gas oil gateway units (the FCC, FCC FHT, hydrocracker, LNC and HNC) each operate at 93% of future utilization capacity (i.e., including Modernization Project-related capacity changes to the FCC FHT). The lightest crude blend case uses all of the capacity of the NHT (57,600 b/d). The heaviest and most sour crude blend cases use the full capacity

of the SDA (50,000 b/d). The lightest blend case generates the highest level of crude and purchased gas oil use, 305,500 b/d compared with project crude blend case crude and gas oil use of 292,900 b/d. Sulfur recovery ranges from 587 lt/d in the lightest crude blend case to 834 lt/d in the most sour crude blend case. The Facility's hydrogen supply from the hydrogen plant (i.e., net of hydrogen obtained from internal processing and recovered from gas fuel) ranges from 178 mmscfd in the lightest crude blend case to 205 mmscfd in the most sour crude blend case.

Table A4.3-URM-19 summarizes the crude oil blends used and Table A4.3-URM-20 summarizes the inputs used in the URM analysis of reasonably foreseeable future operations at 100% of the crude and gas oil gateway unit utilization capacity.

In certain cases, the crude oil blends that allow for Facility operations at 100% of the crude and gas oil gateway unit capacity are different than the comparable blends in the 93% utilization cases. The amount of heavier blends that the Facility can process, for example, can be constrained by the SDA processing capacity. The Facility can use a crude blend with a greater percentage of residuum at 93% utilization than at 100% utilization. As a result, the heaviest crude blend API at 93% utilization is 29.2° (see Table A4.3-URM-17) compared with 30.3° at 100% utilization (see Table A4.3-URM-20). Due to the lighter fraction processing limit of the NHT, the lightest crude blend API at 100% utilization is 35.0° compared with 35.3 at 93% utilization (see Table A4.3-URM-17)

Table A4.3-URM-21 summarizes the amount of crude oil and purchased gas oil, and the average daily unit rates (barrels per day processed by each unit) for each of the four reasonably foreseeable cases assuming 100% utilization of the crude and gas oil gateway unit capacity.

As shown in Table A4.3-URM-21, the crude and gas oil gateway units (the FCC, FCC FHT, hydrocracker, LNC and HNC) each operate at 100% of future utilization capacity (i.e., including Modernization Project-related capacity changes to the FCC FHT). The lightest crude blend case uses all of the capacity of the NHT (57,600 b/d). The heaviest and most sour crude blend cases use the full capacity of the SDA (50,000 b/d). The lightest blend case generates the highest level of crude and purchased gas oil use, 324,300 b/d compared with crude and purchased gas oil use of 315,200 b/d in the project blend crude case. Sulfur recovery ranges from 600 lt/d in the lightest crude blend case to 869 lt/d in the most sour crude blend case. The Facility's hydrogen supply from the hydrogen plant (i.e., net of hydrogen obtained from internal processing and recovered from gas fuel) ranges from 192 mmscfd in the lightest crude blend case to 217 mmscfd in the most sour crude blend case.

TABLE A4.3-URM-19 CRUDE OIL BLENDS, 100% CRUDE AND GAS OIL GATEWAY UNIT UTILIZATION (BARRELS PER DAY)

	Project Crude Blend	Lightest Crude Blend	Heaviest Crude Blend	Most Sour Crude Blend
Arab Light	104,200	195,200	211,200	39,200
Basrah	153,000	-	-	218,000
Bakken	-	62,000	-	-
Eocene	-	-	46,000	-
TOTAL	257,200	257,200	257,200	257,200

TABLE A4.3-URM-20 URM INPUTS, PROJECT-RELATED CASES, 100% CRUDE AND GAS OIL GATEWAY UNIT UTILIZATION

	Project Crude Blend	Lightest Crude Blend	Heaviest Crude Blend	Most Sour Crude Blend
Crude and Gas Oil Gateway Unit Capacity Utilization (%)	100%	100%	100%	100%
Crude Oil Fractions (% Each Boiling Point Range from Assay Data, °F)				
Butane and Lighter Fractions	1.93	1.82	1.34	2.12
Naphtha (55-290)	17.36	19.30	15.58	17.34
Kerosene (290-510)	21.11	23.43	20.70	20.55
Diesel (510-625)	10.62	11.34	10.90	10.34
Gas Oil (625-770)	12.58	13.02	13.20	12.23
Heavy Oil (770-1020)	18.11	17.61	18.84	18.00
Residuum (1020+)	18.30	13.48	19.44	19.44
Feedstock Input Characteristics (% Weight, Unless Otherwise Specified)				
Crude Oil API Gravity (Degrees)	31.6	35.0	30.3	31.0
Crude Oil Specific Gravity	0.868	0.850	0.875	0.871
Crude Oil Sulfur Content	2.50	1.50	2.42	2.75
Sour Gas Oil Sulfur Content	2.25	2.25	2.25	2.25
Sweet Gas Oil Sulfur Content	0.25	0.25	0.25	0.25
Crude Oil Sulfur in Residuum Fraction Processed in SDA	55	45	50	55

TABLE A4.3-URM-21 URM PROJECT-RELATED CASE CALCULATIONS, 100% CRUDE AND GAS OIL GATEWAY UNIT UTILIZATION

	Project Crude Blend	Lightest Crude Blend	Heaviest Crude Blend	Most Sour Crude Blend
Crude and Purchased Gas Oil Use (b/d)				
Crude Oil	257,200	257,200	257,200	257,200
Sweet Gas Oil	4,000	4,000	4,000	4,000
Sour Gas Oil	54,000	63,100	48,400	53,100
TOTAL	315,200	324,300	309,600	314,300
Refinery Unit Rates (b/d)				
Crude Unit – Atmospheric Column	257,200	257,200	257,200	257,200
Crude Unit - Vacuum Column	114,700	101,700	120,500	116,700
NHT	52,200	57,600	47,500	52,000
Catalytic Reformers	48,900	52,300	45,900	48,800
Pen/Hex Isomerization Unit	27,100	29,600	24,900	27,000
JHT	65,500	71,600	64,500	64,100
DHT	32,000	33,900	32,800	31,300
FCC	80,000	80,000	80,000	80,000
FCC FHT	80,000	80,000	80,000	80,000
GHT	19,500	19,500	19,500	19,500
Alkylation Unit	27,700	27,700	27,700	27,700
Polymerization Unit	7,600	7,600	7,600	7,600
Hydrocracker	51,300	51,300	51,300	51,300
Richmond Lube Oil Plant (RLOP)				
<i>LNC – light neutral hydrocracker</i>	16,500	16,500	16,500	16,500
<i>LNF – light neutral hydrofinisher</i>	22,000	22,000	22,000	22,000
<i>HNC – heavy neutral hydrocracker</i>	26,000	26,000	26,000	26,000
<i>HNF – heavy neutral hydrofinisher</i>	12,000	12,000	12,000	12,000
Solvent De-Asphalting (SDA) Unit	47,100	34,700	50,000	50,000
Sulfur Recovery Unit (SRU)(lt/day)	806	600	794	869
Hydrogen Plant production (mmscfd)	211	192	214	217

Note: Numbers rounded to nearest 100.

The URM analysis of the project, heavier, lighter and more sour crude cases at 93% and 100% of crude and gas oil gateway unit utilization capacity consider crude oil blends that range from 29.6° to 35.3°, crude oil sulfur content from 1.50% to 2.98% by weight, and total crude and purchased gas oil use of 284,900 b/d to 324,300 b/d (see Tables AQ-URM-17 to AQ-URM-18 and Tables AQ-URM-20 to AQ-URM-21). Emissions estimates for each of these cases have been prepared and are included in the Modernization Project EIR. To provide a conservative assessment, the EIR further analyzes each of these cases assuming that the hydrogen plant uses any excess production capacity above the Facility's demand as calculated by the URM and operates at 100% of proposed permitted utilization capacity. Health risk assessments have been prepared and are included in the EIR for the project crude blend and lightest crude blend cases assuming the hydrogen plant operates at 100% utilization, which is above the levels calculated by the URM for these cases.

4.3.2 Very Heavy, Very Light and Maximum Sulfur Cases

This section summarizes the URM analysis of very heavy, very light and maximum sulfur content crude cases. The purpose of this analysis is to show how the Facility processing units, the SRU and the hydrogen plant would operate in the event that the Facility used much heavier, much lighter and more sour crude oil than would occur under representative future conditions. As shown in Table A4.3-URM-22, each is based on a crude oil blend that facilitates the URM analysis of the operational consequences of processing very heavy, very light, and very sour crude oil.

TABLE A4.3-URM-22 CRUDE OIL BLEND, VERY HEAVY, VERY LIGHT, AND MAXIMUM SULFUR CASES (BARRELS PER DAY)

	Very Heavy	Very Light	Maximum Sulfur
Arab Light	-	-	39,200
Basrah	-	-	218,000
Bakken	-	199,300	-
Eocene	135,000	-	-
TOTAL	135,000	199,300	257,200

Note: Numbers rounded to nearest 100.

Table A4.3-URM-23 summarizes the inputs used in the URM analysis of the very heavy, very light and maximum sulfur crude cases. The API of the very heavy crude oil is approximately 18.3° and the API of the very light crude oil is approximately 41°. These crude blends are substantially heavier and lighter than

the average gravity of the Baseline Period crude blends (API=33.7°) and the representative project crude blend at 93% capacity (31.6°; see Table A4.3-URM-17). All three cases assume that the crude and gas oil gateway units will operate at 100% of capacity unless constrained by one or more Facility processing unit limits.

TABLE A4.3-URM-23 URM INPUTS, VERY HEAVY, VERY LIGHT, AND MAXIMUM SULFUR CASES

	Very Heavy	Very Light	Maximum Sulfur
Crude and Gas Oil Gateway Unit Capacity Utilization (%)	100%	100%	100%
Crude Oil Fractions (% Each Boiling Point Range from Assay Data, °F)			
Butane and Lighter Fractions	0.67	2.87	2.12
Naphtha (55-290)	7.07	25.20	17.33
Kerosene (290-510)	12.72	26.54	20.55
Diesel (510-625)	9.24	11.61	10.34
Gas Oil (625-770)	12.30	11.82	12.23
Heavy Oil (770-1020)	20.98	15.20	17.99
Residuum (1020+)	37.02	6.77	19.44
Feedstock Input Characteristics (% Weight)			
Crude Oil API Gravity (degrees)	18.3	41.0	31.0
Crude Oil Specific Gravity	0.945	0.820	0.871
Crude Oil Sulfur Content	4.57	0.20	2.75
Sour Gas Oil Sulfur Content	2.25	2.25	2.66
Sweet Gas Oil Sulfur Content	0.25	0.25	0.25
Crude Oil Sulfur in Residuum Fraction Processed in SDA	65	20	55

Table A4.3-URM-24 summarizes the amount of crude oil and purchased gas oil, and the average daily unit rates (barrels per day processed by each unit) for the very heavy, very light and maximum sulfur crude cases assuming 100% utilization of the crude and gas oil gateway unit capacity.

**TABLE A4.3-URM-24 URM VERY HEAVY, VERY LIGHT, AND MAXIMUM SULFUR CASE
CALCULATIONS 100% CRUDE AND GAS OIL GATEWAY UNIT
UTILIZATION**

	Very Heavy	Very Light	Maximum Sulfur
Crude and Purchased Gas Oil Use (b/d)			
Crude Oil	135,000	199,300	257,200
Sweet Gas Oil	4,000	4,000	4,000
Sour Gas Oil	85,900	103,200	53,000
Total	224,900	306,500	314,200
Refinery Unit Rates (b/d)			
Crude Unit – Atmospheric Column	135,000	199,300	257,200
Crude Unit - Vacuum Column	89,000	59,100	116,700
NHT	14,600	57,600	52,000
Catalytic Reformers	24,800	52,400	48,800
Pen/Hex Isomerization Unit	9,500	29,700	27,016
JHT	27,900	64,000	64,100
DHT	17,200	27,900	31,300
FCC	80,000	80,000	80,000
FCC FHT	80,000	80,000	80,000
GHT	19,500	19,500	19,500
Alkylation Unit	27,700	27,700	27,700
Polymerization Unit	7,600	7,600	7,600
Hydrocracker	51,300	51,300	51,300
Richmond Lube Oil Plant (RLOP)			
<i>LNC – light neutral hydrocracker</i>	16,500	16,500	16,500
<i>LNF – light neutral hydrofinisher</i>	22,000	22,000	22,000
<i>HNC – heavy neutral hydrocracker</i>	26,000	26,000	26,000
<i>HNF – heavy neutral hydrofinisher</i>	12,000	12,000	12,000
Solvent De-Asphalting (SDA) Unit	50,000	13,500	50,000
Sulfur Recovery Unit (SRU)(lt/day)	891	376	900
Hydrogen Plant production (mmscfd)	228	167	219

Note: Numbers rounded to nearest 100.

The URM results for the very heavy case results show that the Facility is unable to utilize the full capacity of the crude unit (257,200 b/d) when the crude oil blend feedstock contains more than 50,000 b/d of residuum. All of the residuum that enters the Facility is processed by the SDA which, due to equipment limitations and other factors operates at an annual average throughput of 50,000 b/d, less than the current permitted capacity of 56,000 b/d. The project will lower the annual average throughput permit limits to 50,000 b/d. As shown in Table A4.3-URM-23, assay data indicates that Eocene crude oil contains approximately 37% of the residuum fraction by volume. The SDA processing limit would be reached for Eocene crude use of approximately 135,000 b/d. In general, the URM results indicate that the Facility cannot utilize the full capacity of the crude unit for any crude oil blend that contain more than approximately 19.44% residuum by volume. Crude oil blends that are significantly heavier than the representative project crude blend case (31.6°; see Tables AQ-URM-17 and AQ-URM-20) and the average Baseline Period crude blend (33.7° API) usually contain more than 19.44% of residuum by volume.

The very heavy crude case results also indicate that Facility processing of heavier crude blends with relatively high sulfur content would also tend to be constrained by the maximum SRU processing limit of 900 lt/d. As shown in Table A4.3-URM-23, Eocene crude oil has a comparatively high sulfur content of approximately 4.57% by weight. Even if Eocene crude oil contained less residuum, the Facility could not process more than 135,000 b/d without exceeding the SRU processing limit. The URM results indicate that the Facility's capacity to process high sulfur content and heavier crude would tend to be constrained by either or both the SDA and the SRU processing limits.

The URM results for the very light case show that the Facility is unable to utilize the full capacity of the crude unit (257,200 b/d) when the naphtha in the crude oil blend feedstock, plus internal refinery flows to the NHT, exceed 57,600 b/d. All of the naphtha that enters the Facility, and a small amount of naphtha produced by other Facility units, is processed by the NHT which has a maximum capacity of 57,600 b/d. As shown in Table A4.3-URM-23, assay data indicates that Bakken crude oil contains approximately 25.2% of the naphtha fraction by volume. The NHT processing limit would be reached for Bakken crude volumes of approximately 199,300 b/d plus internal Facility feeds to the unit.

The URM results for the maximum sulfur case analyze how the Facility would operate under future conditions in the event that the crude and gas oil feedstocks contain enough sulfur to fully load the SRU (result in 900 lt/d sulfur recovery), and when the crude and gas oil gateway units are run at full capacity.

This case assumes a slightly higher sour gas sulfur content than in the 100% capacity most sour crude blend case in Table A4.3-URM-21 (2.66% versus 2.25% by weight) to result in a sulfur recovery of 900 lt/d¹³ in the maximum sulfur case would not exceed the maximum capacity of the SDA or NHT, and the crude unit could be operated at the unit's 257,200 b/d capacity. The total crude and purchased gas oil used by the Facility would be 314,200 b/d, and 219 mmscf of hydrogen would be supplied to the Facility from the hydrogen plant.

Emissions estimates for the very heavy, very light and maximum sulfur cases summarized in Tables AQ-URM-22 and AQ-URM-24 have been prepared and are included in the Modernization Project EIR.

4.3.3 No-Modernization Project Cases at 93% and 100% Utilization

This section summarizes the URM analysis of Facility operations under no-Modernization Project future conditions and without upgrading the Facility's processing capacity, the hydrogen plant and other improvements proposed by the Modernization Project. The Baseline Period Facility operational results summarized in Table A4.3-URM-3 represent the 89% utilization case under no-Modernization Project conditions. Table A4.3-URM-25 summarizes the URM analysis results for Facility operations at 93% and 100% of crude and gas oil gateway unit capacity under no-Modernization Project conditions and using the Baseline Period crude blend (see Table A4.3-URM-2). The results show that the Facility operations would be constrained by the existing hydrogen plant's net hydrogen output (accounting for 94% output purity) of approximately 170.2 mmscfd. Due to insufficient hydrogen supplies, the FCC FHT and the hydrocracker could not be run at permitted capacity in the 100% utilization scenario, and the FCC FHT could not operate at full capacity in the 93% utilization scenario.¹⁴ As a result, under no-Modernization Project conditions and using the Baseline Period crude blend, the Facility could not process imported gas oil in sufficient amounts to operate the gas oil gateway units at 100% or 93% of utilization capacity.

¹³ The most sour crude blend case in Table A4.3-URM-21 results in the recovery of 869 lt/d of sulfur and a Facility demand from the hydrogen plant of 217 mmscfd. The slightly higher level of sulfur in sour gas oil assumed in the maximum sulfur case results in the recovery of 900 lt/d of sulfur and a Facility demand from the hydrogen plant of 219 mmscfd.

¹⁴ Under no-Modernization Project conditions, the FCC FHT capacity would remain at 65,000 b/d and not increase to 80,000 b/d as proposed by the Modernization Project. The Hydrocracker capacity of 51,300 b/d would not be modified by the Modernization Project.

TABLE A4.3-URM-25 URM ANALYSIS OF NO-PROJECT REFINERY OPERATIONS, 93% AND 100% OF CRUDE AND GAS OIL GATEWAY UNIT UTILIZATION

	100% Utilization	93% Utilization
Crude and Purchased Gas Oil Use (b/d)		
Crude Oil	257,200	239,200
Sweet Gas Oil	49,300	43,200
Sour Gas Oil	6,100	13,800
Total	312,600	296,200
Refinery Unit Rates (b/d)		
Crude Unit – Atmospheric Column	257,200	239,200
Crude Unit - Vacuum Column	104,600	97,300
NHT	55,300	51,500
Catalytic Reformers	49,100	47,400
Pen/Hex Isomerization Unit	28,300	26,600
JHT	68,200	63,300
DHT	33,400	31,200
FCC FHT	30,800	31,400
FCC	80,000	74,400
GHT	19,500	18,200
Alkylation Unit	26,800	25,800
Polymerization Unit	7,600	7,100
Hydrocracker	45,400	47,700
Richmond Lube Oil Plant (RLOP)		
<i>LNC – light neutral hydrocracker</i>	16,500	15,300
<i>LNF – light neutral hydrofinisher</i>	22,000	20,500
<i>HNC – heavy neutral hydrocracker</i>	26,000	24,200
<i>HNF – heavy neutral hydrofinisher</i>	12,000	11,200
Solvent De-Asphalting (SDA) Unit	38,600	35,900
Sulfur Recovery Unit (SRU)(lt/day)	438	424
Hydrogen Plant Production (mmscfd)	170	170

Note: Numbers rounded to nearest 100.

Emissions estimates have been prepared for these cases and are included in the Modernization Project EIR. The No-Modernization Project cases are considered in more detail in the Alternatives section of the Modernization Project EIR.

4.3.4 Limited Sulfur Scenarios at 93% and 100% Utilization

This section summarizes the URM analysis of Facility operations under future conditions that include the proposed Modernization Project improvements at 93% and 100% of the crude and gas oil gateway unit capacity except that the SRU would be limited to 750 lt/d. The crude oil blend used in both of these scenarios is the same as in the 100% and 93% utilization project crude blend cases summarized in Tables AQ-URM-16 and AQ-URM-19. Table A4.3-URM-26 summarizes the fractional properties and sulfur content information input for these cases, which are the same as for the 93% and 100% utilization project crude blend cases in Tables AQ-URM-17 and AQ-URM-19.

TABLE A4.3-URM-26 URM INPUTS FOR LIMITED SULFUR CASES, 100% AND 93% CRUDE AND GAS OIL GATEWAY UTILIZATION, SRU LIMITED TO 750 LT/D

	100% Utilization	93% Utilization
Crude Oil Fractions (% Each Boiling Point Range from Assay Data, °F)		
Butane and Lighter Fractions	1.93	1.93
Naphtha (55-290)	17.36	17.36
Kerosene (290-510)	21.11	21.11
Diesel (510-625)	10.62	10.62
Gas Oil (625-770)	12.58	12.58
Heavy Oil (770-1020)	18.11	18.11
Residuum (1020+)	18.3	18.3
Feedstock Input Characteristics (% Weight, Unless Otherwise Specified)		
Crude Oil API Gravity (degrees)	31.6	31.6
Crude Oil Specific Gravity	0.868	0.868
Crude Oil Sulfur Content	2.5	2.5
Sour Gas Oil Sulfur Content	2.25	2.25
Sweet Gas Oil Sulfur Content	0.25	0.25
Crude Oil Sulfur in Residuum Fraction Processed in SDA	55	55

Table A4.3-URM-27 summarizes the limited sulfur case analysis results. The reduced 750 lt/d SRU limit would constrain the full use of the crude unit capacity in the 100% case. As a result, only 205,000 b/d of crude oil could be used by the Facility. In contrast, as shown in the 100% utilization project crude blend case in Table A4.3-URM-21, the Facility could use up to 257,200 b/d of crude oil with the same fractional characteristics and sulfur content if the SRU capacity was 900 lt/d. Table A4.3-URM-27 also shows that the crude unit can be operated at 93% of capacity (and with the same unit throughputs summarized for the 93% utilization project crude blend case in Table A4.3-URM-18) because the gas oil gateway units would also be run at 93% of full capacity and less sulfur from gas oil would be brought into the Facility.

Emissions estimates have been prepared for these cases and are included in the Modernization Project EIR. The limited sulfur cases are considered in more detail in the Alternatives section of the Modernization Project EIR.

4.3.5 Other URM Cases

Several URM cases were also developed during the preparation of the Modernization Project EIR with assumed crude oil blends that are highly unlikely to or that cannot reliably be used by the Facility as currently configured, or that have relatively low sulfur contents and are not consistent with Modernization Project objectives. Summaries of 41 of these cases are presented for informational purposes in Attachment 3.

4.4 CONCLUSION

The URM is designed to calculate future refinery unit throughput rates based on potential post-Modernization Project use of crude oil with varying fractional characteristics, crude and gas oil with varying sulfur contents, and varying gas and crude oil import volumes. To provide a conservative assessment, the URM maximizes crude and gas oil inputs to the extent possible subject to applicable unit throughput capacity and permit limits. The URM calculations require that a set of input values be entered into the model that characterize the crude oil's fractional characteristics and weight, and the sulfur content of the crude and purchased gas oil (see Attachment 1). This information would be derived from the applicable assay data. Once the inputs have been entered, the URM calculates the resulting process unit throughput, sulfur recovery amount, and hydrogen plant production levels using the parameters listed in Attachment 2. The URM results were utilized to estimate Facility emissions under post-Modernization Project conditions as a result of the calculated process unit throughput rates for each scenario.

**TABLE A4.3-URM-27 URM ANALYSIS OF LIMITED SULFUR (750 LT/D SRU LIMIT)
CASES, 93% AND 100% OF CRUDE AND GAS AND GAS OIL
GATEWAY UNIT UTILIZATION**

	100% Utilization	93% Utilization
Crude and Purchased Gas Oil Use (b/d)		
Crude Oil	205,000	239,200
Sweet Gas Oil	4,000	3,700
Sour Gas Oil	76,900	50,000
Total	285,900	292,900
Refinery Unit Rates (b/d)		
Crude Unit – Atmospheric Column	205,000	239,200
Crude Unit – Vacuum Column	91,400	106,700
NHT	42,400	48,500
Catalytic Reformers	42,600	45,500
Pen/Hex Isomerization Unit	22,500	25,200
JHT	54,300	60,800
DHT	26,500	29,900
FCC	80,000	74,400
FCC FHT	80,000	74,400
GHT	19,500	18,200
Alkylation Unit	27,700	25,800
Polymerization Unit	7,600	7,100
Hydrocracker	51,300	47,700
Richmond Lube Oil Plant (RLOP)		
<i>LNC – light neutral hydrocracker</i>	16,500	15,300
<i>LNF – light neutral hydrofinisher</i>	22,000	20,500
<i>HNC – heavy neutral hydrocracker</i>	26,000	24,200
<i>HNF – heavy neutral hydrofinisher</i>	12,000	11,200
Solvent De-Asphalting (SDA) Unit	37,500	43,800
Sulfur Recovery Unit (SRU)(lt/day)	751	749
Hydrogen Plant production (mmscfd)	208	197

Note: Numbers rounded to nearest 100.

4.5 REFERENCES

Chevron Data Transmittal #1, (Rev #1): BBL Balance, 2014

Chevron Data Transmittal #3C (Rev #2): H2 Plant Production Rates, 2014.

Hogan, Thomas R. 2014. Written communication to Shari Libicki, ENVIRON.
February 26.

M.D. Edgar, A.D. Johnson, J.T. Pistorius, and T. Varadi. 1984. "Troubleshooting
on Hydrotreating Units," National Petroleum Refiners Association Meeting,
paper No. AM-84-38, p. 7.

Robert A Meyers, Handbook of Petroleum Refining Processes, Third Edition,
(McGraw-Hill, 2004) page 10.27 and page 14.36.

ATTACHMENTS TO APPENDIX 4.3 - URM

APPENDIX 4.3 - URM

Attachment 1

ATTACHMENT 1

CASE-SPECIFIC URM INPUTS (SPECIFIED OR DERIVED FROM ASSAY DATA FOR EACH CASE)

Crude and Gas Oil Gateway Unit Capacity Utilization	%
Crude Oil Fractional Inputs	
Crude Oil Fraction (Boiling Point Range °F)	Percent of Crude Blend Volume
Butane and Lighter Fractions	%
Naphtha (55-290)	%
Kerosene (290-510)	%
Diesel (510-625)	%
Gas Oil (625-770)	%
Heavy Oil (770-1020)	%
Residuum (1020+)	%
Feedstock Input Characteristics (% Weight, Unless Otherwise Specified)	
Crude Oil Specific Gravity ^a	[value]
Crude Oil Sulfur Content (wt. %)	%
Sour Gas Oil Sulfur Content (wt. %)	%
Sweet Gas Oil Sulfur Content (wt. %)	%
Percent Crude Oil Sulfur in Residuum Fraction Processed in SDA	%

^a Gas oil specific gravity is also a treated as a model input and is assumed to be 0.91 for all cases.

APPENDIX 4.3 - URM

Attachment 2

ATTACHMENT 2

URM ANALYSIS PARAMETERS

URM Crude Oil Fraction and Inter-Unit Feed Parameters	
Feed to Vacuum Unit--Percent of Crude Oil Fractions	
Gas Oil Fraction	65%
Heavy Gas Oil Fraction	100%
Residuum Fraction	100%
Feed to Naphtha Hydrotreater—Percent of Crude Oil Fractions or Processing Unit Feed	
Naphtha Fraction	100%
Jet Hydrotreater Feed	6.6%
FCC Feed Hydrotreater Feed	4%
Feed to Catalytic Reformers—Percent of Processing Unit Output	
Naphtha Hydrotreater Feed	64%
Hydrocracker Feed	30%
Feed to Pen/Hex Isomerization Unit—Percent Processing Unit Output	
Naphtha Hydrotreater Feed	36%
Catalytic Reformers Feed	17%
Feed to Jet Hydrotreater—Percent of Crude Oil Fractions or Processing Unit Feed	
Kerosene Fraction (less 1,700 b/d)	100%
LNC Feed	16%
HNC Feed	13%
Diesel Hydrotreater Feed	3.6%
FCC Feed	7.2%
Feed to Diesel Hydrotreater—Percent of Crude Oil Fractions or Processing Unit Feed	
Diesel Fraction (plus 1,700 b/d)	100%
FCC Feed	3.8%
Feed to Alkylation Unit—Percent of Processing Unit Feed	
FCC Feed	25%
Hydrocracker Feed	15%
Feed to Gasoline Hydrotreater from FCC (percent of FCC Feed)	24.4%
Feed to Polymerization Unit from FCC (percent FCC Feed)	9.5%

Percent of Residuum Fraction Feed Solvent De-Asphalting (SDA) Unit	100%
FCC FHT Feed to FCC (percent FCC FHT Feed)	92%
FCC Feed from Heavy Neutral Hydrocracker (HNC) (percent HNC Feed)	9.4%
Hydrocracker Feed from FCC (percent FCC Feed)	5%
Gas Oil Parameters	
Percent Gas Oil Distilled from Atmospheric Crude Unit	35%
Percent Gas Oil Distilled from Crude Vacuum Unit	
Percent Gas Oil Fraction from Crude Vacuum Unit	65%
Percent Gas Oil From Heavy Gas Oil Fraction	100%
Percent DAO Recovered from SDA Feed	72%
Sulfur Calculation Parameters	
Residuum Specific Gravity	1.15
Percent Total Sulfur Routed to SDA that remains in Fuel Oil Blendstock	50%
Percent Sulfur in Sweet Gas Oil	0.25%
Import Gas Oil Specific Gravity	0.91
Percent SDA Feed that is Fuel Oil Blendstock	28%
Baseline Period Sour Gas Oil Sulfur Content	1.5%
Hydrogen Calculation Parameters	
Hydrogen Demand per Barrel by Unit (SCF)	
Naphtha Hydrotreater	95
JHT	145
DHT	425
FCC FHT	-
Purchased gas oil+ gas oil from crude	630
SDA-Produced gas oil + recycled	950
Hydrocracker	2150
GHT	60
Pen/Hex Isomerization Unit	295
Richmond Lube Oil Plant (RLOP)	-
<i>LNC – light neutral hydrocracker</i>	1,100
<i>LNF – light neutral hydrofinisher</i>	150
<i>HNC – heavy neutral hydrocracker</i>	1,100

<i>HNF – heavy neutral hydrofinisher</i>	250
Butamer Unit (mmscfd)	0.3
Hydrogen produced by the Catalytic Reformers (SCF per Barrel)	850
Hydrogen recovered from fuel gas	
Percent of H2 fed to units purged to fuel gas	13%
Percent of H2 in Fuel Gas Stream Recovered for Use	90%
H2 Demand/ Barrel /Percent Difference from Baseline Period Content (SCF)	100

Note: See references section and notes in text for parameter sources.

APPENDIX 4.3 - URM

Attachment 3

ATTACHMENT 3 OTHER URM CASES¹⁵

	Case #							
	1	2	3	4	5	6	7	8
Crude and Gas Oil Gateway Unit Capacity Utilization (%)	100%	100%	100%	100%	100%	100%	93%	100%
Crude Oil Fractions (% Each Boiling Point Range from Assay Data)								
Butane and Lighter Fractions	0.0	0.7	1.1	1.8	0.9	1.0	0.4	0.8
Naphtha (55-290)	1.0	7.1	6.8	10.3	11.4	11.9	7.7	7.7
Kerosene (290-510)	6.6	12.7	10.4	11.9	12.8	15.9	14.8	15.4
Diesel (510-625)	12.2	9.2	11.8	7.6	8.7	8.3	14.4	11.8
Gas Oil (625-770)	18.8	12.3	17.1	10.4	12.1	10.0	18.1	13.6
Heavy Oil (770-1020)	30.1	21.0	26.1	18.0	19.0	17.7	23.8	22.6
Residuum (1020+)	31.3	37.0	26.8	40.0	35.1	35.2	20.9	28.1
Feedstock Input Characteristics (% Weight, Unless Otherwise Specified)								
Crude Oil API Gravity (degrees)	14.4	18.3	19.3	20.6	20.9	21.5	21.6	22.05
Crude Oil Specific Gravity	0.970	0.945	0.939	0.930	0.929	0.925	0.924	0.922
Crude Oil Sulfur Content	1.05	4.57	1.03	4.63	4.68	3.4	0.70	0.74

¹⁵ These cases use crude oil blends that are highly unlikely to or that cannot reliably be used by the Facility as currently configured, or that have relatively low sulfur content and are not consistent with Modernization Project objectives.

	Case #							
	1	2	3	4	5	6	7	8
Sour Gas Oil Sulfur Content	1.50	1.50	1.50	1.50	1.50	1.50	2.25	1.50
Sweet Gas Oil Sulfur Content	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Crude Oil Sulfur in Residuum Fraction Processed in SDA	50	65	50	60	65	65	47	50
Crude and Purchased Gas Oil Use (b/d)								
Crude Oil	159,700	135,000	186,860	125,000	142,500	142,200	239,200	178,000
Sweet Gas Oil	4,000	4,000	4,000	4,000	4,000	4,000	3,700	4,000
Sour Gas Oil	52,700	85,900	50,100	95,200	86,400	91,300	18,700	66,300
Total	216,400	224,900	240,960	224,200	232,900	237,300	261,600	248,300
Refinery Unit Rates (b/d Except Where Noted)								
Crude Unit – Atmospheric Column	159,700	135,000	186,860	125,000	142,500	142,200	239,200	178,000
Crude Unit - Vacuum Column	117,500	89,000	119,500	81,000	88,300	84,400	135,000	106,000
NHT	6,200	14,600	17,900	17,800	21,300	22,400	24,400	19,400
Catalytic Reformers	19,500	24,800	27,000	26,900	29,200	29,800	30,000	27,900
Pen/Hex Isomerization Unit	5,500	9,500	11,000	11,000	12,600	13,100	13,900	11,700
JHT	21,600	27,900	30,500	25,400	29,000	33,200	46,000	38,400
DHT	24,200	17,200	26,800	14,300	17,200	16,600	38,900	25,700
FCC FHT	80,000	80,000	80,000	80,000	80,000	80,000	74,400	80,000
FCC	80,000	80,000	80,000	80,000	80,000	80,000	74,400	80,000
GHT	19,500	19,500	19,500	19,500	19,500	19,500	18,200	19,500
Alkylation Unit	27,700	27,700	27,700	27,700	27,700	27,700	25,800	27,700

	Case #							
	1	2	3	4	5	6	7	8
Polymerization Unit	7,600	7,600	7,600	7,600	7,600	7,600	7,100	7,600
Hydrocracker	51,300	51,300	51,300	51,300	51,300	51,300	47,700	51,300
Richmond Lube Oil Plant (RLOP)								
<i>LNC – light neutral hydrocracker</i>	16,500	16,500	16,500	16,500	16,500	16,500	15,300	16,500
<i>LNF – light neutral hydrofinisher</i>	22,000	22,000	22,000	22,000	22,000	22,000	20,500	22,000
<i>HNC – heavy neutral hydrocracker</i>	26,000	26,000	26,000	26,000	26,000	26,000	24,200	26,000
<i>HNF – heavy neutral hydrofinisher</i>	12,000	12,000	12,000	12,000	12,000	12,000	11,200	12,000
Solvent De-Asphalting (SDA) Unit	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Sulfur Recovery Unit (SRU) (lt/day)	304	799	320	793	839	668	246	285
Hydrogen Plant production (mmscfd)	193	221	189	219	222	209	174	186
Crude Oil Blend (barrels per day)								
Alaskan North Slope			60,460					
Arab Extra Light								
Arab Light								
Arab Medium								
Basrah								
Kern River	159,700		126,400				138,700	
Bakken								
Peace River Heavy					142,500			
Eocene		135,000						

	Case #							
	1	2	3	4	5	6	7	8
Cupiagua								
Murban								
Bonny Light							100,500	
Northwest Shelf Condensate								
Kuito								178,000
Maya						142,200		
Peace Light								
Gulf of Suez								
Seal Heavy					125,000			
Oriente								

	Case #							
	9	10	11	12	13	14	15	16
Crude and Gas Oil Gateway Unit Capacity Utilization (%)	100%	100%	100% ¹	100% ¹	100%	100%	100%	100% ¹
Crude Oil Fractions (% Each Boiling Point Range From Assay Data)								
Butane and Lighter Fractions	0.4	1.4	1.0	1.0	1.1	1.1	1.3	2.2
Naphtha (55-290)	8.6	10.4	11.9	11.9	13.4	13.4	14.4	16.8
Kerosene (290-510)	15.9	17.1	17.1	17.1	18.6	18.6	20.3	19.9
Diesel (510-625)	14.7	10.7	11.6	11.6	11.5	11.5	11.4	10.1
Gas Oil (625-770)	18.1	12.3	15.2	15.2	14.7	14.7	13.5	12.0
Heavy Oil (770-1020)	22.9	19.8	22.3	22.3	21.2	21.2	19.7	18.1
Residuum (1020+)	19.4	28.3	20.9	20.9	19.4	19.4	19.4	20.9
Feedstock Input Characteristics (% Weight, Unless Otherwise Specified)								
Crude Oil API Gravity (degrees)	22.7	24.0	26.3	26.3	28.2	28.2	29.6	30
Crude Oil Specific Gravity	0.918	0.910	0.876	0.876	0.886	0.886	0.878	0.876
Crude Oil Sulfur Content	0.65	1.59	1.59	1.59	1.67	1.67	1.55	2.98
Sour Gas Oil Sulfur Content	2.25	1.50	2.00	8.50	8.04	1.50	1.50	2.00
Sweet Gas Oil Sulfur Content	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Crude Oil Sulfur in Residuum Fraction Processed in SDA	46	60	45	45	45	50	50	55
Crude and Purchased Gas Oil Use (b/d)								
Crude Oil	257,200	176,500	239,200	239,200	257,200	257,200	257,200	239,200
Sweet Gas Oil	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000

	Case #							
	9	10	11	12	13	14	15	16
Sour Gas Oil	25,500	74,100	41,000	41,000	38,300	38,300	45,500	58,800
Total	286,700	254,600	284,200	284,200	299,500	299,500	306,700	302,000
Refinery Unit Rates (b/d Except Where Noted)								
Crude Unit – Atmospheric Column	257,200	176,500	239,200	239,200	257,200	257,200	257,200	239,200
Crude Unit - Vacuum Column	139,000	99,100	127,100	127,100	129,200	129,200	123,100	111,900
NHT	28,800	24,300	35,100	35,100	41,600	41,600	44,500	47,400
Catalytic Reformers	33,900	31,100	37,900	37,900	42,100	42,100	44,000	45,800
Pen/Hex Isomerization Unit	16,100	14,000	19,100	19,100	22,100	22,100	23,500	24,800
JHT	52,600	41,000	52,200	52,200	59,100	59,100	63,500	58,600
DHT	42,500	23,600	32,400	32,400	34,300	34,300	34,100	29,000
FCC FHT	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000
FCC	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000
GHT	19,500	19,500	19,500	19,500	19,500	19,500	19,500	19,500
Alkylation Unit	27,700	27,700	27,700	27,700	27,700	27,700	27,700	27,700
Polymerization Unit	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600
Hydrocracker	51,300	51,300	51,300	51,300	51,300	51,300	51,300	51,300
Richmond Lube Oil Plant (RLOP)								
<i>LNC – light neutral hydrocracker</i>	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500
<i>LNF – light neutral hydrofinisher</i>	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000
<i>HNC – heavy neutral hydrocracker</i>	26,000	26,000	26,000	26,000	26,000	26,000	26,000	26,000

	Case #							
	9	10	11	12	13	14	15	16
<i>HNF – heavy neutral hydrofinisher</i>	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Solvent De-Asphalting (SDA) Unit	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Sulfur Recovery Unit (SRU)(lt/day)	267	439	521	900	900	529	509	876
Hydrogen Plant production (mmscfd)	186	194	199	226	223	197	194	218
Crude Oil Blend (b/d)								
Alaskan North Slope								
Arab Extra Light								
Arab Light			158,500	158,500	194,500	194,500	178,300	
Arab Medium								
Basrah								228,200
Kern River	134,000		80,700	80,700	62,700	62,700		
Bakken								
Peace River Heavy								
Eocene								11,000
Cupiagua								
Murban								
Bonny Light	123,200							
Northwest Shelf Condensate								
Kuito							78,900	
Maya								

	Case #							
	9	10	11	12	13	14	15	16
Peace Light								
Gulf of Suez								
Seal Heavy								
Oriente		176,500						

	Case #							
	17	18	19	20	21	22	23	24
Crude and Gas Oil Gateway Unit Capacity Utilization (%)	100% ¹	100%	100% ¹	100%	93%	93%	100%	100%
Crude Oil Fractions (% Each Boiling Point Range From Assay Data)								
Butane and Lighter Fractions	2.2	1.5	2.2	1.4	2.2	2.2	1.4	1.5
Naphtha (55-290)	16.8	15.3	17.3	16.2	17.3	17.3	16.4	16.3
Kerosene (290-510)	19.9	20.8	20.2	20.5	20.2	20.2	21.1	20.8
Diesel (510-625)	10.1	11.1	10.2	10.8	10.2	10.2	10.7	10.7
Gas Oil (625-770)	12.0	13.1	12.0	13.1	12.0	12.0	12.7	12.9
Heavy Oil (770-1020)	18.1	18.8	17.9	18.5	17.9	17.9	18.2	18.3
Residuum (1020+)	20.9	19.4	20.1	19.4	20.1	20.1	19.4	19.4
Feedstock Input Characteristics (% Weight, Unless Otherwise Specified)								
Crude Oil API Gravity (degrees)	30	30.3	30.6	30.6	30.6	30.6	30.8	31.1
Crude Oil Specific Gravity	0.876	0.874	0.873	0.873	0.873	0.873	0.872	0.870
Crude Oil Sulfur Content	2.98	1.8	2.90	2.48	2.90	2.90	2.21	2.36
Sour Gas Oil Sulfur Content	2.29	1.50	1.50	1.50	2.25	3.42	1.50	1.50
Sweet Gas Oil Sulfur Content	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Crude Oil Sulfur in Residuum Fraction Processed in SDA	55	50	55	50	60	60	50	50
Crude and Purchased Gas Oil Use (b/d)								
Crude Oil	239,200	257,200	248,500	257,200	239,200	239,200	257,200	257,200
Sweet Gas Oil	4,000	4,000	4,000	4,000	3,700	3,700	4,000	4,000

	Case #							
	17	18	19	20	21	22	23	24
Sour Gas Oil	58,800	48,800	56,300	49,400	48,600	48,600	51,100	50,400
Total	302,000	310,000	308,800	310,600	291,500	291,500	312,300	311,600
Refinery Unit Rates (b/d Except Where Noted)								
Crude Unit – Atmospheric Column	239,200	257,200	248,500	257,200	239,200	239,200	257,200	257,200
Crude Unit - Vacuum Column	111,900	120,200	114,000	119,600	109,700	109,700	118,200	118,700
NHT	47,400	46,900	50,300	49,200	48,300	48,300	49,600	49,400
Catalytic Reformers	45,800	45,500	47,700	47,000	45,300	45,300	47,200	47,100
Pen/Hex Isomerization Unit	24,800	24,600	26,200	25,700	25,100	25,100	25,900	25,800
JHT	58,600	64,800	61,400	64,100	58,600	58,600	65,600	64,700
DHT	29,000	33,300	30,000	32,400	28,900	28,900	32,200	32,200
FCC FHT	80,000	80,000	80,000	80,000	74,400	74,400	80,000	80,000
FCC	80,000	80,000	80,000	80,000	74,400	74,400	80,000	80,000
GHT	19,500	19,500	19,500	19,500	18,200	18,200	19,500	19,500
Alkylation Unit	27,700	27,700	27,700	27,700	25,800	25,800	27,700	27,700
Polymerization Unit	7,600	7,600	7,600	7,600	7,100	7,100	7,600	7,600
Hydrocracker	51,300	51,300	51,300	51,300	47,700	47,700	51,300	51,300
Richmond Lube Oil Plant (RLOP)								
<i>LNC – light neutral hydrocracker</i>	16,500	16,500	16,500	16,500	15,300	15,300	16,500	16,500
<i>LNF – light neutral hydrofinisher</i>	22,000	22,000	22,000	22,000	20,500	20,500	22,000	22,000
<i>HNC – heavy neutral hydrocracker</i>	26,000	26,000	26,000	26,000	24,200	24,200	26,000	26,000

	Case #							
	17	18	19	20	21	22	23	24
<i>HNF – heavy neutral hydrofinisher</i>	12,000	12,000	12,000	12,000	11,200	11,200	12,000	12,000
Solvent De-Asphalting (SDA) Unit	50,000	50,000	50,000	50,000	48,200	48,200	50,000	50,000
Sulfur Recovery Unit (SRU)(lt/day)	900	580	834	759	819	900	691	728
Hydrogen Plant production (mmscfd)	220	198	214	210	202	208	205	208
Crude Oil Blend (b/d)								
Alaskan North Slope								
Arab Extra Light								
Arab Light		179,900		206,500			206,800	216,800
Arab Medium								
Basrah	228,200		248,500		239,200	239,200		
Kern River								
Bakken								
Peace River Heavy				50,700				
Eocene	11,000							
Cupiagua								
Murban								
Bonny Light								
Northwest Shelf Condensate								
Kuito								
Maya							50,400	

	Case #							
	17	18	19	20	21	22	23	24
Peace Light								
Gulf of Suez								
Seal Heavy								40,400
Oriente		77,300						

	Case #							
	25	26	27	28	29	30	31	32
Crude and Gas Oil Gateway Unit Capacity Utilization (%)	100%	93% ²	100% ¹	100%	93%	100%	100%	100% ¹
Crude Oil Fractions (% Each Boiling Point Range From Assay Data)								
Butane and Lighter Fractions	1.8	1.6	1.6	2.2	2.2	1.2	1.7	1.3
Naphtha (55-290)	15.5	17.4	17.4	19.3	19.3	19.1	19.4	20.7
Kerosene (290-510)	20.3	22.2	22.2	22.1	22.1	25.9	22.8	25.8
Diesel (510-625)	11.1	11.1	11.1	11.2	11.2	16.8	11.5	16.3
Gas Oil (625-770)	12.8	13.3	13.3	13.0	13.0	16.5	13.2	16.0
Heavy Oil (770-1020)	19.1	18.3	18.3	17.3	17.3	14.3	17.7	13.8
Residuum (1020+)	19.3	16.1	16.1	15.0	15.0	6.2	13.7	6.0
Feedstock Input Characteristics (% Weight, Unless Otherwise Specified)								
Crude Oil API Gravity (degrees)	31.3	32.9	32.9	33.7	33.7	34.1	34.7	34.9
Crude Oil Specific Gravity	0.869	0.861	0.861	0.857	0.857	0.854	0.851	0.850
Crude Oil Sulfur Content	1.41	2.00	2.00	1.58	1.58	0.15	1.62	0.15
Sour Gas Oil Sulfur Content	1.50	2.00	4.43	2.25	2.25	2.25	1.50	2.00
Sweet Gas Oil Sulfur Content	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Crude Oil Sulfur in Residuum Fraction Processed in SDA	50	45	45	50	50	25	50	25
Crude and Purchased Gas Oil Use (b/d)								
Crude Oil	257,200	239,200	239,200	257,200	239,200	257,200	257,200	239,200
Sweet Gas Oil	4,000	4,000	4,000	4,000	3,700	4,000	4,000	4,000

	Case #							
	25	26	27	28	29	30	31	32
Sour Gas Oil	48,900	63,500	63,500	61,200	56,700	76,000	61,900	85,100
TOTAL	310,100	306,700	306,700	322,400	299,596	337,200	323,100	328,300
Refinery Unit Rates (b/d Except Where Noted)								
Crude Unit – Atmospheric Column	257,200	239,200	239,200	257,200	239,196	257,200	257,200	239,200
Crude Unit - Vacuum Column	120,200	102,900	102,900	104,600	97,300	80,400	102,500	72,300
NHT	47,300	49,100	49,100	57,300	53,300	57,600	57,600	57,600
Catalytic Reformers	45,800	46,900	46,900	52,200	48,500	52,400	52,400	52,400
Pen/Hex Isomerization Unit	24,800	25,700	25,700	29,500	27,400	29,600	29,600	29,600
JHT	63,500	64,300	64,300	68,200	63,300	78,300	70,000	73,300
DHT	33,300	31,400	31,400	33,400	31,200	47,900	34,300	43,800
FCC FHT	80,000	80,000	80,000	80,000	74,400	80,000	80,000	80,000
FCC	80,000	80,000	80,000	80,000	74,400	80,000	80,000	80,000
GHT	19,500	19,500	19,500	19,500	18,200	19,500	19,500	19,500
Alkylation Unit	27,700	27,700	27,700	27,700	25,800	27,700	27,700	27,700
Polymerization Unit	7,600	7,600	7,600	7,600	7,100	7,600	7,600	7,600
Hydrocracker	51,300	51,300	51,300	51,300	47,700	51,300	51,300	51,300
Richmond Lube Oil Plant (RLOP)								
<i>LNC – light neutral hydrocracker</i>	16,500	16,500	16,500	16,500	15,300	16,500	16,500	16,500
<i>LNF – light neutral hydrofinisher</i>	22,000	22,000	22,000	22,000	20,500	22,000	22,000	22,000
<i>HNC – heavy neutral hydrocracker</i>	26,000	26,000	26,000	26,000	24,200	26,000	26,000	26,000

	Case #							
	25	26	27	28	29	30	31	32
<i>HNF – heavy neutral hydrofinisher</i>	12,000	12,000	12,000	12,000	11,200	12,000	12,000	12,000
Solvent De-Asphalting (SDA) Unit	49,600	38,400	38,400	38,600	35,900	16,000	35,200	14,400
Sulfur Recovery Unit (SRU) (lt/day)	475	680	900	605	562	290	549	285
Hydrogen Plant production (mmscfd)	190	202	217	193	179	176	188	165
Crude Oil Blend (b/d)								
Alaskan North Slope				68,233	63,457			
Arab Extra Light				62,985	58,576			
Arab Light		214,830	214,830	83,988	78,109		215,000	
Arab Medium				7,877	7,326			
Basrah		24,370	24,370	28,869	26,848			
Kern River								
Bakken								
Peace River Heavy								
Eocene								
Cupiagua							42,200	
Murban				5,248	4,880			
Bonny Light						244,820		219,700
Northwest Shelf Condensate						12,380		19,500
Kuito								
Maya								

	Case #							
	25	26	27	28	29	30	31	32
Peace Light								
Gulf of Suez	257,200							
Seal Heavy								
Oriente								

	Case #						
	33	34	35	36	37 ¹	38	39
Crude and Gas Oil Gateway Unit Capacity Utilization (%)	100%	93%	93%	100%	100%	100%	100%
Crude Oil Fractions (% Each Boiling Point Range From Assay Data)							
Butane and Lighter Fractions	1.4	1.3	1.8	2.5	3.0	N/A	N/A
Naphtha (55-290)	19.1	20.8	20.8	18.7	29.2	N/A	N/A
Kerosene (290-510)	26.2	25.8	26.3	25.0	24.8	N/A	N/A
Diesel (510-625)	15.8	16.3	14.7	11.7	12.6	N/A	N/A
Gas Oil (625-770)	15.8	16.0	14.7	12.9	12.2	N/A	N/A
Heavy Oil (770-1020)	15.1	13.8	15.1	16.1	14.4	N/A	N/A
Residuum (1020+)	6.6	6.0	6.7	13.2	3.9	N/A	N/A
Feedstock Input Characteristics (% Weight, Unless Otherwise Specified)							
Crude Oil API Gravity (degrees)	35.0	35.1	36.6	39.9	43.1	N/A	N/A
Crude Oil Specific Gravity	0.850	0.849	0.842	0.826	0.810	N/A	N/A
Crude Oil Sulfur Content	0.17	0.15	0.18	0.43	0.08	N/A	N/A
Sour Gas Oil Sulfur Content	2.25	2.25	2.25	1.50	1.50	2.25	3.79
Sweet Gas Oil Sulfur Content	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Crude Oil Sulfur in Residuum Fraction Processed in SDA	20	25	20	20	30		
Crude and Purchased Gas Oil Use (b/d)							
Crude Oil	257,200	239,200	239,200	257,200	174,300	N/A	N/A

	Case #						
	33	34	35	36	37 ¹	38	39
Sweet Gas Oil	4,000	3,700	3,700	4,000	4,000	4,000	4,000
Sour Gas Oil	75,200	73,300	72,100	67,800	115,500	166,800	166,800
Total	336,400	316,200	315,000	329,000	293,800	170,800	170,800
Refinery Unit Rates (b/d Except Where Noted)							
Crude Unit – Atmospheric Column	257,200	239,200	239,200	257,200	174,300	N/A	N/A
Crude Unit - Vacuum Column	82,100	72,200	74,900	96,900	45,700	N/A	N/A
NHT	57,600	57,600	57,600	56,200	57,600	4,000	4,000
Catalytic Reformers	52,400	51,300	51,200	51,500	52,400	18,000	18,000
Pen/Hex Isomerization Unit	29,600	29,400	29,400	29,000	29,600	4,500	4,500
JHT	79,000	72,500	73,500	75,600	54,300	11,900	11,900
DHT	45,500	43,600	39,600	34,800	26,700	3,000	3,000
FCC FHT	80,000	74,400	74,400	80,000	80,000	80,000	80,000
FCC	80,000	74,400	74,400	80,000	80,000	80,000	80,000
GHT	19,500	18,200	18,200	19,500	19,500	19,500	19,500
Alkylation Unit	27,700	25,800	25,800	27,700	27,700	27,700	27,700
Polymerization Unit	7,600	7,100	7,100	7,600	7,600	7,600	7,600
Hydrocracker	51,300	47,700	47,700	51,300	51,300	51,300	51,300
Richmond Lube Oil Plant (RLOP)							
<i>LNC – light neutral hydrocracker</i>	16,500	15,300	15,300	16,500	16,500	16,500	16,500
<i>LNF – light neutral hydrofinisher</i>	22,000	20,500	20,500	22,000	22,000	22,000	22,000

	Case #						
	33	34	35	36	37 ¹	38	39
<i>HNC – heavy neutral hydrocracker</i>	26,000	24,200	24,200	26,000	26,000	26,000	26,000
<i>HNF – heavy neutral hydrofinisher</i>	12,000	11,200	11,200	12,000	12,000	12,000	12,000
Solvent De-Asphalting (SDA) Unit	17,000	14,400	15,900	33,900	6,700	14,400	14,400
Sulfur Recovery Unit (SRU) (lt/day)	294	277	283	274	263	535	900
Hydrogen Plant production (mmscfd)	168	154	154	168	157	192	218
Crude Oil Blend (b/d)							
Alaskan North Slope						N/A	N/A
Arab Extra Light						N/A	N/A
Arab Light						N/A	N/A
Arab Medium						N/A	N/A
Basrah						N/A	N/A
Kern River						N/A	N/A
Bakken	69,500		112,500			N/A	N/A
Peace River Heavy						N/A	N/A
Eocene						N/A	N/A
Cupiagua					174,300	N/A	N/A
Murban						N/A	N/A
Bonny Light	187,700	219,200	126,700			N/A	N/A
Northwest Shelf Condensate		20,000				N/A	N/A
Kuito						N/A	N/A

	Case #						
	33	34	35	36	37 ¹	38	39
Maya						N/A	N/A
Peace Light				257,200		N/A	N/A
Gulf of Suez						N/A	N/A
Seal Heavy						N/A	N/A
Oriente						N/A	N/A

	Case #	
	40	41
Crude and Gas Oil Gateway Unit Capacity Utilization (%)	93%	93%
Crude Oil Fractions (% Each Boiling Point Range From Assay Data)		
Butane and Lighter Fractions	N/A	N/A
Naphtha (55-290)	N/A	N/A
Kerosene (290-510)	N/A	N/A
Diesel (510-625)	N/A	N/A
Gas Oil (625-770)	N/A	N/A
Heavy Oil (770-1020)	N/A	N/A
Residuum (1020+)	N/A	N/A
Feedstock Input Characteristics (% Weight, Unless Otherwise Specified)		
Crude Oil API Gravity (degrees)	N/A	N/A
Crude Oil Specific Gravity	N/A	N/A
Crude Oil Sulfur Content	N/A	N/A
Sour Gas Oil Sulfur Content	2.25	3.79
Sweet Gas Oil Sulfur Content	0.25	0.25
Crude Oil Sulfur in Residuum Fraction Processed in SDA		
Crude and Purchased Gas Oil Use (b/d)		
Crude Oil	N/A	N/A
Sweet Gas Oil	3,700	3,700

	Case #	
	40	41
Sour Gas Oil	154,900	154,900
TOTAL	158,600	158,600
Refinery Unit Rates (b/d Except Where Noted)		
Crude Unit – Atmospheric Column	N/A	N/A
Crude Unit - Vacuum Column	N/A	N/A
NHT	3,700	3,700
Catalytic Reformers	16,800	16,800
Pen/Hex Isomerization Unit	4,200	4,200
JHT	11,100	11,100
DHT	2,800	2,800
FCC FHT	74,400	74,400
FCC	74,400	74,400
GHT	18,200	18,200
Alkylation Unit	25,800	25,800
Polymerization Unit	7,100	7,100
Hydrocracker	47,700	47,700
Richmond Lube Oil Plant (RLOP)		
<i>LNC – light neutral hydrocracker</i>	15,300	15,300
<i>LNF – light neutral hydrofinisher</i>	20,500	20,500
<i>HNC – heavy neutral hydrocracker</i>	24,200	24,200

	Case #	
	40	41
<i>HNF – heavy neutral hydrofinisher</i>	11,200	11,200
Solvent De-Asphalting (SDA) Unit	N/A	N/A
Sulfur Recovery Unit (SRU) (lt/day)	497	836
Hydrogen Plant production (mmscfd)	179	203
Crude Oil Blend (b/d)		
Alaskan North Slope	N/A	N/A
Arab Extra Light	N/A	N/A
Arab Light	N/A	N/A
Arab Medium	N/A	N/A
Basrah	N/A	N/A
Kern River	N/A	N/A
Bakken	N/A	N/A
Peace River Heavy	N/A	N/A
Eocene	N/A	N/A
Cupiagua	N/A	N/A
Murban	N/A	N/A
Bonny Light	N/A	N/A
Northwest Shelf Condensate	N/A	N/A
Kuito	N/A	N/A
Maya	N/A	N/A

	Case #	
	40	41
Peace Light	N/A	N/A
Gulf of Suez	N/A	N/A
Seal Heavy	N/A	N/A
Oriente	N/A	N/A

Notes:

1. Case in which gas oil gateway units operate at 100% capacity, but 100% crude unit capacity cannot be achieved due to exceedance of at least one processing unit throughput limit.
2. Case in which crude unit is limited to specified level.

APPENDIX 4.5

Cultural Resources—Letters

**Native American Contacts
Contra Costa County
November 18, 2013**

akki Kehl
120 North 2nd Street
Patterson, CA 95363
(209) 892-1060

Ohlone/Costanoan

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister, CA 95024
ams@indiancanyon.org
831-637-4238

Ohlone/Costanoan

Katherine Erolinda Perez
PO Box 717
Linden, CA 95236
canutes@verizon.net
(209) 887-3415

Ohlone/Costanoan
Northern Valley Yokuts
Bay Miwok

Muwekma Ohlone Indian Tribe of the SF Bay Area
Rosemary Cambra, Chairperson
PO Box 360791
Milpitas, CA 95036
muwekma@muwekma.org
408-205-9714
510-581-5194

Ohlone / Costanoan

Linda G. Yamane
1585 Mira Mar Ave
Seaside, CA 93955
rumsien123@yahoo.com
831-394-5915

Ohlone/Costanoan

The Ohlone Indian Tribe
Andrew Galvan
PO Box 3152
Fremont, CA 94539
chochenyo@AOL.com
(510) 882-0527 - Cell
(510) 687-9393 - Fax

Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

Amah Mutsun Tribal Band of Mission San Juan Bautista
Irene Zwiernie, Chairperson
789 Canada Road
Woodside, CA 94062
amahmutsuntribal@gmail.com
(650) 851-7747 - Home
650-400-4806 cell preferred
650-332-1526 - Fax

Ohlone/Costanoan

Trina Marine Ruano Family
Ramona Garibay, Representative
30940 Watkins Street
Union City, CA 94587
510-972-0645-home
soaprootmo@comcast.net

Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

Amah Mutsun Tribal Band of Mission San Juan Bautista
Michelle Zimmer
789 Canada Road
Woodside, CA 94062
amahmutsuntribal@gmail.com
(650) 851-7747 - Home
650-332-1526 - Fax

Ohlone/Costanoan

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Chevron Energy and Hydrogen Renewal project, Contra Costa County



LSA ASSOCIATES, INC.
157 PARK PLACE
PT. RICHMOND, CALIFORNIA 94801

510.236.6810 TEL
510.236.3480 FAX

BERKELEY
CARLSBAD
FORT COLLINS

FRESNO
IRVINE
PALM SPRINGS

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

November 26, 2013

Via email

Rosemary Cambra, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 360791
Milpitas, California 95036
muwekma@muwekma.org

Subject: Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County,
California. LSA Project #ENV1201

Dear Chairperson Cambra:

Per our email of November 22, 2013, please accept this letter in place of the letter dated November 19, 2013. The November 19 letter was sent in error and did not accurately describe the proposed project. Chevron is proposing modernization improvements to facilities within its refinery complex in Richmond, Contra Costa County, California. The original project proposed in 2005 involved: (1) Hydrogen Plant replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; and (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building). In July 2008, the City of Richmond (City) certified an environmental impact report (EIR) and issued conditional use and design review permits for the project. Construction of two components, the Hydrogen Plant replacement and the Hydrogen Purity Improvements (i.e. Sulfur Removal Improvements), commenced in 2008, but was halted in July 2009 when the Superior Court found the EIR to be insufficient. At that time, the construction of these two components was more than 50% complete.

Following an appeal by Chevron, the Court of Appeal found the EIR to be insufficient, and set aside the permits for the project. On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR in order for the City to reconsider the permits for the project. Chevron's proposed Revised Project will complete only the Hydrogen Plant replacement and the Hydrogen Purity (Sulfur Removal) improvements. It will also include the associated equipment needed to tie the improvements into the Refinery. The Catalytic Reformer replacement, Power Plant replacement, and other new and replacement facilities that were part of the original project have been eliminated.

LSA Associates, Inc. is conducting a study to determine if the project might affect cultural resources. The project area is located in unsectioned land of the San Pablo land grant, as depicted on the accompanying portion of the USGS *San Quentin, Calif.*, USGS 7.5' topographic quadrangle.

Based on cultural resources record searches conducted at the Northwest Information Center at Sonoma State University and a review of the Sacred Lands File at the Native American Heritage Commission, there are no recorded Native American cultural resources within the project area that

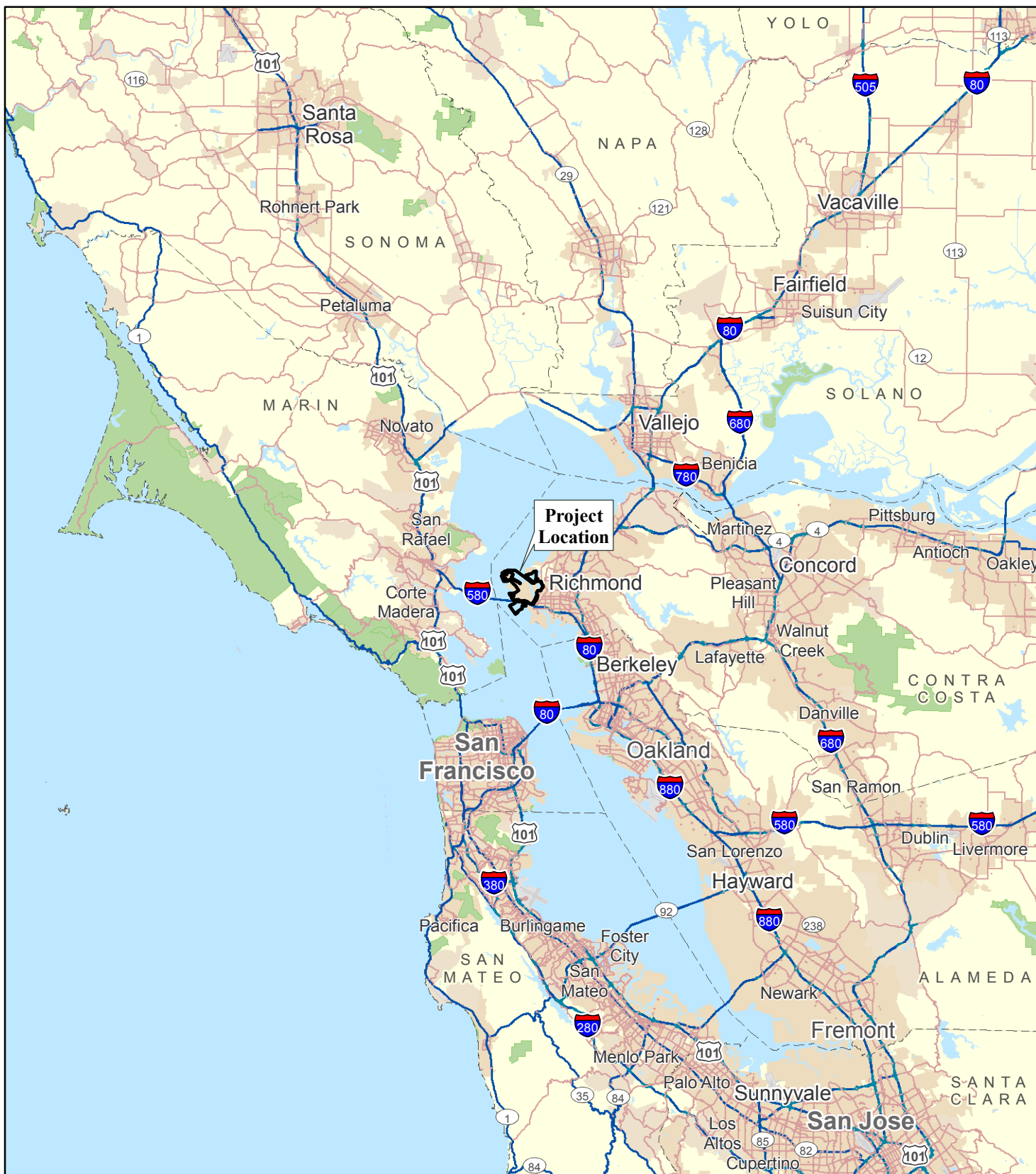
will be affected by the project. Please notify us if you or your organization has any information or concerns about cultural resources within the project area. To reach us, please contact me at the address and telephone number above or via email (neal.kaptain@lsa-assoc.com). We look forward to hearing from you. Thank you.

Sincerely,

LSA ASSOCIATES, INC.

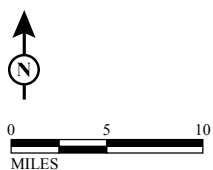
A handwritten signature in blue ink that reads "Neal Kaptain". The signature is written in a cursive, flowing style.

Neal Kaptain
Archaeologist & Architectural Historian
Associate/LSA Northern California Cultural Resources Group



LSA

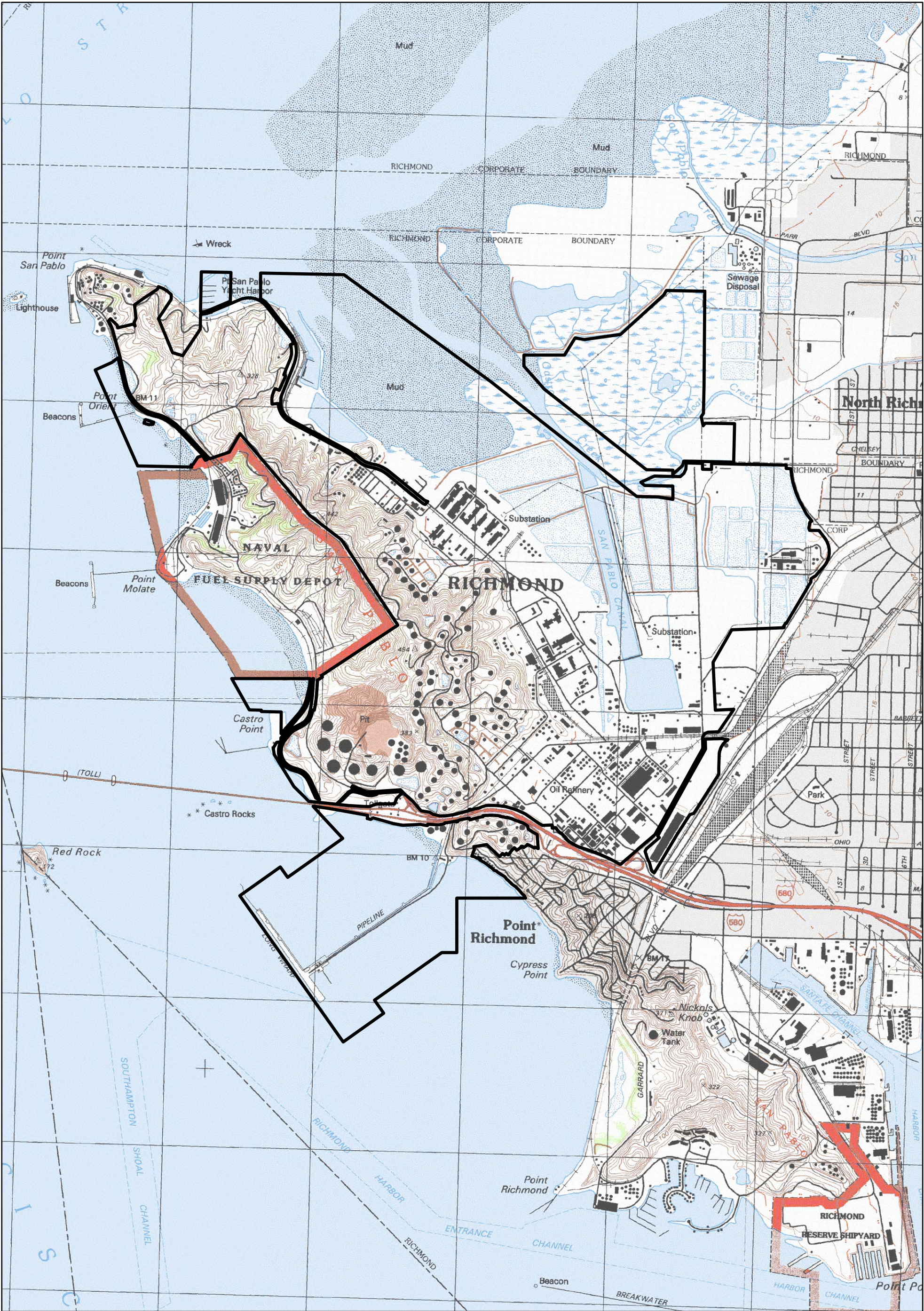
FIGURE 1



SOURCE: StreetMap North America (2009).

E:\UPI1101\GIS\Maps\Cultural\Figure1_Project Location&Vicinity.mxd (11/21/2012)

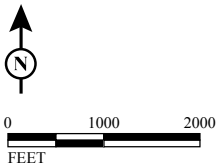
*Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Location and Vicinity*



LSA

LEGEND

Project Area



SOURCE: USGS 7.5-minute Topo Quads - San Quentin, Calif. (1995) and Richmond, Calif. (1980).

I:\UPH101\GIS\Maps\Cultural\Figure2_ProjectArea.mxd (12/7/2012)

FIGURE 2

Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Area



LSA ASSOCIATES, INC.
157 PARK PLACE
PT. RICHMOND, CALIFORNIA 94801

510.236.6810 TEL
510.236.3480 FAX

BERKELEY
CARLSBAD
FORT COLLINS

FRESNO
IRVINE
PALM SPRINGS

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

November 26, 2013

Via email

Andrew Galvan
Ohlone Indian Tribe
P.O. Box 3152
Fremont, California 94539
chochenyo@AOL.com

Subject: Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County,
California. LSA Project #ENV1201

Dear Mr. Galvan:

Per our email of November 22, 2013, please accept this letter in place of the letter dated November 19, 2013. The November 19 letter was sent in error and did not accurately describe the proposed project. Chevron is proposing modernization improvements to facilities within its refinery complex in Richmond, Contra Costa County, California. The original project proposed in 2005 involved: (1) Hydrogen Plant replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; and (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building). In July 2008, the City of Richmond (City) certified an environmental impact report (EIR) and issued conditional use and design review permits for the project. Construction of two components, the Hydrogen Plant replacement and the Hydrogen Purity Improvements (i.e. Sulfur Removal Improvements), commenced in 2008, but was halted in July 2009 when the Superior Court found the EIR to be insufficient. At that time, the construction of these two components was more than 50% complete.

Following an appeal by Chevron, the Court of Appeal found the EIR to be insufficient, and set aside the permits for the project. On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR in order for the City to reconsider the permits for the project. Chevron's proposed Revised Project will complete only the Hydrogen Plant replacement and the Hydrogen Purity (Sulfur Removal) improvements. It will also include the associated equipment needed to tie the improvements into the Refinery. The Catalytic Reformer replacement, Power Plant replacement, and other new and replacement facilities that were part of the original project have been eliminated.

LSA Associates, Inc. is conducting a study to determine if the project might affect cultural resources. The project area is located in unsectioned land of the San Pablo land grant, as depicted on the accompanying portion of the USGS *San Quentin, Calif.*, USGS 7.5' topographic quadrangle.

Based on cultural resources record searches conducted at the Northwest Information Center at Sonoma State University and a review of the Sacred Lands File at the Native American Heritage Commission, there are no recorded Native American cultural resources within the project area that

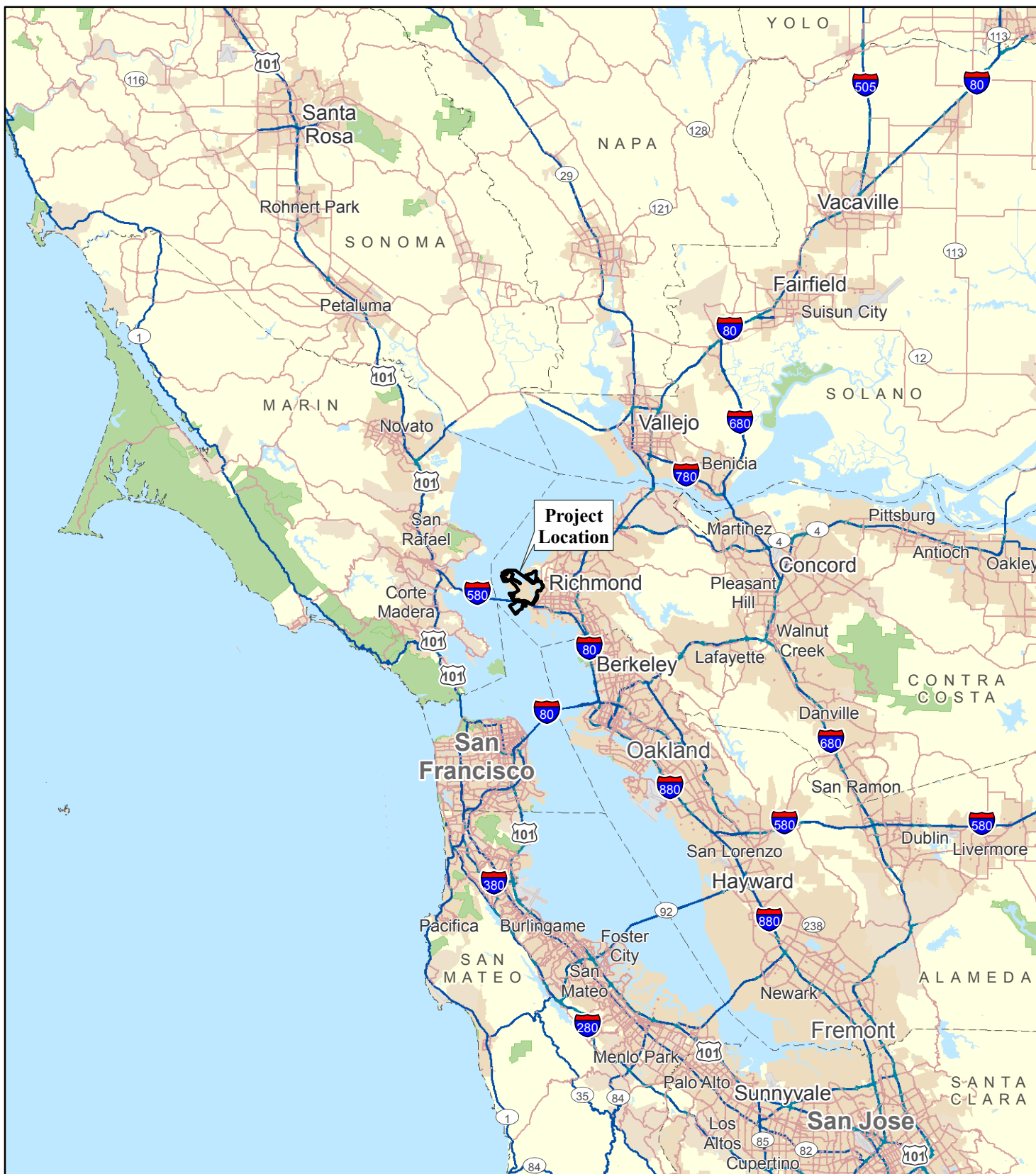
will be affected by the project. Please notify us if you or your organization has any information or concerns about cultural resources within the project area. To reach us, please contact me at the address and telephone number above or via email (neal.kaptain@lsa-assoc.com). We look forward to hearing from you. Thank you.

Sincerely,

LSA ASSOCIATES, INC.

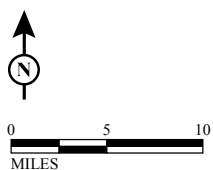
A handwritten signature in blue ink that reads "Neal Kaptain". The signature is written in a cursive style with a large, stylized 'N' and 'K'.

Neal Kaptain
Archaeologist & Architectural Historian
Associate/LSA Northern California Cultural Resources Group



LSA

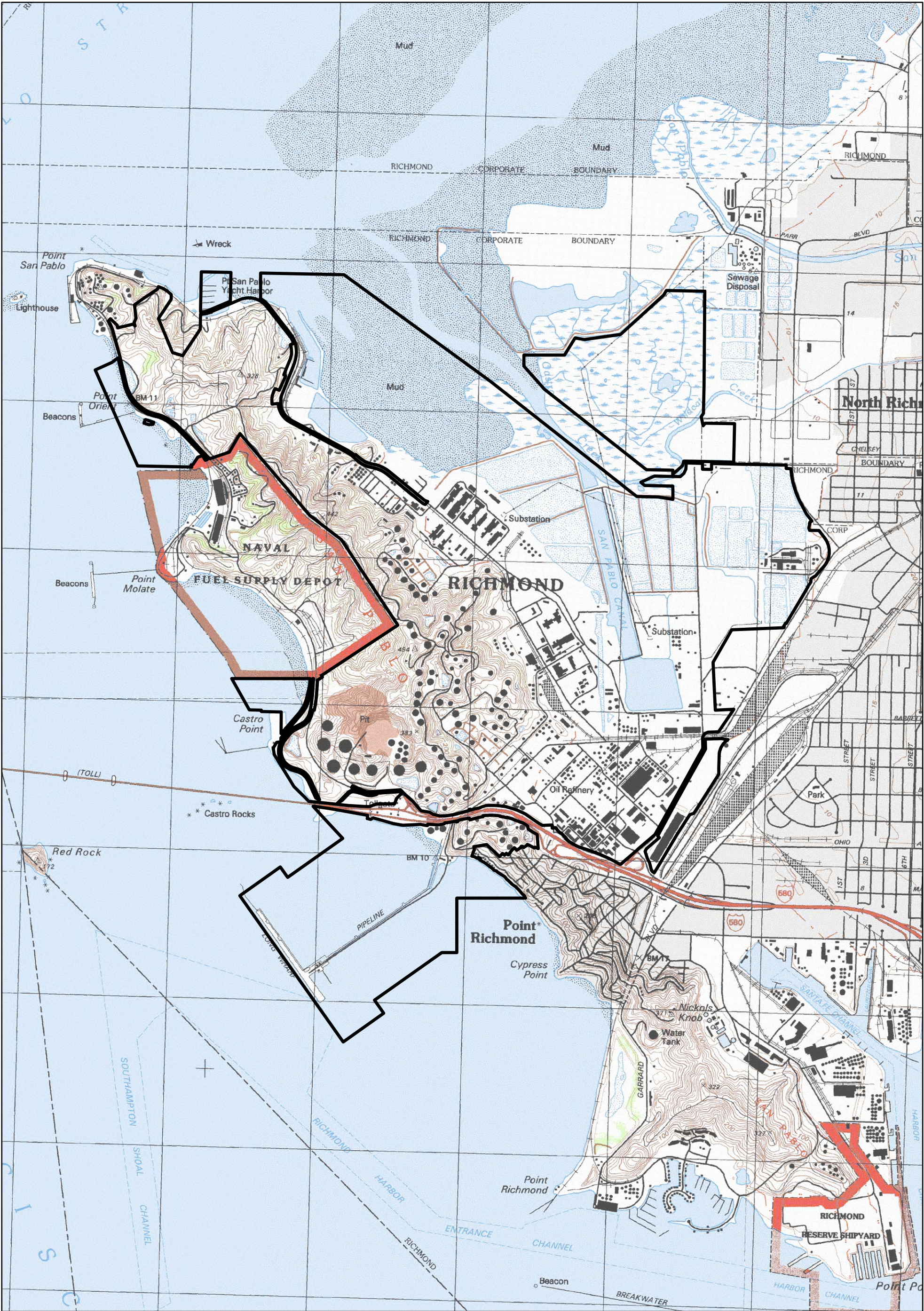
FIGURE 1



SOURCE: StreetMap North America (2009).

E:\UPI1101\GIS\Maps\Cultural\Figure1_Project Location&Vicinity.mxd (11/21/2012)

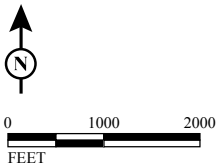
*Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Location and Vicinity*



LSA

LEGEND

Project Area



SOURCE: USGS 7.5-minute Topo Quads - San Quentin, Calif. (1995) and Richmond, Calif. (1980).

I:\UPH101\GIS\Maps\Cultural\Figure2_ProjectArea.mxd (12/7/2012)

FIGURE 2

Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Area



LSA ASSOCIATES, INC.
157 PARK PLACE
PT. RICHMOND, CALIFORNIA 94801

510.236.6810 TEL
510.236.3480 FAX

BERKELEY
CARLSBAD
FORT COLLINS

FRESNO
IRVINE
PALM SPRINGS

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

November 26, 2013

Via email

Ramona Garibay, Representative
Trina Marine Ruano Family
30940 Watkins Street
Union City, California 94587
soaprootmo@comcast.net

Subject: Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County, California. LSA Project #ENV1201

Dear Representative Garibay:

Per our email of November 22, 2013, please accept this letter in place of the letter dated November 19, 2013. The November 19 letter was sent in error and did not accurately describe the proposed project. Chevron is proposing modernization improvements to facilities within its refinery complex in Richmond, Contra Costa County, California. The original project proposed in 2005 involved: (1) Hydrogen Plant replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; and (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building). In July 2008, the City of Richmond (City) certified an environmental impact report (EIR) and issued conditional use and design review permits for the project. Construction of two components, the Hydrogen Plant replacement and the Hydrogen Purity Improvements (i.e. Sulfur Removal Improvements), commenced in 2008, but was halted in July 2009 when the Superior Court found the EIR to be insufficient. At that time, the construction of these two components was more than 50% complete.

Following an appeal by Chevron, the Court of Appeal found the EIR to be insufficient, and set aside the permits for the project. On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR in order for the City to reconsider the permits for the project. Chevron's proposed Revised Project will complete only the Hydrogen Plant replacement and the Hydrogen Purity (Sulfur Removal) improvements. It will also include the associated equipment needed to tie the improvements into the Refinery. The Catalytic Reformer replacement, Power Plant replacement, and other new and replacement facilities that were part of the original project have been eliminated.

LSA Associates, Inc. is conducting a study to determine if the project might affect cultural resources. The project area is located in unsectioned land of the San Pablo land grant, as depicted on the accompanying portion of the USGS *San Quentin, Calif.*, USGS 7.5' topographic quadrangle.

Based on cultural resources record searches conducted at the Northwest Information Center at Sonoma State University and a review of the Sacred Lands File at the Native American Heritage Commission, there are no recorded Native American cultural resources within the project area that

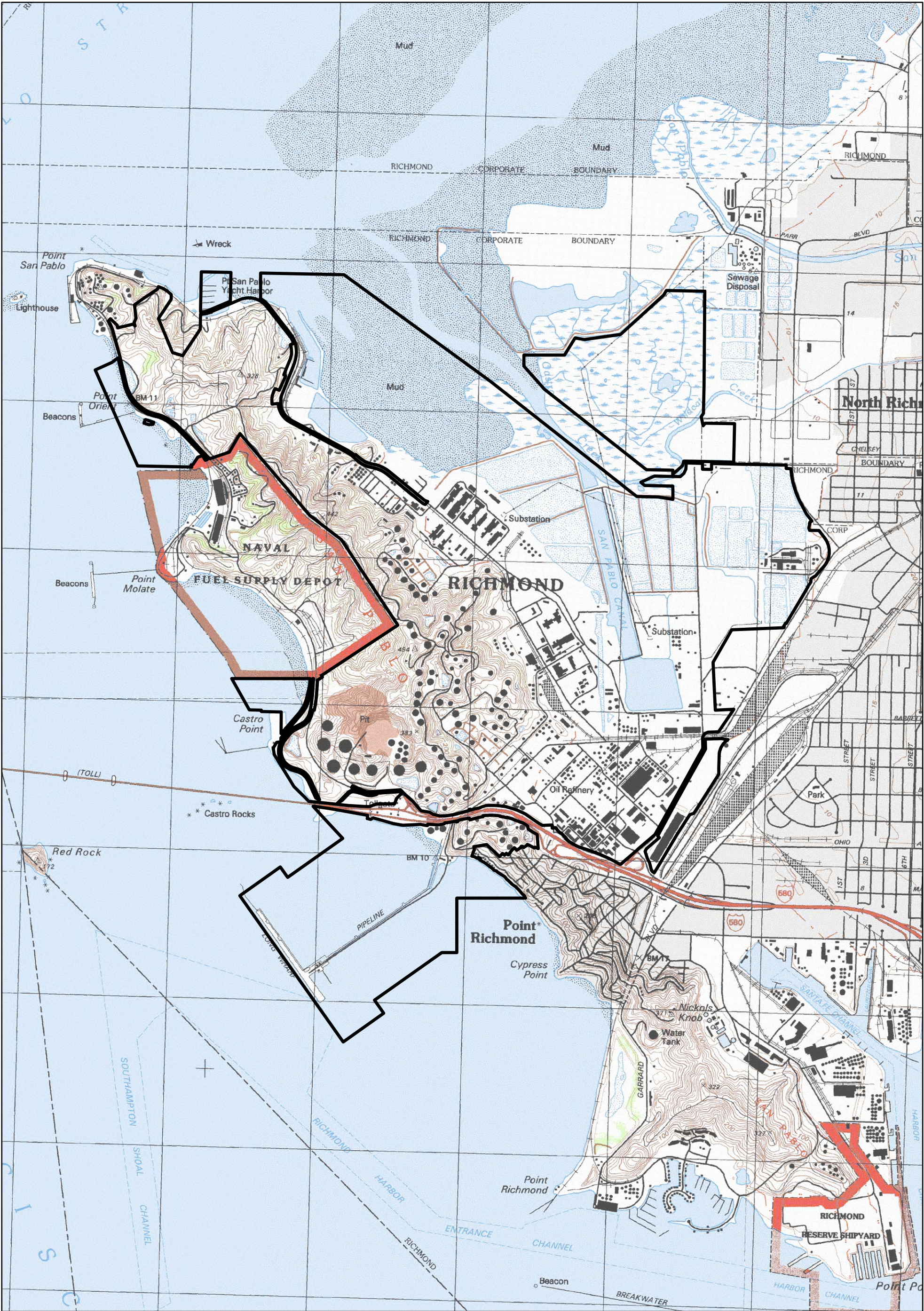
will be affected by the project. Please notify us if you or your organization has any information or concerns about cultural resources within the project area. To reach us, please contact me at the address and telephone number above or via email (neal.kaptain@lsa-assoc.com). We look forward to hearing from you. Thank you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in blue ink that reads "Neal Kaptain". The signature is written in a cursive, flowing style.

Neal Kaptain
Archaeologist & Architectural Historian
Associate/LSA Northern California Cultural Resources Group

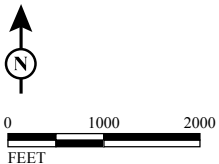


LSA

LEGEND

 Project Area

FIGURE 2



November 26, 2013

Jakki Kehl
720 North 2nd Street
Patterson, California 95363

Subject: Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County, California. LSA Project #ENV1201

Dear Ms. Kehl:

Per our email of November 22, 2013, please accept this letter in place of the letter dated November 19, 2013. The November 19 letter was sent in error and did not accurately describe the proposed project. Chevron is proposing modernization improvements to facilities within its refinery complex in Richmond, Contra Costa County, California. The original project proposed in 2005 involved: (1) Hydrogen Plant replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; and (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building). In July 2008, the City of Richmond (City) certified an environmental impact report (EIR) and issued conditional use and design review permits for the project. Construction of two components, the Hydrogen Plant replacement and the Hydrogen Purity Improvements (i.e. Sulfur Removal Improvements), commenced in 2008, but was halted in July 2009 when the Superior Court found the EIR to be insufficient. At that time, the construction of these two components was more than 50% complete.

Following an appeal by Chevron, the Court of Appeal found the EIR to be insufficient, and set aside the permits for the project. On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR in order for the City to reconsider the permits for the project. Chevron's proposed Revised Project will complete only the Hydrogen Plant replacement and the Hydrogen Purity (Sulfur Removal) improvements. It will also include the associated equipment needed to tie the improvements into the Refinery. The Catalytic Reformer replacement, Power Plant replacement, and other new and replacement facilities that were part of the original project have been eliminated.

LSA Associates, Inc. is conducting a study to determine if the project might affect cultural resources. The project area is located in unsectioned land of the San Pablo land grant, as depicted on the accompanying portion of the USGS *San Quentin, Calif.*, USGS 7.5' topographic quadrangle.

Based on cultural resources record searches conducted at the Northwest Information Center at Sonoma State University and a review of the Sacred Lands File at the Native American Heritage Commission, there are no recorded Native American cultural resources within the project area that will be affected by the project. Please notify us if you or your organization has any information or concerns about cultural resources within the project area. To reach us, please contact me at the address and telephone number above or via email (neal.kaptain@lsa-assoc.com). We look forward to

LSA ASSOCIATES, INC.

hearing from you. Thank you.

Sincerely,

LSA ASSOCIATES, INC.

Arthur Pulcheon for

Neal Kaptain, M.A., RPA #3799700
Archaeologist & Architectural Historian
Associate/LSA Northern California Cultural Resources Group

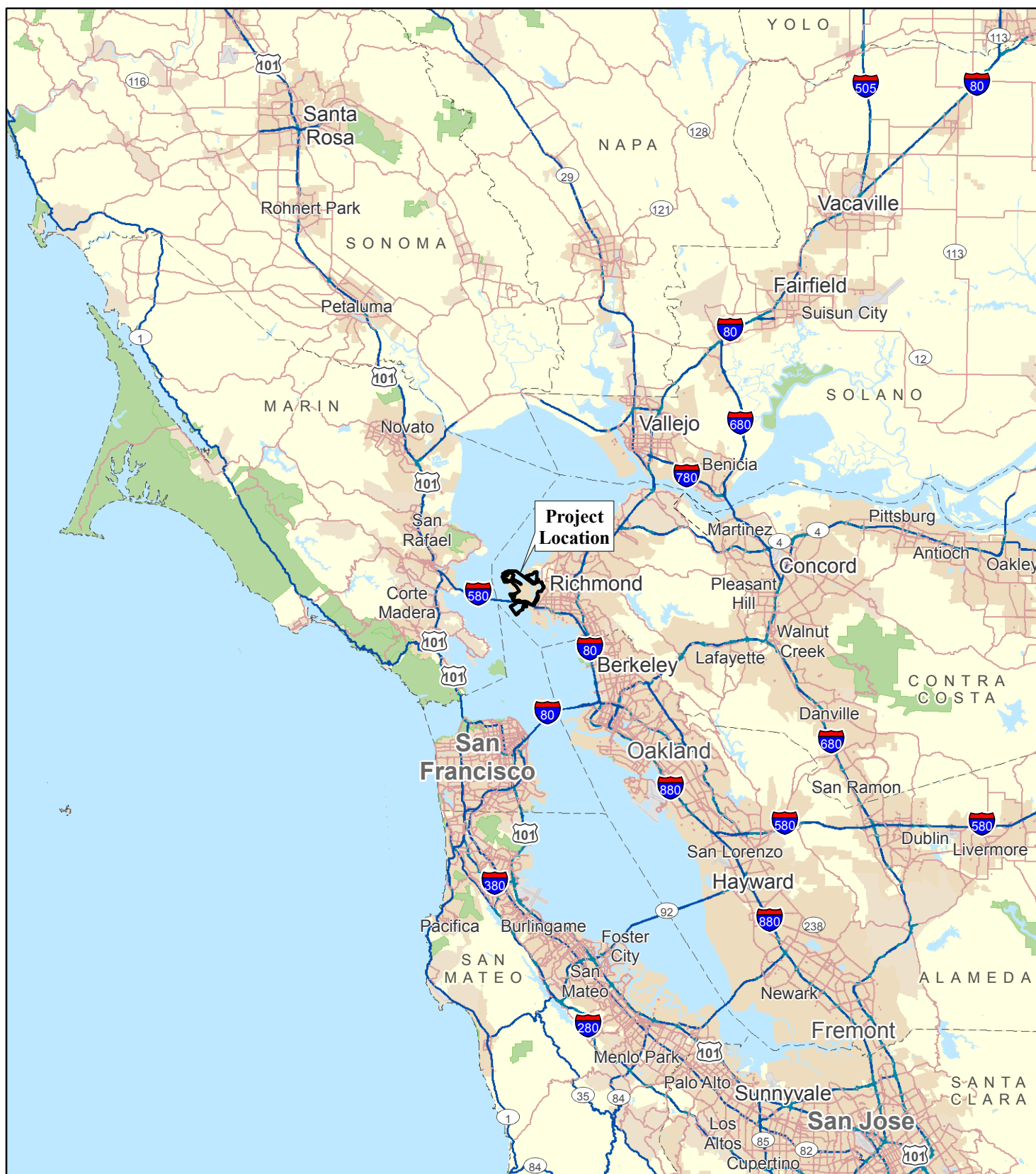
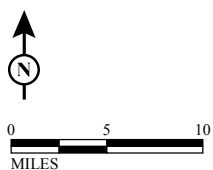


FIGURE 1

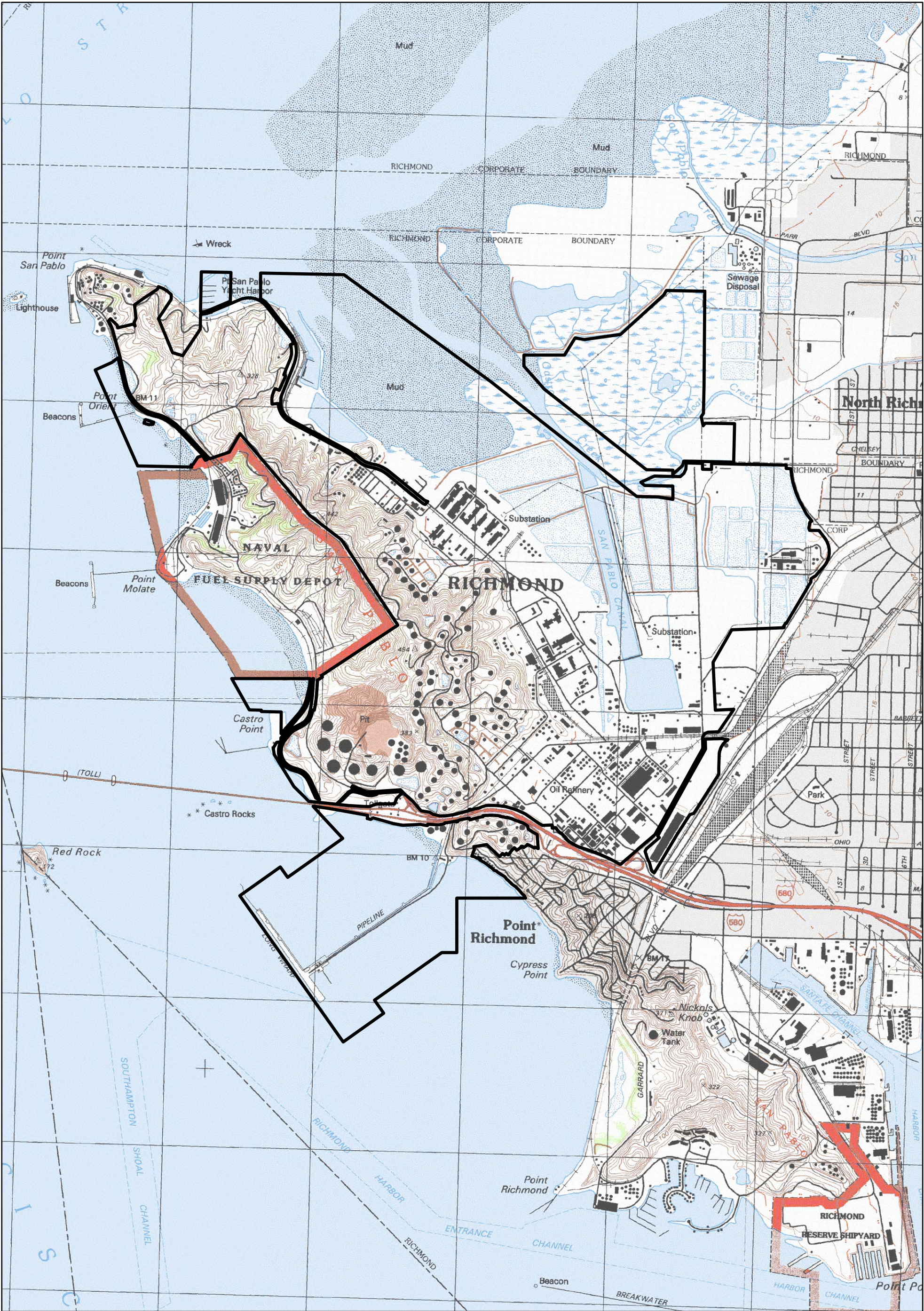
LSA



SOURCE: StreetMap North America (2009).

I:\UPI1101\GIS\Maps\Cultural\Figure1_Project Location&Vicinity.mxd (11/21/2012)

Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Location and Vicinity



LSA

LEGEND

Project Area

FIGURE 2

Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Area

SOURCE: USGS 7.5-minute Topo Quads - San Quentin, Calif. (1995) and Richmond, Calif. (1980).

I:\UPH101\GIS\Maps\Cultural\Figure2_ProjectArea.mxd (12/7/2012)



LSA ASSOCIATES, INC.
157 PARK PLACE
PT. RICHMOND, CALIFORNIA 94801

510.236.6810 TEL
510.236.3480 FAX

BERKELEY
CARLSBAD
FORT COLLINS

FRESNO
IRVINE
PALM SPRINGS

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

November 26, 2013

Via email

Katherine Erolinda Perez
P.O. Box 717
Linden, California 95236
canutes@verizon.net

Subject: Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County,
California. LSA Project #ENV1201

Dear Ms. Perez:

Per our email of November 22, 2013, please accept this letter in place of the letter dated November 19, 2013. The November 19 letter was sent in error and did not accurately describe the proposed project. Chevron is proposing modernization improvements to facilities within its refinery complex in Richmond, Contra Costa County, California. The original project proposed in 2005 involved: (1) Hydrogen Plant replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; and (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building). In July 2008, the City of Richmond (City) certified an environmental impact report (EIR) and issued conditional use and design review permits for the project. Construction of two components, the Hydrogen Plant replacement and the Hydrogen Purity Improvements (i.e. Sulfur Removal Improvements), commenced in 2008, but was halted in July 2009 when the Superior Court found the EIR to be insufficient. At that time, the construction of these two components was more than 50% complete.

Following an appeal by Chevron, the Court of Appeal found the EIR to be insufficient, and set aside the permits for the project. On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR in order for the City to reconsider the permits for the project. Chevron's proposed Revised Project will complete only the Hydrogen Plant replacement and the Hydrogen Purity (Sulfur Removal) improvements. It will also include the associated equipment needed to tie the improvements into the Refinery. The Catalytic Reformer replacement, Power Plant replacement, and other new and replacement facilities that were part of the original project have been eliminated.

LSA Associates, Inc. is conducting a study to determine if the project might affect cultural resources. The project area is located in unsectioned land of the San Pablo land grant, as depicted on the accompanying portion of the USGS *San Quentin, Calif.*, USGS 7.5' topographic quadrangle.

Based on cultural resources record searches conducted at the Northwest Information Center at Sonoma State University and a review of the Sacred Lands File at the Native American Heritage Commission, there are no recorded Native American cultural resources within the project area that will be affected by the project. Please notify us if you or your organization has any information or

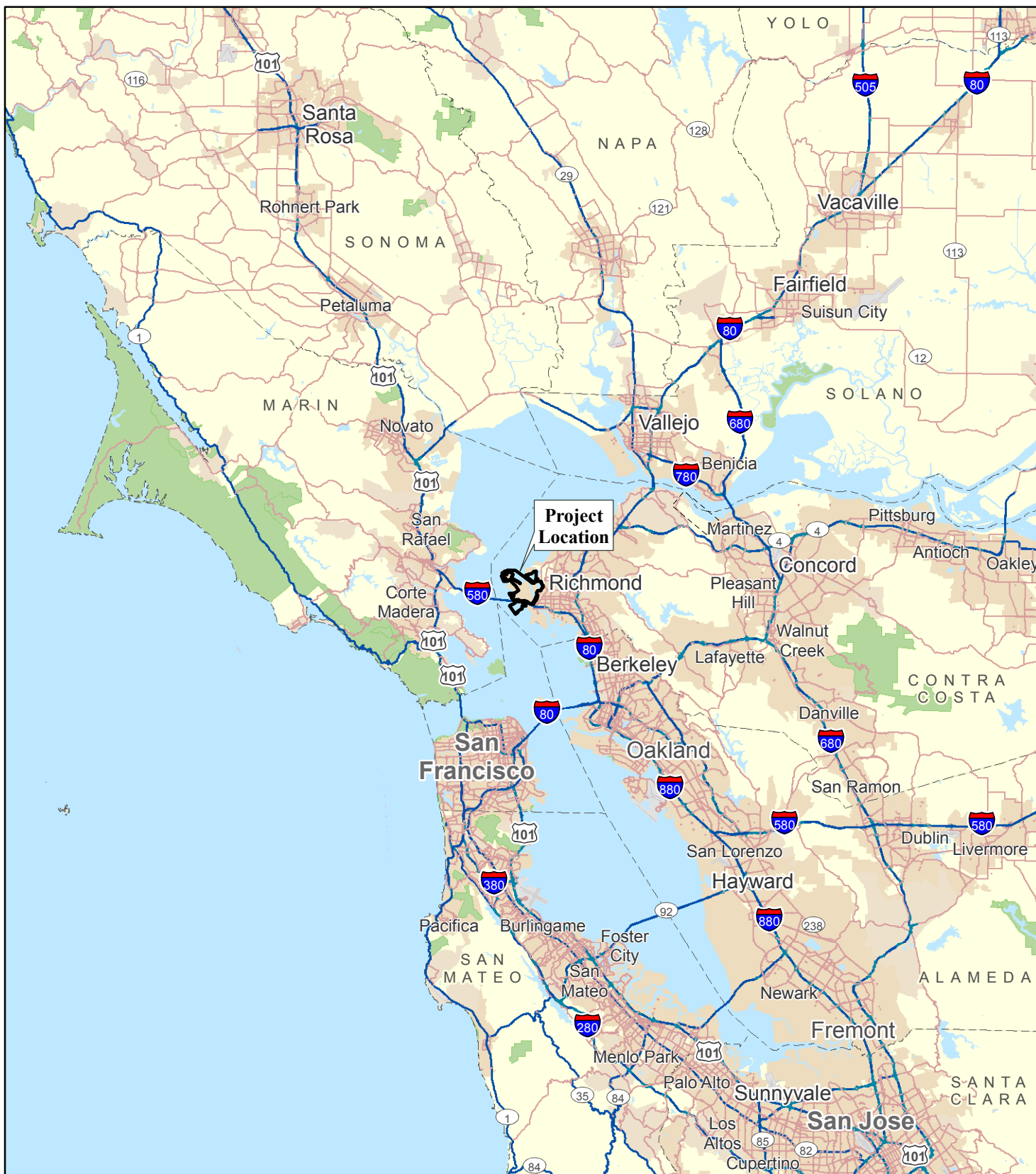
concerns about cultural resources within the project area. To reach us, please contact me at the address and telephone number above or via email (neal.kaptain@lsa-assoc.com). We look forward to hearing from you. Thank you.

Sincerely,

LSA ASSOCIATES, INC.

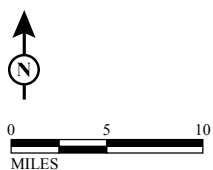
A handwritten signature in blue ink that reads "Neal Kaptain". The signature is written in a cursive style with a large, stylized 'N' and 'K'.

Neal Kaptain
Archaeologist & Architectural Historian
Associate/LSA Northern California Cultural Resources Group



LSA

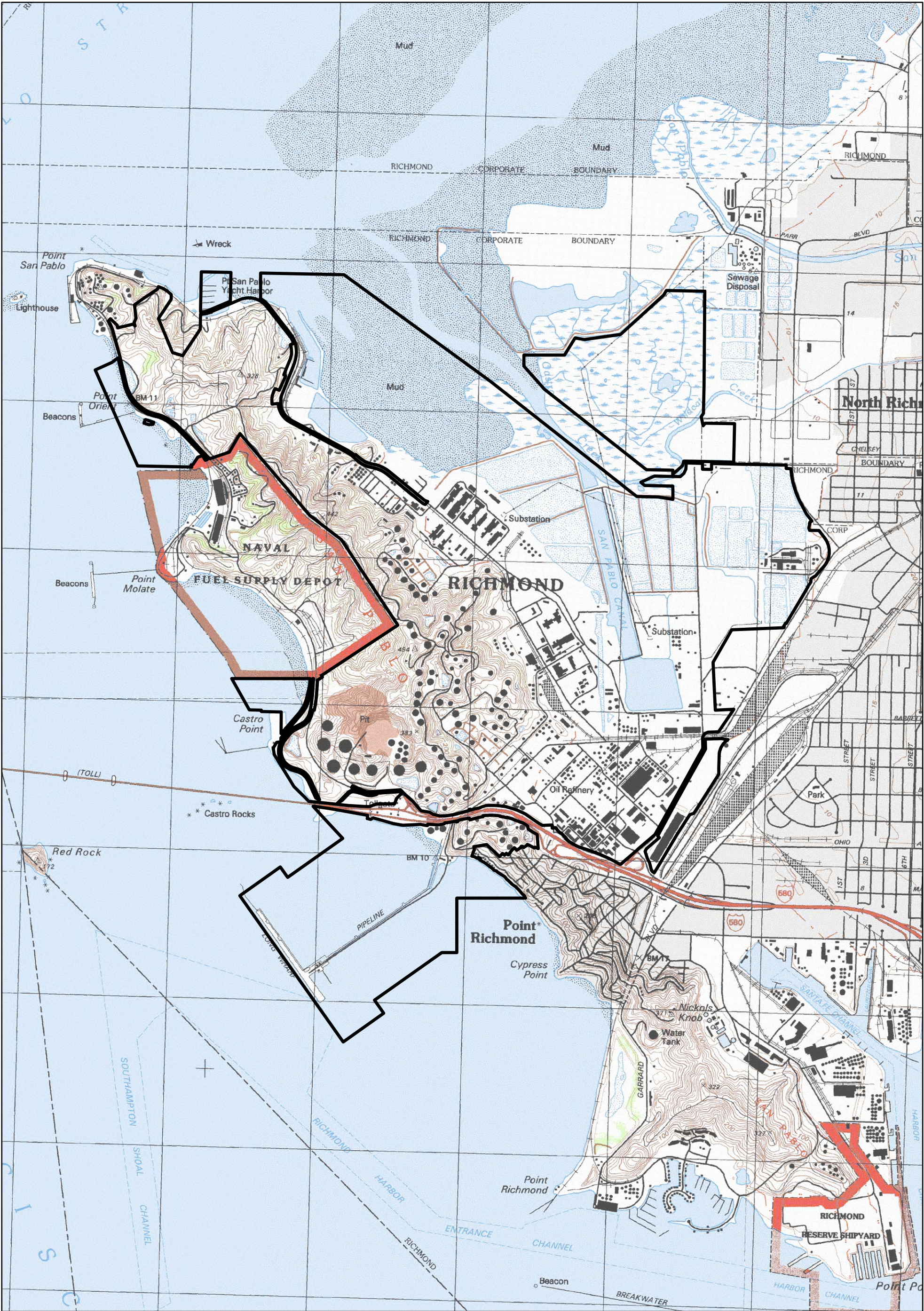
FIGURE 1



SOURCE: StreetMap North America (2009).

E:\UPI1101\GIS\Maps\Cultural\Figure1_Project Location&Vicinity.mxd (11/21/2012)

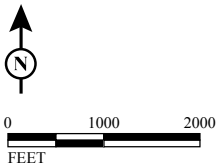
*Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Location and Vicinity*



LSA

LEGEND

Project Area



SOURCE: USGS 7.5-minute Topo Quads - San Quentin, Calif. (1995) and Richmond, Calif. (1980).

I:\UPH101\GIS\Maps\Cultural\Figure2_ProjectArea.mxd (12/7/2012)

FIGURE 2

Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Area



LSA ASSOCIATES, INC.
157 PARK PLACE
PT. RICHMOND, CALIFORNIA 94801

510.236.6810 TEL
510.236.3480 FAX

BERKELEY
CARLSBAD
FORT COLLINS

FRESNO
IRVINE
PALM SPRINGS

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

November 26, 2013

Via email

Anne Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, California 95024
ams@indiancanyon.org

Subject: Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County,
California. LSA Project #ENV1201

Dear Chairperson Sayers:

Per our email of November 22, 2013, please accept this letter in place of the letter dated November 19, 2013. The November 19 letter was sent in error and did not accurately describe the proposed project. Chevron is proposing modernization improvements to facilities within its refinery complex in Richmond, Contra Costa County, California. The original project proposed in 2005 involved: (1) Hydrogen Plant replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; and (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building). In July 2008, the City of Richmond (City) certified an environmental impact report (EIR) and issued conditional use and design review permits for the project. Construction of two components, the Hydrogen Plant replacement and the Hydrogen Purity Improvements (i.e. Sulfur Removal Improvements), commenced in 2008, but was halted in July 2009 when the Superior Court found the EIR to be insufficient. At that time, the construction of these two components was more than 50% complete.

Following an appeal by Chevron, the Court of Appeal found the EIR to be insufficient, and set aside the permits for the project. On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR in order for the City to reconsider the permits for the project. Chevron's proposed Revised Project will complete only the Hydrogen Plant replacement and the Hydrogen Purity (Sulfur Removal) improvements. It will also include the associated equipment needed to tie the improvements into the Refinery. The Catalytic Reformer replacement, Power Plant replacement, and other new and replacement facilities that were part of the original project have been eliminated.

LSA Associates, Inc. is conducting a study to determine if the project might affect cultural resources. The project area is located in unsectioned land of the San Pablo land grant, as depicted on the accompanying portion of the USGS *San Quentin, Calif.*, USGS 7.5' topographic quadrangle.

Based on cultural resources record searches conducted at the Northwest Information Center at Sonoma State University and a review of the Sacred Lands File at the Native American Heritage Commission, there are no recorded Native American cultural resources within the project area that

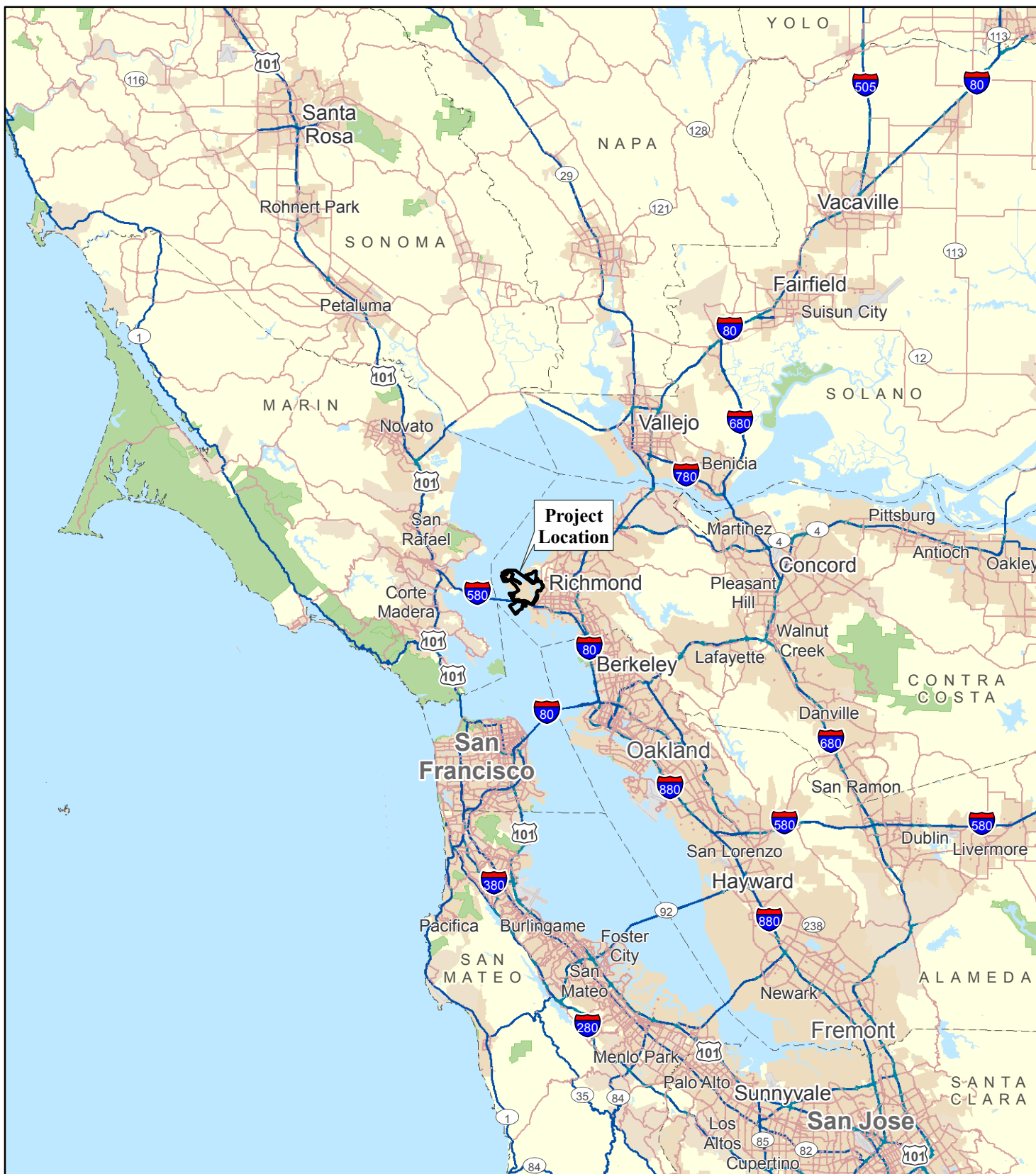
will be affected by the project. Please notify us if you or your organization has any information or concerns about cultural resources within the project area. To reach us, please contact me at the address and telephone number above or via email (neal.kaptain@lsa-assoc.com). We look forward to hearing from you. Thank you.

Sincerely,

LSA ASSOCIATES, INC.

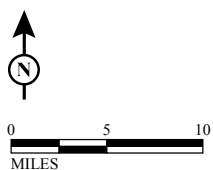
A handwritten signature in blue ink that reads "Neal Kaptain". The signature is written in a cursive, flowing style.

Neal Kaptain
Archaeologist & Architectural Historian
Associate/LSA Northern California Cultural Resources Group



LSA

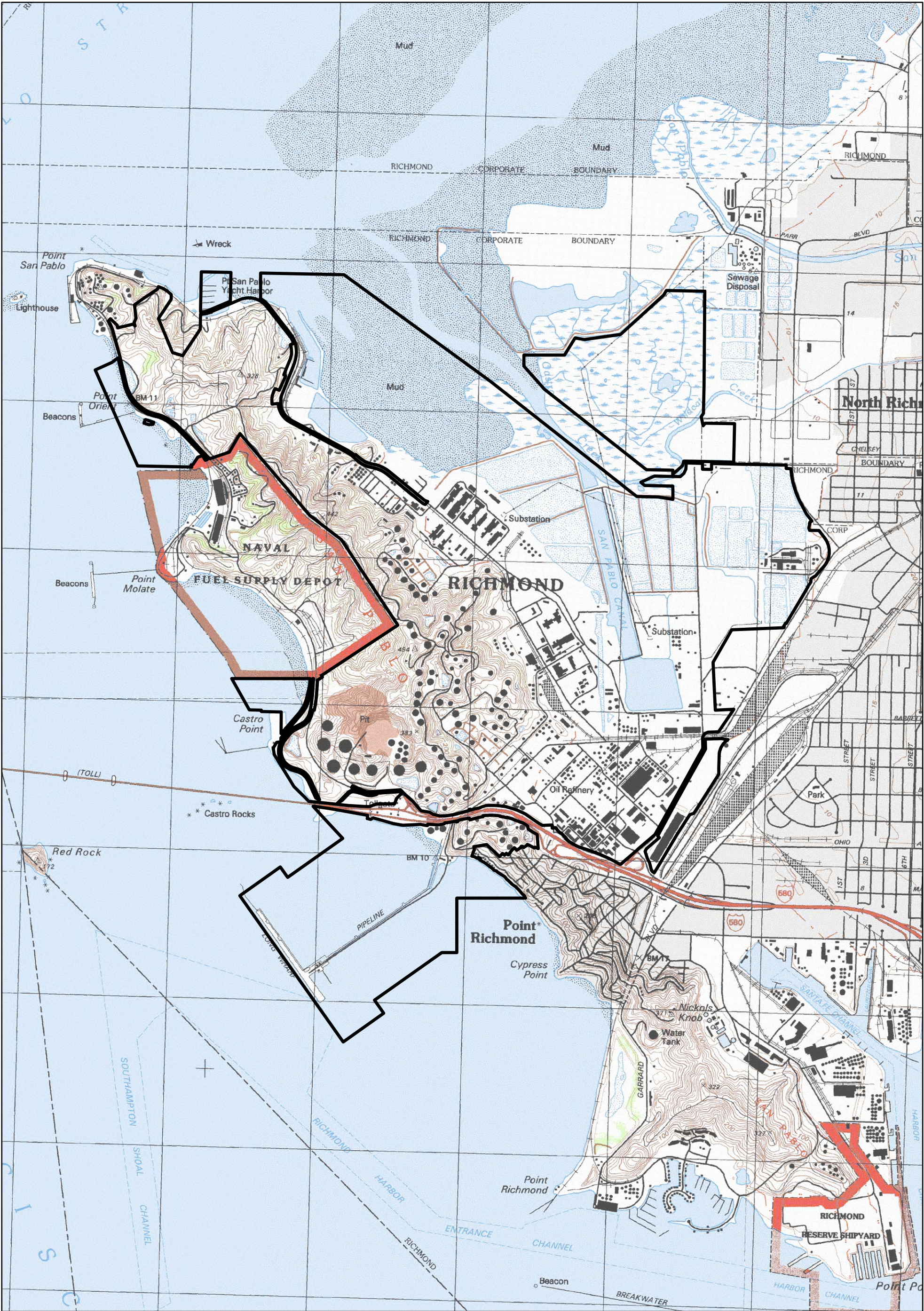
FIGURE 1



SOURCE: StreetMap North America (2009).

E:\UPI1101\GIS\Maps\Cultural\Figure1_Project Location&Vicinity.mxd (11/21/2012)

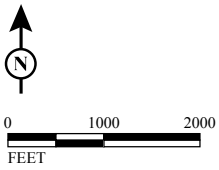
*Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Location and Vicinity*



LSA

LEGEND

Project Area



SOURCE: USGS 7.5-minute Topo Quads - San Quentin, Calif. (1995) and Richmond, Calif. (1980).

I:\UPH101\GIS\Maps\Cultural\Figure2_ProjectArea.mxd (12/7/2012)

FIGURE 2

Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Area



LSA ASSOCIATES, INC.
157 PARK PLACE
PT. RICHMOND, CALIFORNIA 94801

510.236.6810 TEL
510.236.3480 FAX

BERKELEY
CARLSBAD
FORT COLLINS

FRESNO
IRVINE
PALM SPRINGS

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

November 26, 2013

Via email

Linda G. Yamane
1585 Mira Mar Avenue
Seaside, California 93955
rumsien123@yahoo.com

Subject: Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County,
California. LSA Project #ENV1201

Dear Ms. Yamane:

Per our email of November 22, 2013, please accept this letter in place of the letter dated November 19, 2013. The November 19 letter was sent in error and did not accurately describe the proposed project. Chevron is proposing modernization improvements to facilities within its refinery complex in Richmond, Contra Costa County, California. The original project proposed in 2005 involved: (1) Hydrogen Plant replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; and (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building). In July 2008, the City of Richmond (City) certified an environmental impact report (EIR) and issued conditional use and design review permits for the project. Construction of two components, the Hydrogen Plant replacement and the Hydrogen Purity Improvements (i.e. Sulfur Removal Improvements), commenced in 2008, but was halted in July 2009 when the Superior Court found the EIR to be insufficient. At that time, the construction of these two components was more than 50% complete.

Following an appeal by Chevron, the Court of Appeal found the EIR to be insufficient, and set aside the permits for the project. On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR in order for the City to reconsider the permits for the project. Chevron's proposed Revised Project will complete only the Hydrogen Plant replacement and the Hydrogen Purity (Sulfur Removal) improvements. It will also include the associated equipment needed to tie the improvements into the Refinery. The Catalytic Reformer replacement, Power Plant replacement, and other new and replacement facilities that were part of the original project have been eliminated.

LSA Associates, Inc. is conducting a study to determine if the project might affect cultural resources. The project area is located in unsectioned land of the San Pablo land grant, as depicted on the accompanying portion of the USGS *San Quentin, Calif.*, USGS 7.5' topographic quadrangle.

Based on cultural resources record searches conducted at the Northwest Information Center at Sonoma State University and a review of the Sacred Lands File at the Native American Heritage Commission, there are no recorded Native American cultural resources within the project area that will be affected by the project. Please notify us if you or your organization has any information or

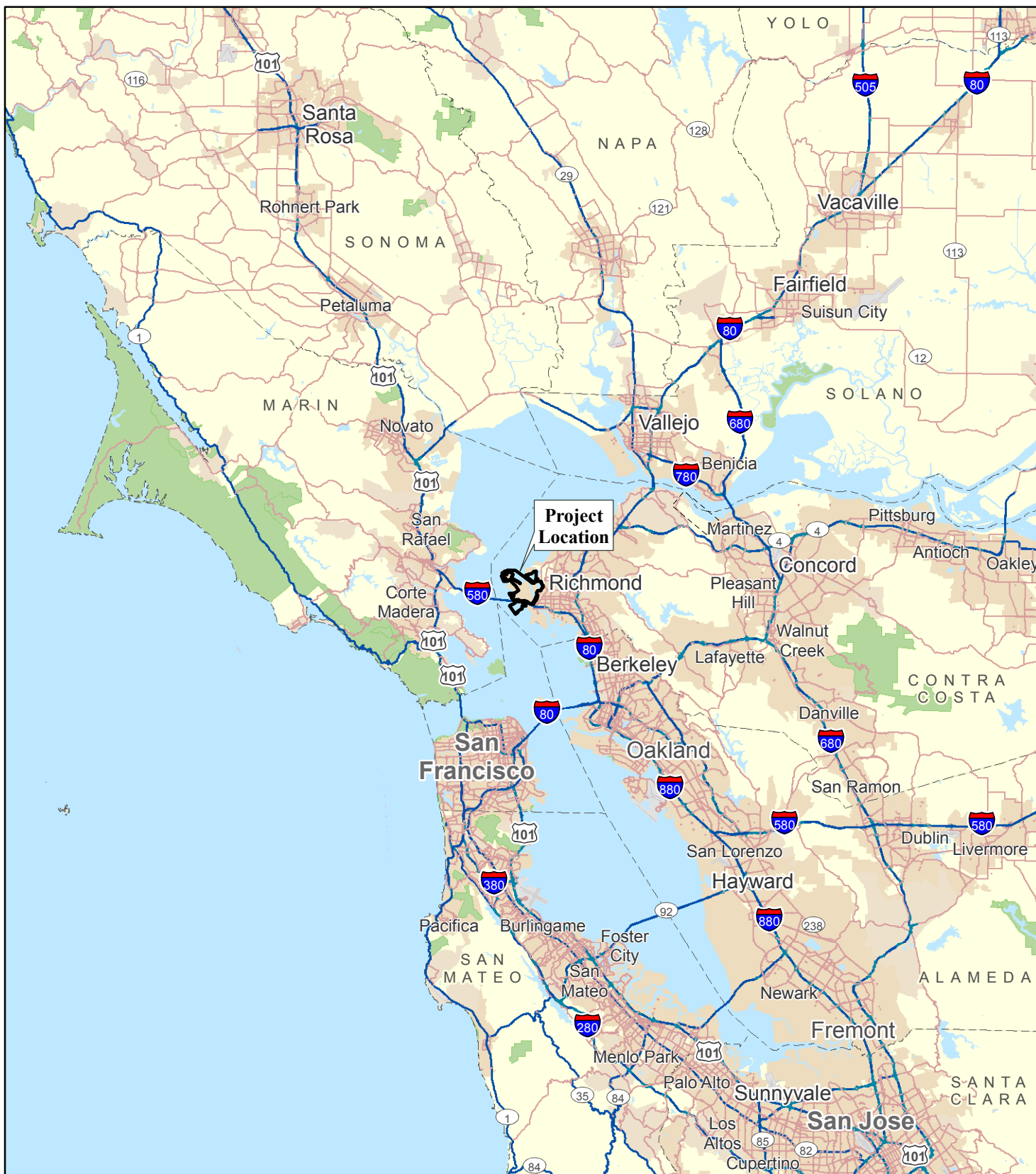
concerns about cultural resources within the project area. To reach us, please contact me at the address and telephone number above or via email (neal.kaptain@lsa-assoc.com). We look forward to hearing from you. Thank you.

Sincerely,

LSA ASSOCIATES, INC.

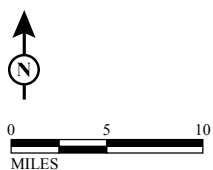
A handwritten signature in blue ink that reads "Neal Kaptain". The signature is written in a cursive, flowing style.

Neal Kaptain
Archaeologist & Architectural Historian
Associate/LSA Northern California Cultural Resources Group



LSA

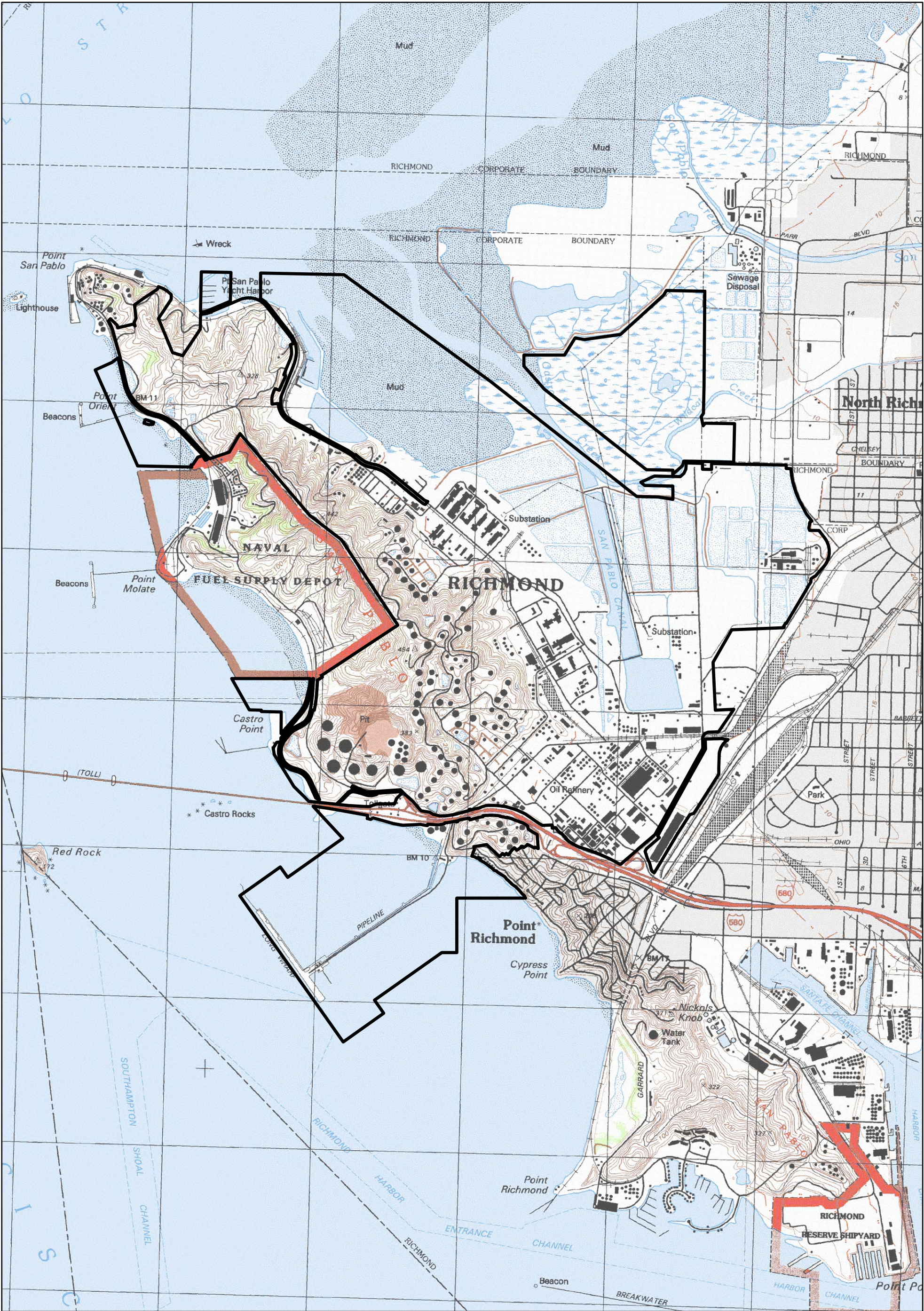
FIGURE 1



SOURCE: StreetMap North America (2009).

E:\UPI1101\GIS\Maps\Cultural\Figure1_Project Location&Vicinity.mxd (11/21/2012)

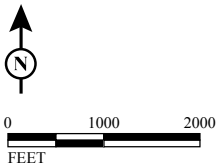
*Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Location and Vicinity*



LSA

LEGEND

Project Area



SOURCE: USGS 7.5-minute Topo Quads - San Quentin, Calif. (1995) and Richmond, Calif. (1980).

I:\UPH101\GIS\Maps\Cultural\Figure2_ProjectArea.mxd (12/7/2012)

FIGURE 2

Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Area



LSA ASSOCIATES, INC.
157 PARK PLACE
PT. RICHMOND, CALIFORNIA 94801

510.236.6810 TEL
510.236.3480 FAX

BERKELEY
CARLSBAD
FORT COLLINS

FRESNO
IRVINE
PALM SPRINGS

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

November 26, 2013

Via email

Michelle Zimmer
Amah Mutsun Tribal Band of Mission San Juan Bautista
789 Cañada Road
Woodside, California 94062
amahmutsuntribal@gmail.com

Subject: Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County, California. LSA Project #ENV1201

Dear Ms. Zimmer:

Per our email of November 22, 2013, please accept this letter in place of the letter dated November 19, 2013. The November 19 letter was sent in error and did not accurately describe the proposed project. Chevron is proposing modernization improvements to facilities within its refinery complex in Richmond, Contra Costa County, California. The original project proposed in 2005 involved: (1) Hydrogen Plant replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; and (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building). In July 2008, the City of Richmond (City) certified an environmental impact report (EIR) and issued conditional use and design review permits for the project. Construction of two components, the Hydrogen Plant replacement and the Hydrogen Purity Improvements (i.e. Sulfur Removal Improvements), commenced in 2008, but was halted in July 2009 when the Superior Court found the EIR to be insufficient. At that time, the construction of these two components was more than 50% complete.

Following an appeal by Chevron, the Court of Appeal found the EIR to be insufficient, and set aside the permits for the project. On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR in order for the City to reconsider the permits for the project. Chevron's proposed Revised Project will complete only the Hydrogen Plant replacement and the Hydrogen Purity (Sulfur Removal) improvements. It will also include the associated equipment needed to tie the improvements into the Refinery. The Catalytic Reformer replacement, Power Plant replacement, and other new and replacement facilities that were part of the original project have been eliminated.

LSA Associates, Inc. is conducting a study to determine if the project might affect cultural resources. The project area is located in unsectioned land of the San Pablo land grant, as depicted on the accompanying portion of the USGS *San Quentin, Calif.*, USGS 7.5' topographic quadrangle.

Based on cultural resources record searches conducted at the Northwest Information Center at Sonoma State University and a review of the Sacred Lands File at the Native American Heritage Commission, there are no recorded Native American cultural resources within the project area that

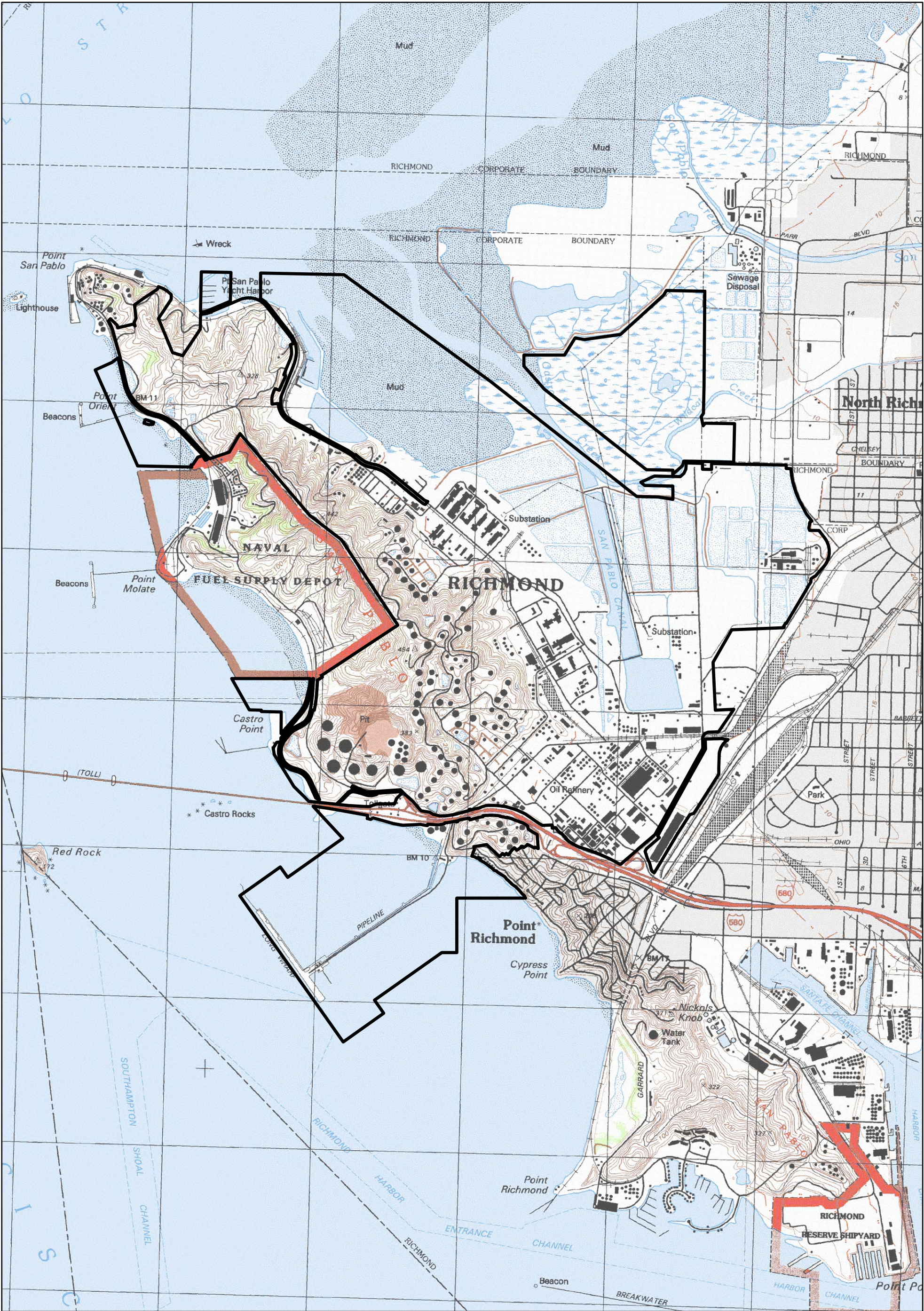
will be affected by the project. Please notify us if you or your organization has any information or concerns about cultural resources within the project area. To reach us, please contact me at the address and telephone number above or via email (neal.kaptain@lsa-assoc.com). We look forward to hearing from you. Thank you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in blue ink that reads "Neal Kaptain". The signature is written in a cursive, flowing style.

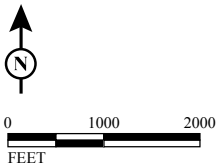
Neal Kaptain
Archaeologist & Architectural Historian
Associate/LSA Northern California Cultural Resources Group



LSA

LEGEND

Project Area



SOURCE: USGS 7.5-minute Topo Quads - San Quentin, Calif. (1995) and Richmond, Calif. (1980).

I:\UPH101\GIS\Maps\Cultural\Figure2_ProjectArea.mxd (12/7/2012)

FIGURE 2

Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Area



LSA ASSOCIATES, INC.
157 PARK PLACE
PT. RICHMOND, CALIFORNIA 94801

510.236.6810 TEL
510.236.3480 FAX

BERKELEY
CARLSBAD
FORT COLLINS

FRESNO
IRVINE
PALM SPRINGS

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

November 26, 2013

Via email

Irene Zwierlein, Chairperson
Amah Mutsun Tribal Band of Mission San Juan Bautista
789 Cañada Road
Woodside, California 94062
amahmutsuntribal@gmail.com

Subject: Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County,
California. LSA Project #ENV1201

Dear Chairperson Zwierlein:

Per our email of November 22, 2013, please accept this letter in place of the letter dated November 19, 2013. The November 19 letter was sent in error and did not accurately describe the proposed project. Chevron is proposing modernization improvements to facilities within its refinery complex in Richmond, Contra Costa County, California. The original project proposed in 2005 involved: (1) Hydrogen Plant replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; and (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building). In July 2008, the City of Richmond (City) certified an environmental impact report (EIR) and issued conditional use and design review permits for the project. Construction of two components, the Hydrogen Plant replacement and the Hydrogen Purity Improvements (i.e. Sulfur Removal Improvements), commenced in 2008, but was halted in July 2009 when the Superior Court found the EIR to be insufficient. At that time, the construction of these two components was more than 50% complete.

Following an appeal by Chevron, the Court of Appeal found the EIR to be insufficient, and set aside the permits for the project. On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR in order for the City to reconsider the permits for the project. Chevron's proposed Revised Project will complete only the Hydrogen Plant replacement and the Hydrogen Purity (Sulfur Removal) improvements. It will also include the associated equipment needed to tie the improvements into the Refinery. The Catalytic Reformer replacement, Power Plant replacement, and other new and replacement facilities that were part of the original project have been eliminated.

LSA Associates, Inc. is conducting a study to determine if the project might affect cultural resources. The project area is located in unsectioned land of the San Pablo land grant, as depicted on the accompanying portion of the USGS *San Quentin, Calif.*, USGS 7.5' topographic quadrangle.

Based on cultural resources record searches conducted at the Northwest Information Center at Sonoma State University and a review of the Sacred Lands File at the Native American Heritage Commission, there are no recorded Native American cultural resources within the project area that

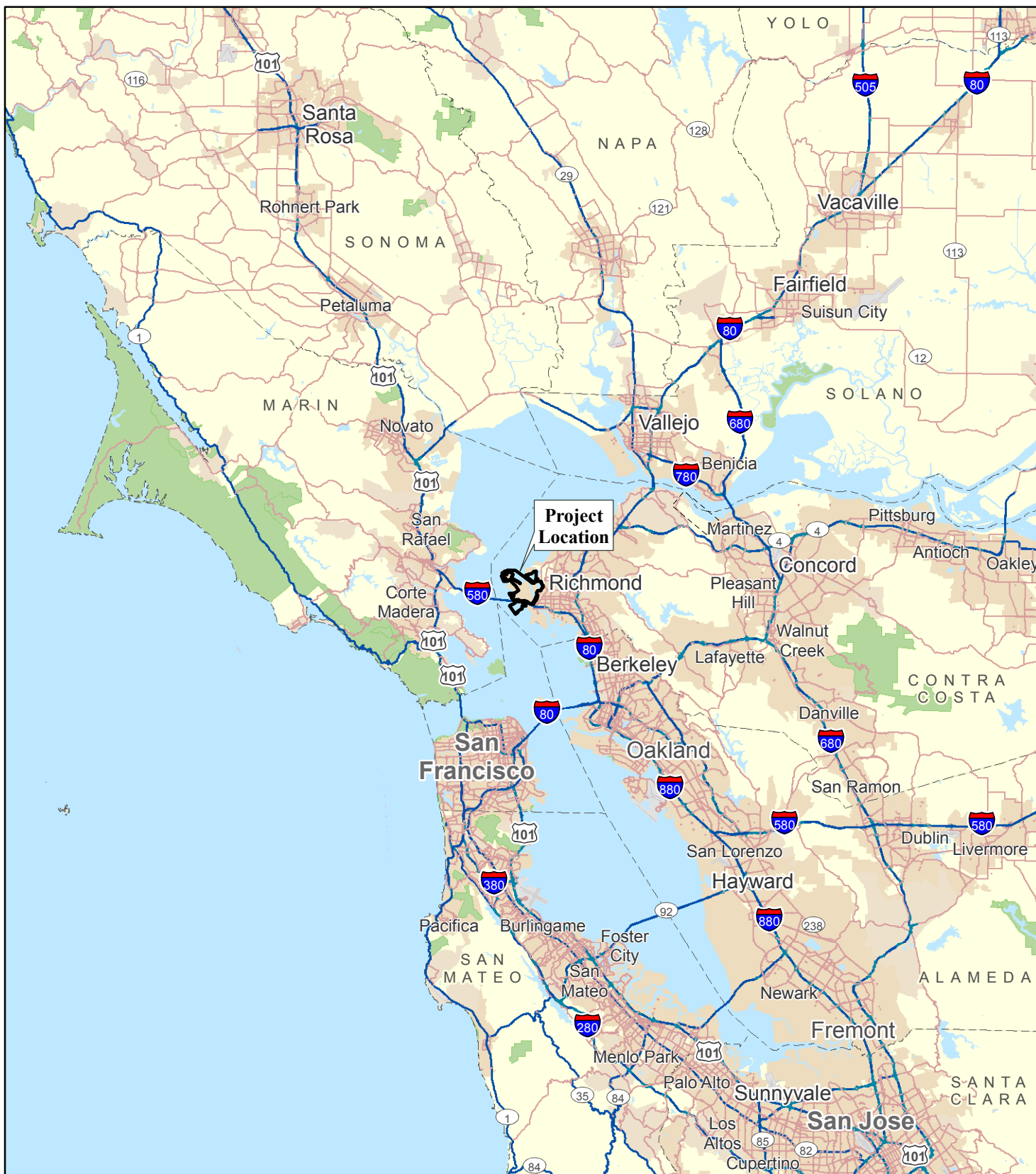
will be affected by the project. Please notify us if you or your organization has any information or concerns about cultural resources within the project area. To reach us, please contact me at the address and telephone number above or via email (neal.kaptain@lsa-assoc.com). We look forward to hearing from you. Thank you.

Sincerely,

LSA ASSOCIATES, INC.

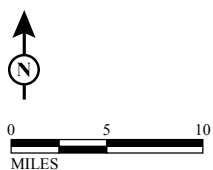
A handwritten signature in blue ink that reads "Neal Kaptain". The signature is written in a cursive, flowing style.

Neal Kaptain
Archaeologist & Architectural Historian
Associate/LSA Northern California Cultural Resources Group



LSA

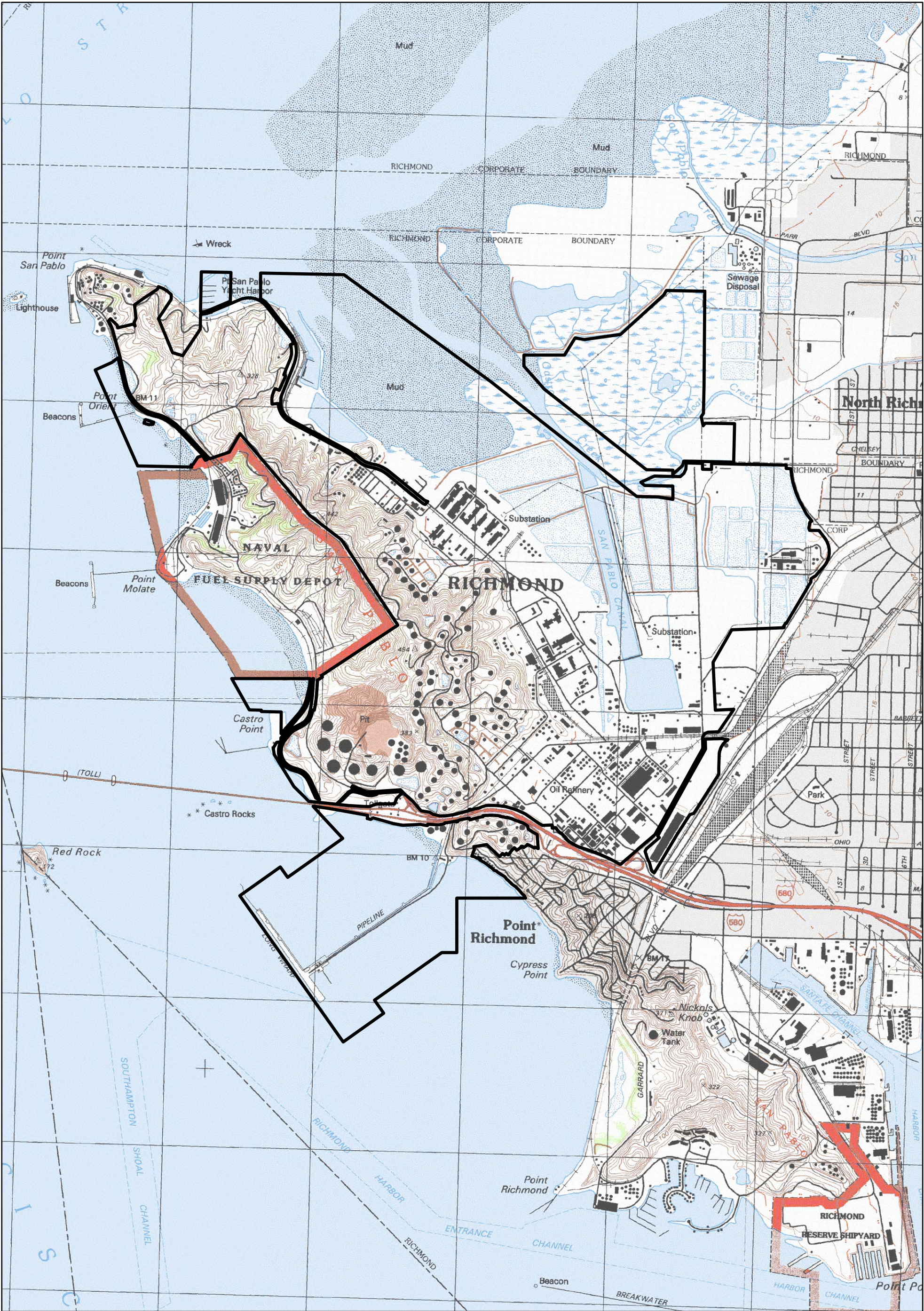
FIGURE 1



SOURCE: StreetMap North America (2009).

E:\UPI1101\GIS\Maps\Cultural\Figure1_Project Location&Vicinity.mxd (11/21/2012)

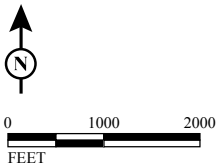
*Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Location and Vicinity*



LSA

LEGEND

Project Area



SOURCE: USGS 7.5-minute Topo Quads - San Quentin, Calif. (1995) and Richmond, Calif. (1980).

I:\UPH101\GIS\Maps\Cultural\Figure2_ProjectArea.mxd (12/7/2012)

FIGURE 2

Chevron Energy and Hydrogen Renewal Project
Richmond, Contra Costa County, California
Project Area

Native American Contact	Response
Jakki Kehl	On December 10, 2013, Ms. Kehl's voice mail box was full. LSA tried to make a follow-up call on January 15, 2014 but the voice mail box was still full. LSA was unable to make a follow-up contact.
Kathy Perez	In a November 30, 2013 email to LSA, Ms. Perez stated the following: <i>Although there seems to be no immediate concerns for cultural sensitivities. The project appear to be close to water source. This may or may not be an issue. It is the recommendation of the Tribe to have the project take precautions by having both a qualified archeological firm and native americans on borad.</i>
Linda Yamane	On December 10, 2013, LSA left a voice message for Ms. Yamane asking her to contact LSA if she has any comments or concerns regarding the project.
Irene Zwierlein	On December 10, 2013, LSA left a voice message for Chairperson Zwierlein asking her to contact LSA if she has any comments or concerns regarding the project.
Michelle Zimmer	During a December 10, 2013, telephone conversation, Ms. Zimmer stated the following: <i>The area is sensitive and all construction crews should be trained in cultural sensitivity. If needed, an archaeologist and Native American should monitor.</i>
Ann Marie Sayers	During a December 10, 2013, telephone conversation, Chairperson Sayers stated the following: <i>An archaeologist and Native American should monitor.</i>
Rosemary Cambra	During a December 10, 2013, telephone conversation, Chairperson Cambra stated that she would speak with the tribal archaeologist and provide a response.
Andrew Galvan	During a December 10, 2013, telephone conversation, Mr. Galvan stated that the cultural resources documentation should provide procedures to be followed if Native American cultural resources are identified.
Ramona Garibay	On December 10, 2013, LSA left a voice message for Representative Garibay asking her to contact LSA if she has any comments or concerns regarding the project.

Elizabeth Boyd

From: Neal Kaptain <Neal.Kaptain@lsa-assoc.com>
Sent: Thursday, November 21, 2013 12:17 PM
To: Lynette Dias
Cc: Andrew.Pulcheon@lsa-assoc.com
Subject: FW: Chevron Energy and Hydrogen Renewal Project - request for comments

Lynette,

Here is the Native American response. I'll send you my email response to her next.

From: Michael Hibma
Sent: Thursday, November 21, 2013 11:52 AM
To: Neal Kaptain
Cc: canutes@verizon.net
Subject: FW: Chevron Energy and Hydrogen Renewal Project - request for comments

Neal,

Please see Ms. Perez's question below.

Thank you,

Michael Hibma, M.A., RPH #603
Cultural Resources Manager
Architectural Historian/Historian
LSA Associates, Inc.
(510) 236-6810
michael.hibma@lsa-assoc.com

From: Katherine Perez [<mailto:canutes@verizon.net>]
Sent: Wednesday, November 20, 2013 8:14 PM
To: Michael Hibma
Subject: Re: Chevron Energy and Hydrogen Renewal Project - request for comments

Neal,
Have you done your survey and has there been any survey prior to yours. If so please send me the information.

Katherine Perez

From: Michael Hibma <Michael.Hibma@lsa-assoc.com>
To: canutes@verizon.net
Cc: Neal Kaptain <Neal.Kaptain@lsa-assoc.com>
Sent: Tuesday, November 19, 2013 10:26 AM
Subject: Chevron Energy and Hydrogen Renewal Project - request for comments

Dear Ms. Perez,

LSA is conducting a cultural resources study of the Chevron Energy and Hydrogen Renewal Project, in the City of Richmond, Contra Costa County, California. Please review the attached letter describing the project and maps depicting the project area.

Please let us know if you have any questions or concerns.

Thank you very much,
Michael Hibma

Michael Hibma, M.A., RPH #603
Cultural Resources Manager
Architectural Historian/Historian

LSA Associates, Inc.
157 Park Place
Point Richmond, CA 94801
(510) 236-6810
michael.hibma@lsa-assoc.com
www.lsa-assoc.com

Elizabeth Boyd

From: Lynette Dias
Sent: Monday, January 13, 2014 5:21 PM
To: Elizabeth Boyd
Subject: FW: Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County, California

LYNETTE DIAS, AICP
URBAN PLANNING PARTNERS, INC.
O. 510.251.8210
M. 510.206.4456

From: Andrew Pulcheon [<mailto:Andrew.Pulcheon@lsa-assoc.com>]
Sent: Tuesday, December 03, 2013 8:33 AM
To: Lynette Dias
Cc: Neal Kaptain
Subject: FW: Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County, California

Lynette-

Please see below for a response to our consultation letters from Kathy Perez.

Andy

Andrew Pulcheon, AICP, CEP
Principal/Cultural Resources Manager

LSA Associates, Inc.
157 Park Place
Point Richmond, CA 94801
(510) 236-6810
(510) 236-3480 *fax*
andrew.pulcheon@lsa-assoc.com

From: Katherine Perez [<mailto:canutes@verizon.net>]
Sent: Saturday, November 30, 2013 3:29 PM
To: Andrew Pulcheon
Subject: Re: Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County, California

Neal,

Although there seems to be no immediate concerns for cultural sensitivities. The project appear to be close to water source. This may or may not be an issue. It is the recommendation of the Tribe to have the project take precautions by having both a qualified archeological firm and native americans on board.

Katherine Perez

On Tuesday, November 26, 2013 2:01 PM, Andrew Pulcheon <Andrew.Pulcheon@lsa-assoc.com> wrote:
Dear Ms. Perez:

This email pertains to the Chevron Energy and Hydrogen Renewal Project, Richmond, Contra Costa County, California.

Per an LSA Associates, Inc. (LSA), email of November 22, 2013, please accept the letter attached to this email in place of a previous LSA letter dated November 19, 2013. The November 19 letter was sent in error and did not accurately describe the proposed project.

Thank you.

Andrew

Andrew Pulcheon, AICP, CEP
Principal/Cultural Resources Manager

LSA Associates, Inc.
157 Park Place
Point Richmond, CA 94801
(510) 236-6810
(510) 236-3480 *fax*
andrew.pulcheon@lsa-assoc.com

APPENDIX 4.8

Greenhouse Gases

APPENDIX 4.8 - BASE

BASE: Greenhouse Gas Baseline

APPENDIX 4.8-BASE GREENHOUSE GAS BASELINE

1.1 DEFINITION OF 2008-2010 PERIOD AND BASELINE

This environmental impact report (EIR) evaluates existing (2008-2010 period) Facility emissions, Baseline Facility emissions, and Project emissions. For existing (2008-2010 period) emissions, a period of 2008-2010 was chosen because it is representative of actual Facility operations. Year 2011 was also reviewed and determined to be consistent with the 2008-2010 period, but is not included in the 2008-2010 period. As described earlier, Facility 2008-2010 period emissions are presented with both the annual Emissions Inventory (EI) compiled by the Bay Area Air Quality Management District (BAAQMD) (*Appendix 4.3-EI*) and the greenhouse gas emissions inventory submitted to California Air Resources Board (CARB) under the California Mandatory Reporting Rule for Greenhouse Gas Emissions (*Appendix 4.8-CEI*).

This section also contains a description of an adjusted Baseline consistent with the *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority*, (2013) 57 Cal. 4th 439 (Smart Rail) decision. In that decision, the California Supreme Court stated that an EIR can always appropriately consider as an “existing conditions baseline” the physical condition existing at the time the EIR is prepared and/or the physical condition projected to exist when a project becomes operational. However, the court accepted that environmental conditions evolve over time and agreed that it was a reasonable exercise of lead agency discretion to predict, based on substantial evidence, environmental conditions that would exist when a project actually began operations. In this EIR, both the 2008-2010 period emissions and an adjusted baseline (Baseline) are presented and compared to the Project impacts.

Because some time has elapsed since 2010, this section also compares information from the 2008-2010 period to information from 2011, as available. As will be shown in this section, operations during the 2008-2010 period are similar to operations at the Facility in 2011. Operations during the 2008-2010 period are not reflective of operations during 2012 or 2013, however. On August 6, 2012, a fire occurred in the crude unit, which is further described in *Section 4.13, Public Safety*. This fire resulted in a shutdown of crude unit until its restart in April 2013. During the crude unit shutdown, the Facility continued to process gas oil and other feedstocks but did not process crude oil. Accordingly, during the nearly 7-month period when the crude unit was not operating, the Facility did

not operate in a manner similar to that which occurred during the 2008-2010 period. However, the California Environmental Quality Act (CEQA) recognizes that temporary curtailments are not representative of normal conditions and therefore do not change the baseline.¹ Further, short-term greenhouse gas emissions from accidental releases such as the fire at the crude unit would be unlikely to have global climate change impacts. This section of the EIR addresses only construction and operational greenhouse gas emissions and impacts from routine operations. Accident risks and public safety issues, including an evaluation of the air emissions from the August 2012 fire, are addressed in *Section 4.13, Public Safety*.

Greenhouse gas emissions from the period of 2008-2010 are the “existing conditions baseline” and are simply referred to as the “2008-2010 greenhouse gas emissions” in this EIR. 2008 to 2010 is referred to as the “2008-2010 period” or “2008-2010 baseline period” in this EIR. The adjusted baseline, which is also presented here, represents the conditions that would be expected to exist, taking into account changes in rules and regulations, as well as changes to the setting that would occur between the end of the 2008-2010 baseline period and the beginning of operations, anticipated to be in January 2016. This adjusted baseline will be referred to as the “Baseline” in this EIR. The emissions from the Baseline are expected to be lower than emissions during the 2008-2010 baseline period as a result of the implementation of rules and regulations designed to reduce emissions.

A number of changes are incorporated into the Baseline, including the following:

- **Equipment upgrades and changes** since the end of the 2008-2010 period and the proposed beginning of Project operation (January 2016).
- **Rule changes** scheduled to take effect prior to 2016 which mandate reductions of greenhouse gas emissions from mobile sources and electricity generation.

Emissions from the Facility are closely tied to Facility utilization. Greater utilization results in greater emissions from process units at the Facility, as they use more fuel to process more feedstock. Greater utilization also results in greater emissions from transportation (i.e., shipping, rail, and trucking) because of the greater quantity of materials that need to be shipped to and from the

¹ From *Communities for a Better Environment v. South Coast Air Quality Management District* (2010): "A temporary lull or spike in operations that happens to occur at the time environmental review for a new project begins should not depress or elevate the baseline."

Facility. Emissions from the Facility are also tied to the utilization of various process units. Higher sulfur feedstocks require greater use of the hydrogen plant and the sulfur recovery unit. Accordingly, these higher utilization rates translate into greater emissions, as is described in more detail in *Section 4.8.4.2, Refinery Operational Emissions*.

In order to better understand the impact of different types of feedstocks on emissions, a Unit Rate Model (URM), as further described in *Appendix 4.3-URM*, was prepared to estimate how the Facility's processing units could potentially be used under Project conditions. The URM generates estimates of the daily average throughput or production of various Facility process units in relation to: (1) the amount of crude and gas oil inputs into the Facility; (2) the American Petroleum Institute (API) gravity and fractional characteristics² of the crude oil inputs; and (3) the sulfur content of the crude and gas oil inputs. This section describes the greenhouse gas emissions that would result from the processing of crude and gas oil and also evaluates the impact of both higher sulfur and heavier and lighter feedstocks.

The City of Richmond team worked closely with the BAAQMD to develop the approach to 2008-2010 period and Baseline emissions. The direction provided by BAAQMD formed the basis of the technical methods described in this section and in *Section 4.3, Air Quality*.

1.2 EXISTING SETTING: ACTUAL EMISSIONS DURING 2008-2010 PERIOD

1.2.1 Facility Operation Emissions

Greenhouse gas emissions during the 2008-2010 period are presented based on both the BAAQMD EI and CARB reports. As shown in Table A4.8-BASE-1, CARB and BAAQMD greenhouse gas emissions inventory totals are similar for 3 years during the 2008-2010 period. The small differences in totals are due to the BAAQMD inventory relying on a different methodology than the CARB inventory to calculate greenhouse gas emissions associated with the hydrogen plant, and further, the BAAQMD inventory does not include sulfur recovery unit process greenhouse gas emissions or greenhouse gas emissions from sources that are exempt from BAAQMD permitting. Therefore, the BAAQMD annual emissions totals are smaller than those presented in the CARB inventory reports. CARB and

² As discussed in *Chapter 3, Project Description*, crude oil is input to the Facility and distilled in the crude unit into specific fractions of oil defined by boiling temperatures. The phrase "fractional characteristics" refers to the relative proportion of each fraction in the crude oil that enters the refinery crude unit.

BAAQMD greenhouse gas inventories for the year 2011 are included in this table to further indicate that the 2008-2010 period years are typical of operations and

**TABLE A4.8-BASE-1 2008-2010 FACILITY OPERATIONS GREENHOUSE GAS EMISSIONS
(BAAQMD EI AND CARB REPORTS)**

Year	BAAQMD EI (MT CO ₂ e/Year)	CARB Report (MT CO ₂ e/Year)
2008-2010 Period		
2008	4,060,366	4,798,282
2009	4,283,141	4,522,383
2010	4,226,040	4,511,882
2008-2010 Average	4,189,849	4,610,849
Non-2008-2010 Period		
2011	4,374,532	4,345,277

Note: This table presents refinery operational emissions only, and does not include shipping or other transportation-related emissions, or indirect emissions from electricity and water usage.

Sources: Appendix 4.3-EI; Chevron Data Transmittal #53A, 2013; Chevron Data Transmittal #53B, 2013; Chevron Data Transmittal #53C, 2013. Total Facility emissions reported to CARB for reporting year 2011 are publically available at: <http://www.arb.ca.gov/cc/reporting/ghg-rep/reported-data/ghg-reports.htm> (accessed November 11, 2013).

2011 emissions are typically similar to the 2008-2010 period; however, only years 2008-2010 are considered in the Baseline evaluation.³

Based on the CARB reports, the average annual direct greenhouse gas emissions during the 2008-2010 period for the Facility was 4,610,849 metric tonnes (MT) of carbon dioxide equivalent (CO₂e). This value does not include shipping and other transportation emissions which are addressed in the next few sections. Chevron has been reporting its annual greenhouse gas emissions to CARB since 2008 under the Mandatory Reporting Rule, which requires that certain large industrial facilities report their greenhouse gas emissions on an annual basis. Each reporting entity must certify under the penalty of perjury that the emissions statements are accurate. All CARB reports for facilities emitting greater than

³ 2012 and 2013 are not representative years for greenhouse gas emissions due to the August 2012 fire that damaged the crude unit. See *Section 4.3, Air Quality*, for a more complete description of why 2012 and 2013 are not representative years.

25,000 MT CO₂e must also be verified by an independent third party.⁴ Chevron's CARB reports for 2008-2010 are included in *Appendix 4.8-CEI*. Total Facility emissions reported to CARB for reporting year 2011 are publically available on CARB's website (CARB, 2013c). Chevron's CARB report for 2011 is also included in *Appendix 4.8-CEI* to indicate that 2011 emissions are only 6% lower demonstrating that the 2008-2010 period is representative of normal operating conditions.

Based on the BAAQMD EI, average annual greenhouse gas emissions during the 2008-2010 period are 4,189,849 MT CO₂e. The EI is prepared by the BAAQMD for permitted facilities. An emission inventory is an itemized list of emission estimates for sources of air pollution for a specified time period. The BAAQMD requires stationary sources of emissions, such as the Facility, to provide the BAAQMD with an annual update on the activity, such as throughput or firing rates, of sources at the Facility. The BAAQMD uses the annual update to calculate emissions of greenhouse gases from each source. This EI is then used to assess fees on sources of pollution based on how much pollution is emitted. Chevron submits an annual update for the Facility in which it provides information on the usage, or activity, of each source. The BAAQMD reviews that information and then uses that activity information to generate an annual emissions inventory, which is referred to as the BAAQMD EI. As described earlier, the BAAQMD EI does not include sulfur recovery unit process greenhouse gas emissions or greenhouse gas emissions from sources that are exempt from BAAQMD permitting. Therefore, the BAAQMD annual emissions totals are typically smaller than those presented the CARB inventory reports.

Also part of Facility operations are indirect emissions from water and electricity usage. These are "indirect" because the greenhouse gas emissions occur elsewhere, but are a result of the operations at the Facility. Emissions associated with water usage arise out of the sourcing, treatment, and distribution of water. Greenhouse gas emissions associated with water usage are calculated by multiplying the water usage (2,519 million gallons [Mgal] freshwater and 1,570 Mgal reclaimed water) (Chevron Data Transmittal #36I (Rev. #2), 2014) by the electricity intensity factor appropriate for Northern California (3.5 megawatt-hours [MWh]/Mgal) for freshwater and 2.1 MWh/Mgal for reclaimed water) (CEC,

⁴ While 2008 emissions were not required by CARB to undergo third-party verification, Chevron's CARB report for 2008 was verified. Third-party verification is a rigorous process that is closely monitored by CARB. Verifiers must undergo training and accreditation through CARB. Conflicts of interest between the verification body and the reporting entity must be cleared before any verification activities may commence.

2006; CAPCOA, 2010; Chevron Data Transmittal #51 (Rev #1), 2013)⁵ and the average of the CO₂ emission factors reported by Pacific Gas and Electric Company (PG&E) (553.7 lb/MWh) for the year's corresponding to the 2008-2010 period and the methane (CH₄) and nitrous oxide (N₂O) emission factors reported by CARB (PG&E, 2013; CARB, 2010).⁶ The 2008-2010 period indirect emissions associated with water usage for the Facility average 3,062 MT CO₂e per year.

Similarly emissions associated with electricity imported from off-site occur at the power plant where the electricity is generated.⁷ Emissions for electricity generation are typically through the combustion of fossil fuels. The greenhouse gas emissions are calculated by multiplying the imported electricity (84,776 MWh) (Chevron Data Transmittal #36I (Rev #2), 2014) by the emission factor for PG&E corresponding to the 2008-2010 period, described above. The 2008-2010 period indirect emissions associated with imported electricity at the Facility average 21,618 MT CO₂e per year.

1.2.2 Shipping Emissions

Emissions for shipping, trucks and rail were not included or analyzed in the 2008 EIR because the Project (both as originally proposed and as currently proposed) does not include any changes to the Facility's import or export capability. Nevertheless, because the EIR analyzes emissions based on reasonably foreseeable post-Project Utilization Scenarios (93% and 100%) that would constitute an increase over 2008-2010 period Facility utilization, and because transportation-related emissions are driven by Facility utilization, this EIR provides a baseline for transportation-related emissions, and *Appendices 4.3-SHP* and *4.3 AQ-TRANS* estimates Project transportation-related emissions.

⁵ As indicated in Chevron Data Transmittal #51 (Rev #1), 2013, no facility wastewater is processed by the East Bay Municipal Utility District. Energy associated with on-site water treatment is assumed to be accounted for under the stationary combustion and/or purchased electricity portion of the facility's greenhouse gas emissions inventory.

⁶ The CO₂ emission factor is the average of the 2008-2010 emission factors provided in Greenhouse Gas Emission Factors: Guidance for PG&E Customers (PG&E, 2013). These historical emission factors are from PG&E's third-party-verified greenhouse gas inventory submitted to the California Climate Action Registry or The Climate Registry. The CH₄ and N₂O emission factors are from the CARB Local Government Operations Protocol Table G.7. Emission factors for the most recent year (2007) were used. The CO₂e emission factor (557.4 pounds/MWh) was calculated based on the Intergovernmental Panel on Climate Change global warming potentials as provided in Local Government Operations Protocol Table E.1. The global warming potentials for CO₂, CH₄, and N₂O are 1, 21, and 310, respectively.

⁷ This is distinct from electricity generated on site. Emissions from electricity generated off site are already included in the facility's emissions inventory in its CARB reports.

Shipping emissions are not included in the BAAQMD EI or the CARB reports and are discussed here separately. As described in greater detail in *Section 4.3, Air Quality* and *Appendix 4.30AQ-SHP*, estimates of shipping emissions during the 2008-2010 period are based on throughput, ship equipment information, and emission factors provided by Chevron and verified by ENVIRON. The methodology used to develop the shipping emissions inventory from waterborne activities related to operations at the Long Wharf is described in detail in *Appendix 4.3-SHP* and a report prepared by Chevron's contractor, ICF. The calculation methodology used to develop the inventory are consistent with the design of other San Francisco Bay shipping emission inventories (ENVIRON, 2008; Moffitt & Nichols and ENVIRON, 2010a-d) with some exceptions associated with Project-specific aspects, CEQA considerations, and Department of Homeland Security considerations. ENVIRON helped direct and peer review the methods described in *Appendix 4.3-SHP*. ENVIRON also engaged in review of third-party sources of information to confirm information provided by Chevron in this report (e.g., evaluating online data that showed the amount of time required for tugs to maneuver ships and barges into and out of docks for a sampling of ship calls at the Richmond Long Wharf and evaluating Chevron's reported at berth time using public data available from the Marine Exchange). ENVIRON also performed calculations to verify the accuracy of this information. In addition, the methodologies used to estimate shipping emissions were developed in consultation with the BAAQMD. The 2008-2010 greenhouse gas emissions associated with shipping average 41,333 MT CO₂e per year. *Section 4.3, Air Quality*, contains additional details on shipping emissions.

1.2.3 Rail and On-Road Mobile Sources

Emissions associated with other modes of transportation associated with the operation of the Facility are not included in the BAAQMD EI or the CARB reports and are discussed here separately. These include transportation of feedstocks and finished products using rail, trucks, and pipelines. The transportation methods for the various feedstocks and products are as follows:

- Rail
 - Ammonia (exports)
 - Base oils (imports and exports)
 - Liquefied petroleum gases (imports and exports)
 - Lubricant additives (imports)
 - Lubricants (exports)
- Trucks
 - Base oils (imports and exports)

- Fuel additives (imports)
- Light products (exports)
- Liquefied petroleum gases (imports and exports)
- Lubricant additives (imports)
- Lubricants (exports)
- Pipelines
 - Light products (exports)

Greenhouse gas emissions associated with non-shipping transportation are roughly 9,969 MT CO₂e per year, or approximately 0.2% of the 2008-2010 period inventory. Hence, this category of greenhouse gas emissions is very small compared to emissions from Refinery Operations and shipping. Non-shipping transportation greenhouse gas emissions are estimated to increase by 12% if the Facility were operated at full utilization without the Project.⁸

Table A4.8-BASE-2 summarizes the 2008-2010 greenhouse gas emissions.

TABLE A4.8-BASE-2 2008-2010 GREENHOUSE GAS EMISSIONS

Year	2008-2010 Period (MT CO ₂ e/Year)
Facility	4,610,849
Electricity Usage	21,618
Water Usage	3,062
Shipping	41,333
Rail and On-Road Mobile	9,969
Total	4,686,831

Source: *Appendices 4.8-GOP and 4.3-SHP.*

1.3 BASELINE: CONDITIONS AS OF PROJECT OPERATIONAL START (JANUARY 2016)

Because new regulations and equipment changes are scheduled to be implemented before the January 2016 expected start date of the Modernization Project, and consistent with the Smart Rail decision, a Baseline representing January 2016 conditions will be used for evaluating the significance of Project-

⁸ A 12% increase was found by scaling the Baseline crude and gas oil throughputs at 89% and 100% utilization.

related greenhouse gas emissions and for ensuring that there is no net increase in greenhouse gas emissions.

The Baseline incorporates emission reduction measures that will be implemented by January 2016. There are 13 individual measures identified by Chevron that will have been implemented after the 2008-2010 period and before the anticipated Project start (January 2016) that are to be implemented independent of the Project (Chevron Data Transmittal #25 (Rev #1), 2014). These include measures that are designed to increase energy efficiency and process performance, thus reducing fuel and electricity usage. Reduced fuel consumption results in fewer direct greenhouse gas emissions from combustion, while reduced electricity usage results in fewer indirect greenhouse gas emissions emitted at the power plant.

In total, these measures will result in an annualized savings of 74,610 MT CO₂e. A listing of these measures along with their annualized greenhouse gas emission reductions is provided in Table A4.8-BASE-3. These measures include upgrading motors, improving computer process controls, changing equipment, repairs, insulation, improvement of catalyst performance, and improved monitoring and maintenance. Annual savings from each of these measures range from 30,400 MT CO₂e (improvement to cogeneration selective catalytic reduction catalyst performance and gas turbine) down to 10 MT CO₂e (upgrade of standard motors with premium efficiency motors).

Ten of the measures that Chevron has completed or has committed to have received rebates under the Statewide Customized Offering for Business program administered by Pacific Gas & Electric (PG&E) and overseen by the California Public Utilities Commission (CPUC). These measures constitute up to 70,610 MT CO₂e in annual greenhouse gas reductions or roughly 95% of the total emission reductions that the Facility will implement before 2016. This program creates incentives for energy efficiency projects by providing rebates on permanent capital improvement projects that demonstrate a real savings in energy. Energy savings from these 10 measures were verified by a third-party consultant that reviews the baseline and post-project energy use as part of a requirement of the program. Baseline energy usage is based on a few years of data; post-project energy usage is based on 6 months of data.

Regulations that would affect emissions levels from the 2008-2010 period to the Baseline (2016) include the Pavley vehicle standards (Pavley), the Low Carbon Fuel Standard (LCFS), and the Renewables Portfolio Standard (RPS). Pavley and the LCFS would affect non-shipping transportation emissions. As is described in more detail in *Appendix GHG-Regulatory*, implementation of the Pavley regulation

is expected to reduce greenhouse gas emissions from California passenger vehicles by about 30% in 2016 (CARB, 2013a), and implementation of the LCFS would reduce the carbon intensity of California’s transportation fuels by at least 10% by 2020 (CARB, 2013b). As will be discussed in this section, non-shipping transportation (rail and on-road mobile source) greenhouse gas emissions are very small (< 0.2%) compared to other Facility emissions. Therefore, changes due to Pavley and LCFS are very small. The RPS would affect emissions associated with electricity usage and requires retail sellers of electric services to increase procurement from eligible renewable resources to 33% of total retail sales by 2020. Therefore, the RPS would lower emissions associated with water usage and imported electricity usage. Emissions associated with electricity and water usage are very small compared to total 2008-2010 period emissions (roughly 0.5%). Therefore, changes in indirect greenhouse gas emissions due to the RPS are very small.

There are no regulatory requirements between the 2008-2010 period and 2016 that affect greenhouse gas emissions from rail transport or shipping. Other non-regulatory factors resulting in changes between the 2008-2010 period and Baseline emissions are described in the sections below.

1.3.1 Refinery Operation Emissions

The Baseline emissions are based primarily on the CARB report for the 2008-2010 period with adjustments made to account for anticipated emissions in 2016 prior to the commencement of Project operations (i.e., accounting for the 13 emission reduction measures that are independent of the Project). For refinery fuel gas combustion and natural gas combustion in the sulfur recovery unit, fuel volumes are used in conjunction with CARB Greenhouse Gas Reporting Regulation emission factors. The quantity of natural gas combusted in the sulfur recovery unit thermal oxidizer was provided directly from Chevron and used with CARB Greenhouse Gas Reporting emission factors. The calculation of the 2008-2010 period and Baseline refinery operational greenhouse gas emissions is described in more detail in *Appendix 4.8-GOP*.

TABLE A4.8-BASE-3 NON-PROJECT FACILITY MEASURES THAT REDUCE GREENHOUSE GAS EMISSIONS

Measure	Emission Reductions (MT CO ₂ e/Year)
Cogeneration Plant – Improvement to selective catalytic reduction catalyst performance and gas turbine resulting in refinery steam savings.	30,400

TABLE A4.8-BASE-3 NON-PROJECT FACILITY MEASURES THAT REDUCE GREENHOUSE GAS EMISSIONS

Measure	Emission Reductions (MT CO₂e/Year)
Cogeneration Plant – Installation of new deaerator feed water preheat coil in the heat recovery steam generators to recover additional waste heat from the gas turbine exhaust resulting in reduced usage of deaerator steam.	19,400
Crude Unit – Online isolation and cleaning of fouled heat exchanger resulting in decreased furnace fuel consumption.	11,300
Rheniformer 5 – Improve furnace heat transfer through use of coating, reducing furnace firing required to heat process stream.	6,700
Refinery Furnaces – Install new furnace analyzers for improved monitoring resulting in decreased furnace fuel consumption.	3,500
Naphtha Hydrotreating Unit – Install computer process control to improve naphtha hydrotreating unit F-410 furnace operation resulting in decreased furnace fuel consumption.	1,300
Refinery – Operation of diesel hydrotreater power recovery turbine resulting in electricity savings.	700
#1 Power Plant Boilers – Reduce usage of boilers through improved planning.	300
Refinery – Replace steam turbine in fluid catalytic cracker plant with electrical motor resulting in refinery steam savings.	300
Refinery – Install new piping and associated pumps and traps to recover hot condensate from steam traps that currently discharge to industrial drains resulting in refinery steam savings.	300
Refinery – Operation of taylor katalytic denitrifier power recovery turbine resulting in electricity savings.	200
Refinery – Install insulation on uninsulated steam piping to minimize heat loss resulting in refinery steam savings.	200
Refinery – Upgrade standard motors with a premium efficiency motors resulting in electricity savings.	10
TOTAL	74,610

Source: Chevron Data Transmittal #25 (Rev #1), 2014.

Indirect emissions associated with electricity and usage are adjusted by taking into account the reduced greenhouse gas intensity due to the RPS. Table A4.8-BASE-4 summarizes the Baseline greenhouse gas emissions.

TABLE A4.8-BASE-4 BASELINE: REFINERY GREENHOUSE GAS EMISSIONS

	Adjusted Baseline (MT CO₂e/Year)
Refinery	4,536,239
Electricity Usage	14,371
Water Usage	1,793
Total^a	4,552,403

Note: ^aHere and in tables throughout this EIR, summing the individual rows may result in a number slightly different than the value appearing in the Total row. Any differences are due to rounding.

Source: *Appendix 4.8-GOP*.

1.3.2 Shipping Emissions

The Baseline shipping emissions are slightly reduced compared to 2008-2010 period shipping emissions to account for expected fleet changes that would result in a change in greenhouse gas emissions from shipping sources by 2016. Between the 2008-2010 period and 2016, Chevron will replace or switch certain ships powered by gas or steam turbine engines to ships powered by diesel internal combustion engines, which will result in a decrease in greenhouse gas emissions. These technology changes and the resulting impact on shipping emissions are accounted for in the calculation of the Baseline emissions, described in more detail in *Appendix 4.3-SHP*. Other ship replacements and regulations detailed in *Section 4.3, Air Quality* do not affect greenhouse gas emissions. Besides the fleet change described above, no other changes were made to the calculation of the Baseline shipping emissions as compared to the 2008-2010 period shipping emissions.

Table A4.8-BASE-5 summarizes the Baseline greenhouse gas emissions associated with shipping.

TABLE A4.8-BASE-5 BASELINE: SHIPPING GREENHOUSE GAS EMISSIONS

	Baseline (MT CO₂e/Year)
Shipping	40,910

Source: *Appendix 4.3-SHP*.

1.3.3 Rail and On-Road Mobile Emissions

The Baseline rail and on-road mobile greenhouse gas emissions are adjusted from the 2008-2010 period emissions by taking into account Pavley vehicle standards, the LCFS, the 2016 fleet year mix (the mix of older and newer trucks assumed to be on the road in 2016), and the associated updated emission factors applicable for 2016. As described in more detail in the *Appendix 4.8-Regulatory* section that follows, the Pavley vehicle standards adopted under Assembly Bill 1493 apply to passenger vehicles and light-duty trucks used by Chevron employees and vendors making deliveries to the facility. The LCFS applies to California transportation fuels, including fuels used by heavy-duty trucks and locomotives. These regulations impose standards that reduce the greenhouse gas emissions associated with the operation of rail and on-road mobile sources.

The calculation of the Baseline rail and on-road mobile emissions is described in more detail in *Appendix 4.3-TRANS*.

Table A4.8-BASE-6 summarizes the Baseline greenhouse gas emissions associated with rail and on-road mobile emissions.

**TABLE A4.8-BASE-6 BASELINE: RAIL AND ON-ROAD
MOBILE GREENHOUSE GAS EMISSIONS**

	Baseline (MT CO₂e/Year)
Rail and On-Road Mobile	9,634

Source: *Appendix 4.3-SHP*.

1.3.4 Summary of Baseline Greenhouse Gas Emissions

Table A4.8-BASE-7 shows both the overall 2008-2010 period and the Baseline greenhouse gas emissions. The Baseline is based on the 2008-2010 period crude unit utilization rate of 89% and the 2008-2010 period blend of crude and gas oils, which have a sulfur content of 1.58% (crude oil) and 1.5% (gas oil) and API gravity of 33.7 (crude oil).

TABLE A4.8-BASE-7 2008-2010 AND BASELINE GREENHOUSE GAS EMISSIONS

Year	2008-2010 Period (MT CO₂e/Year)	Baseline (2016) (MT CO₂e/Year)
Refinery	4,610,849	4,536,239
Electricity Usage	21,618	14,371
Water Usage	3,062	1,793
Shipping	41,333	40,910
Rail and On-Road Mobile	9,969	9,634
Total	4,686,831	4,602,947

Source: *Appendices 4.8-GOP, 4.3-SHP, and 4.3 AQ-TRANS.*

1.4 REFERENCES

California Air Pollution Control Officers Association (CAPCOA). 2010. *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures, Measure WSW-1 Use Reclaimed Water*. August. Accessed December 20, 2013. <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>.

California Air Resources Board (CARB). 2010. *Local Government Operations Protocol for the Quantification and Reporting of Greenhouse Gas Emissions Inventories, Version 1.1*. May. Accessed March 2013. http://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf.

California Air Resources Board (CARB). 2013a. *Clean Car Standards – Pavley, Assembly Bill 1492: Background*. Accessed December 16, 2013. <http://www.arb.ca.gov/cc/ccms/ccms.htm>.

California Air Resources Board (CARB). 2013b. *Low Carbon Fuel Standard Program Background*. Accessed December 16, 2013. <http://www.arb.ca.gov/fuels/lcfs/lcfs-background.htm>.

California Air Resources Board (CARB). 2013c. *2011 GHG Facility and Entity Emissions Detailed Spreadsheet*. Accessed December 16, 2013. <http://www.arb.ca.gov/cc/energyaudits/letter.pdf>.

California Energy Commission (CEC). 2006. *Refining Estimates of Water-Related Energy Use in California*. December. Accessed December 16, 2013.
http://www.energy.ca.gov/pier/project_reports/CEC-500-2006-118.html.

Chevron Data Transmittal #25 (Rev #1): Refinery Modernization Project Miscellaneous GHG Projects. 2014.

Chevron Data Transmittal #36I (Rev #2): Imported Electricity. 2014.

Chevron Data Transmittal #45B (Rev #3): Municipal Water Use. 2014.

Chevron Data Transmittal #51 (Rev #1): Post Project Wastewater. 2013.

Chevron Data Transmittal #53A: AB32 2008 Report. 2013.

Chevron Data Transmittal #53B: AB32 2009 Report. 2013.

Chevron Data Transmittal #53C: AB32 2010 Report. 2013.

ENVIRON. 2008. *Port of Oakland 2005 Seaport Air Emissions Inventory*, prepared for the Port of Oakland. March.

Moffitt & Nichols and ENVIRON. 2010a. *SF Bay Area Seaports Air Emission Inventory -- Port of San Francisco 2005 Emissions Inventory*, prepared for the Bay Planning Coalition. June.

Moffitt & Nichols and ENVIRON. 2010b. *SF Bay Area Seaports Air Emission Inventory -- Port of Richmond 2005 Emissions Inventory*, prepared for the Bay Planning Coalition. June.

Moffitt & Nichols and ENVIRON. 2010c. *SF Bay Area Seaports Air Emission Inventory -- Port of Benicia 2005 Emissions Inventory*, prepared for the Bay Planning Coalition. June.

Moffitt & Nichols and ENVIRON. 2010d. *SF Bay Area Seaports Air Emission Inventory -- Port of Redwood City 2005 Emissions Inventory*, prepared for the Bay Planning Coalition. June.

Pacific Gas and Electric Company (PG&E). 2013. *Greenhouse Gas Emission Factors: Guidance for PG&E Customers*. April. Accessed November 13, 2013.
http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pg_e_ghg_emission_factor_info_sheet.pdf.

APPENDIX 4.8 - CEI

CEI: California Air Resources Board Greenhouse
Gas Emission Inventory for the Chevron Richmond
Refinery

From: Yang, Steven (SYBQ)

Sent: Thursday, December 05, 2013 12:29:57 PM (UTC-08:00) Pacific Time (US & Canada)

To: Hector Rojas

Cc: Hartwig, Jeff; Shari Libicki; 'Idias@up-partners.com'

Subject: Refinery Modernization Project - Transmittal #53A - 2008 AB32 GHG Data

Hector,

This Transmittal #53A provides the 2008 AB32 Greenhouse Gas (GHG) Report and 2008 GHG emissions data for natural gas combustion at the SRU.

The 2008 GHG emissions from natural gas combustion at the SRU are 33,112 metric tons CO₂e.

Please let me know if you have any questions.

Best Regards,

Steven Yang

Environmental Specialist

Chevron Richmond Refinery

Tech Center Rm. 333

Richmond, California

Phone: 510-242-6115

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:28



Facility Information: Chevron Products Company - Richmond Refinery, 94802

Facility Name	Chevron Products Company - Richmond Refinery, 94802
ARB ID	101384
Primary Sector	Petroleum Refinery
Secondary Sectors	Hydrogen Plant, Cogeneration Facility
NAICS Code	324110 - Petroleum Refineries
Facility Description	Petroleum Refinery
Address	841 Chevron Way Richmond, California 94802 United States
Geographic Location	37.93030, -122.38873
Air Basin	SAN FRANCISCO BAY AREA
District	BAY AREA AQMD
County	Contra Costa
Facility Contact	Troy Howell
Contact Email	TRMH@chevron.com
Contact Phone	(510) 242-2026
Reporting Year	2008
Reporting Period	01/01/2008 - 12/31/2008

Overall Mandatory Reporting Status

Verification Ready

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:28



Annual Submission Summary

Mandatory Submissions

Submission ID	Name	Reporting Level	Submission Type	Reporting Year	Submission Status	Status Date
503	Chevron Products Company - Richmond Refinery, 94802	Facility	Emissions and Fuels	2008	Verification Ready	05/26/2011
722	Chevron Products Company - Richmond Refinery, 94802	Facility	Energy and Production	2008	Verification Ready	05/26/2011
629	Cogeneration Plant at Richmond Refinery	Generating Unit	Emissions and Fuels	2008	Verification Ready	05/26/2011
1414	Cogeneration Plant at Richmond Refinery	Generating Unit	Energy and Production	2008	Verification Ready	05/26/2011

Supplemental Fee Regulation Submissions

No Supplemental Fee Regulation submissions exist for this facility and reporting period.

Fee regulation submission data are required only for those reporters subject to additional reporting for the GHG fee regulation.

Note: Data shown here are subject to change. The data may not have not undergone independent third party verification or ARB staff review. Where errors are discovered mechanisms are available to allow revisions to the data. For this reason subsequent reports may show different emissions or other data than that provided here.

Fee Regulation data are displayed only for those reporters subject to additional reporting for the GHG fee regulation.

Third party verification is not required for supplemental Fee Regulation submission data.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



TOTAL EMISSIONS: Chevron Products Company - Richmond Refinery, 94802

* All emission values are displayed in metric tons.

CO2 Biomass values not included in the CO2 Eq. sum.

The summed and supplemental values tables include data reported for the facility and associated units. This applies to the emissions and fuels tables.

Total Emissions Reporting Status:

Verification Ready

Summed Emissions Data	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	2,921,651	2,919,032.138	47.195	5.250	0.000	N/A	N/A
Process	1,870,208	1,870,207.865	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	N/A	N/A	0.000	N/A	N/A
Flares and Destruction (Refinery)	5,376	5,373.457	0.114	0.000	0.000	N/A	N/A
Fugitive	1,048	0.000	35.974	0.000	0.000	0.000	0.012
TOTAL SUMMED EMISSIONS	4,798,282	4,794,613.461	83.283	5.250	0.000	0.000	0.012

Supplemental Emissions	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	652,220	652,220.324	0.000	0.000	0.000	N/A	N/A
Process	921,619	921,619.000	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	2,006,123	2,006,123.000	N/A	N/A	0.000	N/A	N/A
Flares and Destruction (Refinery)	0	0.000	0.000	0.000	0.000	N/A	N/A
Fugitive	0	0.000	0.000	0.000	0.000	0.000	0.000

Optional Emissions	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	0	0.000	0.000	0.000	0.000	N/A	N/A
Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Flares and Destruction (Refinery)	0	0.000	0.000	0.000	0.000	N/A	N/A
Fugitive	0	0.000	0.000	0.000	0.000	0.000	0.000
Optional (Mobile)	0	0.000	0.000	0.000	0.000	N/A	N/A
Portable Equipment	0	0.000	0.000	0.000	0.000	N/A	N/A
TOTAL OPTIONAL EMISSIONS	0	0.000	0.000	0.000	0.000	0.000	0.000

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



De minimis Emissions	Value (metric tons)
Total Summed CO2 Eq.(includes CO2 Biomass)	4,798,282
Total De minimis Emissions	11,060
Percent of Total	0.231%
3% Threshold	143,948
Value Threshold	20,000

TOTAL EMITTING ACTIVITY FUEL USE: Chevron Products Company - Richmond Refinery, 94802

Summed Fuel Use	
Fuel, Feedstock, Other Through Put Name	Quantity Sum
Stationary Combustion	
Associated Gas, Fuel	██████████
Diesel (Distillate Fuel Oil #1, 2, or 4), Fuel	██████████
LPG, Fuel	██████████
Natural Gas (1000 to 1,025 Btu/Std cubic foot), Fuel	██████████
Still Gas or Refinery Gas, Fuel	██████████
Process	
Acid Gas, Other	██████████
FCCU Coke, Feedstock	██████████
Natural Gas (1000 to 1,025 Btu/Std cubic foot), Feedstock	██████████
Reformer Catalyst Regeneration, Other	██████████
Stationary Combustion and Process	
-	-
Flares and Destruction (Refinery)	
Other Input, Other	██████████
Fugitive	
Wastewater Treated, Other	██████████

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



Supplemental Fuel Use	
Fuel, Feedstock, Other Through Put Name	Quantity Sum
Stationary Combustion	
-	-
Process	
-	-
Stationary Combustion and Process	
-	-
Flares and Destruction (Refinery)	
-	-
Fugitive	
-	-
Optional Fuel Use	
Fuel, Feedstock, Other Through Put Name	Quantity Sum
Stationary Combustion	
-	-
Process	
-	-
Stationary Combustion and Process	
-	-
Flares and Destruction (Refinery)	
-	-
Fugitive	
-	-
Optional (Mobile)	
-	-
Portable Equipment	
-	-

Device Level Fuel Use

Facility Emissions Detailed Report: 2008

06/01/2011 18:36:29

[illegible]

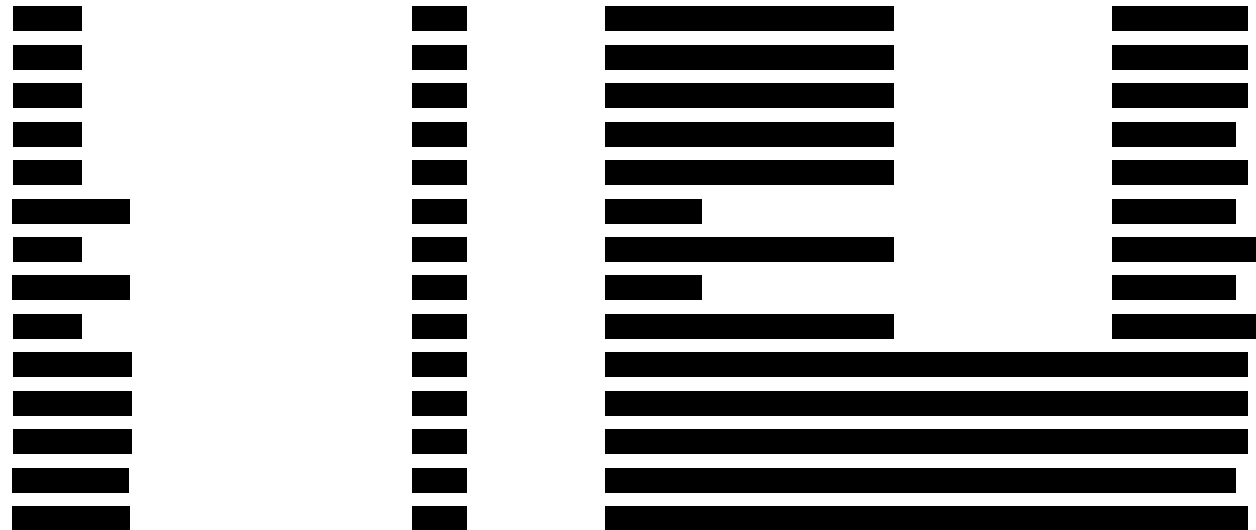
Facility Emissions Detailed Report: 2008

06/01/2011 18:36:29

A large, stylized number 4 is formed by a series of horizontal black bars. The bars are arranged in a grid-like pattern, with some bars being longer than others to create the shape of the digit. The bars are solid black and have a uniform thickness. The overall effect is a high-contrast, digital-style representation of the number 4.

Facility Emissions Detailed Report: 2008

06/01/2011 18:36:29



The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



DETAILED EMISSION RECORDS

Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	GHG	Emissions (metric tons)	CO2 Eq. (metric tons)	Calculation Method	Fuel	Quantity	Carbon Content	HHV	EF	De minimis
Hydrogen Plant Stationary Combustion	Stationary Combustion	Heaters	Summed	CO2 (Carbon dioxide)	619,996.832	619,996.832	Best Available - Operator Calculated (For 2008 Reporting Year Only)	Still Gas or Refinery Gas					
Hydrogen Plant Stationary Combustion	Stationary Combustion	Heaters	Summed	CH4 (Methane)	9.601	201.627	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
Hydrogen Plant Stationary Combustion	Stationary Combustion	Heaters	Summed	N2O (Nitrous oxide)	1.067	330.711	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
Refinery Fuel Gas Less Hydrogen Plant & Cogen Fuel Gas	Stationary Combustion	Multiple Sources	Summed	CH4 (Methane)	24.544	515.430	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
Refinery Fuel Gas Less Hydrogen Plant & Cogen Fuel Gas	Stationary Combustion	Multiple Sources	Summed	N2O (Nitrous oxide)	2.727	845.414	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
Refinery Fuel Gas Less Hydrogen Plant & Cogen Fuel Gas	Stationary Combustion	Multiple Sources	Summed	CO2 (Carbon dioxide)	1,512,345.987	1,512,345.987	Best Available - Operator Calculated (For 2008 Reporting Year Only)	Still Gas or Refinery Gas					
Refinery Natural Gas Less Cogen Natural Gas	Stationary Combustion	Multiple Sources	Summed	CO2 (Carbon dioxide)	127,580.112	127,580.112	Measured Heat Content CO2 (95125(c)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Refinery Natural Gas Less Cogen Natural Gas	Stationary Combustion	Multiple Sources	Summed	CH4 (Methane)	2.172	45.613	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Refinery Natural Gas Less Cogen Natural Gas	Stationary Combustion	Multiple Sources	Summed	N2O (Nitrous oxide)	0.241	74.815	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Stationary Diesel Engines	Stationary Combustion	IC Engines	Summed	CO2 (Carbon dioxide)	2,381.669	2,381.669	Default Emission Factor and Default Heat Content CO2 (95125(a)) - Operator Calculated	Diesel (Distillate Fuel Oil #1, 2, or 4)					
Stationary Diesel Engines	Stationary Combustion	IC Engines	Summed	CH4 (Methane)	0.098	2.053	Default Emission Factor & Default Heat Content CH4 (95125(b)(3)) - Operator Calculated	Diesel (Distillate Fuel Oil #1, 2, or 4)					
Stationary Diesel Engines	Stationary Combustion	IC Engines	Summed	N2O (Nitrous oxide)	0.020	6.060	Default Emission Factor & Default Heat Content N2O (95125(b)(3)) - Operator Calculated	Diesel (Distillate Fuel Oil #1, 2, or 4)					
Catalyst Coke Combustion for Fee Reporting	Process	Catalyst Coke Combustion (Fee Regulation Only)	Supplemental	CO2 (Carbon dioxide)	921,619.000	921,619.000	Operator Calculated per Fee Regulation - Operator Calculated						
FCC Coke Burn	Process	Catalytic Cracking (FCCU)	Summed	CO2 (Carbon dioxide)	921,445.068	921,445.068	Best Available - Operator Calculated (For 2008 Reporting Year Only)	FCCU Coke					
Hydrogen Plant Process Emissions	Process	Hydrogen Plant (s)	Summed	CO2 (Carbon dioxide)	943,951.580	943,951.580	Best Available - Operator Calculated (For 2008 Reporting Year Only)	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	GHG	Emissions (metric tons)	CO2 Eq. (metric tons)	Calculation Method	Fuel	Quantity	Carbon Content	HHV	EF	De minimis
Rheniformers Catalyst Regeneration	Process	Periodic Catalyst Regeneration	Summed	CO2 (Carbon dioxide)	174.148	174.148	Best Available - Operator Calculated (For 2008 Reporting Year Only)	Reformer Catalyst Regeneration					
SRU Process Emissions	Process	Sulfur Recovery Units	Summed	CO2 (Carbon dioxide)	4,637.070	4,637.070	Alternative Method - De Minimis - Operator Calculated	Acid Gas					Yes
Refinery Fuel Gas Less Natural Gas for Fee Reporting	Stationary Combustion and Process	Refinery Gas Consumption (Fee Regulation Only)	Supplemental	CO2 (Carbon dioxide)	2,006,123.000	2,006,123.000	Operator Calculated per Fee Regulation - Operator Calculated						
Emission Control Devices	Flares and Destruction (Refinery)	Other Control Devices	Summed	CO2 (Carbon dioxide)	5,279.663	5,279.663	Best Available - Operator Calculated (For 2008 Reporting Year Only)	Other Input					Yes
Total Refinery Flare Releases	Flares and Destruction (Refinery)	Flares	Summed	CO2 (Carbon dioxide)	93.794	93.794	Flare and Destruction Device CO2 (95113(d)) - Operator Calculated	Other Input					Yes
Total Refinery Flare Releases	Flares and Destruction (Refinery)	Flares	Summed	CH4 (Methane)	0.114	2.401	Flare and Destruction Device CH4 (95113(d)) - Operator Calculated	Other Input					Yes
Equipment Fugitives	Fugitive	Equipment Fugitive Emissions (use for SF6)	Summed	CH4 (Methane)	9.208	193.370	Fugitive Equipment CH4 (95113(c)(4)) - Operator Calculated						Yes
Oil/Water Separators	Fugitive	Oil/Water Separators (Gravity type - covered)	Summed	CH4 (Methane)	24.881	522.498	Fugitive Oil-Water Separator CH4 (95113(c)) - Operator Calculated	Wastewater Treated					Yes
Storage Tanks	Fugitive	Storage Tanks	Summed	CH4 (Methane)	1.885	39.580	Best Available - Operator Calculated (For 2008 Reporting Year Only)						Yes
Sulfur Hexafluoride	Fugitive	Transmission/Distribution/Substation (use for SF6)	Summed	SF6 (Sulfur hexafluoride)	0.012	292.058	Best Available - Operator Calculated (For 2008 Reporting Year Only)						Yes

* Several data columns are not displayed in this report. To view detailed reporting methods or custom factor values, please see the associated submissions detail page within the application.

DETAILED FUEL USE RECORDS

Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	Fuel	Fuel Type	Quantity	Units	Carbon Content	Units	HHV	Units	CO2 EF	Units	CH4 EF	Units	N2O EF	Units
Hydrogen Plant Stationary Combustion	Stationary Combustion	Heaters	Summed	Still Gas or Refinery Gas	Fuel			0.00		0.00		0.00		0.00		0.00	
Refinery Fuel Gas Less Hydrogen Plant & Cogen Fuel Gas	Stationary Combustion	Multiple Sources	Summed	Still Gas or Refinery Gas	Fuel			0.00		0.00		0.00		0.00		0.00	
Refinery Natural Gas Less Cogen Natural Gas	Stationary Combustion	Multiple Sources	Summed	Natural Gas (1000 to 1,025 Btu/Std cubic foot)	Fuel			0.00		0.00		0.00		0.00		0.00	
Stationary Diesel Engines	Stationary Combustion	IC Engines	Summed	Diesel (Distillate Fuel Oil #1, 2, or 4)	Fuel			0.00		0.00		0.00		0.00		0.00	

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	Fuel	Fuel Type	Quantity	Units	Carbon Content	Units	HHV	Units	CO2 EF	Units	CH4 EF	Units	N2O EF	Units
FCC Coke Burn	Process	Catalytic Cracking (FCCU)	Summed	FCCU Coke	Feedstock			0.00		0.00		0.00		0.00		0.00	
Hydrogen Plant Process Emissions	Process	Hydrogen Plant (s)	Summed	Natural Gas (1000 to 1,025 Btu/Std cubic foot)	Feedstock			0.00		0.00		0.00		0.00		0.00	
Rheniformers Catalyst Regeneration	Process	Periodic Catalyst Regeneration	Summed	Reformer Catalyst Regeneration	Other			0.00		0.00		0.00		0.00		0.00	
SRU Process Emissions	Process	Sulfur Recovery Units	Summed	Acid Gas	Other			0.00		0.00		0.00		0.00		0.00	
Emission Control Devices	Flares and Destruction (Refinery)	Other Control Devices	Summed	Other Input	Other			0.00		0.00		0.00		0.00		0.00	
Total Refinery Flare Releases	Flares and Destruction (Refinery)	Flares	Summed	Other Input	Other			0.00		0.00		0.00		0.00		0.00	
Oil/Water Separators	Fugitive	Oil/Water Separators (Gravity type - covered)	Summed	Wastewater Treated	Other			0.00		0.00		0.00		0.00		0.00	

* Several data columns are not displayed in this report. To view detailed custom factor values please see the associated submissions detail page within the application.

Supporting Documentation (Emissions and Fuels)

Document Name	Document Description	Document Type	Status	Date Added
Richmond Refinery Flare Meters.pdf	Device Level Fuel Detail Data for Natural Gas Flares Pilot and Purge meters.	Submission	Private	5/28/2009 8:05:56 PM

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Emissions and Fuels submission.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



ENERGY AND PRODUCTION DATA: Chevron Products Company - Richmond Refinery, 94802

Energy and Production Reporting Status: Verification Ready

Indirect Energy Use (if applicable)						
Category	Energy Type	Quantity	Provider	Provider ARB ID	Common Name	EIA ID
Indirect	Electricity		Pacific Gas and Electric Company (PG&E)	3002		

Electricity Production (if applicable)		Value
Net Power Generation		
(Cogeneration Only) Amount Consumed On-site		
(Cogeneration Only) Efficiency of Electricity Generation (if known)		

Thermal Energy Production (if applicable)		Value
Total Useful Thermal Output		
Amount Consumed On-site		
Efficiency of Thermal Energy Production (if known)		
Input Steam to Steam Turbine (if measured)		
Output of Heat Recovery Steam Generator (HRSG)		
Supplemental Fuel Fired in Duct Burner of HRSG		

Energy Sales (if applicable)					
Category	Energy Type	Quantity	Counterparty	Host/Customer or End-User NAICS	Region
Electricity Provided or Sold	Electricity			221 - Utilities	
Electricity Provided or Sold	Electricity			561210 - Facilities Support Services	
Electricity Provided or Sold	Electricity			486910 - Pipeline Transportation of Refined Petroleum Products	
Electricity Provided or Sold	Electricity			324191 - Petroleum Lubricating Oil and Grease Manufacturing	
Thermal Energy Provided or Sold	Thermal			561210 - Facilities Support Services	
Thermal Energy Provided or Sold	Thermal			324191 - Petroleum Lubricating Oil and Grease Manufacturing	

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



Thermal Energy Provided or Sold	Thermal			324191 - Petroleum Lubricating Oil and Grease Manufacturing	
Thermal Energy Provided or Sold	Thermal			325188 - All Other Basic Inorganic Chemical Manufacturing	

Steam Production (if applicable) Value

Quantity Generated

Boiler Efficiency (if known)

Cement Efficiency Metrics Data (if applicable) Value

Operator Calculated: CO2 Emissions per metric ton of Cementitious Product

Operator Calculated: CO2 Emissions per metric ton of Clinker

Operator Entered: Direct CO2 Emissions from cement manufacturing

Amount Clinker

Amount Sold Directly

Amount Own Consumed

Amount Added to Stock

Type Clinker Substitute Consumed

Amount Clinker Substitute Consumed

Type Cement Substitute Consumed

Amount Cement Substitute Consumed

Lime (CaO) content of clinker

Magnesium Oxide (MgO) content of clinker

Non-carbonate CaO content of clinker

Non-carbonate MgO content of clinker

Plant Specific CKD calcination rate

Amount CKD discarded

Hydrogen Data (if applicable) Value

Total Hydrogen Produced

Total Hydrogen Sold for Use as Transportation Fuel

Total CO2 Sold

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29

Total CO Sold

0.00 metric tons

Supporting Documentation (Energy and Production)

No documents are associated with the current submission.

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Energy and Production submission.



The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



Unit Information

Generating Unit Name	Cogeneration Plant at Richmond Refinery
ARB ID	101384-001
Unit Type	Cogeneration Primary Sector - Topping Cycle
Description	2 Alstom Gas Turbines/Vogt HRSG's - 105.4 MW nameplate capacity (52.7 MW each) 1 Dresser Rand steam turbine - 27.18 MW nameplate capacity
Nameplate Capacity (MW)	132.58 MW
Unit Operating Status	Operating
Reporting Year	2008
Reporting Period	01/01/2008 - 12/31/2008

TOTAL EMISSIONS: Cogeneration Plant at Richmond Refinery

* All emission values are displayed in metric tons.

CO2 Biomass values not included in the CO2 Eq. sum.

Total Emissions Reporting Status:

Verification Ready

Summed Emissions Data	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	657,324	656,727.538	10.780	1.195	0.000	N/A	N/A
Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	N/A	N/A	0.000	N/A	N/A
TOTAL SUMMED EMISSIONS	657,324	656,727.538	10.780	1.195	0.000	0.000	0.000

Supplemental Emissions	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	652,220	652,220.324	0.000	0.000	0.000	N/A	N/A
Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	N/A	N/A	0.000	N/A	N/A

TOTAL EMITTING ACTIVITY FUEL USE: Cogeneration Plant at Richmond Refinery

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



Summed Fuel Use	
Fuel, Feedstock, Other Through Put Name	Quantity Sum
Stationary Combustion	
Associated Gas, Fuel	
LPG, Fuel	
Natural Gas (1000 to 1,025 Btu/Std cubic foot), Fuel	
Still Gas or Refinery Gas, Fuel	
Process	
-	-
Stationary Combustion and Process	
-	-
Supplemental Fuel Use	
Fuel, Feedstock, Other Through Put Name	Quantity Sum
Stationary Combustion	
-	-
Process	
-	-
Stationary Combustion and Process	
-	-

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



DETAILED EMISSION RECORDS

Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	GHG	Emissions (metric tons)	CO2 Eq. (metric tons)	Calculation Method	Fuel	Quantity	Carbon Content	HHV	EF	De minimis
COGEN HRSG DUCT BURNERS REFINERY FUEL GAS	Stationary Combustion	Duct Burners of Heat Recovery Steam Generators	Summed	CH4 (Methane)	2.308	48.470	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
COGEN HRSG DUCT BURNERS REFINERY FUEL GAS	Stationary Combustion	Duct Burners of Heat Recovery Steam Generators	Summed	N2O (Nitrous oxide)	0.256	79.500	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
COGEN HRSG DUCT BURNERS REFINERY FUEL GAS	Stationary Combustion	Duct Burners of Heat Recovery Steam Generators	Summed	CO2 (Carbon dioxide)	148,894.767	148,894.767	Best Available - Operator Calculated (For 2008 Reporting Year Only)	Still Gas or Refinery Gas					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CH4 (Methane)	3.974	83.457	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Associated Gas					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	N2O (Nitrous oxide)	0.442	136.887	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Associated Gas					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CO2 (Carbon dioxide)	242,634.286	242,634.286	Best Available - Operator Calculated (For 2008 Reporting Year Only)	Associated Gas					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CO2 (Carbon dioxide)	14,562.983	14,562.983	Best Available - Operator Calculated (For 2008 Reporting Year Only)	LPG					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CH4 (Methane)	0.231	4.856	Best Available - Operator Calculated (For 2008 Reporting Year Only)	LPG					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	N2O (Nitrous oxide)	0.023	7.168	Best Available - Operator Calculated (For 2008 Reporting Year Only)	LPG					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CO2 (Carbon dioxide)	250,635.503	250,635.503	Measured Heat Content CO2 (95125(c)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CH4 (Methane)	4.267	89.597	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	N2O (Nitrous oxide)	0.474	146.959	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Distributed Emissions to Electricity Generation	Stationary Combustion	Cogeneration to Electricity Generation	Supplemental	CO2 (Carbon dioxide)			Best Available - Operator Calculated (For 2008 Reporting Year Only)						
Distributed Emissions to Thermal Energy Production	Stationary Combustion	Cogeneration to Thermal Energy Production	Supplemental	CO2 (Carbon dioxide)			Best Available - Operator Calculated (For 2008 Reporting Year Only)						

* Several data columns are not displayed in this report. To view detailed reporting methods or custom factor values, please see the associated submissions detail page within the application.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



DETAILED FUEL USE RECORDS

Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	Fuel	Fuel Type	Quantity	Units	Carbon Content	Units	HHV	Units	CO2 EF	Units	CH4 EF	Units	N2O EF	Units
COGEN HRSG DUCT BURNERS REFINERY FUEL GAS	Stationary Combustion	Duct Burners of Heat Recovery Steam Generators	Summed	Still Gas or Refinery Gas	Fuel			0.00		0.00		0.00		0.00		0.00	
COGEN TURBINES	Stationary Combustion	Turbines	Summed	Associated Gas	Fuel			0.00		0.00		0.00		0.00		0.00	
COGEN TURBINES	Stationary Combustion	Turbines	Summed	LPG	Fuel			0.00		0.00		0.00		0.00		0.00	
COGEN TURBINES	Stationary Combustion	Turbines	Summed	Natural Gas (1000 to 1,025 Btu/Std cubic foot)	Fuel			0.00		0.00		0.00		0.00		0.00	

* Several data columns are not displayed in this report. To view detailed custom factor values please see the associated submissions detail page within the application.

Supporting Documentation (Emissions and Fuels)

No documents are associated with the current submission.

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Emissions and Fuels submission.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



ENERGY AND PRODUCTION DATA: Cogeneration Plant at Richmond Refinery

Energy and Production Reporting Status: Verification Ready

Electricity Production (if applicable)	Value
Net Power Generation	
(Cogeneration Only) Amount Consumed On-site	
(Cogeneration Only) Efficiency of Electricity Generation (if known)	

Thermal Energy Production (if applicable)	Value
Total Useful Thermal Output	
Amount Consumed On-site	
Efficiency of Thermal Energy Production (if known)	
Input Steam to Steam Turbine (if measured)	
Output of Heat Recovery Steam Generator (HRSG)	
Supplemental Fuel Fired in Duct Burner of HRSG	

Energy Sales (if applicable)					
Category	Energy Type	Quantity	Counterparty	Host/Customer or End-User NAICS	Region
Electricity Provided or Sold	Electricity			221 - Utilities	
Electricity Provided or Sold	Electricity			561210 - Facilities Support Services	
Electricity Provided or Sold	Electricity			486910 - Pipeline Transportation of Refined Petroleum Products	
Electricity Provided or Sold	Electricity			324191 - Petroleum Lubricating Oil and Grease Manufacturing	
Thermal Energy Provided or Sold	Thermal			561210 - Facilities Support Services	
Thermal Energy Provided or Sold	Thermal			324191 - Petroleum Lubricating Oil and Grease Manufacturing	
Thermal Energy Provided or Sold	Thermal			324191 - Petroleum Lubricating Oil and Grease Manufacturing	
Thermal Energy Provided or Sold	Thermal			325188 - All Other Basic Inorganic Chemical Manufacturing	

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



Supporting Documentation (Energy and Production)

No documents are associated with the current submission.

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Energy and Production submission.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



TOTAL SUPPLEMENTAL EMISSIONS (FEE REGULATION ONLY): Chevron Products Company - Richmond Refinery, 94802

Data are displayed only for those reporters subject to additional reporting for the GHG fee regulation.
Third party verification is not required for Fee Regulation submission data.

Supplemental Emissions (Fee Regulation Only) Reporting Status:

Submission not found.

TOTAL FACILITY FUEL DELIVERY (FEE REGULATION ONLY): Chevron Products Company - Richmond Refinery, 94802

Data are displayed only for those reporters subject to additional reporting for the GHG fee regulation.
Third party verification is not required for Fee Regulation submission data.

Facility Fuel Delivery (Fee Regulation Only) Reporting Status:

Submission not found.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2008

(Private)

06/01/2011 18:36:29



MANDATORY VERIFICATION INFORMATION: Chevron Products Company - Richmond Refinery, 94802

Verification Body Name

Verification Body Address

Mandatory Verification Finding

The submitted data report is reasonably assured of being free of material misstatements.

The submitted emissions data report is reasonably assured of being in conformance with the regulation.

From: Yang, Steven (SYBQ)

Sent: Thursday, December 05, 2013 12:30:00 PM (UTC-08:00) Pacific Time (US & Canada)

To: Hector Rojas

Cc: Shari Libicki; Hartwig, Jeff; 'ldias@up-partners.com'

Subject: Refinery Modernization Project - Transmittal #53B - 2009 AB32 GHG Data
Hector,

This Transmittal #53B provides the 2009 AB32 Greenhouse Gas (GHG) Report and 2008 GHG emissions data for natural gas combustion at the SRU.

The 2009 GHG emissions from natural gas combustion at the SRU are 31,902 metric tons CO₂e.

Please let me know if you have any questions.

Best Regards,

Steven Yang

Environmental Specialist
Chevron Richmond Refinery
Tech Center Rm. 333
Richmond, California
Phone: 510-242-6115

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:54



Facility Information: Chevron Products Company - Richmond Refinery, 94802

Facility Name	Chevron Products Company - Richmond Refinery, 94802
ARB ID	101384
Primary Sector	Petroleum Refinery
Secondary Sectors	Hydrogen Plant, Cogeneration Facility
NAICS Code	324110 - Petroleum Refineries
Facility Description	Petroleum Refinery
Address	841 Chevron Way Richmond, California 94802 United States
Geographic Location	37.93030, -122.38873
Air Basin	SAN FRANCISCO BAY AREA
District	BAY AREA AQMD
County	Contra Costa
Facility Contact	Troy Howell
Contact Email	TRMH@chevron.com
Contact Phone	(510) 242-2026
Reporting Year	2009
Reporting Period	01/01/2009 - 12/31/2009

Annual Submission Summary

Overall Reporting Status: **Verified**

Submission ID	Name	Reporting Level	Submission Type	Reporting Year	Submission Status	Status Date
4541	Chevron Products Company - Richmond Refinery, 94802	Facility	Emissions and Fuels	2009	Verified	12/01/2010
4540	Chevron Products Company - Richmond Refinery, 94802	Facility	Energy and Production	2009	Verified	12/01/2010
4539	Cogeneration Plant at Richmond Refinery	Generating Unit	Emissions and Fuels	2009	Verified	12/01/2010
4542	Cogeneration Plant at Richmond Refinery	Generating Unit	Energy and Production	2009	Verified	12/01/2010

Note: Data shown here are subject to change. The data may not have not undergone independent third party verification or ARB staff review. Where errors are discovered mechanisms are available to allow revisions to the data. For this reason subsequent reports may show different emissions or other data than that provided here.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:54



TOTAL EMISSIONS: Chevron Products Company - Richmond Refinery, 94802

* All emission values are displayed in metric tons.

CO2 Biomass values not included in the CO2 Eq. sum.

The summed and supplemental values tables include data reported for the facility and associated units. This applies to the emissions and fuels tables.

Total Emissions Reporting Status: **Verified**

Summed Emissions Data	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	2,670,556	2,668,055.269	45.090	5.011	0.000	N/A	N/A
Process	1,848,469	1,848,468.726	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	N/A	N/A	0.000	N/A	N/A
Flares and Destruction (Refinery)	2,066	2,058.014	0.362	0.000	0.000	N/A	N/A
Fugitive	1,293	0.000	36.356	0.747	0.000	0.000	0.012
TOTAL SUMMED EMISSIONS	4,522,383	4,518,582.009	81.808	5.758	0.000	0.000	0.012

Supplemental Emissions	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	663,209	663,209.451	0.000	0.000	0.000	N/A	N/A
Process	933,249	933,249.000	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	1,800,602	1,800,602.000	N/A	N/A	0.000	N/A	N/A
Flares and Destruction (Refinery)	0	0.000	0.000	0.000	0.000	N/A	N/A
Fugitive	0	0.000	0.000	0.000	0.000	0.000	0.000

Optional Emissions	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	0	0.000	0.000	0.000	0.000	N/A	N/A
Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Flares and Destruction (Refinery)	0	0.000	0.000	0.000	0.000	N/A	N/A
Fugitive	0	0.000	0.000	0.000	0.000	0.000	0.000
Optional (Mobile)	0	0.000	0.000	0.000	0.000	N/A	N/A
Portable Equipment	0	0.000	0.000	0.000	0.000	N/A	N/A
TOTAL OPTIONAL EMISSIONS	0	0.000	0.000	0.000	0.000	0.000	0.000

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:54



De minimis Emissions	Value (metric tons)
Total Summed CO2 Eq.(includes CO2 Biomass)	
Total De minimis Emissions	
Percent of Total	
3% Threshold	
Value Threshold	

TOTAL EMITTING ACTIVITY FUEL USE: Chevron Products Company - Richmond Refinery, 94802

Summed Fuel Use	
Fuel, Feedstock, Other Through Put Name	Quantity Sum
Stationary Combustion	
Associated Gas, Fuel	
Diesel (Distillate Fuel Oil #1, 2, or 4), Fuel	
LPG, Fuel	
Natural Gas (1000 to 1,025 Btu/Std cubic foot), Fuel	
Still Gas or Refinery Gas, Fuel	
Process	
Acid Gas, Other	
FCCU Coke, Feedstock	
Natural Gas (1000 to 1,025 Btu/Std cubic foot), Feedstock	
Reformer Catalyst Regeneration, Other	
Stationary Combustion and Process	
-	-
Flares and Destruction (Refinery)	
Other Input, Other	
Fugitive	
Wastewater Treated, Other	

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:54

Supplemental Fuel Use

Fuel, Feedstock, Other Through Put Name	Quantity Sum
---	--------------

Stationary Combustion

-	-
---	---

Process

-	-
---	---

Stationary Combustion and Process

-	-
---	---

Flares and Destruction (Refinery)

-	-
---	---

Fugitive

-	-
---	---

Optional Fuel Use

Fuel, Feedstock, Other Through Put Name	Quantity Sum
---	--------------

Stationary Combustion

-	-
---	---

Process

-	-
---	---

Stationary Combustion and Process

-	-
---	---

Flares and Destruction (Refinery)

-	-
---	---

Fugitive

-	-
---	---

Optional (Mobile)

-	-
---	---

Portable Equipment

-	-
---	---

Device Level Fuel Use

Facility Emissions Detailed Report: 2009

12/01/2010 11:48:54

[illegible]

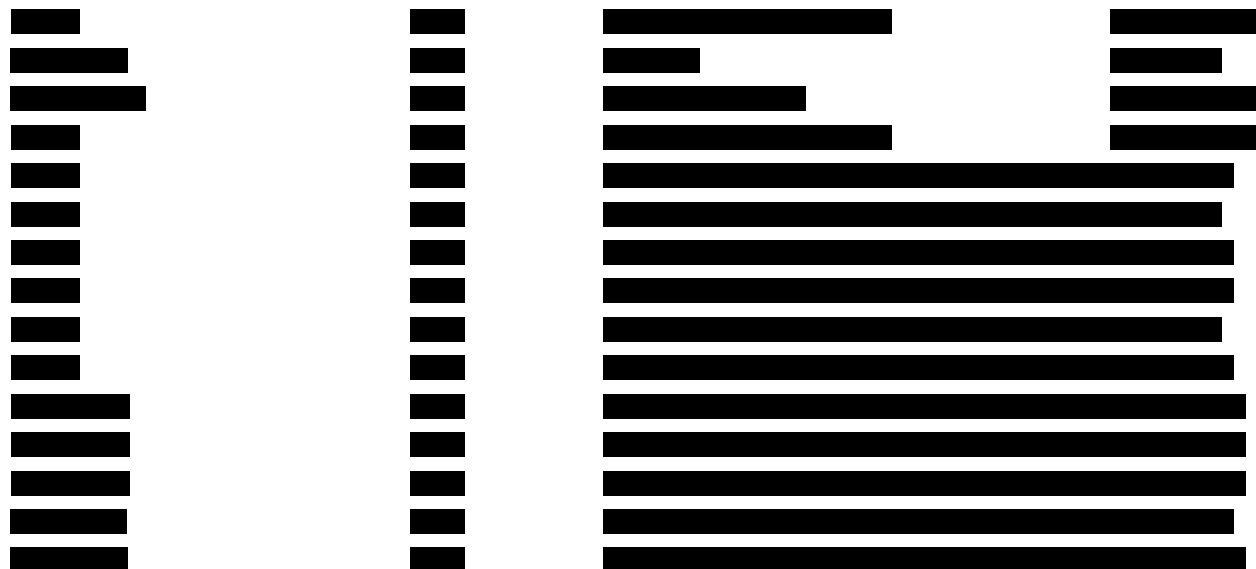
Facility Emissions Detailed Report: 2009

12/01/2010 11:48:54

A large, stylized black letter 'H' is centered on a white background. The letter is constructed from horizontal bars of varying lengths. The left and right vertical stems are made of many short, stacked bars. The top and bottom horizontal crossbars are made of a single long bar spanning the width of the letter. The middle section, where the stems meet the crossbars, is filled with a dense stack of horizontal bars of varying lengths, creating a textured, almost solid appearance. The overall effect is a bold, graphic representation of the letter 'H'.

Facility Emissions Detailed Report: 2009

12/01/2010 11:48:54



The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:54



DETAILED EMISSION RECORDS

Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	GHG	Emissions (metric tons)	CO2 Eq. (metric tons)	Calculation Method	Fuel	Quantity	Carbon Content	HHV	EF	De minimis
Hydrogen Plant Stationary Combustion	Stationary Combustion	Heaters	Summed	N2O (Nitrous oxide)	1.043	323.303	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
Hydrogen Plant Stationary Combustion	Stationary Combustion	Heaters	Summed	CH4 (Methane)	9.386	197.111	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
Hydrogen Plant Stationary Combustion	Stationary Combustion	Heaters	Summed	CO2 (Carbon dioxide)	552,783.813	552,783.813	Measured Heat and Measured Carbon Content CO2 (95125(e)) - Operator Calculated	Still Gas or Refinery Gas					
Refinery Fuel Gas Less Hydrogen Plant & Cogen Fuel Gas	Stationary Combustion	Multiple Sources	Summed	CH4 (Methane)	22.198	466.158	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
Refinery Fuel Gas Less Hydrogen Plant & Cogen Fuel Gas	Stationary Combustion	Multiple Sources	Summed	N2O (Nitrous oxide)	2.466	764.598	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
Refinery Fuel Gas Less Hydrogen Plant & Cogen Fuel Gas	Stationary Combustion	Multiple Sources	Summed	CO2 (Carbon dioxide)	1,323,136.337	1,323,136.337	Measured Heat and Measured Carbon Content CO2 (95125(e)) - Operator Calculated	Still Gas or Refinery Gas					
Refinery Natural Gas Less Cogen Natural Gas	Stationary Combustion	Multiple Sources	Summed	CO2 (Carbon dioxide)	128,539.156	128,539.156	Measured Heat Content CO2 (95125(c)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Refinery Natural Gas Less Cogen Natural Gas	Stationary Combustion	Multiple Sources	Summed	CH4 (Methane)	2.188	45.950	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Refinery Natural Gas Less Cogen Natural Gas	Stationary Combustion	Multiple Sources	Summed	N2O (Nitrous oxide)	0.243	75.368	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Stationary Diesel Engines	Stationary Combustion	IC Engines	Summed	CO2 (Carbon dioxide)	386.512	386.512	Default Emission Factor and Default Heat Content CO2 (95125(a)) - Operator Calculated	Diesel (Distillate Fuel Oil #1, 2, or 4)					Yes
Stationary Diesel Engines	Stationary Combustion	IC Engines	Summed	CH4 (Methane)	0.016	0.333	Default Emission Factor & Default Heat Content CH4 (95125(b)(3)) - Operator Calculated	Diesel (Distillate Fuel Oil #1, 2, or 4)					Yes
Stationary Diesel Engines	Stationary Combustion	IC Engines	Summed	N2O (Nitrous oxide)	0.003	0.983	Default Emission Factor & Default Heat Content N2O (95125(b)(3)) - Operator Calculated	Diesel (Distillate Fuel Oil #1, 2, or 4)					Yes
Catalyst Coke Combustion for Fee Reporting	Process	Catalyst Coke Combustion (Fee Regulation Only)	Supplemental	CO2 (Carbon dioxide)	933,249.000	933,249.000	Operator Calculated per Fee Regulation - Operator Calculated						
FCC Coke Burn	Process	Catalytic Cracking (FCCU)	Summed	CO2 (Carbon dioxide)	932,999.320	932,999.320	FCCU/Fluid Cokers CO2 (95113(b)(1)) - Operator Calculated	FCCU Coke					
Hydrogen Plant Process Emissions	Process	Hydrogen Plant (s)	Summed	CO2 (Carbon dioxide)	910,787.660	910,787.660	Hydrogen Plants CO2 (95114(b)(3)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:55



Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	GHG	Emissions (metric tons)	CO2 Eq. (metric tons)	Calculation Method	Fuel	Quantity	Carbon Content	HHV	EF	De minimis
Rheniformers Catalyst Regeneration	Process	Periodic Catalyst Regeneration	Summed	CO2 (Carbon dioxide)	250.140	250.140	Other Catalyst Regeneration CO2 (95113(b)(2)) - Operator Calculated	Reformer Catalyst Regeneration					Yes
SRU Process Emissions	Process	Sulfur Recovery Units	Summed	CO2 (Carbon dioxide)	4,431.606	4,431.606	Alternative Method - De Minimis - Operator Calculated	Acid Gas					Yes
Refinery Fuel Gas Less Natural Gas for Fee Reporting	Stationary Combustion and Process	Refinery Gas Consumption (Fee Regulation Only)	Supplemental	CO2 (Carbon dioxide)	1,800,602.000	1,800,602.000	Operator Calculated per Fee Regulation - Operator Calculated						
Emission Control Devices	Flares and Destruction (Refinery)	Other Control Devices	Summed	CO2 (Carbon dioxide)	1,918.090	1,918.090	Flare and Destruction Device CO2 (95113(d)(3)) - Operator Calculated	Other Input					Yes
Total Refinery Flare Releases	Flares and Destruction (Refinery)	Flares	Summed	CO2 (Carbon dioxide)	139.924	139.924	Flare and Destruction Device CO2 (95113(d)(2)(c)) - Operator Calculated	Other Input					Yes
Total Refinery Flare Releases	Flares and Destruction (Refinery)	Flares	Summed	CH4 (Methane)	0.362	7.597	Flare and Destruction Device CH4 (95113(d)) - Operator Calculated	Other Input					Yes
Aerobic Wastewater Treatment	Fugitive	Wastewater Treatment Facilities (Aerobic treatment plant: Maintained)	Summed	N2O (Nitrous oxide)	0.747	231.460	Fugitive Waste Water N2O (95113(c)) - Operator Calculated	Wastewater Treated					Yes
Aerobic Wastewater Treatment	Fugitive	Wastewater Treatment Facilities (Aerobic treatment plant: Maintained)	Summed	CH4 (Methane)	0.000	0.000	Fugitive Waste Water CH4 (95113(c)) - Operator Calculated	Wastewater Treated					Yes
Equipment Fugitives	Fugitive	Equipment Fugitive Emissions (use for SF6)	Summed	CH4 (Methane)	8.601	180.617	Fugitive Equipment CH4 (95113(c)(4)) - Operator Calculated						Yes
Oil/Water Separators	Fugitive	Oil/Water Separators (Gravity type - covered)	Summed	CH4 (Methane)	17.231	361.854	Fugitive Oil-Water Separator CH4 (95113(c)) - Operator Calculated	Wastewater Treated					Yes
Storage Tanks	Fugitive	Storage Tanks	Summed	CH4 (Methane)	10.524	221.003	Alternative Method - De Minimis - Operator Calculated						Yes
Sulfur Hexafluoride	Fugitive	Transmission/Distribution/Substation (use for SF6)	Summed	SF6 (Sulfur hexafluoride)	0.012	298.129	Fugitive SF6 (95111(f)) - Operator Calculated						Yes

* Several data columns are not displayed in this report. To view detailed reporting methods or custom factor values, please see the associated submissions detail page within the application.

DETAILED FUEL USE RECORDS

Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	Fuel	Fuel Type	Quantity	Units	Carbon Content	Units	HHV	Units	CO2 EF	Units	CH4 EF	Units	N2O EF	Units
Hydrogen Plant Stationary Combustion	Stationary Combustion	Heaters	Summed	Still Gas or Refinery Gas	Fuel			0.00		0.00		0.00		0.00		0.00	

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:55



Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	Fuel	Fuel Type	Quantity	Units	Carbon Content	Units	HHV	Units	CO2 EF	Units	CH4 EF	Units	N2O EF	Units
Refinery Fuel Gas Less Hydrogen Plant & Cogen Fuel Gas	Stationary Combustion	Multiple Sources	Summed	Still Gas or Refinery Gas	Fuel			0.00		0.00		0.00		0.00		0.00	
Refinery Natural Gas Less Cogen Natural Gas	Stationary Combustion	Multiple Sources	Summed	Natural Gas (1000 to 1,025 Btu/Std cubic foot)	Fuel			0.00		0.00		0.00		0.00		0.00	
Stationary Diesel Engines	Stationary Combustion	IC Engines	Summed	Diesel (Distillate Fuel Oil #1, 2, or 4)	Fuel			0.00		0.00		0.00		0.00		0.00	
FCC Coke Burn	Process	Catalytic Cracking (FCCU)	Summed	FCCU Coke	Feedstock			0.00		0.00		0.00		0.00		0.00	
Hydrogen Plant Process Emissions	Process	Hydrogen Plant (s)	Summed	Natural Gas (1000 to 1,025 Btu/Std cubic foot)	Feedstock			0.00		0.00		0.00		0.00		0.00	
Rheniformers Catalyst Regeneration	Process	Periodic Catalyst Regeneration	Summed	Reformer Catalyst Regeneration	Other			0.00		0.00		0.00		0.00		0.00	
SRU Process Emissions	Process	Sulfur Recovery Units	Summed	Acid Gas	Other			0.00		0.00		0.00		0.00		0.00	
Emission Control Devices	Flares and Destruction (Refinery)	Other Control Devices	Summed	Other Input	Other			0.00		0.00		0.00		0.00		0.00	
Total Refinery Flare Releases	Flares and Destruction (Refinery)	Flares	Summed	Other Input	Other			0.00		0.00		0.00		0.00		0.00	
Aerobic Wastewater Treatment	Fugitive	Wastewater Treatment Facilities (Aerobic treatment plant: Maintained)	Summed	Wastewater Treated	Other			0.00		0.00		0.00		0.00		0.00	
Oil/Water Separators	Fugitive	Oil/Water Separators (Gravity type - covered)	Summed	Wastewater Treated	Other			0.00		0.00		0.00		0.00		0.00	

* Several data columns are not displayed in this report. To view detailed custom factor values please see the associated submissions detail page within the application.

Supporting Documentation (Emissions and Fuels)

No documents are associated with the current submission.

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Emissions and Fuels submission.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:55



ENERGY AND PRODUCTION DATA: Chevron Products Company - Richmond Refinery, 94802

Energy and Production Reporting Status: **Verified**

Indirect Energy Use (if applicable)						
Category	Energy Type	Quantity	Provider	Provider ARB ID	Common Name	EIA ID
Indirect	Electricity		Pacific Gas and Electric Company (PG&E)	3002		

Electricity Production (if applicable) Value

Net Power Generation

(Cogeneration Only) Amount Consumed On-site

(Cogeneration Only) Efficiency of Electricity Generation (if known)

Thermal Energy Production (if applicable) Value

Total Useful Thermal Output

Amount Consumed On-site

Efficiency of Thermal Energy Production (if known)

Input Steam to Steam Turbine (if measured)

Output of Heat Recovery Steam Generator (HRSG)

Supplemental Fuel Fired in Duct Burner of HRSG

Energy Sales Data has yet to be reported for this table. Please report this data if applicable.

Steam Production (if applicable) Value

Quantity Generated

Boiler Efficiency (if known)

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:55



Cement Efficiency Metrics Data (if applicable)	Value
--	-------

Operator Calculated: CO2 Emissions per metric ton of Cementitious Product

Operator Calculated: CO2 Emissions per metric ton of Clinker

Operator Entered: Direct CO2 Emissions from cement manufacturing

Amount Clinker

Amount Sold Directly

Amount Own Consumed

Amount Added to Stock

Type Clinker Substitute Consumed

Amount Clinker Substitute Consumed

Type Cement Substitute Consumed

Amount Cement Substitute Consumed

Lime (CaO) content of clinker

Magnesium Oxide (MgO) content of clinker

Non-carbonate CaO content of clinker

Non-carbonate MgO content of clinker

Plant Specific CKD calcination rate

Amount CKD discarded

Hydrogen Data (if applicable)	Value
-------------------------------	-------

Total Hydrogen Produced

██████████

Total Hydrogen Sold for Use as Transportation Fuel

██████████

Total CO2 Sold

██████████

Total CO Sold

██████████

Fee Regulation Natural Gas Data (if applicable)	Value
---	-------

Natural gas received directly from Interstate Pipelines

██████████

Natural gas production consumed onsite (not for electrical generation)

██████████

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:55

Fuel Delivery Data has yet to be reported for this table. Please report this data if applicable.



Supporting Documentation (Energy and Production)

No documents are associated with the current submission.

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Energy and Production submission.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:55



Unit Information

Generating Unit Name	Cogeneration Plant at Richmond Refinery
ARB ID	101384-001
Unit Type	Cogeneration Primary Sector - Topping Cycle
Description	2 Alstom Gas Turbines/Vogt HRSG's - 105.4 MW nameplate capacity (52.7 MW each) 1 Dresser Rand steam turbine - 27.18 MW nameplate capacity
Nameplate Capacity (MW)	132.58 MW
Unit Operating Status	Operating
Reporting Year	2009
Reporting Period	01/01/2009 - 12/31/2009

TOTAL EMISSIONS: Cogeneration Plant at Richmond Refinery

* All emission values are displayed in metric tons.

CO2 Biomass values not included in the CO2 Eq. sum.

Total Emissions Reporting Status: **Verified**

Summed Emissions Data	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	663,836	663,209.451	11.302	1.255	0.000	N/A	N/A
Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	N/A	N/A	0.000	N/A	N/A
TOTAL SUMMED EMISSIONS	663,836	663,209.451	11.302	1.255	0.000	0.000	0.000

Supplemental Emissions	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	663,209	663,209.451	0.000	0.000	0.000	N/A	N/A
Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	N/A	N/A	0.000	N/A	N/A

TOTAL EMITTING ACTIVITY FUEL USE: Cogeneration Plant at Richmond Refinery

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:55



Summed Fuel Use	
Fuel, Feedstock, Other Through Put Name	Quantity Sum
Stationary Combustion	
Associated Gas, Fuel	
LPG, Fuel	
Natural Gas (1000 to 1,025 Btu/Std cubic foot), Fuel	
Still Gas or Refinery Gas, Fuel	
Process	
-	-
Stationary Combustion and Process	
-	-
Supplemental Fuel Use	
Fuel, Feedstock, Other Through Put Name	Quantity Sum
Stationary Combustion	
-	-
Process	
-	-
Stationary Combustion and Process	
-	-

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:55



DETAILED EMISSION RECORDS

Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	GHG	Emissions (metric tons)	CO2 Eq. (metric tons)	Calculation Method	Fuel	Quantity	Carbon Content	HHV	EF	De minimis
COGEN HRSG DUCT BURNERS REFINERY FUEL GAS	Stationary Combustion	Duct Burners of Heat Recovery Steam Generators	Summed	CO2 (Carbon dioxide)	138,918.554	138,918.554	Measured Heat and Measured Carbon Content CO2 (95125(e)) - Operator Calculated	Still Gas or Refinery Gas					
COGEN HRSG DUCT BURNERS REFINERY FUEL GAS	Stationary Combustion	Duct Burners of Heat Recovery Steam Generators	Summed	CH4 (Methane)	2.365	49.671	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
COGEN HRSG DUCT BURNERS REFINERY FUEL GAS	Stationary Combustion	Duct Burners of Heat Recovery Steam Generators	Summed	N2O (Nitrous oxide)	0.263	81.471	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CO2 (Carbon dioxide)	183,314.347	183,314.347	Measured Carbon Content CO2 (95125(d)) - Operator Calculated	Associated Gas					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CH4 (Methane)	3.135	65.830	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Associated Gas					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	N2O (Nitrous oxide)	0.348	107.975	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Associated Gas					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CO2 (Carbon dioxide)	1,999.672	1,999.672	Measured Heat Content CO2 (95125(c)) - Operator Calculated	LPG					1
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CH4 (Methane)	0.032	0.667	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	LPG					1
COGEN TURBINES	Stationary Combustion	Turbines	Summed	N2O (Nitrous oxide)	0.003	0.984	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	LPG					1
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CO2 (Carbon dioxide)	338,976.878	338,976.878	Measured Heat Content CO2 (95125(c)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CH4 (Methane)	5.770	121.178	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	N2O (Nitrous oxide)	0.641	198.757	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Distributed Emissions to Electricity Generation	Stationary Combustion	Cogeneration to Electricity Generation	Supplemental	CO2 (Carbon dioxide)			Distributed Topping Cycle CO2 (95112(b)) - Operator Calculated						
Distributed Emissions to Thermal Energy Production	Stationary Combustion	Cogeneration to Thermal Energy Production	Supplemental	CO2 (Carbon dioxide)			Distributed Topping Cycle CO2 (95112(b)) - Operator Calculated						

* Several data columns are not displayed in this report. To view detailed reporting methods or custom factor values, please see the associated submissions detail page within the application.

DETAILED FUEL USE RECORDS

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:55



Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	Fuel	Fuel Type	Quantity	Units	Carbon Content	Units	HHV	Units	CO2 EF	Units	CH4 EF	Units	N2O EF	Units
COGEN HRSG DUCT BURNERS REFINERY FUEL GAS	Stationary Combustion	Duct Burners of Heat Recovery Steam Generators	Summed	Still Gas or Refinery Gas	Fuel			0.00		0.00		0.00		0.00		0.00	
COGEN TURBINES	Stationary Combustion	Turbines	Summed	Associated Gas	Fuel			0.00		0.00		0.00		0.00		0.00	
COGEN TURBINES	Stationary Combustion	Turbines	Summed	LPG	Fuel			0.00		0.00		0.00		0.00		0.00	
COGEN TURBINES	Stationary Combustion	Turbines	Summed	Natural Gas (1000 to 1,025 Btu/Std cubic foot)	Fuel			0.00		0.00		0.00		0.00		0.00	

* Several data columns are not displayed in this report. To view detailed custom factor values please see the associated submissions detail page within the application.

Supporting Documentation (Emissions and Fuels)

No documents are associated with the current submission.

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Emissions and Fuels submission.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:55



ENERGY AND PRODUCTION DATA: Cogeneration Plant at Richmond Refinery

Energy and Production Reporting Status: **Verified**

Electricity Production (if applicable)	Value
Net Power Generation	
(Cogeneration Only) Amount Consumed On-site	
(Cogeneration Only) Efficiency of Electricity Generation (if known)	

Thermal Energy Production (if applicable)	Value
Total Useful Thermal Output	
Amount Consumed On-site	
Efficiency of Thermal Energy Production (if known)	
Input Steam to Steam Turbine (if measured)	
Output of Heat Recovery Steam Generator (HRSG)	
Supplemental Fuel Fired in Duct Burner of HRSG	

Energy Sales (if applicable)					
Category	Energy Type	Quantity	Counterparty	Host/Customer or End-User NAICS	Region
Electricity Provided or Sold	Electricity			221 - Utilities	
Electricity Provided or Sold	Electricity			561210 - Facilities Support Services	
Electricity Provided or Sold	Electricity			486910 - Pipeline Transportation of Refined Petroleum Products	
Electricity Provided or Sold	Electricity			324191 - Petroleum Lubricating Oil and Grease Manufacturing	
Thermal Energy Provided or Sold	Thermal			561210 - Facilities Support Services	
Thermal Energy Provided or Sold	Thermal			324191 - Petroleum Lubricating Oil and Grease Manufacturing	
Thermal Energy Provided or Sold	Thermal			325188 - All Other Basic Inorganic Chemical Manufacturing	

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2009

(Private)

12/01/2010 11:48:55



Supporting Documentation (Energy and Production)

No documents are associated with the current submission.

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Energy and Production submission.

VERIFICATION INFORMATION: Chevron Products Company - Richmond Refinery, 94802

Verification Body Name	Ernst & Young
Verification Body Address	41 Rue Ybry 92576 Neuilly Sur Seine Cedex, 92576 France
Verification Finding	Positive
The submitted data report is reasonably assured of being free of material misstatements.	Yes
The submitted emissions data report is reasonably assured of being in conformance with the regulation.	Yes

From: Yang, Steven (SYBQ)

Sent: Thursday, December 05, 2013 12:30:02 PM (UTC-08:00) Pacific Time (US & Canada)

To: Hector Rojas

Cc: Hartwig, Jeff; 'ldias@up-partners.com'; Shari Libicki

Subject: Refinery Modernization Project - Transmittal #53C - 2010 AB32 GHG Data

Hector,

This Transmittal #53C provides the 2010 AB32 Greenhouse Gas (GHG) Report and 2010 GHG emissions data for natural gas combustion at the SRU.

The 2010 GHG emissions from natural gas combustion at the SRU are 31,236 metric tons CO₂e.

Please let me know if you have any questions.

Best Regards,

Steven Yang

Environmental Specialist

Chevron Richmond Refinery

Tech Center Rm. 333

Richmond, California

Phone: 510-242-6115

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:02:59



Facility Information: Chevron Products Company - Richmond Refinery, 94802

Facility Name	Chevron Products Company - Richmond Refinery, 94802
ARB ID	101384
Primary Sector	Petroleum Refinery
Secondary Sectors	Hydrogen Plant, Cogeneration Facility
NAICS Code	324110 - Petroleum Refineries
Facility Description	Petroleum Refinery
Address	841 Chevron Way Richmond, California 94802 United States
Geographic Location	37.93030, -122.38873
Air Basin	SAN FRANCISCO BAY AREA
District	BAY AREA AQMD
County	Contra Costa
Facility Contact	Troy Howell
Contact Email	TRMH@chevron.com
Contact Phone	(510) 242-2026
Reporting Year	2010
Reporting Period	01/01/2010 - 12/31/2010

Overall Mandatory Reporting Status

Verified

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:02:59



Annual Submission Summary

Mandatory Submissions

Submission ID	Name	Reporting Level	Submission Type	Reporting Year	Submission Status	Status Date
8112	Chevron Products Company - Richmond Refinery, 94802	Facility	Emissions and Fuels	2010	Verified	11/25/2011
8150	Chevron Products Company - Richmond Refinery, 94802	Facility	Energy and Production	2010	Verified	11/25/2011
8145	Cogeneration Plant at Richmond Refinery	Generating Unit	Emissions and Fuels	2010	Verified	11/25/2011
8151	Cogeneration Plant at Richmond Refinery	Generating Unit	Energy and Production	2010	Verified	11/25/2011

Supplemental Fee Regulation Submissions

Submission ID	Name	Reporting Level	Submission Type	Reporting Year	Submission Status	Status Date
8178	Chevron Products Company - Richmond Refinery, 94802	Facility	Supplemental Emissions (Fee Regulation Only)	2010	Certified - Unverified Data	05/26/2011

Note: Data shown here are subject to change. The data may not have not undergone independent third party verification or ARB staff review. Where errors are discovered mechanisms are available to allow revisions to the data. For this reason subsequent reports may show different emissions or other data than that provided here.

Fee Regulation data are displayed only for those reporters subject to additional reporting for the GHG fee regulation.

Third party verification is not required for supplemental Fee Regulation submission data.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:02:59



TOTAL EMISSIONS: Chevron Products Company - Richmond Refinery, 94802

* All emission values are displayed in metric tons.

CO2 Biomass values not included in the CO2 Eq. sum.

The summed and supplemental values tables include data reported for the facility and associated units. This applies to the emissions and fuels tables.

Total Emissions Reporting Status: **Verified**

Summed Emissions Data	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	2,845,552	2,843,006.749	45.890	5.100	0.000	N/A	N/A
Process	1,660,582	1,660,582.433	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	N/A	N/A	0.000	N/A	N/A
Flares and Destruction (Refinery)	3,845	3,839.866	0.221	0.000	0.000	N/A	N/A
Fugitive	1,904	0.000	62.197	0.515	0.000	0.000	0.018
TOTAL SUMMED EMISSIONS	4,511,882	4,507,429.048	108.308	5.615	0.000	0.000	0.018

Supplemental Emissions	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	648,461	648,461.000	0.000	0.000	0.000	N/A	N/A
Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	N/A	N/A	0.000	N/A	N/A
Flares and Destruction (Refinery)	0	0.000	0.000	0.000	0.000	N/A	N/A
Fugitive	0	0.000	0.000	0.000	0.000	0.000	0.000

Optional Emissions	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	0	0.000	0.000	0.000	0.000	N/A	N/A
Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Flares and Destruction (Refinery)	0	0.000	0.000	0.000	0.000	N/A	N/A
Fugitive	0	0.000	0.000	0.000	0.000	0.000	0.000
Optional (Mobile)	0	0.000	0.000	0.000	0.000	N/A	N/A
Portable Equipment	0	0.000	0.000	0.000	0.000	N/A	N/A
TOTAL OPTIONAL EMISSIONS	0	0.000	0.000	0.000	0.000	0.000	0.000

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:02:59



De minimis Emissions	Value (metric tons)
Total Summed CO2 Eq.(includes CO2 Biomass)	4,511,882
Total De minimis Emissions	19,956
Percent of Total	0.442%
3% Threshold	135,356
Value Threshold	20,000

TOTAL EMITTING ACTIVITY FUEL USE: Chevron Products Company - Richmond Refinery, 94802

Summed Fuel Use	
Fuel, Feedstock, Other Through Put Name	Quantity Sum
Stationary Combustion	
Associated Gas, Fuel	██████████
Diesel (Distillate Fuel Oil #1, 2, or 4), Fuel	██████████
LPG, Fuel	██████████
Natural Gas (1000 to 1,025 Btu/Std cubic foot), Fuel	██████████
Still Gas or Refinery Gas, Fuel	██████████
Process	
Acid Gas, Other	██████████
FCCU Coke, Feedstock	██████████
Natural Gas (1000 to 1,025 Btu/Std cubic foot), Feedstock	██████████
Reformer Catalyst Regeneration, Other	██████████
Stationary Combustion and Process	
-	-
Flares and Destruction (Refinery)	
Other Input, Other	██████████
Fugitive	
Wastewater Treated, Other	██████████

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:02:59

Supplemental Fuel Use

Fuel, Feedstock, Other Through Put Name	Quantity Sum
---	--------------

Stationary Combustion

-	-
---	---

Process

-	-
---	---

Stationary Combustion and Process

-	-
---	---

Flares and Destruction (Refinery)

-	-
---	---

Fugitive

-	-
---	---

Optional Fuel Use

Fuel, Feedstock, Other Through Put Name	Quantity Sum
---	--------------

Stationary Combustion

-	-
---	---

Process

-	-
---	---

Stationary Combustion and Process

-	-
---	---

Flares and Destruction (Refinery)

-	-
---	---

Fugitive

-	-
---	---

Optional (Mobile)

-	-
---	---

Portable Equipment

-	-
---	---

Device Level Fuel Use

Facility Emissions Detailed Report: 2010

12/06/2011 21:02:59

[illegible]

Facility Emissions Detailed Report: 2010

12/06/2011 21:02:59



AIR RESOURCES BOARD

A large, stylized black letter 'H' composed of horizontal bars, set against a white background. The letter is formed by four vertical columns of bars. The first and third columns are single bars. The second and fourth columns are double bars. The top and bottom of the letter are formed by single bars. The middle of the letter is formed by double bars. The letter is centered on the page.

Facility Emissions Detailed Report: 2010

12/06/2011 21:02:59



The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:02:59



DETAILED EMISSION RECORDS

Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	GHG	Emissions (metric tons)	CO2 Eq. (metric tons)	Calculation Method	Fuel	Quantity	Carbon Content	HHV	EF	De minimis
Hydrogen Plant Stationary Combustion	Stationary Combustion	Heaters	Summed	CO2 (Carbon dioxide)	607,735.916	607,735.916	Measured Carbon Content CO2 (95125(d)) - Operator Calculated	Still Gas or Refinery Gas					
Hydrogen Plant Stationary Combustion	Stationary Combustion	Heaters	Summed	CH4 (Methane)	9.532	200.172	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
Hydrogen Plant Stationary Combustion	Stationary Combustion	Heaters	Summed	N2O (Nitrous oxide)	1.059	328.324	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
Refinery Fuel Gas Less Hydrogen Plant & Cogen Fuel Gas	Stationary Combustion	Multiple Sources	Summed	CH4 (Methane)	23.253	488.315	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
Refinery Fuel Gas Less Hydrogen Plant & Cogen Fuel Gas	Stationary Combustion	Multiple Sources	Summed	N2O (Nitrous oxide)	2.584	800.939	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
Refinery Fuel Gas Less Hydrogen Plant & Cogen Fuel Gas	Stationary Combustion	Multiple Sources	Summed	CO2 (Carbon dioxide)	1,462,310.617	1,462,310.617	Measured Carbon Content CO2 (95125(d)) - Operator Calculated	Still Gas or Refinery Gas					
Refinery Natural Gas Less Cogen Natural Gas	Stationary Combustion	Multiple Sources	Summed	CO2 (Carbon dioxide)	124,121.138	124,121.138	Measured Heat Content CO2 (95125(c)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Refinery Natural Gas Less Cogen Natural Gas	Stationary Combustion	Multiple Sources	Summed	CH4 (Methane)	2.113	44.371	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Refinery Natural Gas Less Cogen Natural Gas	Stationary Combustion	Multiple Sources	Summed	N2O (Nitrous oxide)	0.235	72.778	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Stationary Diesel Engines	Stationary Combustion	IC Engines	Summed	CO2 (Carbon dioxide)	377.651	377.651	Default Emission Factor and Default Heat Content CO2 (95125(a)) - Operator Calculated	Diesel (Distillate Fuel Oil #1, 2, or 4)					Yes
Stationary Diesel Engines	Stationary Combustion	IC Engines	Summed	CH4 (Methane)	0.015	0.325	Default Emission Factor & Default Heat Content CH4 (95125(b)(3)) - Operator Calculated	Diesel (Distillate Fuel Oil #1, 2, or 4)					Yes
Stationary Diesel Engines	Stationary Combustion	IC Engines	Summed	N2O (Nitrous oxide)	0.003	0.961	Default Emission Factor & Default Heat Content N2O (95125(b)(3)) - Operator Calculated	Diesel (Distillate Fuel Oil #1, 2, or 4)					Yes
FCC Coke Burn	Process	Catalytic Cracking (FCCU)	Summed	CO2 (Carbon dioxide)	779,938.649	779,938.649	FCCU/Fluid Cokers CO2 (95113(b)(1)) - Operator Calculated	FCCU Coke					
Hydrogen Plant Process Emissions	Process	Hydrogen Plant (s)	Summed	CO2 (Carbon dioxide)	866,814.773	866,814.773	Hydrogen Plants CO2 (95114(b)(3)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Rheniformers Catalyst Regeneration	Process	Periodic Catalyst Regeneration	Summed	CO2 (Carbon dioxide)	99.632	99.632	Other Catalyst Regeneration CO2 (95113(b)(2)) - Operator Calculated	Reformer Catalyst Regeneration					Yes

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:03:00



Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	GHG	Emissions (metric tons)	CO2 Eq. (metric tons)	Calculation Method	Fuel	Quantity	Carbon Content	HHV	EF	De minimis
SRU Process Emissions	Process	Sulfur Recovery Units	Summed	CO2 (Carbon dioxide)	13,729.378	13,729.378	Alternative Method - De Minimis - Operator Calculated	Acid Gas					Yes
Emission Control Devices	Flares and Destruction (Refinery)	Other Control Devices	Summed	CO2 (Carbon dioxide)	3,643.950	3,643.950	Alternative Method - De Minimis - Operator Calculated	Other Input					Yes
Total Refinery Flare Releases	Flares and Destruction (Refinery)	Flares	Summed	CO2 (Carbon dioxide)	195.917	195.917	Alternative Method - De Minimis - Operator Calculated	Other Input					Yes
Total Refinery Flare Releases	Flares and Destruction (Refinery)	Flares	Summed	CH4 (Methane)	0.221	4.646	Alternative Method - De Minimis - Operator Calculated	Other Input					Yes
Aerobic Wastewater Treatment	Fugitive	Wastewater Treatment Facilities (Aerobic treatment plant: Maintained)	Summed	CH4 (Methane)	0.000	0.000	Fugitive Waste Water CH4 (95113 (c)) - Operator Calculated	Wastewater Treated					Yes
Aerobic Wastewater Treatment	Fugitive	Wastewater Treatment Facilities (Aerobic treatment plant: Maintained)	Summed	N2O (Nitrous oxide)	0.515	159.651	Fugitive Waste Water N2O (95113 (c)) - Operator Calculated	Wastewater Treated					Yes
Equipment Fugitives	Fugitive	Equipment Fugitive Emissions (use for SF6)	Summed	CH4 (Methane)	31.000	651.000	Alternative Method - De Minimis - Operator Calculated						Yes
Oil/Water Separators	Fugitive	Oil/Water Separators (Gravity type - covered)	Summed	CH4 (Methane)	21.433	450.087	Fugitive Oil-Water Separator CH4 (95113(c)) - Operator Calculated	Wastewater Treated					Yes
Storage Tanks	Fugitive	Storage Tanks	Summed	CH4 (Methane)	9.764	205.050	Alternative Method - De Minimis - Operator Calculated						Yes
Sulfur Hexafluoride	Fugitive	Transmission/Distribution/Substation (use for SF6)	Summed	SF6 (Sulfur hexafluoride)	0.018	437.968	Alternative Method - De Minimis - Operator Calculated						Yes

* Several data columns are not displayed in this report. To view detailed reporting methods or custom factor values, please see the associated submissions detail page within the application.

DETAILED FUEL USE RECORDS

Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	Fuel	Fuel Type	Quantity	Units	Carbon Content	Units	HHV	Units	CO2 EF	Units	CH4 EF	Units	N2O EF	Units
Hydrogen Plant Stationary Combustion	Stationary Combustion	Heaters	Summed	Still Gas or Refinery Gas	Fuel			0.00		0.00		0.00		0.00		0.00	
Refinery Fuel Gas Less Hydrogen Plant & Cogen Fuel Gas	Stationary Combustion	Multiple Sources	Summed	Still Gas or Refinery Gas	Fuel			0.00		0.00		0.00		0.00		0.00	
Refinery Natural Gas Less Cogen Natural Gas	Stationary Combustion	Multiple Sources	Summed	Natural Gas (1000 to 1,025 Btu/Std cubic foot)	Fuel			0.00		0.00		0.00		0.00		0.00	

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:03:00



Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	Fuel	Fuel Type	Quantity	Units	Carbon Content	Units	HHV	Units	CO2 EF	Units	CH4 EF	Units	N2O EF	Units
Stationary Diesel Engines	Stationary Combustion	IC Engines	Summed	Diesel (Distillate Fuel Oil #1, 2, or 4)	Fuel			0.00		0.00		0.00		0.00		0.00	
FCC Coke Burn	Process	Catalytic Cracking (FCCU)	Summed	FCCU Coke	Feedstock			0.00		0.00		0.00		0.00		0.00	
Hydrogen Plant Process Emissions	Process	Hydrogen Plant (s)	Summed	Natural Gas (1000 to 1,025 Btu/Std cubic foot)	Feedstock			0.00		0.00		0.00		0.00		0.00	
Rheniformers Catalyst Regeneration	Process	Periodic Catalyst Regeneration	Summed	Reformer Catalyst Regeneration	Other			0.00		0.00		0.00		0.00		0.00	
SRU Process Emissions	Process	Sulfur Recovery Units	Summed	Acid Gas	Other			0.00		0.00		0.00		0.00		0.00	
Emission Control Devices	Flares and Destruction (Refinery)	Other Control Devices	Summed	Other Input	Other			0.00		0.00		0.00		0.00		0.00	
Total Refinery Flare Releases	Flares and Destruction (Refinery)	Flares	Summed	Other Input	Other			0.00		0.00		0.00		0.00		0.00	
Aerobic Wastewater Treatment	Fugitive	Wastewater Treatment Facilities (Aerobic treatment plant: Maintained)	Summed	Wastewater Treated	Other			0.00		0.00		0.00		0.00		0.00	
Oil/Water Separators	Fugitive	Oil/Water Separators (Gravity type - covered)	Summed	Wastewater Treated	Other			0.00		0.00		0.00		0.00		0.00	

* Several data columns are not displayed in this report. To view detailed custom factor values please see the associated submissions detail page within the application.

Supporting Documentation (Emissions and Fuels)

No documents are associated with the current submission.

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Emissions and Fuels submission.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:03:00



ENERGY AND PRODUCTION DATA: Chevron Products Company - Richmond Refinery, 94802

Energy and Production Reporting Status: **Verified**

Indirect Energy Use (if applicable)						
Category	Energy Type	Quantity	Provider	Provider ARB ID	Common Name	EIA ID
Indirect	Electricity		Pacific Gas and Electric Company (PG&E)	3002		

Electricity Production (if applicable) Value

Net Power Generation

(Cogeneration Only) Amount Consumed On-site

(Cogeneration Only) Efficiency of Electricity Generation (if known)

Thermal Energy Production (if applicable) Value

Total Useful Thermal Output

Amount Consumed On-site

Efficiency of Thermal Energy Production (if known)

Input Steam to Steam Turbine (if measured)

Output of Heat Recovery Steam Generator (HRSG)

Supplemental Fuel Fired in Duct Burner of HRSG

Energy Sales Data has yet to be reported for this table. Please report this data if applicable.

Steam Production (if applicable) Value

Quantity Generated

Boiler Efficiency (if known)

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:03:00



Cement Efficiency Metrics Data (if applicable)	Value
--	-------

Operator Calculated: CO2 Emissions per metric ton of Cementitious Product

Operator Calculated: CO2 Emissions per metric ton of Clinker

Operator Entered: Direct CO2 Emissions from cement manufacturing

Amount Clinker

Amount Sold Directly

Amount Own Consumed

Amount Added to Stock

Type Clinker Substitute Consumed

Amount Clinker Substitute Consumed

Type Cement Substitute Consumed

Amount Cement Substitute Consumed

Lime (CaO) content of clinker

Magnesium Oxide (MgO) content of clinker

Non-carbonate CaO content of clinker

Non-carbonate MgO content of clinker

Plant Specific CKD calcination rate

Amount CKD discarded

Hydrogen Data (if applicable)	Value
-------------------------------	-------

Total Hydrogen Produced	
-------------------------	--

Total Hydrogen Sold for Use as Transportation Fuel	
--	--

Total CO2 Sold	
----------------	--

Total CO Sold	
---------------	--

Supporting Documentation (Energy and Production)

No documents are associated with the current submission.

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Energy and Production submission.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:03:00



Unit Information

Generating Unit Name	Cogeneration Plant at Richmond Refinery
ARB ID	101384-001
Unit Type	Cogeneration Primary Sector - Topping Cycle
Description	2 Alstom Gas Turbines/Vogt HRSG's - 104 MW nameplate capacity (52 MW each) 1 Dresser Rand steam turbine - 30.40 MW nameplate capacity
Nameplate Capacity (MW)	134.40 MW
Unit Operating Status	Operating
Reporting Year	2010
Reporting Period	01/01/2010 - 12/31/2010

TOTAL EMISSIONS: Cogeneration Plant at Richmond Refinery

* All emission values are displayed in metric tons.

CO2 Biomass values not included in the CO2 Eq. sum.

Total Emissions Reporting Status: **Verified**

Summed Emissions Data	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	649,070	648,461.428	10.977	1.220	0.000	N/A	N/A
Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	N/A	N/A	0.000	N/A	N/A
TOTAL SUMMED EMISSIONS	649,070	648,461.428	10.977	1.220	0.000	0.000	0.000

Supplemental Emissions	CO2 Eq.	CO2	CH4	N2O	CO2 Biomass	HFCs	SF6
Stationary Combustion	648,461	648,461.000	0.000	0.000	0.000	N/A	N/A
Process	0	0.000	0.000	0.000	0.000	N/A	N/A
Stationary Combustion and Process	0	0.000	N/A	N/A	0.000	N/A	N/A

TOTAL EMITTING ACTIVITY FUEL USE: Cogeneration Plant at Richmond Refinery

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:03:00



Summed Fuel Use

Fuel, Feedstock, Other Through Put Name	Quantity Sum
---	--------------

Stationary Combustion

Associated Gas, Fuel	
----------------------	--

LPG, Fuel	
-----------	--

Natural Gas (1000 to 1,025 Btu/Std cubic foot), Fuel	
--	--

Still Gas or Refinery Gas, Fuel	
---------------------------------	--

Process

-	-
---	---

Stationary Combustion and Process

-	-
---	---

Supplemental Fuel Use

Fuel, Feedstock, Other Through Put Name	Quantity Sum
---	--------------

Stationary Combustion

-	-
---	---

Process

-	-
---	---

Stationary Combustion and Process

-	-
---	---

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:03:00



DETAILED EMISSION RECORDS

Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	GHG	Emissions (metric tons)	CO2 Eq. (metric tons)	Calculation Method	Fuel	Quantity	Carbon Content	HHV	EF	De minimis
COGEN HRSG DUCT BURNERS REFINERY FUEL GAS	Stationary Combustion	Duct Burners of Heat Recovery Steam Generators	Summed	CO2 (Carbon dioxide)	137,179.565	137,179.565	Measured Carbon Content CO2 (95125(d)) - Operator Calculated	Still Gas or Refinery Gas					
COGEN HRSG DUCT BURNERS REFINERY FUEL GAS	Stationary Combustion	Duct Burners of Heat Recovery Steam Generators	Summed	CH4 (Methane)	2.245	47.150	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
COGEN HRSG DUCT BURNERS REFINERY FUEL GAS	Stationary Combustion	Duct Burners of Heat Recovery Steam Generators	Summed	N2O (Nitrous oxide)	0.249	77.336	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Still Gas or Refinery Gas					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CH4 (Methane)	2.611	54.836	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Associated Gas					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	N2O (Nitrous oxide)	0.290	89.943	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Associated Gas					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CO2 (Carbon dioxide)	151,761.465	151,761.465	Measured Carbon Content CO2 (95125(d)) - Operator Calculated	Associated Gas					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CO2 (Carbon dioxide)	0.000	0.000	Alternative Method - De Minimis - Operator Calculated	LPG					Yes
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CH4 (Methane)	0.000	0.000	Alternative Method - De Minimis - Operator Calculated	LPG					Yes
COGEN TURBINES	Stationary Combustion	Turbines	Summed	N2O (Nitrous oxide)	0.000	0.000	Alternative Method - De Minimis - Operator Calculated	LPG					Yes
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CO2 (Carbon dioxide)	359,520.398	359,520.398	Measured Carbon Content CO2 (95125(d)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	CH4 (Methane)	6.120	128.522	Default Emission Factor CH4 (95125(b)(2)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
COGEN TURBINES	Stationary Combustion	Turbines	Summed	N2O (Nitrous oxide)	0.680	210.802	Default Emission Factor N2O (95125(b)(2)) - Operator Calculated	Natural Gas (1000 to 1,025 Btu/Std cubic foot)					
Distributed Emissions to Electricity Generation	Stationary Combustion	Cogeneration to Electricity Generation	Supplemental	CO2 (Carbon dioxide)			Distributed Topping Cycle CO2 (95112(b)) - Operator Calculated						
Distributed Emissions to Thermal Energy Production	Stationary Combustion	Cogeneration to Thermal Energy Production	Supplemental	CO2 (Carbon dioxide)			Distributed Topping Cycle CO2 (95112(b)) - Operator Calculated						

* Several data columns are not displayed in this report. To view detailed reporting methods or custom factor values, please see the associated submissions detail page within the application.

DETAILED FUEL USE RECORDS

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:03:00



Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	Fuel	Fuel Type	Quantity	Units	Carbon Content	Units	HHV	Units	CO2 EF	Units	CH4 EF	Units	N2O EF	Units
COGEN HRSG DUCT BURNERS REFINERY FUEL GAS	Stationary Combustion	Duct Burners of Heat Recovery Steam Generators	Summed	Still Gas or Refinery Gas	Fuel			0.00		0.00		0.00		0.00		0.00	
COGEN TURBINES	Stationary Combustion	Turbines	Summed	Associated Gas	Fuel			0.00		0.00		0.00		0.00		0.00	
COGEN TURBINES	Stationary Combustion	Turbines	Summed	LPG	Fuel			0.00		0.00		0.00		0.00		0.00	
COGEN TURBINES	Stationary Combustion	Turbines	Summed	Natural Gas (1000 to 1,025 Btu/Std cubic foot)	Fuel			0.00		0.00		0.00		0.00		0.00	

* Several data columns are not displayed in this report. To view detailed custom factor values please see the associated submissions detail page within the application.

Supporting Documentation (Emissions and Fuels)

No documents are associated with the current submission.

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Emissions and Fuels submission.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:03:00



ENERGY AND PRODUCTION DATA: Cogeneration Plant at Richmond Refinery

Energy and Production Reporting Status: **Verified**

Electricity Production (if applicable)	Value
Net Power Generation	
(Cogeneration Only) Amount Consumed On-site	
(Cogeneration Only) Efficiency of Electricity Generation (if known)	

Thermal Energy Production (if applicable)	Value
Total Useful Thermal Output	
Amount Consumed On-site	
Efficiency of Thermal Energy Production (if known)	
Input Steam to Steam Turbine (if measured)	
Output of Heat Recovery Steam Generator (HRSG)	
Supplemental Fuel Fired in Duct Burner of HRSG	

Energy Sales (if applicable)					
Category	Energy Type	Quantity	Counterparty	Host/Customer or End-User NAICS	Region
Electricity Provided or Sold	Electricity			221 - Utilities	
Electricity Provided or Sold	Electricity			561210 - Facilities Support Services	
Electricity Provided or Sold	Electricity			486910 - Pipeline Transportation of Refined Petroleum Products	
Electricity Provided or Sold	Electricity			324191 - Petroleum Lubricating Oil and Grease Manufacturing	
Thermal Energy Provided or Sold	Thermal			561210 - Facilities Support Services	
Thermal Energy Provided or Sold	Thermal			324191 - Petroleum Lubricating Oil and Grease Manufacturing	
Thermal Energy Provided or Sold	Thermal			325188 - All Other Basic Inorganic Chemical Manufacturing	

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:03:00

Supporting Documentation (Energy and Production)

No documents are associated with the current submission.

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Energy and Production submission.



The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:03:00



TOTAL SUPPLEMENTAL EMISSIONS (FEE REGULATION ONLY): Chevron Products Company - Richmond Refinery, 94802

Data are displayed only for those reporters subject to additional reporting for the GHG fee regulation.
Third party verification is not required for Fee Regulation submission data.

Supplemental Emissions (Fee Regulation Only) Reporting Status:

Certified - Unverified Data

DETAILED EMISSION RECORDS

Emitting Activity Name	Emitting Activity Category	Activity Type	Aggregation Level	GHG	Emissions (metric tons)	CO2 Eq. (metric tons)	Calculation Method	De minimis
Catalyst Coke Combustion for Fee Reporting	Process	Catalyst Coke Combustion (Fee Regulation Only)	Supplemental	CO2 (Carbon dioxide)	780,038.000	780,038.000	Operator Calculated per Fee Regulation - Operator Calculated	
Refinery Fuel Gas Less Natural Gas for Fee Reporting	Stationary Combustion and Process	Refinery Gas Consumption (Fee Regulation Only)	Supplemental	CO2 (Carbon dioxide)	1,749,337.000	1,749,337.000	Operator Calculated per Fee Regulation - Operator Calculated	

* Fee Regulation Supplemental Emissions data are not combined with mandatory data supplemental submissions sums.

Supporting Documentation (Supplemental Emissions (Fee Regulation Only))

No documents are associated with the current submission.

* Documents listed above can be viewed and downloaded from the supporting documentation tab for the referenced Supplemental Emissions (Fee Regulation Only) submission.

TOTAL FACILITY FUEL DELIVERY (FEE REGULATION ONLY): Chevron Products Company - Richmond Refinery, 94802

Data are displayed only for those reporters subject to additional reporting for the GHG fee regulation.
Third party verification is not required for Fee Regulation submission data.

Facility Fuel Delivery (Fee Regulation Only) Reporting Status:

Submission not found.

The California GHG Emissions Reporting Tool

Facility Emissions Detailed Report: 2010

(Private)

12/06/2011 21:03:00



MANDATORY VERIFICATION INFORMATION: Chevron Products Company - Richmond Refinery, 94802

Verification Body Name	Ernst & Young
Verification Body Address	700 West Georgia Street. P.O. Box 10101 Vancouver, British Columbia V7Y1C7 Canada
Mandatory Verification Finding	Positive
Is the submitted report reasonably assured of being free of material misstatements?	Yes
Is the submitted emissions data report reasonably assured of being in conformance with the regulation?	Yes

APPENDIX 4.8 - CGRP

Greenhouse Gas Mitigation Programs Emission
Reduction Calculations

APPENDIX 4.8-CGRP

GREENHOUSE GAS MITIGATION PROGRAMS EMISSION REDUCTION CALCULATIONS

This appendix presents greenhouse gas emissions reduction and cost effectiveness calculations for the following Community Greenhouse Gas Reduction Program (CGRP) measures considered in the Chevron Refinery Modernization Project EIR:

- 1.1 Urban Forestry
- 1.2 Zero Waste Programs
- 1.3 Residential Energy Efficiency Rebate
- 1.4 Commercial Energy Efficiency Rebate
- 1.5 Residential Solar Rebate (Single-Family and Multi-Family)
- 1.6 Commercial Solar Rebate
- 1.7 Pedestrian and Bicycle Master Plans Implementation
- 1.8 Electric Vehicles
- 1.9 Ride Share/Green Transportation
- 1.10 Bicycle Program
- 1.11 Transit Access
- 1.12 Wetlands Creation
- 1.13 2-Mw Solar Project

This appendix also includes a discussion of the maximum potential greenhouse gas reductions, a hypothetical case for budget spread, and co-benefits of CGRP measures, as well as synergies with other greenhouse gas reduction policies adopted by the City of Richmond.

1.1 URBAN FORESTRY

Planting individual trees in city parks, in city rights-of-way, on residential property, and on commercial property would sequester carbon dioxide (CO₂). In addition, if trees provide shade to buildings, there can be additional energy savings from reduced air conditioning energy use. However, based on the low number of “cooling degree days”¹ in Richmond, it is unlikely that shading from trees would provide additional energy savings.

¹ A “cooling degree day” relates the average day’s temperature to the energy

1.1.1 Co-Benefits

Co-benefits of this measure include:

- Improved air quality²
- Stormwater runoff mitigation
- Reduced crime
- Improved aesthetics
- increased property values
- local job creation from required maintenance and planting activities

1.1.2 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-1 presents annual greenhouse gas savings from the Urban Forestry Program and associated costs. An average annual CO₂ reduction of 0.082 metric tonnes (MT) per tree was assumed based on data provided by the United States Department of Agriculture (USDA) Forest Service.³

Table A4.8-CGRP-18 presents a hypothetical case for a budget spread for all greenhouse gas reduction measures discussed in this appendix. It is discussed in more detail in *Section 1.15, Hypothetical Case for Budget Spread*. Table A4.8-CGRP-18 also includes an estimate of the maximum possible greenhouse gas reductions from each measure as well as year-by-year emission reductions from each measure.

Table A4.8-CGRP-18 presents year-by-year emission reductions from the Urban Forestry Program for up to 10 years. As additional trees are planted each year, the annual emissions reductions reflect trees planted in the current year as well as in all previous years.

Assuming a project lifetime of 25 years,⁴ the greenhouse gas cost effectiveness of the Urban Forestry measure would be \$58 per MT.

demands of air conditioning. The monthly total cooling degree day for Richmond obtained from the Western Regional Climate Center (WRCC), <http://www.wrcc.dri.edu/cgi-bin/cliMONTcdd.pl?ca7414>, accessed December 11, 2013.

² Trees such as redwood, deodar cedar, live oak, and oleander have been shown to reduce airborne concentrations of particulate matter and toxic air contaminants (BAAQMD, 2012).

³ Annual CO₂ reduction of 0.082 MT per tree based on the estimated reduction of 4.5 million short tons from CO₂ sequestration for 50 million trees planted (McPherson, 2008).

⁴ The California Air Resources Board (CARB) uses a 25-year crediting period for urban forest offset projects (CARB, 2011).

1.1.3 Monitoring

The City of Richmond would monitor and verify the program by performing periodic tree surveys. For each tree planted, the annual greenhouse gas emission reductions would be calculated as the number trees planted, multiplied by an annual greenhouse gas emission reduction factor, such as the factor presented above of 0.082 MT per tree.

1.1.4 Leveraging

There is no leveraging of costs for the Urban Forestry Program, although some of the costs may be offset by State funding. There may be potential funding opportunities through the State of California Department of Forestry and Fire Protection (CAL FIRE) Urban Forestry and Urban Greening Grant Programs.⁵

1.1.5 Economic Benefit

In addition to energy savings, the Urban Forestry Program would represent an economic benefit to the community. The Urban Forestry Program would create local jobs from required planting and maintenance activities. In addition, property values could potentially increase due to improved aesthetics.

1.1.6 Prioritization

Based on the above, this measure received the following ratings when evaluated against the prioritization criteria described in Section 1.14:

- **High** – Enhance Other Environmental Sustainability
- **Medium** – Create Local Jobs, Reduce Local Greenhouse Gas Emissions, Improve Community Health, Create Community Wealth & Resilience, Accurate Metric/Verifiable, Magnitude of Greenhouse Gas Reduction Available, Leveraging

1.1.7 Additional Note

There is literature that suggests that the afforestation projects in temperate climates may lead to localized warming that counteracts the carbon sequestration of planting trees. For example, the results of one study show that an afforestation project in temperate regions produces regional warming due to decreased albedo (i.e., reflectivity) while contributing to cooling the rest of the planet due to carbon sequestration, suggesting that afforestation may offer little

⁵ CAL FIRE Grant information for urban forests can be found here: http://www.fire.ca.gov/resource_mgt/resource_mgt_urbanforestry.php, accessed October 31, 2013.

to no benefit to climate change (Bala, 2007). Other studies have shown that afforestation in temperate climates merely reduces, but does not cancel out, the carbon storage benefit (Betts, 2000; Kirschbaum, 2011). However, an important caveat is that these studies on afforestation in temperate climates are focused on conventional forests, which are on a much larger scale of trees compared to the quantity that would be used in an urban forest project. Thus, any local warming effects from urban forestry projects can be assumed to be negligible. This is especially true in urban environments that the albedo is variable and generally defined by the materials that comprise the city (e.g., concrete, asphalt, and bricks) which already decrease the reflective ability. Snow cover also significantly impacts albedo. Areas that are not generally impacted by snow fall are less affected by the potential warming due to afforestation and are able to benefit more from urban trees (Kirschbaum, 2011).

1.2 ZERO WASTE PROGRAMS

Zero waste programs reduce the amount of greenhouse gas emissions generated at local landfills by encouraging Richmond businesses and residents to increase diversion of waste to recycling and compost. The programs under this measure would provide free indoor recycling bins and compost bins, outreach materials, cart stickers, technical assistance and multi-lingual trainings.

1.2.1 Co-Benefits

Co-benefits of this measure include:

- Improved green business practices.
- Encouraging Richmond residents to develop a zero-waste lifestyle.
- Local job creation from staff time required to process the additional recycling and compost loads.

1.2.2 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-2 presents an estimate of waste generated in Richmond on an annual basis. This estimate was based on the 10-year average of waste disposed within the jurisdiction of the West Contra Costa Integrated Waste Management Authority (WCCIMA) between 2000 and 2009 (199,799 tons) (CalRecycle, 2014).⁶ Based on the population of Richmond in comparison with the total population serviced by WCCIMA, it was assumed that 50% of the total waste disposed originated in Richmond. The current WCCIMA waste diversion rate of 52% was

⁶ WCCIMA's jurisdiction includes the Cities of El Cerrito, Hercules, Pinole, Richmond, and San Pablo; and Contra Costa County.

used to convert the amount of waste disposed to the amount of waste generated.⁷

Table A4.8-CGRP-3 presents greenhouse gas emission reductions when the diversion rate for waste generated in Richmond is increased from 52% to 74%. Emission reductions were calculated following the methodology in the California Emissions Estimator Model (CalEEMod) User's Guide.⁸ The amount of each degradable waste type disposed in Richmond was estimated based on the total waste disposal rate and waste composition information for California waste streams (CIWMB, 2009).⁹ The amount of methane and CO₂ generated from each waste type was calculated based on the fraction of degradable organic carbon (DOC, the degradable anaerobic carbon fraction (DANF) , and the assumption that half of the anaerobic carbon is methane (CH₄) and the other half is CO₂ (IPCC, 2006; CARB, 2010).^{10,11} The amount of methane and CO₂ emitted was calculated by assuming 75% of the landfill gas emitted is collected by a landfill gas collection system, 98% of the landfill gas collected is destroyed, and 10% of the methane generated is oxidized to CO₂ as it rises through the landfill.¹² The total estimated reduction in greenhouse gas emissions from the diversion rate increase is 21,838 metric tonnes of carbon dioxide equivalents (MT CO₂e) per year.

Table A4.8-CGRP-18 presents year-by-year emissions reductions from zero waste programs. As the diversion rate is increased each year, the annual emissions reductions also increase.

⁷ The current diversion rate is provided by City of Richmond.

⁸ CalEEMod is a land use emissions estimation model that calculates emissions associated with energy, water, transportation, and waste for land use projects and is widely used by California air districts for California Environmental Quality Act (CEQA) projects. The waste emissions module calculates the greenhouse gas emissions associated with the decomposition of waste into methane and the generation of carbon dioxide from combustion of methane. This methodology is similar to that used by the Intergovernmental Panel on Climate Change (IPCC) in its 2006 Guideline for National Greenhouse Gas Inventories.

CalEEMod and calculation methodology is available online at:
<http://www.caleemod.com> (accessed October 9, 2013).

California waste composition information obtained from the California Integrated Waste Management Board (CIWMB).

¹⁰ DOC data obtained from Intergovernmental Panel on Climate Change (IPCC) Guidelines.

¹¹ DANF data is based on California Air Resources Board (CARB) Local Government Operations Protocol, V1.1.

¹² Landfill gas collection, destruction, and oxidation efficiencies are based on CalEEMod default values.

The estimated cost to run zero waste programs is \$200,000 per year, or \$2,000,000 over 10 years. Annual project costs can be broken down to the following:

Component	Cost (\$)
Free indoor recycling containers for businesses	\$50,000
Free recycling containers for residents	\$25,000
Posters and cart stickers for businesses and residents	\$50,000
Mailers to businesses and residents	\$25,000
Technical Assistance Consulting	\$50,000
Total	\$200,000

Notes: Costs provided by City of Richmond.

Many cities stipulate a cost limit target in their service contracts to reach their diversion goals. For example, the City of San Francisco has a goal of \$30 per ton of additional waste diverted. Given the City of Richmond's most recent figure of waste disposal (110,000 tons for 2012 corresponding to a 52% diversion rate) and its diversion goal of 74%, the quantity of additional diverted waste would be roughly 50,000 tons. At a cost limit target of \$30 per ton, this would represent a \$1,500,000 cost limit. This is comparable to the proposed \$2,000,000 to be spent on the City of Richmond program.

Assuming a project lifetime of 25 years, the carbon reduction effectiveness of the zero waste programs measure would be \$4 per ton.

1.2.3 Monitoring

The City of Richmond would monitor and verify the program by tracking total disposal rates and diversion rates. The annual greenhouse gas emission reductions would be calculated using methane and CO₂ generation rates for the different degradable waste types diverted, using the method described above.

1.2.4 Leveraging

There is no leveraging of costs for the zero waste program.

1.2.5 Economic Benefit

In addition to energy savings, the zero waste program would represent an economic benefit to the community. The zero waste program would create local

jobs from the staff time required to process the additional recycling and compost loads.

1.2.6 Prioritization

Based on the above, this measure received the following ratings when evaluated against the prioritization criteria described in Section 1.13:

- **High** – None
- **Medium** – Create Local Jobs, Reduce Local Greenhouse Gas Emissions, Enhance Other Environmental Sustainability, Accurate Metric/Verifiable, Magnitude of Greenhouse Gas Reduction Available, Leveraging
- **Not applicable** – Improve Community Health, Create Community Wealth & Resilience

1.3 RESIDENTIAL ENERGY EFFICIENCY REBATE

The residential energy efficiency rebate program reduces energy consumption in Richmond by providing home performance energy efficiency rebates to residents who employ Richmond contractors or RichmondBUILD graduates to perform retrofit work. Energy efficiency projects include installation of new windows and frames, insulation, weather-stripping, plugging gaskets, and programmable thermostats.

1.3.1 Co-Benefits

Co-benefits of this measure include:

- Local job creation
- Improved indoor air quality
- Improved comfort and durability of homes
- Fewer natural resources used to produce energy at power plants
- Reduced energy costs for residents
- Additional money spent in the community

1.3.2 Electricity Emission Factors

There are two major electricity providers serving the City of Richmond: Marin Clean Energy (MCE) and Pacific Gas & Electric (PG&E). PG&E is the only natural gas provider to the City. The greenhouse gas electricity emission factor used in this study represents the average of the PG&E and MCE greenhouse gas emission factors, weighted to reflect the percentage of customers in Richmond served by either utility. The PG&E electricity emission is calculated using the California

Public Utilities Commission (CPUC) Greenhouse Gas Calculator, which factors in projected GHG reductions under the Global Warming Solutions Act of 2006 ("AB32"). MCE provides low carbon intensity electricity under its Light Green program with an emission factor of 0.389 pounds carbon dioxide equivalents (CO₂e) per kilowatt-hour (kWh) in their reports to the California Climate Action Registry (CCAR) (CCAR, 2013). A greenhouse gas electricity emission factor for PG&E was calculated based on (1) 2016 CO₂ emission factor provided by PG&E in its April 2013 report "Greenhouse Gas Emission Factors: Guidance for PG&E Customers;" and (2) CH₄ and nitrous oxide (N₂O) emission factors taken from the CARB Local Government Operations Protocol (LGOP) (PG&E, 2013a; CARB, 2010). Global warming potentials (GWPs) for CH₄ and N₂O were taken from the U.S. Environmental Protection Agency (EPA) Mandatory Greenhouse Gas Reporting Rule (MRR) (EPA, 2012). The CH₄ and N₂O emission factors were multiplied by their respective GWPs to obtain CO₂e emission factors, then added to the PG&E CO₂ emission factor to obtain a PG&E greenhouse gas emission factor of 0.374 pounds CO₂e/kWh. In the City of Richmond, 84% of end users receive their electricity from MCE and 16% receive their electricity from PG&E (Kudo, 2013). The resulting weighted greenhouse gas electricity emission factor used in this study is 0.387 pounds CO₂e/kWh. The calculation is shown in Table A4.8-CGRP-19.

A greenhouse gas emission factor for natural gas was calculated based on (1) CO₂ emission factors used in PG&E Energy Overview Reports for the City of Richmond, and (2) CH₄ and N₂O emission factors taken from the EPA MRR (PG&E, 2013b; EPA, 2012).¹³ CH₄ and N₂O emissions were multiplied by their respective GWPs to obtain CO₂e emissions, then added to the CO₂e emission factor to obtain a greenhouse gas natural gas emission factor of 11.7 pounds CO₂e/therm. This is comparable to the greenhouse gas emission factor based on the EPA MRR.

1.3.3 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-4 presents estimated greenhouse gas emission reductions from the residential energy efficiency program. The program goal is to reduce energy consumption in existing homes by 40% (CEC, 2013a).¹⁴ Electricity and natural gas savings per percent reduction in energy consumption were calculated based on program data for home upgrade projects conducted in the City of Richmond

¹³ The average of CO₂ emission factors in reports dated between 2009 and 2011 was used.

¹⁴ The 40% reduction goal is consistent with California Energy Commission (CEC) strategy. This reduction goal is close to what had been achieved in past energy efficiency programs in Richmond.

under the PG&E Energy Upgrade California (EUC) program.¹⁵ These ratios were calculated for each individual project, then averaged over all projects to obtain estimated electricity savings of 12.3 kWh/% reduction and natural gas savings of 8.5 therms/% reduction. These ratios were multiplied by the 40% reduction goal to obtain average savings of 494 kWh and 338 therms per home retrofit, respectively. The corresponding emission reductions were calculated using the emission factors presented in Table A4.8-CGRP-19. The estimated annual greenhouse gas reduction is 1.9 MT per household.

Table A4.8-CGRP-18 presents year-by-year emissions reductions from the residential energy efficiency program. The annual emissions reductions for each year reflect cumulative reductions from retrofits completed in the current year as well as in all previous years.

The City is proposing a \$2,000 rebate to homeowners under this program. For lower income qualifying residents (80% Area Medium Income [AMI]), the City will propose to offer a \$4,000 rebate. Assuming a project lifetime of 30 years (CEC, 2011),¹⁶ the greenhouse gas reduction cost effectiveness of the residential energy efficiency Rebate would be \$35 per MT CO₂e for households above 80% AMI and \$71 per MT CO₂e for households below 80% AMI. These cost effectiveness values are comparable to those calculated based on MEA's energy efficiency programs for multi-family homes and also to that estimated for the City of San Diego's Climate Action Plan (MEA, 2012; City of San Diego, 2012).^{17,18}

1.3.4 Monitoring

The City of Richmond would monitor and verify the program by tracking natural gas and electricity usage on an annual basis before and after project implementation. MCE currently has the resources to assist with this effort. The

¹⁵ Based on program data for residential projects implemented in the City of Richmond under the EUC Whole House program between December 2010 and May 2013. Program data obtained from Build It Green in May 2013.

¹⁶ The California Energy Commission (CEC) uses 30 years for life-cycle cost analysis for residential building envelope energy efficiency measures.

¹⁷ For a total program budget of \$860,971, MEA estimates an annual electricity savings of 822,709 kWh and natural gas savings of 46,864 therms. Incorporating the emission factors developed for Richmond, this results in a greenhouse gas savings of 399 MT per year. Assuming a 30-year project lifetime consistent with CEC guidance, this results in a cost effectiveness of roughly \$70 per MT CO₂e.

¹⁸ The City of San Diego Climate Mitigation and Adaptation Plan assumes the cost of a commercial retrofit for a single-family home to be \$13,000 resulting in a 30% energy reduction. When accounting for that the cost effectiveness for the City of Richmond program only accounts for the Chevron rebate amount (and not the entire cost of the retrofit) and the 30-year lifetime of the energy upgrade, the cost effectiveness values are similar.

annual greenhouse gas emission reductions would be calculated using natural gas and electricity emission factors, such as the ones presented in Table A4.8-CGRP-19.

1.3.5 Leveraging

The total cost to reduce household energy consumption by 40% is \$8,000, based on information supplied by Richmond's building performance contractor AHE. This cost would be shared by homeowners. After the proposed rebate, the resulting cost to homeowners would be \$4,000. For lower income qualifying residents (80% AMI), the resulting cost would be \$2,000.

1.3.6 Economic Benefit

In addition to energy savings, the residential energy efficiency rebate program would represent an economic benefit to participants. As presented in Table A4.8-CGRP-4, a 40% reduction in energy corresponds to annual energy savings of 494 kWh per home and 338 therms per home. Using current PG&E electricity and natural gas rates of \$0.14 per kWh and \$1.15 per therm, respectively, this corresponds to an annual savings of \$458 per home.^{19,20}

As a secondary benefit, the residential energy efficiency rebate program would create jobs by (1) employing Richmond contractors and RichmondBUILD graduates to perform retrofit work; and (2) increasing spending within the community due to energy savings.

1.3.6.1 Jobs Created from Retrofit Work

An average cost to perform retrofit work per percent energy savings was calculated based on program data for home upgrade projects conducted in the City of Richmond under the PG&E Energy Upgrade California (EUC) program.²¹ The ratio of the project cost to the percent reduction in energy consumption achieved was averaged over all projects to obtain an average cost of \$414 per percent energy reduction. The average cost to complete a retrofit resulting in a 40% reduction would be \$8,000 per home. The corresponding jobs metric would

¹⁹ Electricity rate used is the average of Tier 1/2 PG&E electricity rates between May and August 2013.

²⁰ Natural gas rate use is the average of PG&E base and excess natural gas rates for 2013.

²¹ Based on program data for residential projects implemented in the City of Richmond under the EUC Whole House program between December 2010 and May 2013. Program data obtained from Build It Green in May 2013.

be 0.15 job-years (annual full-time equivalent) created per home retrofitted (BEA, 2010a, 2010b).^{22,23}

1.3.6.2 Monetary Benefit to Community

Assuming customers would spend 90% of energy savings within the local community, the annual return to the community would be \$412 per home (BEA, 2013; US DOT, 2009).^{24,25} The corresponding jobs metric would be 0.005 jobs (annual full-time equivalent) created per home retrofitted (BEA, 2010a; BEA, 2010b).^{26,27}

The jobs metric would be the jobs created from retrofit work, 0.15 job-years (annual full-time equivalent) per home retrofitted.

1.3.7 Prioritization

Based on the above, this measure received the following ratings when evaluated against the prioritization criteria described in Section 1.13:

- **High** – Create Community Wealth & Resilience (Low Income only), Magnitude of GHG Reduction Available
- **Medium** – Create Local Jobs, Reduce Local Greenhouse Gas Emissions, Improve Community Health, Create Community Wealth & Resilience (Any Income), Enhance Other Environmental Sustainability, Accurate Metric/Verifiable, Leveraging

1.4 COMMERCIAL ENERGY EFFICIENCY REBATE

The commercial energy efficiency program reduces energy consumption in Richmond by providing energy efficiency rebates to businesses that employ Richmond contractors or RichmondBUILD graduates for building retrofits.

²² Assumes 9.66 job-years are created per million dollars spent.

²³ Assumes 95% of jobs created are full-time equivalent jobs.

²⁴ The assumption that 10% of income is saved is meant to be a conservative assumption. In July 2013, the national saving rate was 4.4%.

²⁵ The assumption that all spending will be within the local community is based on the 2009 overall average trip distance for the State of California of 8.79 miles, which means that all trips originating from Richmond would be within the boundary of Contra Costa County.

²⁶ Assumes 13.5 jobs are created per million dollars spent.

²⁷ Assumes 85% of jobs created are full-time equivalent jobs.

1.4.1 Co-Benefits

Co-benefits of this measure include:

- Local job creation
- Increased safety through improved lighting
- Fewer natural resources used to produce energy at power plants

1.4.2 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-5 presents greenhouse gas emission reductions from commercial energy efficiency improvements. These improvements could reduce the commercial sector's energy consumption by as much as 50% (CPUC, 2011).²⁸ The program would provide rebates for reduced energy consumption at rates of \$1 per therm and \$0.14 per kWh (EBEW, 2013).²⁹ For illustrative purposes, assuming an annual program budget of \$360,000 and an even divide between natural gas and electricity savings (i.e., therms saved = kWh saved), the annual greenhouse gas reduction would be 1,735 MT. Assuming a project lifetime of 30 years, consistent with CEC guidance (CEC, 2011),³⁰ the greenhouse reduction effectiveness of the commercial energy efficiency incentive would be \$7/MT CO₂e.

Table A4.8-CGRP-18 presents year-by-year emissions reductions from the commercial energy efficiency rebate program. The annual emissions reductions for each year reflect cumulative reductions from retrofits completed in the current year as well as in all previous years.

1.4.3 Monitoring

The City of Richmond would monitor and verify the program by tracking natural gas and electricity usage on an annual basis before and after project implementation. MCE currently has the resources to assist with this effort. The annual greenhouse gas emission reductions would be calculated using natural gas and electricity emission factors, such as the ones presented in Table A4.8-CGRP-19.

1.4.4 Leveraging

There is no leveraging of costs for the commercial energy efficiency program.

²⁸ Based on the California Public Utilities Commission (CPUC) goal to convert 50% of existing commercial buildings to zero net energy buildings by 2030.

²⁹ Based on incentive from East Bay Energy Watch.

³⁰ The California Energy Commission (CEC) uses 30 years for life-cycle cost analysis for residential building envelope energy efficiency measures.

1.4.5 Economic Benefit

In addition to energy savings, the commercial energy efficiency program would create jobs by employing Richmond contractors and RichmondBUILD graduates. The number of jobs created was estimated by assuming businesses would spend twice as much as the amount of rebates provided on retrofit contracting work. The corresponding jobs metric would be 6.6 job-years (annual full-time equivalent) created each year, or 66 job-years created after 10 years (BEA, 2010a, 2010b).^{31,32,33}

1.4.6 Prioritization

Based on the above, this measure received the following ratings when evaluated against the prioritization criteria described in Section 1.13:

- **High** – Magnitude of Greenhouse Gas Reduction Available
- **Medium** – Create Local Jobs, Reduce Local Greenhouse Gas Emissions, Create Community Wealth & Resilience, Enhance Other Environmental Sustainability, Accurate Metric/Verifiable, Leveraging
- **Not applicable** – Improve Community Health

1.5 RESIDENTIAL SOLAR REBATE (SINGLE-FAMILY AND MULTI-FAMILY)

The residential solar rebate program reduces energy consumption in Richmond by providing solar rebates to residents who employ Richmond contractors or RichmondBUILD graduates for installation of residential solar panels (i.e., photovoltaic (PV) systems) to generate electricity. Rebates are provided to both residents of single-family homes and owners of multi-family homes. Although the calculations described here are based on a single-family home, comparable greenhouse gas savings could be realized for multi-family housing (assuming adequate rooftop space is available).

1.5.1 Co-Benefits

Co-benefits of this measure include:

- Local job creation

³¹ Assumes 9.66 jobs are created per million dollars spent.

³² Assumes 95% of jobs created are full-time equivalent jobs.

³³ Does not assume that commercial beneficiaries will spend economic benefits within the community.

- Other energy efficiency programs complemented and promoted

Fewer natural resources used to produce energy at power plants

1.5.2 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-6 presents greenhouse gas emission reductions from residential solar rebates. The annual energy production of a typical 3-kW PV system is approximately to be 4,932 kWh.³⁴ The corresponding annual emission reduction of 0.9 MT was calculated using the greenhouse gas electricity emission factor for the City of Richmond.

Table A4.8-CGRP-18 presents year-by-year emissions reductions from the residential solar rebate program. The annual emissions reductions for each year reflect cumulative reductions from retrofits completed in the current year and in all previous years.

The proposed residential Chevron mitigation rebate is \$2,000 per kW. Assuming a project lifetime of 25 years (CEC, 2013b), the carbon reduction effectiveness of the residential solar rebate program would be \$278 per MT.

1.5.3 Monitoring

The City of Richmond would monitor and verify the program by tracking the rebates issued and annual electricity generation (in kW-hr) for each home. The annual greenhouse gas emission reductions would be calculated using natural gas and electricity emission factors, such as the ones presented in Table A4.8-CGRP-19.

1.5.4 Leveraging

Residential solar costs are approximately \$6.00 per W (CSI, 2010).³⁵ For an average system size of 3 kW, the total cost of an average system would be \$18,000. Existing government rebates include the Federal Incentive Tax Credit (ITC) and the California Solar Initiative (CSI) rebate offered under the Expected Performance-Based Buydown (EPBB) program.^{36,37} Under the Federal ITC, eligible

³⁴ Go Solar Clean Power Estimator Calculator:
http://www.gosolarcalifornia.ca.gov/tools/clean_power_estimator.php. Accessed June 15, 2013. Used Richmond Zip code of 94801.

³⁵ Cost data from California Solar Initiative (CSI) General Market program data based on last 12 months for systems < 10kW (dated October 23, 2013).

³⁶ Federal Tax Code (Title 26 of United States Code [USC], Section 25D)

³⁷ California Solar Initiative Statewide Trigger Tracker. Available at: <http://www.csi-trigger.com/> (accessed October 28, 2013).

individuals may claim a one-time 30% tax credit on expenditures for solar PV systems. For a 3-kW system, that would be equivalent to \$5,400. Under the CSI, systems in the PG&E territory may be eligible for a rebate of \$0.20 per watt.³⁸ For a 3-kW system, that would be equivalent to \$600. The proposed residential Chevron mitigation rebate is \$2,000 per kW. For a 3-kW system, that would be equivalent to \$6,000. Thus, the resulting costs to the homeowner for a 3-kW system would be \$6,000 out of a total cost of \$18,000.

For lower income qualifying residents (80% Area Medium Income [AMI]), the proposed residential Chevron mitigation rebate will remain at \$2,000 per kW, but the remainder of the costs will be covered under the GRID Alternatives Single-Family Affordable Solar Homes Program (SASH).³⁹

Separate rebates are available to owners of multifamily low income housing buildings in California under the Multi-Family Affordable Solar Housing (MASH) Program. Under the program building owners can install solar PV systems to offset energy used in their building's common areas, and receive higher rebates for the energy they share with tenants.⁴⁰

1.5.5 Economic Benefit

In addition to energy savings, the Residential Solar Rebate program would represent an economic benefit to participants. Installation of a 3-kW PV system corresponds to annual energy savings of 4,932 kWh/home. Using the current PG&E electricity rate of \$0.14/kWh, this corresponds to an annual savings of \$697 per home.⁴¹

As a secondary benefit, the Residential Solar Rebate program would create jobs by (1) employing Richmond contractors and RichmondBUILD graduates to perform solar installation work; and 2) increasing spending within the community due to energy savings.

³⁸ The megawatt target has been reached but additional funding may be available. The PG&E Territory is currently under Step 10 with Expected Performance-Based Buydown (EPBB) Incentive Payments of \$0.20 per watt.

³⁹ SASH provides significant rebates on solar electric systems to qualifying single-family homeowners in PG&E service territories. The SASH program has been extended to 2021. Information on SASH can be found at: <http://www.gridalternatives.org/sash> (accessed October 15, 2013).

⁴⁰ Under MASH, owners of qualifying buildings can install solar PV systems to offset energy used in their building's common areas, and receive higher rebates for the energy they share with tenants. MASH applications in the PG&E service territory are currently being waitlisted due to limited budget. Information on MASH can be found at: <http://www.gosolarcalifornia.ca.gov/affordable/mash.php> (accessed February 12, 2014).

⁴¹ Average of Tier 1/2 PG&E electricity rates between May and August 2013.

1.5.5.1 Jobs Created from Residential Solar Installation Work

The assumed cost to install a residential PV system is \$6.00/watt (CSI, 2010).⁴² For a typical 3-kW system, this corresponds to job creation of 0.2 job-years (annual full-time equivalent) created per home (BEA, 2010a, 2010b).^{43,44}

1.5.5.2 Monetary Benefit to Community

Assuming customers would spend 90% of energy savings within the local community, the annual return to the community would be \$627 per home (BEA, 2013; US DOT, 2009).^{45,46} This corresponds to job creation of 0.007 jobs (annual full-time equivalent) created per home (BEA, 2010a, 2010b).^{47,48}

1.5.6 Prioritization

Based on the above, this measure received the following ratings when evaluated against the prioritization criteria described in Section 1.13:

- **Medium** – Create Local Jobs, Create Community Wealth & Resilience, Enhance Other Environmental Sustainability, Accurate Metric/Verifiable, Magnitude of Greenhouse Gas Reduction Available, Leveraging
- **Not applicable** – Reduce Local Greenhouse Gas Emissions, Improve Community Health

1.6 COMMERCIAL SOLAR REBATE

The Commercial Solar Rebate program reduces energy consumption in Richmond by providing solar rebates to businesses that employ Richmond contractors or RichmondBUILD graduates for installation of commercial photovoltaic systems.

1.6.1 Co-Benefits

Co-benefits of this measure include:

⁴² Cost data from California Solar Initiative (CSI) General Market program data based on last 12 months for systems < 10kW (dated October 23, 2013).

⁴³ Assumes 9.66 jobs are created per million dollars spent.

⁴⁴ Assumes 95% of jobs created are full-time equivalent jobs.

⁴⁵ The assumption that 10% of income is saved is meant to be a conservative assumption. In July 2013, the national saving rate was 4.4%.

⁴⁶ The assumption that all spending will be within the local community, is based on the 2009 overall average trip distance for the State of California of 8.79 miles, which means that all trips originating from Richmond would be within the boundary of Contra Costa County.

⁴⁷ Assumes 13.5 jobs are created per million dollars spent.

⁴⁸ Assumes 85% of jobs created are full-time equivalent jobs.

- local job creation
- other energy efficiency programs complemented and promoted
- fewer natural resources used to produce energy at power plants

1.6.2 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-7 presents greenhouse gas emission reductions from commercial solar rebates. The annual energy production of a 1-kW PV system was assumed to be 1,644 kWh.⁴⁹ The corresponding annual emission reduction of 0.3 MT/kW was calculated using the greenhouse gas electricity emission factor for the City of Richmond.

Table A4.8-CGRP-18 presents year-by-year emissions reductions from the Commercial Solar Rebate program. The annual emissions reductions for each year reflect cumulative reductions from retrofits completed in the current year as well as in all previous years.

Assuming a project lifetime of 25 years (CEC, 2013b), the carbon reduction effectiveness of the Commercial Solar Rebate program would be \$67/MT.

1.6.3 Monitoring

The City of Richmond would monitor and verify the program by tracking the rebates issued and annual electricity generation (in kW-hr) for each building. The annual greenhouse gas emission reductions would be calculated using natural gas and electricity emission factors, such as the ones presented in Table A4.8-CGRP-19.

1.6.4 Leveraging

Commercial solar costs are approximately \$5,600 per kW (CSI, 2010).⁵⁰ Existing government rebates include the Federal ITC and the California Solar Initiative (CSI) rebate offered under the EPBB program.^{51,52} Under the Federal ITC, eligible businesses may claim a 30% tax credit on expenditures for solar PV systems. The equivalent tax credit would be \$1,670 per kW. Under the CSI, systems in the

⁴⁹ Go Solar Clean Power Estimator Calculator: http://www.gosolarcalifornia.ca.gov/tools/clean_power_estimator.php (Accessed June 15, 2013) Used Richmond Zip code of 94801.

⁵⁰ Cost data from California Solar Initiative (CSI) General Market program data based on last twelve months for systems > 10kW (dated October 23, 2013).

⁵¹ Federal Tax Code (Title 26 of United States Code [USC], Section 48)

⁵² California Solar Initiative Statewide Trigger Tracker. Available at: <http://www.csi-trigger.com/> (Accessed October 28, 2013)

PG&E territory may be eligible for a rebate of \$200 per watt.⁵³ The proposed residential Chevron mitigation rebate is \$500 per kW. Thus, the resulting costs to a qualifying business would be \$3,400 per kW out of a total cost of \$5,600 per kW.

1.6.5 Economic Benefit

In addition to energy savings, the commercial solar rebate program would create jobs by employing Richmond contractors and RichmondBUILD graduates.

The assumed cost to install a commercial PV system is \$5.6 per watt or \$5,600 per kW (CSI, 2010).⁵⁴ The corresponding jobs metric would be 0.05 job-years (annual full-time equivalent) created per kW installed (BEA, 201a, 2010b).^{55,56}

1.6.6 Prioritization

Based on the above, this measure received the following ratings when evaluated against the prioritization criteria described in Section 1.14

- **Medium** – Magnitude of Greenhouse Gas Reduction Available, Create Local Jobs, Create Community Wealth & Resilience, Enhance Other Environmental Sustainability, Accurate Metric/Verifiable, Leveraging
- **Not applicable** – Reduce Local Greenhouse Gas Emissions, Improve Community Health

1.7 PEDESTRIAN AND BICYCLE MASTER PLANS IMPLEMENTATION

Implementation of the City of Richmond Pedestrian Plan and Bicycle Master Plan would reduce vehicle-generated greenhouse gas emissions by encouraging walking and bicycling through providing improvements to bicycle and pedestrian paths in the city. The Bicycle Master Plan focuses on the development of a complete on-street bicycle network, building safe and accessible connections to the Bay Trail and Richmond Greenway, and reducing barriers, such as freeway interchanges and railroad crossings. The Pedestrian Plan focuses on capital

⁵³ The megawatt target for the PG&E service territory has been reached but additional funding may be available. The PG&E Territory is currently under Step 10 with Expected Performance-Based Buydown (EPBB) Incentive Payments of \$0.20 per watt.

⁵⁴ Cost data from California Solar Initiative (CSI) General Market program data based on last 12 months for systems > 10kW (dated October 23, 2013).

⁵⁵ Assumes 9.66 jobs are created per million dollars spent.

⁵⁶ Assumes 95% of jobs created are full-time equivalent jobs.

improvement projects and ongoing maintenance and upgrade projects for the citywide pedestrian system.

1.7.1 Co-Benefits

Co-benefits of this measure include:

- Improved local air quality
- Health benefits from exercise
- Encouraged economic activity along commercial arteries
- Reduced crime

1.7.2 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-8 presents annual greenhouse gas reductions from implementation of the Pedestrian Plan and Bicycle Master Plan. Based on the City of Richmond's 2005 greenhouse inventory, annual greenhouse gas emissions from transportation on local roads are 178,743 MT CO₂e from gasoline-fueled vehicles.⁵⁷ The program goal is to achieve a 2% reduction in local road emissions or 3,575 MT CO₂e per year (CAPCOA, 2010; City of Walnut Creek, 2012).^{58,59}

Table A4.8-CGRP-18 presents year-by-year emissions reductions from implementation of the Pedestrian Plan and Bicycle Master Plan. The year-by-year emissions reductions assume full implementation of the plan beginning with the first year.

The City of Walnut Creek estimates the cost to the city for the implementation of their Bicycle Master Plan is \$30,000,000 (City of Walnut Creek, 2012). The estimated greenhouse gas reduction potential is 5,835 MT CO₂e per year. Assuming a similar project lifetime of 25 years, the greenhouse gas reduction cost effectiveness is \$205 per MT CO₂e.

The City of Berkeley estimates that the cost of implementation of its bicycle master plan is \$7 million (City of Berkeley, 1998). The estimated reduction in greenhouse gas emissions is 1,157 MT CO₂e per year (City of Berkeley, 2009).

⁵⁷ Greenhouse gas emissions from transportation on local roads taken from the 2005 greenhouse gas inventory for the City of Richmond.

⁵⁸ The local road emissions reduction goal is consistent with the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures document, which estimates up to 2% reduction in greenhouse gas emissions from pedestrian network improvements. (Measures SDT-1)

⁵⁹ The City of Walnut Creek Climate Action Plan estimates a 2.3% reduction in local road greenhouse gas emissions from the implementation of the City's Master Bicycle Plan.

Assuming a similar project lifetime of 25 years, the greenhouse gas reduction cost effectiveness is \$242 per MT CO₂e.

1.7.3 Monitoring

The City of Richmond would monitor and verify the program by tracking path improvements and conducting surveys to determine how the community is utilizing the new paths. This information would allow an estimate of the reduction in vehicle miles traveled as a result of program implementation, which could in turn be used to calculate the reduction in greenhouse gas emissions.

1.7.4 Leveraging

There is no leveraging of costs for the Pedestrian Plan and Bicycle Master Plan.

There may be potential leveraging opportunities through the CalTrans Bicycle Transportation Account (BTA), an annual program that provides state funds for city and county projects that improve the safety and convenience for bicycle commuters.⁶⁰

1.7.5 Economic Benefit

In addition to energy savings, the Pedestrian Plan and Bicycle Master Plan would represent an economic benefit to the local community by encouraging economic activity along commercial arteries.

1.7.6 Prioritization

Based on the above, this measure received the following ratings when evaluated against the prioritization criteria described in Section 1.14:

- **High** – None
- **Medium** – Reduce Local Greenhouse Gas Emissions, Improve Community Health, Create Community Wealth & Resilience, Enhance Other Environmental Sustainability, Magnitude of Greenhouse Gas Reduction Available, Leveraging
- **Not applicable** – Create Local Jobs, Accurate Metric/Verifiable

⁶⁰ Caltrans Bicycle Transportation Account. Accessed October 30, 2013.
<http://www.dot.ca.gov/hq/LocalPrograms/bta/btawebPage.htm> .

1.8 ELECTRIC VEHICLES

1.8.1 Electric Vehicle Purchase Rebate

Implementation of the electric vehicle rebate program would reduce vehicle-generated greenhouse gas emissions by providing rebates to residents for the purchase of electric vehicles.

1.8.2 Co-Benefits

Co-benefits of this measure include:

- Fewer local criteria pollutant emissions
- Less energy usage overall
- Additional money spent in the community

1.8.3 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-9 presents annual greenhouse gas reductions from the electric vehicle purchase rebate program. Annual greenhouse gas savings were calculated as the difference in greenhouse gas emissions between a gasoline-fueled vehicle and an electric vehicle. Both vehicle types were assumed to be driven 13,746 miles per year, based on the national average (FHWA, 2011).⁶¹

1.8.3.1 Gasoline-Fueled Vehicle Greenhouse Gas Emissions

Greenhouse gas emissions from a gasoline-fueled vehicle were calculated assuming the vehicle has a fuel efficiency equivalent to the average fuel efficiency for light-duty vehicles (23.5 miles per gallon) (US DOT, 2010). The corresponding annual vehicle fuel consumption would be 573 gallons/year (FHWA, 2011). Greenhouse gas emissions were calculated using a greenhouse gas gasoline emission factor of 19.4 pounds CO₂e per gallon of gasoline consumed (EPA, 2005). Greenhouse gas emissions from a gasoline-fueled vehicle were thus estimated at 5.0 MT CO₂e per year.

1.8.3.2 Electric Vehicle Greenhouse Gas Emissions

Greenhouse gas emissions for an electric vehicle were calculated assuming the vehicle to have a fuel economy comparable to a 2013 Nissan Leaf (29 kW-hr/100 miles).^{62,63} The equivalent annual charge would be 3,908 kW-hr per year. The

⁶¹ Based on the average annual miles per driver.

⁶² The greenhouse gas emissions associated with operation of an electric vehicle are indirect emissions. These emissions are not emitted at the vehicle. Rather, they are emitted at the power plant where the electricity is generated to power the vehicle.

⁶³ 2013 Nissan Leaf Fuel Economy obtained from the EPA. Available at:

corresponding greenhouse gas emissions were calculated using the greenhouse gas electricity emission factor for the City of Richmond. Greenhouse gas emissions from an electric vehicle were thus estimated at 0.7 MT per year.⁶⁴

The net average vehicle greenhouse gas emissions reduction from replacing a gasoline-fueled vehicle with an electric vehicle would be 4.4 MT per year.

Table A4.8-CGRP-18 presents year-by-year emissions reductions from the electric vehicle rebate program. The annual emissions reductions for each year reflect cumulative reductions from cars replaced in the current year as well as in previous years.

The proposed Chevron mitigation rebate for purchase of electric vehicles is \$1,000 per qualifying electric vehicle. Assuming a project lifetime of 15 years, the cost effectiveness of the electric vehicle purchase rebate would be \$15 per MT.

1.8.4 Monitoring

The City of Richmond would monitor and verify the program by tracking rebates issued. The annual greenhouse gas emission reductions would be calculated using either an average vehicle greenhouse gas emissions reduction, such as the one described above, or using more refined information obtained from rebate applicants regarding the types of vehicles being replaced and purchased.

1.8.5 Leveraging

The typical cost for a new Nissan Leaf S is \$28,800 (manufacturer's suggested retail price).⁶⁵ Federal tax credits are available up to \$7,500.⁶⁶ California Environmental Protection Agency's Air Resources Board also provides rebates of up to \$2,500.⁶⁷ The proposed Chevron mitigation rebate for purchase of electric

<http://www.fueleconomy.gov/feg/Find.do?action=sbs&id=33558>, accessed October 2013.

⁶⁴ Based on an average of 13,476 miles driven in a year.

⁶⁶ Information on the IRS Plug-In Electric Drive Vehicle Credit (IRC 30C) is available at: <http://www.irs.gov/Businesses/Plug-In-Electric-Vehicle-Credit-%28IRC-30-and-IRC-30D%29>, accessed October 20, 2013.

⁶⁷ Information on the Clean Vehicle Rebate Project (CVRP) is available at: http://energycenter.org/programs/clean_vehicle_rebate_project, accessed April 12, 2014.

vehicles is \$1,000 per qualifying electric vehicle. Thus, the resulting cost to owner would be roughly \$17,800.⁶⁸

1.8.6 Electric Vehicle Charging Station

Implementation of the electric vehicle charging station program would reduce vehicle-generated greenhouse gas emissions by providing rebates to residents and business for installation of electric vehicle charging stations.

1.8.7 Co-Benefits

- Co-benefits of this measure include:
- Modernization of the City's infrastructure
- Lower criteria air pollutant emissions
- Less energy usage overall
- Additional money spent in the community

1.8.8 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-10 presents annual greenhouse gas reductions from the electric vehicle charging station program. The greenhouse gas emissions saved on a per mile basis is calculated by taking the average greenhouse gas emissions savings per person per year (4.4 tonnes per year, Table A4.8-CGRP-9) and dividing by the average number of miles driven per person per year (13,476 miles per year, Table A4.8-CGRP-9). The number of annual vehicle miles traveled switched to electric vehicle per station is calculated assuming 2 chargers per station, a charger is used 8 hours per day, and the miles per charge of a Nissan Leaf.⁶⁹ The annual greenhouse gas emissions savings per station installed is 35 MT CO₂e per year.

The estimated cost per charging station is \$30,000.⁷⁰ Assuming a 10-year lifetime of the project, the cost effectiveness for the electric vehicle station program would be \$85 per MT.⁷¹

⁶⁸ The calculation of electric vehicle cost to owner is consistent with industry practice based on information available at: <http://www.driveclean.ca.gov/pev/Costs/Vehicles.php>

⁶⁹ The Nissan Leaf gets 75 miles after a 4-hour charge using a 6.6-kW charger, or 18.75 miles per hour charged. Available at: <http://www.fueleconomy.gov/feg/evsbs.shtml#midsize-cars>, accessed December 31, 2013.

⁷⁰ Equipment cost, annual monitoring/maintenance, and installation cost provided by ChargePoint for Model CT4021m Level II.

⁷¹ Lifetime based on assumption used in Financial Viability of Non-Residential Electric Vehicle Charging Stations (UCLA, 2012).

Table A4.8-CGRP-18 presents year-by-year emissions reductions from the electric vehicle charging station program. The annual emissions reductions for each year reflect cumulative reductions from stations installed in the current year as well as in all previous years.

1.8.9 Monitoring

The City of Richmond would monitor and verify the program by tracking rebates issued and conducting user surveys. This information would allow an estimate of the number of gasoline trips replaced by electric trips as a result of program implementation, which could in turn be used to calculate the reduction in greenhouse gas emissions.

1.8.10 Leveraging

There is no leveraging of costs for the electric vehicle charging station program.

1.8.11 Economic Benefit

In addition to energy savings, the electric vehicle purchase rebate and electric vehicle charging station programs would represent an economic benefit to participants due to replacement of gasoline-fueled vehicle trips with lower-cost electric vehicle trips.

1.8.12 Prioritization

Based on the above, these measures received the following ratings when evaluated against the prioritization criteria described in Section 1.14

- **High** –Magnitude of Greenhouse Gas Reduction Available
- **Medium** – Reduce Local Greenhouse Gas Emissions, Improve Community Health, Create Community Wealth & Resilience, Enhance Other Environmental Sustainability, Accurate Metric/Verifiable, Leveraging
- **Not applicable** – Create Local Jobs

1.9 RIDE SHARE/GREEN TRANSPORTATION

The ride share program would encourage the availability of low-greenhouse-gas transportation alternatives such as the use of a local shuttle circular or a van service. Greenhouse gas savings can be realized as individual trips in personal vehicles are eliminated as residents use the shuttles.

1.9.1 Co-Benefits

Co-benefits of this measure include:

- Fewer overall criteria pollutant emissions
- Less traffic congestion
- Personal savings

1.9.2 Greenhouse Gas Reductions and Costs

1.9.3 Local Shuttle Circular

Table A4.8-CGRP-11 presents annual greenhouse gas reductions from the current Richmond Circular Bus program as an illustration of the emission savings that can be realized. The Richmond Circular Bus is a free bus service that provides stops at Richmond BART, Civic Center, Marina Bay, and other locations. Annual greenhouse gas savings were calculated as the difference between the emissions from operation of the shuttle bus and the use of personal vehicles.

1.9.3.1 Shuttle Emissions

Greenhouse gas emissions from the shuttle were calculated using the annual reported vehicle miles traveled (VMT) for the existing shuttles (38,760 miles for a total of 101,520 boardings) and the emission factor for similar vehicles in California (1.53 lb CO₂e/mile).^{72,73} The resulting greenhouse gas emissions from the shuttle system were estimated at 27 MT CO₂e per year.

1.9.3.2 Personal Vehicle Emissions

Avoided greenhouse gas emissions from replaced personal vehicle trips were calculated by using the number of daily ridership of the shuttle (423 rides per day) and the weighted average origin-to-destination trip length (1.6 miles) reported by riders in a survey.⁷⁴ At operations of 240 days per year, the annual avoided VMT is 160,529 miles. Using an average emission factor for gasoline

⁷² VMT data for Richmond Circular Bus from Final Report, Shuttle Projects, BAAQMD Project #11R12 (9/13/13).

⁷³ The greenhouse gas emission factor was obtained from California Air Resources Board (CARB) EMFAC for OBUS category, model year 2015, aggregated speeds, taking into account Pavley and Low Carbon Fuel Standard (LCFS). Available at: <http://www.arb.ca.gov/emfac/>, accessed 10/20/2013.

⁷⁴ Ridership and trip length survey results for Richmond Circular Bus from Final Report, Shuttle Projects, BAAQMD Project #11R12 (9/13/13).

personal vehicles (0.83 lb CO₂e/mile), the avoided greenhouse gas emissions are 60 MT CO₂e per year.⁷⁵

The net average vehicle greenhouse gas emissions reduction is 33 MT CO₂e per year under the current shuttle service provided in Richmond.

Table A4.8-CGRP-18 presents year-by-year emissions reductions from the Richmond Circular Bus program. The year-by-year emissions reductions assume full implementation of the program during the first year.

An estimate for the cost effectiveness of this program can be made by considering that the annual cost of operations for the current shuttle service is \$369,000 per year.⁷⁶ Assuming Chevron will cover 25% of the program costs and the same level of service, the cost effectiveness of the program is roughly \$2,788 per MT CO₂e.

1.9.4 Van Service

The van service would organize passenger shuttle vans for shopping, event trips, and other local trips. There would be a \$2.00 per passenger fee for use of the shuttle. Table A4.8-CGRP-12 presents annual greenhouse gas reductions based on the existing van service program as an illustration of the emission savings that can be realized through that program. Annual greenhouse gas savings were calculated as the difference between the emissions between operation of the shuttle van and the use of personal vehicles.

1.9.4.1 Shuttle Emissions

Assuming an annual cost of \$13,560 as a basis, greenhouse gas emissions from the shuttle were calculated based on making 44 trips per month (with six people per trip) with each trip at 20 miles (Greenprint Transportation System, 2008). An emission factor typical of a passenger van is used in this calculation (2.2 lb CO₂e/mile).⁷⁷ Greenhouse gas emissions from the shuttle system were thus estimated at 11 MT CO₂e per year under the current system.

⁷⁵ Calculated based on emission factor for gallon of gasoline (19.4 lb CO₂e/gal) and average miles per gallon of US fleet (23.5 miles/gal) (US DOT, 2010; EPA, 2005).

⁷⁶ Provided by F. Kahn of TransMetro.

⁷⁷ The greenhouse gas emission factor was obtained from California Air Resources Board (CARB) EMFAC for LHD1 category, model year 2015, aggregated speeds, taking into account Pavley and Low Carbon Fuel Standard (LCFS). Available at: <http://www.arb.ca.gov/emfac/>, accessed 10/20/2013.

1.9.4.2 Personal Vehicle Emissions

Greenhouse gas emissions from replaced personal vehicle trips were calculated by using the number of annual ridership of the shuttle (44 trips per month with six people per trip) and the trip length (20 miles) (Greenprint Transportation System, 2008). The annual avoided VMT is 63,360 miles. Using an average emission factor for gasoline personal vehicles (0.83 lb CO₂e/mile), the avoided greenhouse gas emissions are 24 MT CO₂e per year under the current program.⁷⁸

The resulting net average vehicle greenhouse gas emissions reduction is 13 MT CO₂e per year under the van service under the current program.

An estimate for the cost effectiveness of this program can be made by considering that the annual cost basis for the van service is \$13,560. With the \$2.00 passenger fee, the net annual cost for operation of the van service under the current program is \$4,716 per year. Thus, the cost effectiveness of the program is approximately \$358 per MT CO₂e.

1.9.5 Monitoring

The City of Richmond would monitor and verify the program by tracking the number of shuttle and van trips per year and conducting user surveys. This information would allow an estimate of the reduction in vehicle miles traveled as a result of program implementation, which could in turn be used to calculate the reduction in greenhouse gas emissions.

1.9.6 Leveraging

1.9.6.1 Local Shuttle Circular

The proposed Chevron contribution for the local shuttle circular would be 25% of the total cost.

1.9.6.2 Van Service

The proposed Chevron contribution for the van service would be approximately 35% of the total cost as the rest would be provided by revenues from passenger fares.

⁷⁸ Calculated based on emission factor for gallon of gasoline (19.4 lb CO₂e/gal) and average miles per gallon of US fleet (23.5 miles/gal) (US DOT, 2010; EPA, 2005).

1.9.7 Economic Benefit

In addition to energy savings, the ride share program would represent an economic benefit to participants due to replacement of personal vehicle trips with free or low-cost shuttle trips.

1.9.8 Prioritization

Based on the above, this measure received the following ratings when evaluated against the prioritization criteria described in Section 1.13:

- **High** – None
- **Medium** – Create Local Jobs, Reduce Local Greenhouse Gas Emissions, Improve Community Health, Create Community Wealth & Resilience, Enhance Other Environmental Sustainability, Magnitude of Greenhouse Gas Reduction Available
- **Not applicable** –Accurate Metric/Verifiable, Leveraging

1.10 BICYCLE PROGRAM

The bicycle program would reduce energy consumption by developing a public bike sharing system. Residents and visitors would be able to rent bicycles by the hour. Bicycles could be picked up and dropped off at secure designated stations throughout the city. Greenhouse gas savings would be realized as individual trips typically taken in personal vehicles are eliminated as residents use non-emitting bicycles.

1.10.1 Co-Benefits

Co-benefits of this measure include:

- Less overall criteria pollutant emissions
- Less traffic congestion
- Personal savings
- Healthier habits through increased physical activity

1.10.2 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-13 presents annual greenhouse gas reductions from the bicycle program as an illustration of the emission savings that can be achieved. Annual greenhouse gas savings are calculated as the emissions that would have been emitted had a user driven a personal vehicle. The cost basis for this example is \$500,000 for a 10-year program. The number of daily vehicle trips that would be

replaced by bicycle trips is 200 trips per day with average trip lengths of 3 miles per trip.⁷⁹ Thus, the annual VMT that are replaced by bicycles is 219,000 miles per year. Given an average greenhouse gas emission factor for vehicles of 0.83 pounds of CO₂e per mile, the greenhouse gas emissions savings per the basis cost amount is 82 MT CO₂e per year.⁸⁰

Table A4.8-CGRP-18 presents year-by-year emissions reductions from the bicycle program. The year-by-year emissions reductions assume full implementation of the plan beginning with the first year.

Assuming a cost basis of \$500,000 for an estimated lifetime of 10 years, the cost effectiveness of the program is \$611 per MT CO₂e. The cost effectiveness value is comparable to that for the Denver bike sharing program where annual net operating costs are \$241,480 for greenhouse gas emissions savings of 366 MT CO₂e per year, resulting in a cost effectiveness of \$660 MT CO₂e per year.⁸¹

1.10.3 Monitoring

The City of Richmond would monitor and verify the program by collecting ridership data and conducting user surveys. The survey results would allow an estimate of the reduction in vehicle miles traveled as a result of program implementation, which could in turn be used to calculate the reduction in greenhouse gas emissions.

1.10.4 Leveraging

There is no leveraging of costs for the bicycle program.

1.10.5 Economic Benefit

In addition to energy savings, the bicycle program would represent an economic benefit to participants due to replacement of personal vehicle trips with no-cost bicycle trips.

⁷⁹ Daily trip replacement, trip length, and program cost provided by F. Kahn of TransMetro.

⁸⁰ Greenhouse gas emission factor on a per mile basis calculated based on emission factor for gallon of gasoline (19.4 lb CO₂e/gal) and average miles per gallon of US fleet (23.5 miles/gal). (US DOT, 2010; EPA, 2005)

⁸¹ Operating costs and greenhouse gas savings obtained from Denver Bike Sharing (DBS, 2012). Note that the net operating cost includes sponsorships, membership fees, and usage fees. Removal of this income would increase the cost effectiveness value.

1.10.6 Prioritization

Based on the above, this measure received the following ratings when evaluated against the prioritization criteria described in Section 1.13:

- **High** – None
- **Medium** – Reduce Local Greenhouse Gas Emissions, Improve Community Health, Create Community Wealth & Resilience, Enhance Other Environmental Sustainability, Magnitude of Greenhouse Gas Reduction Available
- **Not applicable** – Create Local Jobs, Accurate Metric/Verifiable, Leveraging

1.11 TRANSIT ACCESS

The transit access program would provide reduced cost public transportation access through subsidized Clipper Cards that can be used on all transit agencies in the San Francisco Bay Area. Discounted Clipper Cards would encourage the use of public transportation over the use of private vehicles.

1.11.1 Co-Benefits

Co-benefits of this measure include:

- Less overall criteria pollutant emissions
- Less traffic congestion
- Personal savings
- Healthier habits through increased physical activity

1.11.2 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-14 presents annual greenhouse gas reductions from the transit access program as an illustration of the emission savings that can be achieved. A similar program in Contra Costa and Alameda Counties (TransLink for Transit-Oriented Development [T4T]) has shown annual greenhouse gas emission savings per program participant to be 0.19 MT CO₂e per year.⁸² Under the T4T program, the cost for each program participant was \$16 per month.⁸³ Assuming

⁸² Based on greenhouse gas reduction data from the TransLink for Transit Oriented Development (T4T) Pilot Program conducted in Contra Costa and Alameda Counties between 2008 and 2009. An estimated 475,842 pounds CO₂ was reduced for 1,367 participants. Of the 1,367 participants, 422 received 6-month passes and 945 received annual passes (Cambridge Systematics, Inc., 2010).

⁸³ Based on cost data from the T4T Pilot Program. Total program cost was \$225,000 dollars (includes transit pass costs and administrative costs) for 1,367 program participants. Of the 1,367 participants, 422 received 6-month passes and 945 received

Chevron subsidizes 50% of the program costs, Chevron's proposed contribution for each program participant would be \$8 per month. Thus, the corresponding cost effectiveness of the transit access program would be \$521 per MT. It is possible that the cost effectiveness for a program in Richmond would be lower (i.e., the higher dollars per metric ton saved) since the T4T study is based on transit-oriented development, which is likely to have higher rates of transit usage compared to non-transit-oriented development.

Table A4.8-CGRP-18 presents year-by-year emissions reductions from the transit program. The year-by-year emissions reductions assume full implementation of the program beginning with the first year.

1.11.3 Monitoring

The City of Richmond would monitor and verify the program by obtaining electronic data of Clipper Card utilization, provided by the transit agencies, and conducting user surveys. This information would allow an estimate of the reduction in vehicle miles traveled as a result of program implementation, which could in turn be used to calculate the reduction in greenhouse gas emissions.

1.11.4 Leveraging

The proposed Chevron contribution for the transit access program would be 50% of the total program cost.

1.11.5 Economic Benefit

In addition to energy savings, the transit access program would represent an economic benefit to participants due to replacement of personal vehicle trips with reduced cost public transportation.

1.11.6 Prioritization

Based on the above, this measure received the following ratings when evaluated against the prioritization criteria described in Section 1.13:

- **High** – None
- **Medium** – Reduce Local Greenhouse Gas Emissions, Improve Community Health, Create Community Wealth & Resilience, Enhance Other Environmental Sustainability, Magnitude of Greenhouse Gas Reduction Available

annual passes. The cost used here absorbs the cost for pass holders who chose not to participate in the program.

- **Not applicable** – Create Local Jobs, Accurate Metric/Verifiable, Leveraging

1.12 WETLANDS CREATION

Creation of a vernal pool or other wetland type in the City of Richmond would sequester CO₂.

1.12.1 Co-Benefits

Co-benefits of this measure include:

- Creation of a habitat for plant and animal species
- Water quality buffering
- Stormwater runoff mitigation
- Water storage
- Flood conveyance
- Flood storage
- Wave attenuation
- Erosion control
- Production of natural resources
- Recreational and other human uses
- Improved aesthetics

1.12.2 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-15 presents annual greenhouse gas savings from the wetlands restoration program. The wetland was assumed to sequester CO₂ at a rate of 1.56 MT per acre per year during the first 5 years.⁸⁴ After the first 5 years, the wetland was assumed to sequester CO₂ at a lower rate of 0.34 MT per acre per year (Hansen, 2009).

Table A4.8-CGRP-15 presents wetlands restoration costs under two scenarios, a more conservative scenario (Scenario 1) and a less conservative scenario (Scenario 2).

1.12.2.1 Scenario 1 (Includes Cost of Land)

Conservative land, design, construction, and maintenance costs were included under Scenario 1. Land and construction costs were assumed to be \$300,000 per acre based on costs for registered wetlands for mitigation in urban areas of

⁸⁴ Based on carbon sequestration for a prairie pothole wetland (Euliss, 2006).

northern California.⁸⁵ Maintenance costs were assumed to be 5% of construction costs, or \$15,000 per acre (CASQA, 2003). Assuming a project lifetime of 25 years, total project costs would be approximately \$660,000 per acre. The total greenhouse gas sequestration over the 25-year lifetime would be 14.6 MT CO₂e per acre. Thus, the cost effectiveness would be roughly \$45,000/MT CO₂e.

1.12.2.2 Scenario 2 (Assumes Land Available For Free)

In Scenario 2, land for wetland construction was assumed to be available at no cost (or purchased with leveraged funds). Only design, construction and maintenance costs were assumed. Estimated construction costs were assumed to be \$29,000 per acre.⁸⁶ A fixed maintenance cost of \$3,000 per year was assumed. Assuming a project lifetime of 25 years, total project costs would be approximately \$101,000 per acre. The total greenhouse gas sequestration over the 25-year lifetime would be 14.6 MT CO₂e per acre. Thus, the cost effectiveness would be roughly \$7,000 per MT CO₂e.

Table A4.8-CGRP-18 presents year-by-year emissions reductions from the wetlands creation program. The year-by-year emissions reductions assume full implementation of the program beginning with the first year.

1.12.3 Monitoring

The City of Richmond would monitor and verify the program through wetland surveys to determine square acreage. The annual greenhouse gas emission reduction could be calculated as the wetland square acreage multiplied by wetland CO₂ sequestration rates, such as the rates presented above.

1.12.4 Leveraging

There is no leveraging of costs for the wetlands creation program.

1.12.5 Economic Benefit

The wetlands creation program does not represent a direct economic benefit to the community, although property values could potentially increase due to improved aesthetics.

⁸⁵ Registered wetlands used for mitigation have been estimated to cost \$100,000 to \$300,000 per acre in urban areas of northern California (Reub, 2010). The highest value was assumed in cost-effectiveness calculations.

⁸⁶ Based on typical construction cost for a 10-acre wetland (Brown and Schueler, 1997).

1.12.6 Prioritization

Based on the above, this measure received the following ratings when evaluated against the prioritization criteria described in Section 1.14:

- **High** – Enhance Other Environmental Sustainability
- **Medium** – Reduce Local Greenhouse Gas Emissions, Accurate Metric/Verifiable, Leveraging, Magnitude of Greenhouse Gas Reduction Available
- **Not applicable** – Create Local Jobs, Improve Community Health, Create Community Wealth & Resilience

1.13 2-MW SOLAR PROJECT

The 2-megawatt (MW) solar project reduces energy consumption in Richmond through construction of a 2-MW ground-mounted photovoltaic solar facility on approximately 13 acres of Chevron property. The facility would supply the northern California electric grid.

1.13.1 Co-Benefits

Co-benefits of this measure include:

- Local job creation
- Fewer natural resources used to produce energy at power plants

1.13.2 Greenhouse Gas Reductions and Costs

Table A4.8-CGRP-16 presents annual greenhouse gas savings from the 2-MW solar project. The projected annual energy output of the facility is 3,800 megawatt-hours (MWh). The corresponding annual emission reduction of 666 MT was calculated using the greenhouse gas electricity emission factor for the City of Richmond.

The gross cost of the project is estimated at \$7.8 million, based on the cost of a conventional solar facility.⁸⁷ Assuming the solar power developer receives a 30%

⁸⁷ Based on a gross cost estimate of \$2.4 million for a 615-kW conventional silicon solar facility (SunPower, 2011). The gross cost includes installation, operating, maintenance, and hardware expenses.

federal tax credit, the actual cost would be approximately \$5.5 million.⁸⁸ Assuming a project lifetime of 25 years, the cost effectiveness would be roughly \$328/MT CO₂e.⁸⁹

Table A4.8-CGRP-18 presents year-by-year emissions reductions from the 2-MW solar project. The year-by-year emissions reductions assume full implementation of the project beginning with the first year.

1.13.3 Monitoring

The City of Richmond would monitor and verify the program by tracking the power supplied to the grid. The annual greenhouse gas emission reductions would be calculated using electricity emission factors, such as the ones presented in Table A4.8-CGRP-19.

1.13.4 Leveraging

The cost to install the 2-MW solar project is leveraged by a federal tax rebate. Although an incentive program is also operated at the state level, this program is currently closed in PG&E's service territory, as the allocated budget has already been spent.⁹⁰

1.13.5 Economic Benefit

There would be a local economic benefit from this measure if construction and maintenance jobs were sourced from the community.

1.13.6 Prioritization

Based on the above, this measure received the following ratings when evaluated against the prioritization criteria described in Section 1.14:

- **High** – Accurate Metric/Verifiable
- **Medium** – Create Local Jobs, Enhance Other Environmental Sustainability, Improve Community Health, Create Community Wealth & Resilience, Magnitude of Greenhouse Gas Reduction Available

⁸⁸Federal Solar Investment Tax Credit (ITC). Available at: <http://energy.gov/savings/business-energy-investment-tax-credit-itc>, accessed February 12, 2014.

⁸⁹ Lifetime based on assumption used in Valuing the Return on Solar Projects for Business and Government Agencies (SunPower, 2011)

⁹⁰ The California Solar Initiative (CSI) offers incentives to residential, commercial and government customers for solar system installation. Information on CSI can be found at: <http://www.cpuc.ca.gov/PUC/energy/Solar/>, accessed February 12, 2014.

1.14 PRIORITIZATION CRITERIA

Several criteria were considered in evaluating the measures included in the CGRP:

- **Cost effectiveness**⁹¹ – The cost effectiveness of measure in terms of cost per MT of greenhouse gas emission reductions. Certain measures are more cost effective (i.e., require less money to achieve a certain amount of greenhouse gas reductions) while other measures can be less cost effective (i.e., require more money to achieve a certain amount of greenhouse gas reductions.)
- **Local job creation** – The potential for a measure to create or maintain quality local jobs. Jobs are created from construction activities (e.g., energy efficiency retrofit work, installation of solar systems), increased recycling and composting activities, and tree planting and park maintenance activities. In addition, when residents save on energy costs this could translate into additional money to be spent in the community and the creation of additional local jobs.
- **Local greenhouse gas emission reductions** – The magnitude of greenhouse gas emission reductions to be achieved locally through implementation of the measure. Local greenhouse gas emission reductions tend to bring co-benefits to the community compared to greenhouse gas emission reductions that occur remotely.
- **Community health co-benefits** – The potential for a measure to improve community health by improving outdoor and indoor air quality (e.g., from reduced criteria air or toxic air pollutant emissions) and by promoting increased physical activity (e.g., walking or biking).

⁹¹ Cost effectiveness is one metric that can be used to compare different emission reduction programs. In a general sense, it represents how “effective” each dollar spent on a program is on reducing emissions. Highly cost-effective programs have relatively low cost effectiveness values. It takes fewer dollars to result in the same emission reductions compared to low cost-effective programs. Thus, cost effectiveness can help decision makers understand where dollars may be most effective at reducing emissions.

In general, cost effectiveness is calculated by dividing an annualized cost for a program by the annual emission reductions:

$$\text{Cost Effectiveness} \left(\frac{\$}{\text{MT CO}_2\text{e}} \right) = \frac{\text{Annualized Cost} \left(\frac{\$}{\text{yr}} \right)}{\text{Greenhouse Gas Emissions Reduction} \left(\frac{\text{MT CO}_2\text{e}}{\text{yr}} \right)} = \left(\frac{\$}{\text{MT CO}_2\text{e}} \right)$$

The annualized cost includes ongoing operational costs and one-time capital costs. One-time capital costs are annualized by the expected lifetime of the program. For purposes of this document, the capital costs are simply divided by the expected lifetime (in years) of the program. More refined methods exist, such as using a capital recovery factor (CRF) incorporating an assumed interest rate, but are not considered for purposes of this document.

- **Community wealth and resilience** – The potential for a measure to create community wealth and resilience (e.g., by reducing energy costs for residents, or enhancing the value of homes or other structures).
- **Other environmental sustainability enhancements** – The potential for a measure to enhance other types of environmental sustainability (e.g., waste diversion to recycling and compost bins, reduced fuel consumption, reduced energy consumption) or provide other environmental co-benefits (e.g., urban greening, habitat creation, improved groundwater quality).
- **Accurate metric/verifiable** – The availability of accurate metrics to measure and verify greenhouse gas reductions achieved through implementation of the measure.
- **Magnitude of greenhouse gas reductions available** – The magnitude of local greenhouse gas emissions available to be reduced through implementation of the measure. (Discussed in next section.)
- **Leveraging potential** – The potential for leveraging of additional resources for further greenhouse gas emission reductions through program enhancements or expansions.

The greenhouse gas reduction measures were evaluated against the prioritization criteria described above using a prioritization matrix (included as Table A4.8-CGRP-17). Each measure was evaluated against each criterion and assigned one of the following ratings:

- check (✓) = yes – applicable;
- plus (+) = yes – applicable and rates very highly; or
- dash (-) = no – not applicable.

1.15 HYPOTHETICAL CASE FOR BUDGET SPREAD

The following is a discussion of the methodology and assumptions used to calculate year-by-year emission reductions over a 10-year period from the CGRP, as presented in Table A4.8-CGRP-18.

As a hypothetical case, a total budget of \$30,000,000 was assumed to be evenly allocated over all programs.

For programs assumed to be fully implemented in the first year, year-by-year reductions were calculated by dividing the budget allocated to the measure by the cost effectiveness of the measure and assuming the allocated budget was spread over the lifetime of the project, or over the 10-year period for measures where a project lifetime was not specified.

For programs assumed to be implemented over the lifetime of the program, emissions reductions would increase each year. Thus, the year-by-year reductions take into account the percent of project completion for each year by multiplying by the ratio of the project age to the project lifetime. The allocated budget was assumed to be spread over the 10-year period for these programs in the hypothetical case.

1.16 MAXIMUM POTENTIAL GREENHOUSE GAS SAVINGS

The following is a discussion of the methodology and assumptions used to calculate maximum potential greenhouse gas savings from the CGRP, as presented in Table A4.8-CGRP-18. The maximum savings presented here are theoretical maxima based on the assumptions described below. These savings are not necessarily additive across programs, as there may be overlap in the estimated emission reductions (e.g., residential energy efficiency and residential energy efficiency for households below 80% AMI; electric vehicle rebate and electric vehicle charging stations).

1.16.1 Urban Forestry

Maximum potential greenhouse gas savings from the urban forestry program were calculated based on the assumption that enough trees could potentially be planted in Richmond to achieve the tree density of a well-performing city in terms of urban forestry. Sacramento and San Francisco are both well-performing cities with public tree densities of approximately 1.9 and 3.5 trees/acre, respectively.^{92,93} Assuming the tree density of San Francisco was achieved in Richmond, the number of trees planted would be approximately 125,149. Using the emission calculation methodology described in Section 1.1, the maximum annual greenhouse gas savings would be 10,218 MT CO₂e per year.⁹⁴

1.16.2 Zero Waste Programs

Maximum potential greenhouse gas savings from zero waste programs were calculated assuming a landfill diversion rate comparable to San Francisco. San Francisco is a well-performing city in terms of waste diversion with a diversion rate of approximately 80% (City and County of San Francisco, 2012). Assuming the same diversion rate were achieved in Richmond, the maximum annual

⁹² Based on 115,000 public trees in Sacramento and a total land area in Sacramento of 362,180 acres (American Forests, 2014).

⁹³ Based on 105,000 public trees in San Francisco and a total land area in San Francisco of 30,016 acres (SFPD, 2014; US CB, 2014).

⁹⁴ Based on a total land area in Richmond of 55.9 square miles (City of Richmond, 2012a).

greenhouse gas savings would be 27,794 MT CO₂e per year, using the emissions calculation methodology described in Section 1.2.

1.16.3 Residential Energy Efficiency

Maximum potential greenhouse gas savings from the residential energy efficiency rebate program were calculated assuming energy efficiency upgrades could be completed at all occupied homes in Richmond. Based on U.S. Census data, there are 35,884 occupied housing units in Richmond.⁹⁵ Assuming energy efficiency upgrades were completed at all housing units, the maximum annual greenhouse gas savings would be 67,551 MT CO₂e per year, using the emissions calculation methodology described in Section 1.3.

Maximum potential greenhouse gas savings from the residential energy efficiency rebate program for lower-income qualifying residents were calculated assuming energy efficiency upgrades could be completed at all households in Richmond below 80% AMI. Based on the Richmond General Plan 2030, there are 13,267 households in Richmond below 80% AMI (City of Richmond, 2012a). Assuming energy efficiency upgrades were completed for all qualifying households, the maximum annual greenhouse gas savings would be 24,975 MT CO₂e per year, using the emissions calculation methodology described in Section 1.3.

1.16.4 Residential Solar Rebate

Maximum potential greenhouse gas savings from the residential solar rebate program were calculated assuming solar installation could be completed at all occupied homes in Richmond. Based on U.S. Census data, there are 35,884 occupied housing units in Richmond (City and County of San Francisco, 2012). Assuming solar installation were completed at all occupied housing units, the maximum annual greenhouse gas savings would be 31,032 MT CO₂e per year, using the emissions calculation methodology described in Section 1.5.

1.16.5 Commercial Energy Efficiency Rebate

Maximum potential greenhouse gas savings from the commercial energy efficiency rebate program were calculated assuming that energy consumption by Richmond businesses (excluding the Facility and other large industrial entities)

⁹⁵ Used U.S. Census Bureau housing unit estimates for Richmond based on data collected from 2007 through 2011 (US CB, 2011).

could be reduced by 50%.⁹⁶ Based on the Richmond General Plan 2030, annual greenhouse gas emissions from Richmond businesses (excluding the Facility and other large industrial entities) are approximately 1.18 million MT CO₂e per year.⁹⁷ Reducing these emissions by 50% would correspond to a maximum savings of 590,258 MT CO₂e per year.

1.16.6 Commercial Solar Rebate

Maximum potential greenhouse gas savings from the commercial solar rebate program were calculated based on the total square footage of commercial building space in Richmond. Based on the Richmond General Plan 2030, Richmond has 2.6 million square feet of commercial space (City of Richmond, 2012b). Richmond's total commercial square footage was converted to an estimated total "footprint" of 962,963 square feet using U.S. Energy Information Administration (EIA) data for commercial buildings in the United States (EIA, 2003).⁹⁸ Assuming 100% of commercial buildings are flat roof buildings (i.e., roof space is equal to the building footprint), 65% of commercial roof space is available for solar installation, and a photovoltaic density of 110 W per square meter, the corresponding maximum annual greenhouse gas savings would be 1,844 MT CO₂e per year, using the emissions calculation methodology described in Section 1.6.⁹⁹

1.16.7 Pedestrian and Bicycle Master Plans Implementation

Maximum potential greenhouse gas savings from implementation of the Pedestrian Plan and Bicycle Master Plan were calculated based on the proportion of miles traveled by bicycle or on foot (or modal split) by residents of Boulder, Colorado. Boulder, Colorado is a well-performing city with a modal split of 12.7% for bicycle and pedestrian miles (NRCI, 2012). Based on the City of Richmond's 2005 greenhouse gas inventory, annual greenhouse gas emissions from transportation on local roads are 178,743 MT CO₂e from gasoline-fueled

⁹⁶ The maximum reduction of 50% is based on the California Public Utilities Commission (CPUC) goal to convert 50% of existing commercial buildings to zero net energy buildings by 2030 (CPUC, 2011).

⁹⁷ Greenhouse gas emissions from the commercial sector taken from the 2005 greenhouse gas inventory for the City of Richmond.

⁹⁸ The total floor space of commercial buildings was scaled to estimate the total "footprint" based on EIA data for commercial buildings (e.g., percent of buildings that are one-story, two-story, etc.). An average number of floors per commercial building was calculated based on the following distribution (percent of total square feet shown in parentheses): one floor (40%), two floors (25%), three floors (12%), four to nine floors (16%), ten or more floors (8%). The minimum number of floors was assumed for the "four to nine" and "ten or more" categories.

⁹⁹ Used the estimated percentage of available roof space for commercial buildings in colder climates and photovoltaic density for flat roofs (NREL, 2008).

vehicles.¹⁰⁰ Assuming 12.7% of miles traveled on local roads were shifted to bicycle or travel on foot, the maximum greenhouse gas savings would be 22,700 MT CO₂e per year.

1.16.8 Electric Vehicle Rebate

Maximum potential greenhouse gas savings from the electric vehicle rebate program were calculated assuming rebates could be provided for all vehicles operated by Richmond residents. Assuming there are 18,710 households in Richmond that will buy one new car in the next 10 years, the corresponding maximum greenhouse gas savings would be 81,594 MT CO₂e per year, using the emission calculation methodology described in Section 1.8.¹⁰¹

1.16.9 Electric Vehicle Charging Stations

Maximum potential greenhouse gas savings from the electric vehicle charging station program were calculated assuming enough commercial charging stations were installed to reach a charging station density comparable to San Francisco. An estimated 182 commercial charging stations are present in San Francisco, corresponding to a charging station density of 0.006 charging stations per acre.¹⁰² If the same charging station density were achieved in Richmond, this would correspond to installation of approximately 217 charging stations.¹⁰³ Using the emission calculation methodology described in Section 1.8, the corresponding maximum greenhouse gas savings would be 7,687 MT CO₂e per year.

1.16.10 RideShare (Shuttle Circular Bus)

Maximum potential greenhouse gas savings from the use of a local shuttle circular service were calculated assuming that primary impact of shuttle operation would be to reduce the number of residents who drive alone to Richmond and El Cerrito Del Norte Bay Area Rapid Transit (BART) stations during the week. Assuming that all weekday single-occupied vehicle trips to these BART stations were switched to RideShare and that the shuttle operates 240 days per

¹⁰⁰ Greenhouse gas emissions from transportation on local roads taken from the 2005 greenhouse gas inventory for the City of Richmond.

¹⁰¹ Based on the number of households in Richmond with an annual household income of at least \$50,000 (City of Richmond, 2012a).

¹⁰² Number of charging stations in San Francisco obtained from ChargePoint, <http://www.chargepoint.com>, accessed December 19, 2013.

Total land area in San Francisco (30,016 acres) obtained from the United States Census Bureau (US CB, 2014).

¹⁰³ Based a total land area in Richmond of 55.9 square miles (City of Richmond, 2012a).

year, the annual avoided VMT would be approximately 2,849,955 miles.¹⁰⁴ Annual shuttle miles were calculated using the ratio of shuttle miles to VMT switched to RideShare from the Richmond Circular Bus program (ratio of 0.24 shuttle miles per mile switched to RideShare). Using this ratio, the annual shuttle VMT would be 688,129 miles per year. Using the emission calculation methodology described in Section 1.9, the annual greenhouse gas emissions removed from personal vehicles would be 1,066 MT CO₂e per year, the annual greenhouse gas emissions from shuttle operation would be 478 MT CO₂e per year, and the net maximum annual greenhouse gas savings would be 587 MT CO₂e per year.

1.16.11 RideShare (Van Service)

Maximum potential greenhouse gas savings from the use of a van service were calculated assuming that all residential non-work commuting trips could potentially be switched to RideShare. The annual avoided VMT was calculated using CalEEMod default trip generation rates for residential land use and default trip lengths for Contra Costa County. The default average trip rate for a single-family home was conservatively used (9.5 trips per day per dwelling unit).¹⁰⁵ The percentage of trips that are home-shopping trips and home-other trips was assumed to be 29.1% and 44.8%, respectively. The average trip length of home-shopping trips and home-other trips was assumed to be 4.3 and 5.4 miles, respectively.¹⁰⁶ Assuming 35,884 households in Richmond, the corresponding annual avoided VMT would be approximately 460 million miles.¹⁰⁷ Annual shuttle miles were calculated using the ratio of shuttle miles to VMT switched to RideShare from the Greenprint Transportation System (ratio of 0.17 shuttle miles per mile switched to RideShare). Using this ratio, the annual shuttle VMT would be 76 million miles per year. Using the emission calculation methodology described in Section 1.9, the annual greenhouse gas emissions removed from personal vehicles would be 171,308 MT CO₂e per year, the annual greenhouse gas emissions from shuttle operation would be 76,171 MT CO₂e per year, and the net maximum annual greenhouse gas savings would be 95,137 MT CO₂e per year.

¹⁰⁴ The annual avoided VMT is based on the following ridership data for Richmond residents on an average weekday: (1) 940 residents drive alone to the Richmond BART with a median car distance of 2.06 miles, and (2) 891 residents drive alone to the El Cerrito Del Norte BART station with a median car distance of 4.49 miles (BART, 2008).

¹⁰⁵ Based on the following CalEEMod default trip rates for single family homes (trips per day per dwelling unit): 9.57 (weekday), 10.08 (Saturday), 8.77 (Sunday).

¹⁰⁶ CalEEMod default trip type percentages and trip lengths for Contra Costa County.

¹⁰⁷ Used U.S. Census Bureau housing unit estimates for Richmond based on data collected from 2007 through 2011 (US CB, 2011).

1.16.12 Bicycle Share

Maximum potential greenhouse gas savings from the bicycle share program were calculated based on ridership data from bicycle share programs operated in well-performing U.S. cities. The maximum rides per day were calculated based on the population of Richmond and assuming an average ridership of 0.3 rides per day per person.^{108,109} Assuming that 43% of miles traveled by bicycle would replace vehicle trips and using the same emission calculation methodology described in Section 1.10, the maximum avoided VMT would be 13,950,747 miles and the corresponding maximum annual greenhouse gas savings would be 5,224 MT CO₂e per year.¹¹⁰

1.16.13 Transit Access

Maximum potential greenhouse gas savings from the transit access program were calculated assuming that all Richmond residents dwelling in multi-family residences with 20 or more units could be provided with transit passes. Based on the Richmond General Plan 2030, 3,482 housing units in Richmond are located within structures with 20 or more units (City of Richmond, 2012a). Assuming an average household size of 2.83 people per household, this corresponds to approximately 9,854 residents dwelling in these types of residences.¹¹¹ Assuming transit passes were distributed to all of these residents, the maximum annual greenhouse gas savings would be 1,840 MT CO₂e per year, using the same emission calculation methodology described in Section 1.11.

1.16.14 Wetlands Creation

Maximum potential greenhouse gas savings from the wetlands creation program were calculated assuming a wetland acreage equal to the largest wetland restoration program in Richmond (279.7 acres, Wildcat Creek Marsh Restoration Project).¹¹² Using the same emission calculation methodology described in

¹⁰⁸ Used Richmond population of 103,701. (City of Richmond, 2012a).

¹⁰⁹ Daily ridership based on survey results from the 2008 Capital Bikeshare Pilot Program (Washington, D.C.) (NLC, 2010).

¹¹⁰ Percent of miles that replace vehicle miles based on survey results from the 2008 B-Cycle Program (Denver, CO) (NLC, 2010).

¹¹¹ Average household size taken from the City of Richmond's General Plan 2030 (City of Richmond, 2012a).

¹¹² Based on information obtained from California EcoAtlas – San Francisco Estuary Institute. Available at: <http://www.ecoatlas.org/regions/ecoregion/bay-delta/projects>, accessed February 24, 2014.

Section 1.12, the maximum annual greenhouse gas savings would be 163 MT CO₂e per year.¹¹³

1.16.15 2-MW Solar Project

The maximum potential greenhouse gas savings from the 2-MW solar project are 666 MT CO₂e per year as described in Section 1.13.

1.17 CITY POLICY SYNERGIES

The City of Richmond has adopted several policies that aim to reduce the City's greenhouse gas footprint and meet the State's greenhouse gas reduction goals. These policies have informed the CGRP measures discussed above.

Examples of City policies and directives that address greenhouse gas emissions from industry in Richmond include the following:

- On September 16, 2008, the City Council passed Resolution No. 108-08, committing to the greenhouse gas emission reduction target established by Assembly Bill 32, which is 1990 levels by calendar year (CY) 2020, and also committing to targets established by Executive Order S-3-05, which include 2000 levels by CY 2010 and 80% below 1990 levels by CY 2050.
- Richmond General Plan 2030, adopted on April 25, 2012, includes an Energy and Climate Change Element that identifies policies and implementing actions to address energy and climate change needs, and outlines measures that can be implemented to reduce greenhouse gas emissions. Finding 5 of the Energy and Climate Element states that "Industries and businesses in Richmond should be encouraged to adopt green and sustainable practices and build capacity in the emerging green economy."
- General Plan Policy Energy and Climate Change Element EC5.2 calls on the City to "encourage existing businesses and industries to become increasingly environmentally progressive and continue making positive contributions to the community. Encourage businesses and industries to hire locally and to demonstrate reasons for not hiring local employees. Seek reciprocity in the hiring of Richmond residents in Contra Costa County and other nearby jurisdictions with local hiring ordinances. Encourage businesses and industries to participate in civic life and play a positive role in the community. Together with regulatory agencies, actively work with local

¹¹³ Since the method described in Section 1.12 assumes different CO₂ sequestration rates during the first 5 years of the wetland, the maximum annual greenhouse gas savings presented here represent the average annual savings over a 25-year project lifetime.

industries to ensure compliance with all applicable environmental regulations to limit pollution, decrease harmful impacts from emissions and protect the community from environmental hazards. Promote and encourage new clean and green industries that provide well-paying jobs, revenue and other community and environmental benefits; support efforts to require existing industries to decrease harmful emissions and impacts; and promote a mix of uses and a range of activities on industrial land to create jobs and revenue while avoiding conflict between industrial and nonindustrial uses."

- General Plan Land Use Element Policy LU3.7 encourages the City to "retain and support the modernization of Richmond's existing heavy industrial uses and support their continued transition to cleaner and more energy-efficient operations in order to reduce impacts to human and environmental health."

Examples of City policies and directives that support greenhouse gas reductions within Richmond include:

- General Plan Community Health and Wellness Element Policy HW10.4 encourages the City to "promote the generation, transmission and use of a range of renewable energy sources such as solar, wind power and waste energy to meet current and future demand and encourage new development and redevelopment projects to generate a portion of their energy needs through renewable sources."
- General Plan Community Health and Wellness Action HW9.G applies the Bay Area Air Quality Management District's CEQA thresholds of significance and mitigation measures to ensure that new facilities do not create additional net cumulative air pollution health impacts on sensitive uses. Mitigation could include measures to reduce air emissions, monitor exposure and prevent exposure.
- General Plan Housing Element Policy H-2.2 encourages the City to "promote the incorporation of green building measures and practices in new residential development projects and existing residential structures."
- General Plan Energy and Climate Change Element Policy EC3.2 encourages the City to "promote efficient use of energy and conservation of available resources in the design, construction, maintenance and operation of public and private facilities, infrastructure and equipment. Collaborate with partner agencies, utilities and businesses to support a range of energy efficiency, conservation and waste reduction measures including: development and retrofitting of green buildings and infrastructure; installation of energy-efficient appliances and equipment in homes and offices; and heightened awareness of energy and conservation issues. Collaborate with local

workforce development programs to train and employ Richmond residents in these other green jobs sectors."

- General Plan Energy and Climate Change Element Action EC6.E Urban Forestry Management Plan directs the City to "continue to implement the urban forest management plan to guide landscaping practices in urban areas of the City, reduce the heat-island effect and contribute to carbon mitigation."
- Bicycle Master Plan, adopted by the Richmond City Council on November 1, 2011, sets forth a blueprint for completion of a 145-mile system of bikeways and support facilities within Richmond. The plan builds upon the existing system of on-street and off-street bicycle facilities throughout the city, focusing on connections between neighborhoods, safe routes to schools and access to major destinations such as employment centers, stores and shops, parks, trails and open space areas.
- Pedestrian Plan, adopted by the Richmond City Council on November 1, 2011 aims to improve the safety, convenience and appeal of walking throughout the city by making specific recommendations on how to overcome obstacles to safe walking.

1.18 REFERENCES

- American Forests. 2014. *Sacramento Urban Forest Fact Sheet*. Accessed December 31, 2013. <http://www.americanforests.org/our-programs/urbanforests/10-best-cities-for-urban-forests/10-best-cities-for-urban-forests-sacramento/sacramento-urban-forest-fact-sheet/>.
- Bala, G., et al. 2007. Combined Climate and Carbon-Cycle Effects of Large-Scale Deforestation, *Proceedings of the National Academy of Sciences*, v. 104, No. 16, pp. 6550-6555.
- Bay Area Air Quality Management District (BAAQMD). 2012. *CEQA Air Quality Guidelines, Section 5.4 Mitigating Local Community Risk and Hazard Impacts*. Accessed October 22, 2013. http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en.
- Bay Area Rapid Transit (BART). 2008. *BART Station Profile Study*, Marketing and Research Department. Accessed December 19, 2013. http://www.bart.gov/sites/default/files/docs/2008StationProfileReport_web.pdf.
- Betts, R. 2000. Offset of the Potential Carbon Sink from Boreal Forestation by Decreases in Surface Albedo, *Nature*, v. 408, pp. 187-190.

- Brown, W.E. and Schueler, T.R. 1997. *The Economics of Stormwater BMPs in the Mid-Atlantic Region: An Examination of the Real Cost of Storm Water Control*, Center for Watershed Protection.
- California Air Pollution Control Officers Association (CAPCOA). 2010. *Quantifying Greenhouse Gas Mitigation Measures*. Chapter 7. Section 3.2.1. June. Accessed October 21, 2013). <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>.
- California Air Resources Board (CARB). 2011. *Compliance Offset Protocol Urban Forest Projects*. Accessed October 31, 2013. <http://www.arb.ca.gov/regact/2010/capandtrade10/copurbanforestfin.pdf>.
- California Air Resources Board (CARB). 2010. *Local Government Operations Protocol*, V1.1. Accessed October 9, 2013. http://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf.
- California Climate Action Registry (CCAR). 2013. *MCE Emission Factor Certification Template*.
- California Energy Commission (CEC). 2011. Life-Cycle Cost Methodology. 2013 California Building Energy Efficiency Standards. Accessed: October 9, 2013. http://www.energy.ca.gov/title24/2013standards/prerulemaking/documents/general_cec_documents/2011-01-14_LCC_Methodology_2013.pdf.
- California Energy Commission (CEC). 2013a. *Draft Action Plan for the Comprehensive Energy Efficiency Program for Existing Buildings*. Accessed October 15, 2013. <http://www.energy.ca.gov/2013publications/CEC-400-2013-006/CEC-400-2013-006-D.pdf>.
- California Energy Commission (CEC). 2013b. Consultant Report: *Cost-Effectiveness of Rooftop Photovoltaic Systems for Consideration in California's Building Energy Efficiency Standards*.
- California Integrated Waste Management Board (CIWMB). 2009. *California 2008 Statewide Waste Characterization Study*, Table ES-3. Accessed October 9, 2013. <http://www.calrecycle.ca.gov/Publications/Detail.aspx?PublicationID=1346>.
- California Public Utilities Commission (CPUC). 2011. *California Energy Efficiency Strategic Plan*. Accessed December 19, 2013. http://www.cpuc.ca.gov/NR/rdonlyres/A54B59C2-D571-440D-9477-3363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf.

California Solar Initiative (CSI). 2010 *Statistics*. Accessed October 29, 2013.
<http://www.californiasolarstatistics.ca.gov>.

California Stormwater Quality Association (CASQA). 2003. *Constructed Wetlands*.
In: California Stormwater BMP Handbook, New Development and
Redevelopment. Website: www.cabmphandbooks.com

CalRecycle. 2014 *Landfill Tonnage Reports*. Accessed October 29, 2013.
<http://www.calrecycle.ca.gov/SWFacilities/Landfills/Tonnages/>.

Cambridge Systematics, Inc. 2010. *T4T Pilot Project Evaluation and
Recommendations for Future Implementation*. June. Prepared for: The
Metropolitan Transportation Commission. Accessed December 05, 2013.
[http://www.mtc.ca.gov/planning/smart_growth/tod/T4T/
TransLink_for_TOD_Pilot_Project_FINAL.pdf](http://www.mtc.ca.gov/planning/smart_growth/tod/T4T/TransLink_for_TOD_Pilot_Project_FINAL.pdf).

City of Berkeley. 1998. *Berkeley Bicycle Plan*. Accessed October 29, 2013.
[http://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/
Level_3_-_Energy_and_Sustainable_Development/
Berkeley%20Climate%20Action%20Plan.pdf](http://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/Berkeley%20Climate%20Action%20Plan.pdf).

City of Berkeley. 2009. *Berkeley Climate Action Plan*. Accessed October 28, 2013.
[http://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/
Level_3_-_Energy_and_Sustainable_Development
/Berkeley%20Climate%20Action%20Plan.pdf](http://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/Berkeley%20Climate%20Action%20Plan.pdf).

City of Richmond. 2012a. *Richmond General Plan 2030, Housing Element*.
Accessed December 19, 2013.
<http://www.ci.richmond.ca.us/index.aspx?nid=2608>.

City of Richmond. 2012b. *Richmond General Plan 2030, Economic Development
Element*. Accessed December 19, 2013.
<http://www.ci.richmond.ca.us/index.aspx?nid=2608>.

City of San Diego. 2012. *Draft Climate Mitigation and Adaptation Plan*.
Appendices. Accessed December 1, 2013. [http://www.sandiego.gov/
environmental-services/pdf/sustainable/finalcmapappendices.pdf](http://www.sandiego.gov/environmental-services/pdf/sustainable/finalcmapappendices.pdf).

City and County of San Francisco. 2012. *News Release: Mayor Lee Announces San
Francisco Reaches 80 Percent Landfill Waste Diversion, Leads All cities in
North America*, Office of the Mayor, October 15. Accessed December 19,
2013. <http://sfmayor.org/index.aspx?recordid=1113&page=846>.

- City of Walnut Creek. 2012. *Climate Action Plan*. Accessed October 29, 2013.
[http://www.walnut-creek.org/documents/PS/CAP/
Climate_Action_Plan_Chapter5_CommunityMeasures.pdf](http://www.walnut-creek.org/documents/PS/CAP/Climate_Action_Plan_Chapter5_CommunityMeasures.pdf)
- Denver Bike Sharing (DBS). 2012. *Denver Bike Sharing 2012 Annual Report*.
Accessed October 20, 2013. [http://denverbikesharing.org/AnnualReports/
DBS_2012_Annual_Report.pdf](http://denverbikesharing.org/AnnualReports/DBS_2012_Annual_Report.pdf).
- East Bay Energy Watch (EBEW). 2013. Accessed February 1, 2014.
<http://www.eastbayenergywatch.com/>.
- Energy Information Administration (EIA). 2003. *Commercial Buildings Energy Consumption Survey: Consumption and Expenditures Tables*.
Accessed February 25, 2014. [http://www.eia.gov/consumption/
commercial/data/archive/cbecs/cbecs2003/detailed_tables_2003/
2003set9/2003pdf/c1.pdf](http://www.eia.gov/consumption/commercial/data/archive/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003pdf/c1.pdf).
- Euliss, N., Jr., et al. 2006. North American Prairie Wetlands Are Important Nonforested Land-Based Carbon Storage Sites, *Science of the Total Environment*, v. 361, pp. 79-188.
- Federal Highway Administration (FHWA). 2011. *Average Annual Miles per Driver by Age Group*. Accessed October 2013. [http://www.fhwa.dot.gov/ohim/
onh00/bar8.htm](http://www.fhwa.dot.gov/ohim/onh00/bar8.htm).
- Greenprint Transportation System. 2008. *Reducing the Carbon Footprint for Transportation One Trip at a Time*. October 10.
- Hansen, L.T. 2009. The viability of creating wetlands for the sale of carbon offsets, *Journal of Agricultural and Resource Economics*, v. 34, No. 2, pp. 350-365.
- Intergovernmental Panel on Climate Change (IPCC). 2006. *Guidelines for National Greenhouse Gas Inventories*. Volume 5, Chapter 2. Table 2.4. Accessed October 9, 2013. [http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/
5_Volume5/V5_2_Ch2_Waste_Data.pdf](http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/5_Volume5/V5_2_Ch2_Waste_Data.pdf).
- Kirschbaum, M., et al. 2011. Implication of Albedo Changes Following Afforestation on the Benefits of Forests as Carbon Sinks, *Biogeosciences*, v. 8, pp. 3687-3696.
- J. Kudo, MCE. E-mail communication with D. Kim, ENVIRON, October 14, 2013.

- Marin Energy Authority (MEA). 2012. MEA Energy Efficiency Program for 2013-2014, E3 Calculators (Multi-Family). Accessed October 1, 2013.
<http://www.marinenergyauthority.org/ee>.
- McPherson, E.G. 2008. *Urban Forestry and Climate Change*. USDA Forest Service, Pacific Southwest Research Station. Accessed October 9, 2013.
<http://www.fs.fed.us/ccrc/topics/urban/index.shtml>.
- National League of Cities (NLC). 2010. *City Practice Brief: Integrating Bike Share Programs into a Sustainable Transportation System*. Accessed December 19, 2013. <http://www.nlc.org/documents/Find%20City%20Solutions/Research%20Innovation/Sustainability/integrating-bike-share-programs-into-sustainable-transportation-system-cpb-feb11.pdf>.
- National Renewable Energy Laboratory (NREL). 2008. *Supply Curves for Rooftop Solar PV-Generated Electricity for the United States*. November. Accessed February 25, 2014. <http://www.nrel.gov/docs/fy09osti/44073.pdf>.
- National Research Center, Inc. (NRCI). 2012. *Modal Shift in the Boulder Valley. Prepared for the City of Boulder Transportation Division*. December. Accessed December 19, 2013. <https://www-static.bouldercolorado.gov/docs/modal-shift-report-1990-2012-1-201305291129.pdf>.
- Pacific Gas & Electric (PG&E). 2013a. *Greenhouse Gas Emission Factors: Guidance for PG&E Customers*. Accessed November 13, 2013. http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf.
- Pacific Gas & Electric (PG&E). 2013b. *Energy Related Emissions Summary. Incorporated City of Richmond PG&E Energy Overview 2005 to 2011*. Obtained June 13, 2013.
- G. Reub. 2010. Personal communication with R. Abbott, ENVIRON.
- SunPower. 2011. *Valuing the Return on Solar Projects for Business and Government Agencies*. Accessed February 12, 2014.
<http://us.sunpower.com/>.
- U.S. Bureau of Economic Analysis (BEA). 2010a. Regional Input-Output Modeling System (RIMS II). Table 2.5 Total Multipliers for Output, Earnings, Employment and Value Added by Industry Aggregation, Contra Costa County, Construction Industry.

- U.S. Bureau of Economic Analysis (BEA). 2010b. National Income and Product Account Tables (6.4D and 6.5D, Construction Industry-2010). Accessed September 2013. http://www.bea.gov/national/nipaweb/SS_Data/Section6All.xls.xls.
- U.S. Bureau of Economic Analysis (BEA). 2013. *Personal Income and Outlays*. Accessed September 2013. <http://www.bea.gov/newsreleases/national/pi/pinewsrelease.htm>.
- U.S. Census Bureau (US CB). 2011. American FactFinder. Accessed February 24, 2014. <http://factfinder2.census.gov/>.
- U.S. Census Bureau (US CB). 2014. Accessed December 19, 2013. <http://quickfacts.census.gov/qfd/states/06/06075.html>.
- U.S. Department of Transportation (US DOT). 2009. Data Extraction Tool. Accessed October 2013. <http://nhts.ornl.gov/det/Extraction1.aspx>.
- U.S. Department of Transportation (US DOT). 2010. *National Transportation Statistics*. Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles. Accessed October 2013. http://www.rita.dot.gov/bts/sites/rita.dot.gov/bts/files/publications/national_transportation_statistics/html/table_04_23.html.
- U.S. Environmental Protection Agency (EPA). 2005. *Calculating Emissions of Greenhouse Gases: Key Facts and Figures*. Accessed October 2013. <http://nepis.epa.gov/Adobe/PDF/P1001YTV.PDF>.
- U.S. Environmental Protection Agency (EPA). 2012. *Code of Federal Regulations*, Title 40: Protection of Environment, Part 98 – Mandatory Greenhouse Gas Reporting, Table A-1.
- University of California Los Angeles (UCLA). 2012. *Lifetime based on assumption used in Financial Viability of Non-Residential Electric Vehicle Charging Stations*. Luskin School of Public Affairs. Accessed November 15, 2013. 2012. <http://luskin.ucla.edu/sites/default/files/Non-Residential%20Charging%20Stations.pdf>.

Table A4.8-CGRP-1
Urban Forestry
Community GHG Reduction Program
Richmond, California

GHG Emissions Reduction Factor Basis

	Value	Units	Notes/Source
Number of Trees (Basis)	50	million trees	Accounts for carbon sequestration and energy savings effects from shading.
GHG Emissions Reduction	4.5	million short tons CO2 annually	US Forest Service, Center for Urban Forest Research. Available at: http://www.fs.fed.us/ccrc/topics/urban-forests/ . Accessed: October 2, 2013.
GHG Emissions Reduction Factor	0.082	MT CO2 per year per tree	

Costing Basis

		Tree Type		
		Right of Way Trees	Park Trees	Trees to Residents
	\$ per tree \ Quantity	2,000	1,000	2,000
Cost of Tree	\$40	\$80,000	\$40,000	\$80,000
Cost of Tree Equipment (stakes, ties, fertilizer)	\$12	\$24,000	\$12,000	\$24,000
Costs of Planting in City Right of Way	\$100	\$200,000		
Costs of Maintaining in City Right of Way	\$40	\$80,000		
Costs of Planting in City Parks	\$50		\$50,000	
	Total	\$590,000		

Total Cost Per Tree	\$118	Average cost per tree	Costing information from the City of Richmond Parks Department. The average cost per tree is calculated by the total costs above divided by the number of trees in the basis.
----------------------------	--------------	------------------------------	---

Cost Effectiveness

	Value	Units	Source/Notes
GHG Emissions Reduction Factor	0.082	MT CO2 per year per tree	From above
Lifetime of Project	25	years	The California Air Resources Board (ARB) uses a 25-year crediting period for urban forest offset projects. Source: ARB. 2011. Compliance Offset Protocol Urban Forest Projects. October 20. Available at: http://www.arb.ca.gov/regact/2010/capandtrade10/copurbanforestfin.pdf (Accessed October 31, 2013)
Average cost per tree	\$118	\$	From above
Cost effectiveness	\$58	\$/MT CO2e	Calculated

Abbreviations:

CO2 - carbon dioxide
CO2e - carbon dioxide equivalents
GHG - greenhouse gas
MT - metric ton

Table A4.8-CGRP-2
Zero Waste Programs
Community GHG Reduction Program
Richmond, California

Historical Disposal Rates

Region	Report Year	Total Disposed (tons)
West Contra Costa Integrated Waste Management Authority (WCCIWMA)	2000	199,176
	2001	210,727
	2002	229,228
	2003	225,353
	2004	232,225
	2005	228,837
	2006	192,003
	2007	174,787
	2008	162,648
	2009	143,009

Disposal Assumptions

		Units	Sources
10-Year Disposal Average for WCCIWMA	199,799	tons/year	CalRecycle Landfill Tonnage Reports. Available at: http://www.calrecycle.ca.gov/SWFacilities/Landfills/Tonnage s/. Accessed: October, 2013.
Richmond Population in WCCIWMA	50%	%	City of Richmond
10-Year Disposal Average for Richmond	99,900	tons/year	Calculation
Current Diversion Rate	52%	%	City of Richmond
Total Waste Generated in Richmond	208,124	tons/year	Calculation

Cost Effectiveness

		Units	Sources
Program Implementation Costs (Annual)			
Free indoor recycling containers for businesses	\$50,000	\$/year	City of Richmond
Free recycling containers for residents	\$25,000	\$/year	City of Richmond
Posters and cart stickers for businesses and residents	\$50,000	\$/year	City of Richmond
Mailers to businesses and residents	\$25,000	\$/year	City of Richmond
Technical Assistance Consulting	\$50,000	\$/year	City of Richmond
Total Cost after Full Implementation (10 years)	\$2,000,000	\$	City of Richmond
GHG Reduced at Diversion Rate Goal (74%)	21,838	MT CO2e	Calculation (See Table A4.8-CGRP-3)
Project Lifetime	25	years	
Cost Effectiveness	\$4	\$/MT CO2e	Calculation

Abbreviations:

CO2e - carbon dioxide equivalents

GHG - greenhouse gas

MT - metric ton

WCCIWMA - Western Contra Costa Integrated Waste Management Association

Table A4.8-CGRP-3
Zero Waste Programs - GHG Reduction Calculations
Community GHG Reduction Program
Richmond, California

GHG Reduction Calculations

GHG Reduction Calculations													
Scenario	Diversion Rate	Waste Profile	Annual Waste Disposal ¹ (tons)	Degradable Waste Type	Percent of Waste Profile ²	Disposed Waste by Type (tons)	% DOC ³	% DANF ⁴	Generation (tons)	Methane Emissions (tons)	CO2 Emissions (tons)	CO ₂ e ⁵ (tons)	Total CO2e (metric tons)
Current Diversion Rate (52%)	52%	CA Overall Disposed Waste Stream	99,900	Paper/cardboard	17%	17,283	40%	43%	1,478	473	9,536	19,466	47,646
				Textiles	10%	9,690	24%	50%	581	186	3,752	7,659	
				Food waste	16%	15,484	15%	87%	1,005	321	6,483	13,233	
				Wood	15%	14,485	43%	23%	726	232	4,683	9,559	
				Garden and Park waste	7%	7,093	20%	28%	198	63	1,276	2,604	
New Diversion Rate (74%)	74%	CA Overall Disposed Waste Stream	54,112	Paper/cardboard	17%	9,361	40%	43%	800	256	5,165	10,544	25,809
				Textiles	10%	5,249	24%	50%	315	101	2,032	4,149	
				Food waste	16%	8,387	15%	87%	544	174	3,511	7,168	
				Wood	15%	7,846	43%	23%	393	126	2,537	5,178	
				Garden and Park waste	7%	3,842	20%	28%	107	34	691	1,410	
GHG Reduction													21,838

Notes:

1. Waste disposal was derived from the West Contra Costa Integrated Waste Management Authority, assuming Richmond contributes to 50% of the waste disposed.
2. The percent of waste profile for each degradable waste type is the fraction of the total waste disposed made up by each type. 'Carpet' and 'Remainder/Composite Organics' waste streams are included in the Textile category due to waste stream definitions and available DOC/DANF data.
3. The percent degradable organic carbon (DOC) is the fraction of degradable carbon in each degradable waste type. Data for percent DOC is based on IPCC Guidelines.
4. The percent degradable anaerobic fraction (DANF) is the fraction of each degradable waste type that is capable of decomposition in anaerobic conditions. Data for percent DANF is based on California Air Resources Board data (Local Government Operations Protocol, V 1.1).
5. Represents the total carbon dioxide emissions plus methane emissions converted to carbon dioxide equivalents by a global warming potential factor of 21 based on 40 CFR 98 (emissions calculated per CalEEMod guidance). Emission estimates account for an oxidation efficiency of methane of 10% (per CalEEMod guidance), a destruction efficiency of landfill gas of 98% (per CalEEMod Guidance), and a collection efficiency of landfill gas of 75% (per 2005 Richmond GHG Inventory).

Abbreviations:

CCAR - California Climate Action Registry
CO₂e - carbon dioxide equivalent
DANF - Degradable anaerobic fraction
DOC - Degradable Organic Matter

Sources:

40 Code of Federal Regulations Part 98 - Mandatory Greenhouse Gas Reporting
CalEEMod. California Emissions Estimator Model. Available online at: <http://www.caleemod.com/>. Appendix A.

Table A4.8-CGRP-4
Residential Energy Efficiency
Community GHG Reduction Program
Richmond, California

GHG Emissions Reduction

	Value	Units	Sources
Electricity Emissions Factor	0.39	lbs CO2e/kWh	See Table EF
Natural Gas Emissions Factor	11.71	lbs CO2e/therm	See Table EF
Energy Reduction Goal for Existing Homes	40%	%	Draft Action Plan for the Comprehensive Energy Efficiency Program for Existing Buildings. California Energy Commission. Available at: http://www.energy.ca.gov/2013publications/CEC-400-2013-006/CEC-400-2013-006-D.pdf . Accessed: October, 2013.
Average Electricity (kWh) saved per % Reduction	12.3	kWh / %	PG&E Company's Energy Upgrade California Program Data for Richmond.
Average Therm Saved per % Reduction	8.5	therm / %	PG&E Company's Energy Upgrade California Program Data for Richmond.
Average Electricity (kWh) saved per Home Retrofit (40% goal)	494	kWh/home	PG&E Company's Energy Upgrade California Program Data for Richmond.
Average Natural Gas (Therms) saved per Home Retrofit (40% goal)	338	therm/home	PG&E Company's Energy Upgrade California Program Data for Richmond.
Annual GHG Reduction per Household	1.9	tonnes	Calculation

Economic Benefit

	Value	Units	Sources
Job Impact from Retrofit Work (Construction)			
Average Cost per % Energy Savings	\$414	\$ / %	PG&E Company's Energy Upgrade California Program Data for Richmond.
Average Cost for 40% Upgrade	\$16,573	\$/home	Calculation
Job-years per \$1MM	9.66	job-years/\$1MM	2010 RIMS II Multipliers for Construction Industry in Contra Costa County. US Bureau of Economic Affairs.
Ratio of Full Time Employment (FTE) to Total Employment (Construction)	0.95		National Income and Product Account tables (6.4D and 6.5D, Construction Industry - 2010). US Bureau of Economic Affairs. Available at: www.bea.gov/national/nipaweb/SS_Data/Section6All.xls . Accessed: September, 2013.
Jobs Metric (Construction)	0.15	job-years/home retrofitted (annual FTE)	Calculation
Job Impact from Energy Savings (Retail)			
Average Electricity (kWh) saved per % Reduction	12.3	kWh / %	PG&E Company's Energy Upgrade California Program Data for Richmond.
Average Therm Saved per % Reduction	8.5	therm / %	PG&E Company's Energy Upgrade California Program Data for Richmond.

Table A4.8-CGRP-4
Residential Energy Efficiency
Community GHG Reduction Program
Richmond, California

Annual Electricity (kWh) Saved per Home	494	kWh/home	PG&E Company's Energy Upgrade California Program Data for Richmond.
Annual Natural Gas (therm) Saved per Home	338	therm/home	PG&E Company's Energy Upgrade California Program Data for Richmond.
PG&E Electricity Cost	\$0.14	\$/kWh	Average of May - August 2013 Tier 1/2 PG&E Electricity Rates
PG&E Natural Gas Cost	\$1.15	\$/therm	Average of 2013 Base & Excess PG&E Natural Gas Rates
Savings per Home	\$458	\$/home/year	Calculation
% of Savings Spent	90%	%	Conservatively assume 10% of income is saved. July 2013 rate was 4.4%. US Bureau of Economic Affairs. Available at: http://www.bea.gov/newsreleases/national/pi/pinewsrelease.htm . Accessed: September 2013.
% of Spending within Community	100%	%	Per Department of Transportation 2009 data for California, overall average trip distance is 8.79 miles, which is within the boundary of Contra Costa County. Available at: http://nhts.ornl.gov/det/Extraction1.aspx . Accessed: October 2013.
Annual return to community	\$412	\$/home/year	Calculation
Jobs per \$1MM	13.5	jobs	2010 RIMS II Multipliers for Retail Industry in Costra Costa County. US Bureau of Economic Affairs.
Ratio of FTE to Total Employment (Retail)	0.85		National Income and Product Account tables (6.4D and 6.5D, Construction Industry - 2010). US Bureau of Economic Affairs. Available at: www.bea.gov/national/nipaweb/SS_Data/Section6All.xls . Accessed: September, 2013.
Jobs Metric (Retail)	0.005	jobs/home retrofitted (annual FTE)	Calculation

Cost Effectiveness

	Value	Units	Sources
Total Cost to Reduce Household Energy Consumption by 40%	\$8,000		Information supplied by Richmond building performance contractor AHE
Proposed Chevron Mitigation Rebate (Standard)	\$2,000		Proposed amount per home
Proposed Chevron Mitigation Rebate (80% AMI)	\$4,000		Proposed amount per home. 80% AMI is double what would be offered under the standard rebate.
GHG Emissions Per Household (Pre-Retrofit)	4.7	MT CO2e	Average GHG emissions per household before energy efficiency retrofit assuming 40% reduction based on PG&E Company's Energy Upgrade California Program Data for Richmond.
GHG Savings Per Household	1.9	MT CO2e	Calculation

Table A4.8-CGRP-4
Residential Energy Efficiency
Community GHG Reduction Program
Richmond, California

Life Expectancy of Improvements	30	years	The California Energy Commission (CEC) uses 30 years for life-cycle cost analysis for residential building envelope energy efficiency measures. CEC Life-Cycle Cost Methodology. 2013 California Building Energy Efficiency Standards. Available at: http://www.energy.ca.gov/title24/2013standards/prerulemaking/documents/general_cec_documents/2011-01-14_LCC_Methodology_2013.pdf . Accessed: October 9, 2013.
Cost Effectiveness (Leveraged - Standard)	\$35	\$/MT CO2e	Calculation
Cost Effectiveness (Leveraged - 80% AMI)	\$71	\$/MT CO2e	Calculation

Abbreviations:

CEC - California Energy Commission

CO2e - carbon dioxide equivalents

FTE - full-time equivalents

GHG - greenhouse gas

kWh - kilowatt-hour

lbs - pounds

MCE - Marin Clean Energy

\$1MM - million dollars

MT - metric ton

PG&E - Pacific Gas & Electric

Table A4.8-CGRP-5
Commercial Energy Efficiency
Community GHG Reduction Program
Richmond, California

	Value	Units	Sources
Therm Incentive	\$1.00	\$ per therm per year	East Bay Energy Watch (http://www.eastbayenergywatch.com/)
kWh Incentive	\$0.14	\$ per kWh per year	East Bay Energy Watch (http://www.eastbayenergywatch.com/)
Electricity Emissions Factor	0.39	lbs. CO2e/kWh	Table EF
Natural Gas Emissions Factor	11.7	lbs. CO2e/therm	Table EF

Economic Benefit

	Value	Units	Sources
Total Job Cost (\$)/Program Cost (\$)	2		Assumption
Jobs per \$1MM	9.66	jobs/\$1MM	2010 RIMS II Multipliers for Construction Industry in Contra Costa County. US Bureau of Economic Affairs.
Ratio of FTE to Total Employment	0.95		National Income and Product Account tables (6.4D and 6.5D, Construction Industry - 2010). US Bureau of Economic Affairs. Available at: www.bea.gov/national/nipaweb/SS_Data/Section6All_xls.xls . Accessed: September, 2013.

Cost Effectiveness

	Value	Units	Sources
Program Budget (Example)	\$360,000	\$/year	Example program budget for one year to be used on incentives.
Natural Gas (Therm) Savings	315,789	Therm	Calculation. Assumes equal savings of therms and kWh
Electricity (kWh) Savings	315,789	kWh	Calculation. Assumes equal savings of therms and kWh
GHG Savings (Therm)	55	MT/year	Calculation
GHG Savings (kWh)	1,678	MT/year	Calculation
GHG Savings (Total)	1,733	MT/year	Calculation.
Life Expectancy of Improvements	30	years	The California Energy Commission (CEC) uses 30 years for life-cycle cost analysis for residential building envelope energy efficiency measures. CEC Life-Cycle Cost Methodology. 2013 California Building Energy Efficiency Standards. Available at: http://www.energy.ca.gov/title24/2013standards/prerulemaking/documents/general_cec_documents/2011-01-14
Cost Effectiveness (Incentives)	\$7	\$/MT CO2e	Calculation

Abbreviations:

CEC - California Energy Commission
CO2e - carbon dioxide equivalents
FTE - full-time equivalents
GHG - greenhouse gas
kWh - kilowatt-hour

Table A4.8-CGRP-5
Commercial Energy Efficiency
Community GHG Reduction Program
Richmond, California

lbs - pounds
MCE - Marin Clean Energy
\$1MM - million dollars
MT - metric ton
PG&E - Pacific Gas & Electric

Table A4.8-CGRP-6
Residential Solar Rebate (Single-Family and Multi-Family)
Community GHG Reduction Program
Richmond, California

	Value	Units	Sources
Typical Size of System:	3	kW	
Annual Energy Production (kWh):	4,932	kWh	Solar Calculator: http://www.gosolarcalifornia.ca.gov/tools/clean_power_estimator.php (Accessed June 15, 2013)
Electricity Emissions Factor:	0.39	lbs CO2e/kWh	See Table EV
GHG reduction annually:	0.9	tonnes/year	

Economic Benefit

	Value	Units	Sources
Job Impact from Solar Installation (Construction)			
Installation Cost (per watt)	\$5.98	\$/watt	Cost data from California Solar Initiative (CSI) General Market program data based on last twelve months for systems < 10kW (dated October 23, 2013). California Solar Initiative (CSI) Statistics: http://www.californiasolarstatistics.ca.gov (Accessed October 29, 2013).
Installation Cost (per home)	\$17,940	\$/home	Calculated
Job-years per \$1MM:	9.66	job-years/\$1MM	2010 RIMS II Multipliers for Construction Industry in Contra Costa County. US Bureau of Economic Affairs.
Ratio of FTE to Total Employment:	0.95		National Income and Product Account tables (6.4D and 6.5D, Construction Industry - 2010). US Bureau of Economic Affairs. Available at: www.bea.gov/national/nipaweb/SS_Data/Section6All.xls . Accessed: September, 2013.
Jobs Metric (Construction)	0.16	job-years/home (annual FTE)	Calculated
Job Impact from Energy Savings (Retail)			
% of Savings Spent:	90%	%	Conservatively assume 10% of income is saved. July, 2013 rate was 4.4%. US Bureau of Economic Affairs. Available at: http://www.bea.gov/newsreleases/national/pi/pinewsrelease.htm . Accessed: September, 2013.
% of Spending within Community:	100%	%	Per Department of Transportation 2009 data for CA, overall average trip distance is 8.79 miles, which is within the boundary of Contra Costa County. Available at: http://nhts.ornl.gov/det/Extraction1.aspx . Accessed: October, 2013.
Annual kWh saved:	4,932	kWh saved	
PG&E Electricity Cost:	\$0.14	\$/kWh	Average of May - August 2013 Tier 1/2 PG&E Electricity Rates.

Table A4.8-CGRP-6
Residential Solar Rebate (Single-Family and Multi-Family)
Community GHG Reduction Program
Richmond, California

Savings per Home	\$697	\$/home/year	Calculated
Annual Return to Community:	\$627	\$/home/year	Calculated based on % savings spent.
Jobs per \$1MM:	14	jobs/\$1MM	2010 RIMS II Multipliers for Retail Industry in Contra Costa County. US Bureau of Economic Affairs.
Ratio of FTE to Total Employment:	0.85		National Income and Product Account tables (6.4D and 6.5D, Construction Industry - 2010). US Bureau of Economic Affairs. Available at: www.bea.gov/national/nipaweb/SS_Data/Section6All.xls . Accessed: September, 2013.
Jobs Metric (Retail)	0.007	jobs/home (annual FTE)	Calculated

Cost Effectiveness

	Value	Units	Source
Average System Size	3	kW	
Residential Cost per kW	\$5,980	\$ per kW	Per CSI above.
Total Cost of Average System	\$17,940		Calculation
Federal Incentive Tax Credit (ITC)	30%		Section 25D of the US Tax Code.
	\$5,382		
California Solar Initiative (CSI) Rebate	\$0.20	\$ per W	The megawatt target for the CSI has been reached but additional funding may be available. The PG&E Territory is currently under Step 10 with Expected Performance-Based Buydown (EPBB) Incentive Payments of \$0.20 per watt. CSI: http://www.gosolarcalifornia.org/csi/rebates.php Statewide Trigger Tracker: http://www.csi-trigger.com/
	\$600		
Proposed Residential Chevron Mitigation Rebate	\$2,000	\$ per kW	
	\$6,000	\$	For 3-kW system
Resulting Cost to Owner	\$5,958		Subtracting ITC, CSI Rebate, and Chevron Mitigation Rebate
GHG Savings	0.86	MT CO ₂ e/year	Calculated above
Estimated life of system:	25	years	Source: CEC. 2013. Consultant Report: Cost-Effectiveness of Rooftop Photovoltaic Systems for Consideration in California's Building Energy Efficiency Standards. May
Cost Effectiveness (Rebate)	\$278	\$/MT CO₂e	

Abbreviations:

CEC - California Energy Commission

CO₂e - carbon dioxide equivalents

Table A4.8-CGRP-6
Residential Solar Rebate (Single-Family and Multi-Family)
Community GHG Reduction Program
Richmond, California

FTE - full-time equivalents
GHG - greenhouse gas
kW - kilowatt
kWh - kilowatt-hour
lbs - pounds
MCE - Marin Clean Energy
\$1MM - million dollars
MT - metric ton
PG&E - Pacific Gas & Electric
W - watt

**Table A4.8-CGRP-7
Commercial Solar Rebate
Community GHG Reduction Program
Richmond, California**

	Value	Units	Sources
Size of system:	1	kW	Calculation basis of 1 kW.
Annual Energy Production (kWh):	1,644	kWh	Solar Calculator: http://www.gosolarcalifornia.ca.gov/tools/clean_power_estimator.php (Accessed June 15, 2013)
Electricity Emissions Factor:	0.39	lbs CO2e/kWh	Weighted average of 2011 Marin Clean Energy (MCE) Light Green emission factor (0.389 lbs CO2e/kWh at 84% of customers) and PG&E average of emission factors (0.474 lbs CO2e/kWh at 16% of customers) for 2009 - 2011. Marin Clean Energy Emission Factor Certification and City of Richmond PG&E Energy Overview.
GHG reduction annually:	0.3	tonnes/year/kW	

Economic Benefit

	Value	Units	Sources
Job Impact from Solar Installation (Construction)			
Installation Cost (per watt)	\$5.57	\$/watt	Cost data from California Solar Initiative (CSI) General Market program data based on last twelve months for systems > 10kW (dated October 23, 2013). California Solar Initiative (CSI) Statistics: http://www.californiasolarstatistics.ca.gov (Accessed October 29, 2013).
Job-years per \$1MM:	9.66	job-years/\$1MM	2010 RIMS II Multipliers for Construction Industry in Contra Costa County. US Bureau of Economic Affairs.
Ratio of FTE to Total Employment:	0.95		National Income and Product Account tables (6.4D and 6.5D, Construction Industry - 2010). US Bureau of Economic Affairs. Available at: www.bea.gov/national/nipaweb/SS_Data/Section6All.xls . Accessed: September, 2013.
Jobs Metric:	0.05	job-years/kW installed (annual FTE)	Calculated

Table A4.8-CGRP-7
Commercial Solar Rebate
Community GHG Reduction Program
Richmond, California

Cost Effectiveness

Total Commercial Cost per installation:	\$5.57	\$ per W	Cost data from California Solar Initiative (CSI) General Market program data based on last twelve months for systems > 10kW (dated October 23, 2013). California Solar Initiative (CSI) Statistics: http://www.californiasolarstatistics.ca.gov (Accessed October 29, 2013).
Federal Incentive Tax Credit (ITC)	30%		Section 48 of the US Tax Code
	\$1.67	\$ per W	
California Solar Initiative (CSI) Rebate	\$0.20	\$ per W	The megawatt target has been reached but additional funding may be available. The PG&E Territory is currently under Step 10 with Expected Performance-Based Buydown (EPBB) Incentive Payments of \$0.20 per watt. CSI: http://www.gosolarcalifornia.org/csi/rebates.php Statewide Trigger Tracker: http://www.csi-trigger.com/
Proposed Commercial Chevron Mitigation Rebate:	\$0.50	\$ per W	
Resulting Cost to Owner	\$3.40	\$ per W	Subtracting ITC, Mitigation Rebate, and CSI Rebate
Estimated life of system:	25	years	Source: CEC. 2013. Consultant Report: Cost-Effectiveness of Rooftop Photovoltaic Systems for Consideration in California's Building Energy Efficiency Standards. May
Cost Effectiveness (Rebate)	\$69	\$/MT CO2e	Calculated

Abbreviations:

CEC - California Energy Commission
CO2e - carbon dioxide equivalents
FTE - full-time equivalents
GHG - greenhouse gas
kW - kilowatt
kWh - kilowatt-hour
lbs - pounds
MCE - Marin Clean Energy
\$1MM - million dollars
MT - metric ton
PG&E - Pacific Gas & Electric
W - watt

Table A4.8-CGRP-8
Pedestrian and Bike Master Plans
Community GHG Reduction Program
Richmond, California

	Value	Units	Sources
GHG Emissions From Local Roads (Gasoline)	178,743	MT CO2e/year	City of Richmond 2005 GHG Inventory
Percent Reduction in Vehicle Miles Traveled (VMT) From Pedestrian and Bicycle Master Plans Implementation	2%		Land use Measure SDT-1 (Providing Pedestrian Network Improvements) estimates a 1-2% reduction in VMT and therefore in emissions. 1% is conservatively used. California Air Pollution Control Officers Association (CAPCOA) Quantifying GHG Mitigation Measures. Available at: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf (Accessed October 1, 2013)
GHG Emission Reductions	3,575	MT CO2e/year	Calculation
Cost of Improvements	\$2,000,000	\$	Assumed
Project Lifetime	25	years	Assumed
Cost Effectiveness	\$22	\$/MT CO2e	Calculation

Abbreviations:

CAPCOA - California Air Pollution Control Officers Association

CO2e - carbon dioxide equivalents

MT - metric ton

GHG - greenhouse gas

VMT - vehicle miles traveled

Table A4.8-CGRP-9
EV Purchase Rebates
Community GHG Reduction Program
Richmond, California

Assumptions	Value	Units	Sources
Average Miles Driven per Year	13,476	miles/year	Average Annual Miles per Driver by Age Group, Federal Highway Administration. Available at: http://www.fhwa.dot.gov/ohim/onh00/bar8.htm . Accessed: October, 2013.

GHG Emissions Reduction

Gasoline Vehicle			
Average MPG	23.5	miles/gallon	Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles, 2010, US Department of Transportation. Available at: http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_04_23.html . Accessed: October, 2013.
Gallons consumed per year	573	gal/year	Calculation
GHG Emissions Factor (gas)	19.4	lb CO ₂ e per gallon of gas	Calculating Emissions of Greenhouse Gases: Key Facts and Figures. USEPA, 2005. Available at: http://nepis.epa.gov/Adobe/PDF/P1001YTV.PDF . Accessed: October, 2013.
GHG Emissions per year	5.0	MT CO ₂ e/year	
Electric Vehicle			
"Fuel Economy"	29	kW-hr/100 miles	2013 Nissan Leaf Fuel Economy. USEPA. Available at: http://www.fueleconomy.gov/feg/Find.do?action=sbs&id=33558 . Accessed: October, 2013.
Equivalent Charge per Year	3,908	kW-hr/year	Calculation
Electricity Emissions Factor	0.39	lbs CO ₂ e/kW-hr	Weighted average of 2011 Marin Clean Energy emission factor and PG&E average of emission factors for 2009 - 2011. Marin Clean Energy Emission Factor Certification and City of Richmond PG&E Energy Overview.
GHG Emissions	0.7	MT CO ₂ e/year	Calculation
Average Vehicle GHG Emissions Benefit	4.4	MT CO₂e/year	Calculation

Cost Effectiveness Calculation

	Value	Units	Sources
Typical Cost for Vehicle	\$28,800	\$	Nissan Leaf S MSRP. http://www.nissanusa.com/electric-cars/leaf/ (Accessed October 20, 2013)
Federal Tax Credit	\$7,500	\$	IRS Plug-In Electric Drive Vehicle Credit (IRC 30C) http://www.irs.gov/Businesses/Plug-In-Electric-Vehicle-Credit-%28IRC-30-and-IRC-30D%29 (Accessed October 20, 2013)
California Clean Vehicle Rebate	\$2,500	\$	CARB Clean Vehicle Rebate Project http://energycenter.org/programs/clean_vehicle_rebate_project (Accessed February 12, 2014)
Proposed Chevron Mitigation Rebate	\$1,000	\$	
Resulting Cost to Owner	\$17,800	\$	Calculation

Table A4.8-CGRP-9
EV Purchase Rebates
Community GHG Reduction Program
Richmond, California

Estimated Life of System	15	years	Assumes a lifetime VMT of 200,000 miles in conjunction with average miles driven per year (above). Source: California Air Resources Board. Estimation of Average Lifetime Vehicle Miles of Travel. http://www.arb.ca.gov/regact/grnhsgas/vmt.pdf (Accessed October 15, 2013)
Cost Effectiveness	\$15	\$/MT CO₂e	Calculation

Abbreviations:

CARB - California Air Resources Board

CO₂e - carbon dioxide equivalents

EV - electric vehicle

gal - gallon

GHG - greenhouse gas

kW-hr - kilowatt-hour

lb - pound

MPG - miles per gallon

MT - metric ton

PG&E - Pacific Gas & Electric

USEPA - United States Environmental Protection Agency

Table A4.8-CGRP-10
EV Station
Community GHG Reduction Program
Richmond, California

Assumptions	Value	Units	Sources
Cost per Station	\$7,000	\$ per station	ChargePoint (Model CT4021m Level II)
Installation Costs	\$8,000	\$ per station	ChargePoint. Also, supported by UCLA study: Financial Viability of Non-Residential Electric Vehicle Charging Stations, UCLA Luskin School of Public Affairs. 2012. Available at: http://luskin.ucla.edu/sites/default/files/Non-Residential%20Charging%20Stations.pdf . (Accessed November 15, 2013)
Annual Monitoring/Maintenance	\$1,500	\$ per station per year	ChargePoint.
Estimated Life of System	10	years	Financial Viability of Non-Residential Electric Vehicle Charging Stations, UCLA Luskin School of Public Affairs. 2012. Available at: http://luskin.ucla.edu/sites/default/files/Non-Residential%20Charging%20Stations.pdf . (Accessed November 15, 2013)
Cost per Station over Lifetime	\$30,000	\$ per station	Calculation

GHG Emissions Reduction

GHG Emissions Saved per Mile	0.00032	MT CO ₂ e/mile	Calculated based on values from Table A4.8-CGRP-9.
Number of Chargers per Station	2	chargers/station	Assumption
Daily Hours of Use per Charger	8	hours/day/charger	Assumption
Miles per Hour Charged	18.75	miles/hour charged	Assumes the vehicle is a Nissan Leaf, which gets 75 miles/charge and takes 4 hours to charge using a 6.6 kW charger. http://www.fueleconomy.gov/feg/evsbs.shtml#midsize-cars
Annual Vehicle Miles Traveled (VMT) Switched to EV	109,500	miles/station	Calculation
GHG Emissions Savings per Station	35	MT CO₂e/year/station	Calculation

Table A4.8-CGRP-10
EV Station
Community GHG Reduction Program
Richmond, California

Cost Effectiveness Calculation

	Value	Units	Sources
Estimated Life of System	10	years	Financial Viability of Non-Residential Electric Vehicle Charging Stations, UCLA Luskin School of Public Affairs. 2012. Available at: http://luskin.ucla.edu/sites/default/files/Non-Residential%20Charging%20Stations.pdf . (Accessed November 15, 2013)
Cost Effectiveness	\$85	\$/MT CO2e	Calculation

Abbreviations:

CO2e - carbon dioxide equivalents

EV - electric vehicle

GHG - greenhouse gas

MT - metric ton

Table A4.8-CGRP-11
Rideshare (Local Shuttle Circular)
Community GHG Reduction Program
Richmond, California

GHG Emissions Reduction

GHG Emission Factor (Shuttle)	1.53	lb CO ₂ e/mile	California Air Resources Board (ARB) EMFAC for OBUS category, model year 2015, aggregated speeds, taking into account Pavley and Low Carbon Fuel Standard (LCFS). Source: http://www.arb.ca.gov/emfac/ (Accessed October 30, 2013)
GHG Emission Factors (Personal Vehicle)	0.83	lb CO ₂ e/mile	Calculated based on emission factor for gallon of gasoline (19.4 lb CO ₂ e/gal) and average miles per gallon of US fleet (23.5 miles/gal). See Table A4.8-CGRP-9 for sources.
Vehicle Miles Traveled (VMT) for Shuttle	38,760	miles/year	Richmond Circular Bus. Period of operation July 2012 - June 2013). Source: Final Report, Shuttle Projects, BAAQMD Project #11R12 (9/13/13)
Annual GHG Emissions (Shuttle)	27	MT CO ₂ e/year	Calculated.
Number of Daily Personal Vehicle Trips Replaced by Rideshare Trips	423	trips/day	Richmond Circular Bus. Period of operation July 2012 - June 2013). Source: Final Report, Shuttle Projects, BAAQMD Project #11R12 (9/13/13)
Trip Length	1.6	miles/trip	Survey responses for Richmond Circular Bus.
Annual Vehicle Miles Traveled (VMT) Switched to Rideshare	160,529	miles	Calculation. Assumes 240 days of operation in one year.
Annual GHG Emissions Removed from Personal Vehicles	60	MT CO ₂ e/year	Calculated
GHG Emission Savings	33	MT CO ₂ e/year	Calculated

Cost Effectiveness Calculation

	Value	Units	Sources
Annual Cost of Current System	\$369,000	\$/year	Provided by F. Kahn of TransMetro.
Proposed Chevron Contribution (under current service)	\$92,250		Assumes Chevron will cover 25% program costs.
Cost Effectiveness	\$2,788	\$/MT CO₂e	Calculation

Abbreviations:

CO₂e - carbon dioxide equivalents
EV - electric vehicle
GHG - greenhouse gas
MT - metric ton

Table A4.8-CGRP-12
Rideshare (Van Service)
Community GHG Reduction Program
Richmond, California

GHG Emissions Reduction

GHG Emission Factor (Van)	2.20	lb CO2e/mile	California Air Resources Board (ARB) EMFAC for LHD1 category, model year 2015, aggregated speeds, taking into account Pavley and Low Carbon Fuel Standard (LCFS). Source: http://www.arb.ca.gov/emfac/ (Accessed October 30, 2013)
GHG Emission Factors (Personal Vehicle)	0.83	lb CO2e/mile	Calculated based on emission factor for gallon of gasoline (19.4 lb CO2e/gal) and average miles per gallon of US fleet (23.5 miles/gal). See Table A4.8-CGRP-9 for sources.
Vehicle Miles Traveled (VMT) for Shuttle	10,560	miles/year	Greenprint Transportation System (October 10, 2008). Assumes 44 trips per month, with each trip at 20 miles.
Annual GHG Emissions (Shuttle)	11	MT CO2e/year	Calculated.
Number of Annual Personal Vehicle Trips Replaced by Rideshare Trips	3,168	trips/year	Greenprint Transportation System (October 10, 2008). Assumes 6 people per van at 44 trips per month.
Trip Length	20	miles/trip	Greenprint Transportation System (October 10, 2008). Each trip at 20 miles.
Annual Vehicle Miles Traveled (VMT) Switched to Rideshare	63,360	miles	Calculated
Annual GHG Emissions Removed from Personal Vehicles	24	MT CO2e/year	Calculated
GHG Emission Savings	13	MT CO2e/year	Calculated

Cost Effectiveness Calculation

	Value	Units	Sources
Annual Cost of System	\$4,716	\$/year	Greenprint Transportation System (October 10, 2008). Operating expenses of \$13,560 minus revenue of \$8,844.
Cost Effectiveness	\$358	\$/MT CO2e	Calculation

Abbreviations:

CO2e - carbon dioxide equivalents
EV - electric vehicle
GHG - greenhouse gas
MT - metric ton

Table A4.8-CGRP-13
Bicycle Share Program
Community GHG Reduction Program
Richmond, California

GHG Emissions Reduction

Cost Basis	\$500,000		Basis for estimating potential trip and GHG emission reductions. Provided by F. Kahn of TransMetro
Number of Daily Gasoline Trips Replaced by Bicycle Trips	200	trips/day	Provided by F. Kahn of TransMetro
Trip Length	3	miles/trip	Provided by F. Kahn of TransMetro. Trips taken by bicycle would be expected to be shorter than typical 16-mile commute.
Annual Vehicle Miles Traveled (VMT) Switched to Bicycle Trips	219,000	miles/year	Calculated
GHG Emissions Factor for Average Vehicle	0.83	lb CO ₂ e/mile	Calculated based on emission factor for gallon of gasoline (19.4 lb CO ₂ e/gal) and average miles per gallon of US fleet (23.5 miles/gal). See Table A4.8-CGRP-9 for sources.
GHG Emissions Savings per Basis Amount	82	MT CO₂e/year	Calculated

Cost Effectiveness Calculation

	Value	Units	Sources
Estimated Life of System	10	years	Assumed
Cost Effectiveness	\$611	\$/MT CO₂e	Calculation

Abbreviations:

CO₂e - carbon dioxide equivalents

EV - electric vehicle

GHG - greenhouse gas

lb - pound

MT - metric ton

**Table A4.8-CGRP-14
Transit Access Program
Community GHG Reduction Program
Richmond, California**

Assumptions	Value	Units	Sources
Monthly Cost per Participating Pass Holder	\$16	\$/month/participating pass holder	Cost data from the T4T Pilot Program conducted in Contra Costa and Alameda Counties. Total program cost was \$225,000 dollars (includes pass costs and administrative costs) for a total of 1,367 program participants. Of the 1,367 participants, 422 received 6-month passes and 945 received 12-month passes. The cost shown here absorbs the cost for pass holders who chose not to participate in the program. T4T Pilot Project Evaluation: http://www.mtc.ca.gov/planning/smart_growth/tod/T4T/TransLink_for_TOD_Pilot_Project_FINAL.pdf (Accessed December 05, 2013).
Proposed Chevron Subsidy	\$8	\$/month/participating pass holder	Assumes a 50% subsidy.

GHG Emissions Reduction

GHG Emissions Reduction per Month per Participating Pass Holder	34.3	lb/month/participating pass holder	Average GHG savings for a T4T Pilot Program participant based on a total annual program reduction of 475,842 pounds with 422 participants who received 6-month passes and 945 participants who received 12-month passes.
GHG Emissions Reduction per Participating Pass Holder	0.19	MT CO2e/year/participating pass holder	Calculated

Cost Effectiveness Calculation

	Value	Units	Sources
Cost Effectiveness	\$521	\$/MT CO2e	Calculation

Abbreviations:

CO2e - carbon dioxide equivalents

GHG - greenhouse gas

MT - metric ton

T4T - TransLink for Transit Oriented Development

Table A4.8-CGRP-15
Wetlands Creation
Community GHG Reduction Program
Richmond, California

Parameters

	Value	Units	Sources
Sequestration Rate (0 - 5 years)	1.56	MT/acre/year	Euliss, N., Jr., et al. "North American Prairie Wetlands Are Important Nonforested Land-Based Carbon Storage Sites." Science of the Total Environment 361(2006):79–188.
Sequestration Rate (5+ years)	0.34	MT/acre/year	Hansen, L.T. 2009. The viability of creating wetlands for the sale of carbon offsets. Journal of Agricultural and Resource Economics. 34(2): 350-365.

Scenario 1: Includes Land Costs

	Value	Units	Sources
Land Costs and Construction	\$300,000	\$ per acre	Estimate for Northern California
Maintenance Costs	5%	% per year	California Stormwater Quality Association (CASQA). 2003. Constructed Wetlands. In: California Stormwater BMP Handbook, New Development and Redevelopment
Assumed Project Lifetime	25	years	Assumption for cost estimation
Total Cost per Acre	\$660,000	\$ / acre	Calculation
GHG Sequestration over Project Lifetime	14.6	MT/acre	Calculation
Cost Effectiveness	\$45,205	\$/MT CO2e	Calculation

Scenario 2: Assumes Land Available for Free

	Value	Units	Sources
Construction	\$29,000	\$ per acre	Brown and Schueler (1997), The Economics of Stormwater BMPs in the Mid-Atlantic Region: An Examination of the Real Cost of Storm Water Control
Maintenance Costs	\$3,000	\$ / acre / year	
Assumed Project Lifetime	25	years	Assumption for cost estimation
Total Cost per Acre	\$101,000	\$ / acre	Calculation
GHG Sequestration over Project Lifetime	14.6	MT/acre	Calculation
Cost Effectiveness	\$6,918	\$/MT CO2e	Calculation

Abbreviations:

BMP - best management practices
CO2e - carbon dioxide equivalents
GHG - greenhouse gas
MT - metric ton
N2O - nitrous oxide

Table A4.8-CGRP-16
2-MW Solar Project
Community GHG Reduction Program
Richmond, California

Assumptions

	Value	Units	Sources
Rated Capacity	2	MW	
Gross Cost	\$7.8	\$MM	Based on a gross cost estimate of \$2.4 million for a 615 kW conventional silicon solar facility. The gross cost includes installation, operating, maintenance, and hardware expenses. Source: "Achieving The Greatest Return on a Solar Project." Available at: http://us.sunpower.com/ (Accessed February 12, 2014)

GHG Emissions Reduction

Projected Energy Output	3,800	MWh/yr	Chevron Data Transmittal #43, 2013
Electricity Emissions Factor	0.39	lbs CO ₂ e/kWh	See Table EV
GHG reduction annually	666	MT/year	Calculation

Cost Effectiveness Calculation

	Value	Units	Sources
Federal Tax Credit	\$2.3	\$MM	Federal Solar Investment Tax Credit (ITC) (calculated as 30% of the gross cost) http://energy.gov/savings/business-energy-investment-tax-credit-itc (Accessed February 12, 2014)
Adjusted Cost (after tax credit)	\$5.5	\$MM	Calculation
Estimated Life of System	25	years	http://us.sunpower.com/ (Accessed February 12, 2014)
Cost Effectiveness	\$328	\$/MT CO₂e	Calculation

Abbreviations:

CO₂e - carbon dioxide equivalents

GHG - greenhouse gas

kWh - kilowatt-hour

MT - metric ton

MWh - megawatt-hour

Table A4.8-CGRP-17
Summary of Evaluation Criteria
Community GHG Reduction Program
Richmond, California

	Measure	Cost Effective (\$/MT CO2e)	Create Local Jobs	Reduce Local GHG Emissions	Improve Community Health	Create Community Wealth & Resilience	Enhance Other Environmental Sustainability	Accurate Metric/ Verifiable	Magnitude of GHG Reduction Available	Leveraging
	General Plan Reference		EC5.1, EC5.2, EC3.2, EC5.B, ED3, ED2.6, ED2.D, ED3.2, ED3.A, LU3, LU3.1, HW6.1	HW9.G, HW10.2, CN4.1, EC2.1, EC2.2	HW1.1, W4.3, LU2	EC2.3, EC3.2, EC5.1, LU3.7, ED2.D, LU3, LU3.A	EC6.E, HW10.4, HW10.5, HW10.6, HW10.8, H-2.2, EC3.2, LU4, CR5, CN5.1, CN5.2, CN5.3, CN5.A, CN5.C, CN5.D, CN6.E, EC3.1, EC3.3, EC3.B, EC3.D, EC5.3			
Urban Greening	<u>Urban Forestry</u> : Plant trees to help sequester CO2.	\$58	✓	✓	✓	✓	+	✓	✓	-
	<u>Pedestrian and Bicycle Master Plans Implementation</u> : Development of bicycle and pedestrian networks.	\$22	-	✓	✓	✓	✓	-	✓	-
	<u>Zero Waste Programs</u> : Increase the waste diversion by implementing programs to encourage recycling and compost.	\$4	✓	✓	-	-	✓	✓	✓	-
Energy Efficiency	<u>Healthy Homes/Residential Energy Efficiency (Any Income)</u> : Provide home performance energy efficiency (weatherization) rebates.	\$35	9.7 jobs /\$1M ¹	✓	✓	✓	✓	✓	+	✓
	<u>Healthy Homes/Residential Energy Efficiency (Low Income)</u> : Provide home performance energy efficiency (weatherization) rebates for low income households.	\$71	9.7 jobs /\$1M ¹	✓	✓	+	✓	✓	✓	✓

Table A4.8-CGRP-17
Summary of Evaluation Criteria
Community GHG Reduction Program
Richmond, California

	Measure	Cost Effective (\$/MT CO2e)	Create Local Jobs	Reduce Local GHG Emissions	Improve Community Health	Create Community Wealth & Resilience	Enhance Other Environmental Sustainability	Accurate Metric/ Verifiable	Magnitude of GHG Reduction Available	Leveraging
	<u>Residential Solar Rebate:</u> Incentivize homeowners to install photovoltaic (PV) panels through rebates.	\$278	9.7 jobs /\$1M ¹	-	-	✓	✓	✓	✓	✓
	<u>Commercial Energy Efficiency:</u> Incentivize business owners to increase energy efficiency.	\$7	9.7 jobs /\$1M ¹	✓	-	✓	✓	✓	+	-
	<u>Commercial Solar Rebate:</u> Incentivize business owners to install photovoltaic (PV) panels through rebates.	\$69	9.7 jobs /\$1M ¹	-	-	✓	✓	✓	✓	✓
Transportation GHG Reduction Measures	<u>Electric Vehicle (EV) Purchase Rebates:</u> Encourage purchasing of EVs by providing rebates to residents purchasing EVs.	\$15	-	✓	✓	✓	✓	✓	+	✓
	<u>Electric Vehicle (EV) Charging Stations Rebates:</u> Encourage use of EVs by providing rebates to businesses that install EV charging stations.	\$85	-	✓	✓	✓	✓	✓	✓	-
	<u>Ride Share/Green Transportation:</u> Encourage the availability of low-GHG transportation alternatives, such as local shuttle circular and van service.	\$358 - \$2,788	✓	✓	✓	✓	✓	-	+	✓
	<u>Bicycle Program:</u> Develop a public bicycle sharing system.	\$611	-	✓	✓	✓	✓	-	✓	-

Table A4.8-CGRP-17
Summary of Evaluation Criteria
Community GHG Reduction Program
Richmond, California

	Measure	Cost Effective (\$/MT CO2e)	Create Local Jobs	Reduce Local GHG Emissions	Improve Community Health	Create Community Wealth & Resilience	Enhance Other Environmental Sustainability	Accurate Metric/ Verifiable	Magnitude of GHG Reduction Available	Leveraging
	<u>Transit Access:</u> Encourage participation in reduced cost monthly public transportation access (e.g., reduced cost Clipper Card).	\$521	-	✓	✓	✓	✓	-	✓	✓
Other	<u>Wetlands:</u> Create wetlands in the City of Richmond for carbon sequestration.	\$7K - \$45K	-	✓	-	-	+	✓	✓	-
	<u>2-MW Solar Project:</u> Construct a 2-MW photovoltaic solar facility that supplies the electric grid.	\$328	✓	✓	✓	✓	✓	+	✓	✓

Notes

¹ Jobs per million dollars metric obtained from RIMS 2010 Data for Construction Industry in Contra Costa County.

**Table A4.8-CGRP-18
Summary of Programs
Community GHG Reduction Program
Richmond, California**

Program	Description	Cost Effectiveness (\$ / MT CO2e)	Lifetime (years)	Budget (\$)	Maximum Potential GHG Savings (MT CO2e/year)	Year by Year emissions reductions (MT CO2e/year)									
						1	2	3	4	5	6	7	8	9	10
Urban Forestry	Provide free trees to residents, businesses and city right-of-way.	\$58	25	\$1,875,000	10,218	130	259	389	519	649	778	908	1,038	1,168	1,297
Zero Waste Programs	Provide free indoor recycling and compost bins, outreach materials, cart stickers, technical assistance and multi-lingual trainings to businesses and residents.	\$4	25	\$1,875,000	27,794	2,047	4,095	6,142	8,189	10,237	12,284	14,331	16,378	18,426	20,473
Residential Energy Efficiency	Provide home performance energy efficiency rebates to Richmond residents that employ Richmond contractors or RichmondBUILD graduates.	\$35	30	\$1,875,000	67,551	176	353	529	706	882	1,059	1,235	1,412	1,588	1,765
Residential Energy Efficiency (80% AMI)	Provide home performance energy efficiency rebates to Richmond residents that employ Richmond contractors or RichmondBUILD graduates.	\$71	30	\$1,875,000	24,975	88	176	265	353	441	529	618	706	794	882
Residential Solar Rebate	Provide an additional solar rebate to Richmond households that employ Richmond contractors or RichmondBUILD graduates.	\$278	25	\$1,875,000	31,032	27	54	81	108	135	162	189	216	243	270
Commercial Energy Efficiency Rebate	Provide an additional energy efficiency rebates to Richmond businesses.	\$7	30	\$1,875,000	590,258	903	1,805	2,708	3,611	4,513	5,416	6,319	7,221	8,124	9,026
Commercial Solar Rebate	Provide an additional solar rebate to Richmond businesses that employ Richmond contractors or RichmondBUILD graduates.	\$69	25	\$1,875,000	1,844	108	216	324	432	540	649	757	865	973	1,081
Pedestrian and Bicycle Master Plans Implementation	Implement bicycle and pedestrian improvements identified in the Pedestrian and Bicycle Master Plans.	\$22	25	\$1,875,000	22,700	3,351	3,351	3,351	3,351	3,351	3,351	3,351	3,351	3,351	3,351
Electric Vehicle Rebate	Provide rebates to residents for the purchase of electric vehicles	\$15	10	\$1,875,000	81,594	221	443	664	886	1,107	1,329	1,550	1,772	1,993	2,215
Electric Vehicle Charging Stations	Provide rebates to residents and businesses to install EV charging stations. (Alternatively, provide rebates for purchase of EV cars.)	\$85	15	\$1,875,000	7,687	818	1,635	2,453	3,271	4,088	4,906	5,724	6,541	7,359	8,177
RideShare (Shuttle Circular)	Provide a free bus service that provides stops at Richmond BART, Civic Center, Marina Bay, and other locations.	\$2,788	10	\$1,875,000	587	67	67	67	67	67	67	67	67	67	67
RideShare (Van Service)	Provide passenger shuttle vans for shopping, event trips, and other local trips.	\$358	10	\$1,875,000	95,137	523	523	523	523	523	523	523	523	523	523
Bicycle Share	Provide residents free or reduced cost access to an automated, public bike sharing system.	\$611	10	\$1,875,000	5,224	307	307	307	307	307	307	307	307	307	307
Transit Access	Provide reduced cost public transportation access through subsidized Clipper Cards.	\$521	10	\$1,875,000	1,840	360	360	360	360	360	360	360	360	360	360
Wetlands Creation	Creation of a vernal pool or other wetland type in Richmond.	\$6,918	25	\$1,875,000	163	11	11	11	11	11	11	11	11	11	11
2-MW Solar Project	Construct a 2-MW photovoltaic solar facility on Chevron property that will supply the electric grid.	\$328	25	\$1,875,000	666	229	229	229	229	229	229	229	229	229	229
Total						9,367	13,886	18,404	22,923	27,442	31,960	36,479	40,998	45,516	50,035

Abbreviations:

AMI - area median income
BMP - best management practices
CO2e - carbon dioxide equivalents
EV - electric vehicle
GHG - greenhouse gas
MT - metric ton

Table A4.8-CGRP-19
Emission Factors
Community GHG Reduction Program
Richmond, California

Electricity Emission Factors

Source	Pollutant	Emission Factor	Units	Reference
PG&E	CO2	370.0	lbs/MWh	2016 PG&E emission factor, Greenhouse Gas Emission Factors: Guidance for PG&E Customers
		0.3700	lbs/kWh	Conversion
	CH4	0.029	lbs/MWh	2007 CARB emission factor, CARB LGOP
		0.000029	lbs/kWh	Conversion
	N2O	0.010	lbs/MWh	2007 CARB emission factor, CARB LGOP
		0.000010	lbs/kWh	Conversion
	CO2e	0.374	lbs/kWh	Calculation
MCE	CO2e	389	lbs/MWh	2011 Marin Clean Energy (MCE) Light Green emission factor, Marin Clean Energy Emission Factor Certification and City of Richmond PG&E Energy Overview
		0.389	lbs/kWh	Conversion
Weighted Average	CO2e	0.387	lbs/kWh	84% MCE, 16% PG&E

Natural Gas Emission Factors

Source	Pollutant	Emission Factor	Units	Reference
PG&E	CO2	11.701	lbs/therm	City of Richmond PG&E Energy Overview
	CH4	0.001	kg/MMBTU	Table C-2 from EPA MRR
		2.20E-04	lbs/therm	Conversion
	N2O	0.0001	kg/MMBTU	Table C-2 from EPA MRR
		2.20E-05	lbs/therm	Conversion
	CO2e	11.7	lbs/therm	Calculation

Abbreviations:

CARB - California Air Resources Board

CH4 - methane

CO2 - carbon dioxide

Table A4.8-CGRP-19
Emission Factors
Community GHG Reduction Program
Richmond, California

CO₂e - carbon dioxide equivalents
EPA - Environmental Protection Agency
GHG - greenhouse gas
kg - kilogram
kWh - kilowatt-hour
lbs - pounds
LGOP - Local Government Operations Protocol
MCE - Marin Clean Energy
MMBTU - million british thermal units
MRR - Mandatory Reporting Regulation
MWh - Megawatt-hour
N₂O - nitrous oxide
PG&E - Pacific Gas & Electric

Sources:

CARB. 2010. LGOP for the Quantification and Reporting of Greenhouse Gas Emissions Inventories, Version 1.1. May.
CCAR. 2013. MCE Emission Factor Certification Template. June 6.
EPA MRR - Part 98 of 40 Code of Federal Regulations (CFR) - Mandatory Greenhouse Gas Reporting, Table C-2.
PG&E. 2013. Greenhouse Gas Emission Factors: Guidance for PG&E Customers. April. Accessed November 13, 2013.

APPENDIX 4.8 - GOP

GOP: Refinery Operational Greenhouse Gas
Emissions

APPENDIX 4.8-GOP

REFINERY OPERATIONAL GREENHOUSE GAS EMISSIONS

This technical appendix describes the methods and data used to estimate greenhouse gas emissions from operations at the Facility. Greenhouse gases at the Facility include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) from on-site stationary combustion and process units as well as indirect emissions associated with purchased electricity and water usage. 2008-2010 period, Baseline, and Project emissions from Refinery Operations are evaluated.¹ The emissions estimation methods described in this appendix follow standard methods approved by the California Air Resources Board (CARB) and the Bay Area Air Quality Management District (BAAQMD), and were developed based on extensive consultation with BAAQMD.

This appendix presents the estimated annual greenhouse gas emissions associated with the Facility equipment described in *Appendix 3, Overview of Oil Refining Process*. Greenhouse gas emissions from transportation-related activities including trucking and rail transport are presented in *Appendix 4.3-TRANS*. Emissions from shipping are presented separately in *Appendix 4.3-SHP*. Emissions associated with construction of the Modernization Project are addressed in *Appendix 4.3-CST*.

This appendix parallels *Appendix 4.3-OP* in that the methodologies used to calculate greenhouse gas emissions from Project-related activities are based on the same analytical building blocks used to calculate criteria air pollutant (CAP) and toxic air contaminant (TAC) emissions. Specifically, Modernization Project emissions are estimated by scaling Baseline emissions based on outputs of the Unit Rate Model (URM), described in *Appendix 4.3-URM*. There are three exceptions that are specific to GHGs, each made in accordance with direction from BAAQMD:

- The 2008-2010 and Baseline greenhouse gas emissions inventories are based on Chevron's mandatory reporting of greenhouse gas emissions to CARB using CARB-specified methodologies, rather than the BAAQMD Emissions

¹ As described in *Section 4.8, Greenhouse Gases*, actual emissions during the 2008-2010 period are referred to as the "2008-2010 period emissions." The term "Baseline" is used to describe the baseline emissions that are adjusted from the "2008-2010 period" to take into account greenhouse gas rule changes and equipment upgrades and changes scheduled to take effect prior to 2016.

Inventory (EI) greenhouse gas estimates. The CARB greenhouse gas emission reports are subject to a verification process by an independent, certified auditor and are thus currently considered more accurate than the greenhouse gas emission estimation formula used in the BAAQMD EI.

- In the Modernization Project emissions inventory, with the exception of the future hydrogen plant, source emission factors are derived from the emissions reported in the CARB greenhouse gas emission reports and 2008-2010 period activities (throughputs) reported for the BAAQMD EI. To obtain Modernization Project emissions, these emission factors are multiplied by the Modernization Project activities (throughputs) calculated by the URM.² For the future hydrogen plant, process greenhouse gas emissions are estimated using methodologies presented in the American Petroleum Institute (API) Greenhouse Gas Compendium (API, 2009). Combustion greenhouse gas emissions from the future hydrogen plant are estimated using the combustion emission factors and methodologies required under the EPA's Mandatory Reporting Rule (Mandatory Greenhouse Gas Reporting, 2012).
- Modernization Project sources of greenhouse gas emissions are only a subset of CAP and TAC emissions sources. Greenhouse gases are generated primarily from fuel combustion, certain greenhouse gas-generating refinery processes, and leaks, whereas CAPs and TACs are generated from those sources as well as additional sources including cooling towers and process and wharf fugitive sources. In short, fewer sources are included in greenhouse gas emission estimates.
- The remainder of this appendix is structured as follows:
 1. Overview of Facility Greenhouse Gas Emission Sources
 2. Overview of Cases Evaluated: 2008-2010 Period, Baseline, and Project
 3. Estimation of Greenhouse Gas Emissions from On-Site Combustion and Process Sources
 4. Estimation of Greenhouse Gas Emissions from Indirect Sources
 5. Estimation of Greenhouse Gas Reductions from Project Design Features and Mitigation Measures
 6. Summary of Facility Greenhouse Gas Emissions
 7. References

² As with the CAP and TAC emissions calculation methodology, greenhouse gas emissions for a subset of sources would not change between the Baseline and the Project because the emissions are independent of production or feedstock type and would remain at the Baseline levels. These sources are described in more detail later in this appendix.

1.1 OVERVIEW OF FACILITY GREENHOUSE GAS EMISSIONS SOURCES

As described in *Chapter 3, Project Description* and *Appendix 3, Overview of Oil Refining Process*, the Facility is a complex industrial facility that processes crude oil blends, externally sourced gas oils, and natural gas into a number of products including motor gasoline, jet fuel, diesel fuel, lubricant base oils, fuel oils, liquefied petroleum gas, and sulfur. The Facility also produces steam and electricity primarily for its own use, and fuel gas and hydrogen solely for its own use. Over 400 individual permitted sources are operated at the Facility, and many are sources of greenhouse gas emissions. There are three categories of greenhouse gas emissions sources at the Facility:

- On-site stationary combustion sources
- On-site stationary process sources
- On-site stationary fugitive sources
- Indirect sources

These categories of greenhouse gas emissions sources are described in more detail in the sections that follow. Table A4.8-GOP-1, below, summarizes the relationships between the refinery operational steps described in *Chapter 3, Project Description* and *Appendix 3, Overview of Oil Refining Process*, and the major Facility plants. The table also identifies the greenhouse gas emissions source category associated with each plant.

1.2 ON-SITE STATIONARY COMBUSTION SOURCES

Combustion occurs when fuel reacts with oxygen in the air to produce energy, usually in the form of heat. CO₂, CH₄, N₂O, and water are byproducts of combustion reactions. In an industrial setting, the heat produced is typically used in the operation of equipment such as furnaces, boilers, process heaters, and engines. These “stationary” combustion sources are differentiated from “mobile” combustion sources such as cars, trucks, and construction vehicles, and equipment.

On-site stationary combustion sources at the Facility include furnaces, boilers, process heaters, internal combustion engines (as part of emergency generators), gas turbines, thermal oxidizers, CAP emission reduction devices, and flares. Furnaces, boilers, and process heaters are devices that provide heat to various liquid or gas streams such as water, process streams (e.g., crude oil), or air. These heating devices all include burner assemblies, where fuel (e.g., natural gas

TABLE A4.8-GOP-1 EMISSIONS ASSOCIATED WITH FACILITY PROCESS STEPS

Process Description	Major Process Unit	Title V Emission Source Categories for Equipment and Components with Air Emissions
Distillation	Crude Atmospheric and Vacuum Distillation Units SDA	Combustion (furnaces) VOC sources (fugitive components) ^c
Treatment to Remove Sulfur and Other Natural Impurities	Hydrotreaters (JHT, NHT, FHT, GHT, DHT) Amine Contactors ^e Amine Regenerators ^e Sour Water Strippers ^e SRU	Combustion (burners, furnaces, thermal oxidizers) Sulfur recovery (hydrogen sulfide plants) Sulfur recovery (Claus Plants [SRU]) Tanks VOC sources (fugitive components) ^c
Conversion: “Cracking” Remaining Heavy Hydrocarbon Molecules into Light Hydrocarbons	Fluid Catalytic Cracker Hydrocracker	Combustion (furnaces) Process Units (Fluid Catalytic Cracker) Tanks VOC sources (fugitive components) ^c
Reforming: Increasing Octane Levels in Gasoline	Rheniformers	Combustion (furnaces) Process Units (Rheniformer Catalyst Regeneration) VOC sources (fugitive components) ^c Tanks (perchloroethylene tanks)
Blending and Final Product Production Process	Product Storage Tanks	Tanks VOC sources (fugitive components) ^c
Specialty Operations: Lubricating Oil Production Process	RLOP (HNC, LNC, HNF, LNF) hydrocrackers and hydrofinishers	Combustion (furnaces) VOC sources (fugitive components) ^c
Hydrogen Production	Hydrogen Plant	Process Units (hydrogen plant) Combustion (furnaces) VOC sources (fugitive components) ^c
Other Refinery Operations	Flares	Combustion (flares) ^c
	Power/Steam Generation Boiler Plant, Cogeneration Plant ^a	Combustion (boilers, cogeneration) ^c VOC sources (fugitive components) ^c
	Cooling Towers ^e	Process Units (cooling towers)
	Chemical Storage Tanks	Tanks

TABLE A4.8-GOP-1 EMISSIONS ASSOCIATED WITH FACILITY PROCESS STEPS

Process Description	Major Process Unit	Title V Emission Source Categories for Equipment and Components with Air Emissions
	Refinery Fuel Gas System ^b	VOC sources (fugitive components) ^c
	Wastewater Treatment ^c	Wastewater (tanks/API separators, process drains, bioreactor)*
Other Emission Sources	Emergency diesel generators ^c	Internal Combustion Engines ^c
Product Loading ^d	Sulfur loading Wharf loading Marketing rack	Sulfur Recovery (sulfur rack), Loading Terminals (Wharf), Loading Terminals (truck/rail)
Refinery Maintenance Activities	Maintenance Equipment ^e	Cold Cleaners ^c Paint booth ^c

Note: SDA = solvent de-asphalting, JHT = jet hydrotreater, NHT = naphtha hydrotreater, FCC FHT = fluid catalytic cracking feed hydrotreater, GHT = gasoline hydrotreater, DHT = diesel hydrotreater, SRU = sulfur recovery unit, RLOP = Richmond lube oil plant, HNC = heavy neutral hydrocracker, LNC = light neutral hydrocracker, HNF = heavy neutral hydrofinisher, LNF = light neutral hydrofinisher, VOC = volatile organic compound, API = American Petroleum Institute

^a Due to their magnitude, emissions from the boiler plant and cogeneration plant were included in this EIR analysis, despite that there are no anticipated emission increases from these sources resulting from the Modernization Project.

^b Emissions associated with fuel gas system are discussed in the report as furnace combustion emissions.

^c Denotes sources with emissions that are not expected to change as a result of the Modernization Project, and hence were not included in this EIR analysis.

^d Emission reduction devices are used to reduce VOC and carbon monoxide emissions by combusting them to form CO₂. These CO₂ stationary combustion emissions are included in this appendix. Emissions from transportation vehicle exhaust are discussed in *Appendix 4.3-SHP*.

^e Denotes sources that do not generate greenhouse gas emissions, but are included in this table for completeness and consistency with *Appendix 4.3-OP*.

Source: Chevron Title V Permit; Project Description.

or refinery fuel gas) is combusted with oxygen in the air. Internal combustion engines provide mechanical power through the combustion of liquid fuel. Similarly, gas turbines generate electricity through the combustion of gaseous fuel which moves the blades of a turbine, providing mechanical power to operate the electric generator. Thermal oxidizers and the wharf emission reduction devices are used to reduce volatile organic compound (VOC) and carbon monoxide emissions by combusting them to form CO₂.

Finally, Refinery flares are safety devices designed to relieve pressure or to prevent units from over-pressurizing, while at the same time minimizing releases of hydrocarbons directly into the atmosphere. Flares are primarily used for burning off flammable gas released by a relief gas header during either unplanned pressuring of refinery equipment, or during startups and shutdowns. As with other combustion sources, flares produce fuel combustion-related greenhouse gas emissions.

Table A4.8-GOP-2, below, lists the on-site stationary combustion sources included in the Facility greenhouse gas emissions inventories evaluated in this EIR.

TABLE A4.8-GOP-2 FACILITY ON-SITE STATIONARY COMBUSTION SOURCES

Source ID^a	2008-2010 Period and Baseline, Project, or Both?	Source Name
4038	Both	#4 Rheniformer, F-3550
4039	Both	#4 Rheniformer, F-3560
4040	Both	#4 Rheniformer, F-3570
4041	Both	F3580, #4 Rheniformer
4042	Both	#5 Rheniformer F550 w/36 Ultra Low NOx Burners
4043	Both	F560, #5 Rheniformer
4044	Both	#5 Rheniformer F570
4045	Both	#5 Rheniformer F580
4059	Both	#1 JHT Furnace #247
4060	Both	#1 JHT Furnace #210A&B
4061	Both	#5 NHT F410
4062	Both	#5 NHT F447

TABLE A4.8-GOP-2 FACILITY ON-SITE STATIONARY COMBUSTION SOURCES

Source ID^a	2008-2010 Period and Baseline, Project, or Both?	Source Name
4068	Both	VGO Desulfurizer F-1610
4069	Both	VGO F1660
4070	Both	#4 Crude Unit F 1100a
4071	Both	#4 Crude Unit F1100b
4072	Both	#4 Crude Unit F1160
4129	Both	800# Steam Boiler #1 #1PP
4131	Both	800# Steam Boiler #3 #1PP
4132	Both	800# Steam BoilerR #4 #1 PP
4133	Both	800# Steam Boiler #5 #1PP
4135	Both	800# Steam Boiler #7 #1 PP
4152	Both	F-100 Asphalt Solution Heater SDA Isomax
4154	Both	F-120 Asphalt Solution Heater SDA Isomax
4155	Both	F-135 Hot Oil Furnace
4158	2008-2010 period and Baseline	Hydrogen Plant Preheat Furnace F-340
4159	Both	F410 TKC Feed Furnace TKC Isomax
4160	Both	F420 TKC Feed Furnace TKC Isomax
4161	Both	Hydrocracker
4162	Both	Hydrocracker
4163	Both	Hydrocracker
4164	Both	F-630 Isocracker Feed Furnace Isomax w/Ultra Low NOx Burn
4165	Both	F620 Isocracker Feed Furnace Isomax w/Ultra Low NOX Burn
4166	Both	F-610 Isocracker Feed Furnace Isomax w/Ultra Low NOx Burn
4167	Both	F-710 TKC Fractionator Isomax
4168	Both	F-730 Isocracker Splitter Feed Furnace Isomax w/Ultra Low
4169	Both	F-731 Isocracker Reboiler Isomax w/Ultra Low NOx Burners
4170	2008-2010 period	F305 Reforming Furnace, Hydrogen Plant

TABLE A4.8-GOP-2 FACILITY ON-SITE STATIONARY COMBUSTION SOURCES

Source ID ^a	2008-2010 Period and Baseline, Project, or Both?	Source Name
	and Baseline	
4171	2008-2010 period and Baseline	F355 Reforming Furnace, Hydrogen Plant
4188	Both	Poly
4189	Both	Poly
4192	2008-2010 period and Baseline	F-2170 Stack Gas Heater #1 SRU Catalytic Cracker
4193	2008-2010 period and Baseline	F-2270 Tail Gas Heater #2 SRU
4194	2008-2010 period and Baseline	F-2370 Tail Gas Heater #3 SRU
4330	Both	HNF Reactor Furnace, F-1610
4331	Both	LNF Reactor Furnace, F-1310
4332	Both	Hot Oil Furnace, F-1360
4333	Both	TKC Vacuum Furnace, F-1750
4334	Both	LNC Atmos Furnace, F-1200
4335	Both	LNC Vacuum Furnace, F-1250
4336	Both	HNC Reactor Furnace, F-1410
4337	Both	HNC Atmos Furnace, F-1500
4338	Both	HNC Vacuum Furnace, F-1550
4339	Both	LNC Reactor Furnace, F-1110
4349	Both	Furnace F-1650
4350	Both	Gas Turbine with Steam Injection
4350	Both	Gas Turbine with Steam Injection
4351	Both	Heat Recovery Steam Generator
4352	Both	Gas Turbine with Steam Injection
4352	Both	Gas Turbine with Steam Injection
4353	Both	Heat Recovery Steam Generator
4471	Project	New Hydrogen Plant Furnace
4472	Project	New Hydrogen Plant Furnace

TABLE A4.8-GOP-2 FACILITY ON-SITE STATIONARY COMBUSTION SOURCES

Source ID^a	2008-2010 Period and Baseline, Project, or Both?	Source Name
6010	Both	High Level Flare, LSFO
6012	Both	V-282 South Isomax Flare
6013	Both	North Isomax Flare V-281
6015	Baseline and Project	D&R Flare
6016	Both	Fluid Catalytic Cracker Flare V-731
6019	Both	V-732, Alky-Poly Flare
6021	Project	New Hydrogen Plant Flare
6039	Both	Lube Flare, V-3501
9321	Both	Marine Loading Berth #1
9322	Both	Marine Loading Berth #2
9323	Both	Marine Loading Berth #3
9325	Both	Marine Loading Berth #9
9326	Both	Marine Loading Berth #11
9999	Both	Miscellaneous Greenhouse Gas Sources ^b
4436	Project	SRU 1 Stack Heater
4437	Project	SRU 2 Stack Heater
4438	Project	SRU 3 Stack Heater

Note: SDA = solvent de-asphalting, JHT = jet hydrotreater, NHT = naphtha hydrotreater, SRU = sulfur recovery unit, LNC = light neutral hydrocracker, HNF = heavy neutral hydrofinisher, LNF = light neutral hydrofinisher, NOx = oxides of nitrogen, VGO = vacuum gas oil, TKC = Taylor Katalytic Cracking unit, D&R = distillation and reforming, LSFO = low sulfur fuel oil

^a Source ID corresponds to the ID assigned by the BAAQMD to each emissions source listed on the Facility's current Title V operating permit. For Modernization Project sources not listed in the current Title V operating permit, source IDs from the BAAQMD Authority to Construct permit for the Chevron Hydrogen and Energy Renewal Project (2008 Project) are used.

^b Miscellaneous greenhouse gas sources includes greenhouse gas emissions from the following on-site stationary combustion sources: flares, diesel engines, and miscellaneous natural gas combustion. They also include greenhouse gas emissions from on-site stationary fugitive sources, described in a later section of this appendix.

The methods and data used to estimate greenhouse gas emissions from on-site stationary combustion sources are described later in this appendix.

1.4 ON-SITE STATIONARY PROCESS SOURCES

Certain industrial processes produce greenhouse gas emissions through chemical reactions that do not involve combustion. These emissions are known as process emissions. Examples of industries that generate greenhouse gas process emissions are cement manufacturing, iron and steel production, chemical production, and refineries. On-site stationary process emissions sources at the Facility include the fluid catalytic cracker, sulfur recovery units (SRUs), hydrogen plant, and catalytic reformers (Rheniformers).

In the fluid catalytic cracker unit, the process of catalytic cracking deposits coke byproduct on the fluid catalytic cracker catalyst, which must be removed in order to restore catalytic activity. The catalyst is regenerated by burning off the coke in a controlled combustion process. This process generates CO₂ emissions.

In the sulfur recovery unit, thermal and catalytic processes convert hydrogen sulfide and oxygen into sulfur and water, releasing CO₂ as a by-product.³ Acid gas feed contains some amount of CO₂, and in addition, side reactions convert hydrocarbons into carbonyl sulfide and carbon disulfide intermediates, which are converted to CO₂.

The production of hydrogen from natural gas and/or refinery fuel gas and water involves a series of chemical reactions that produce CO₂ as a by-product. Both the existing hydrogen plant and the future hydrogen plant proposed as part of the Modernization Project are therefore associated with CO₂ process emissions.

Finally, the Rheniformers contain vessels with catalyst that accumulate coke as hydrocarbons are passed over them. This coke must be burned off periodically to regenerate the catalyst, which produces CO₂ emissions.

Table A4.8-GOP-3, below, lists the on-site stationary process emissions sources included in the Facility greenhouse gas emissions inventories evaluated in this EIR.

The methods and data used to estimate greenhouse gas emissions from on-site stationary process sources are described later in this appendix.

³ Some Claus sulfur recovery units have supplementary processes that generate CH₄ emissions; however, per Chevron, the SRU Claus units at the Facility do not have a reboiler vent, and therefore do not release CH₄ emissions.

TABLE A4.8-GOP-3 FACILITY ON-SITE STATIONARY PROCESS SOURCES

Source ID	2008-2010 Period and Baseline, Project, or Both?	Source Name
4227	Both	SRU 1 Thermal Oxidizer
4228	Both	SRU 2 Thermal Oxidizer
4229	Both	SRU 3 Thermal Oxidizer
4237	Both	No. 5 Rheniformer, 23,000 barrels/day
4250	2008-2010 period and Baseline	Hydrogen Manufacturing Plant, 150 million scf/day
4283	Both	NO. 4 Catalytic Reformer, 28,000 barrels/day
4285	Both	Fluid Catalytic Cracker Plant
4449	Project	Hydrogen Plant Train 1
4450	Project	Hydrogen Plant Train 2
6021	Project	Hydrogen Plant Flare Pilot and Purge

Note: scf = standard cubic feet.

1.5 ON-SITE STATIONARY FUGITIVE SOURCES

Fugitive greenhouse gas emissions are those that are not discharged to atmosphere in a confined flow stream. Typical fugitive greenhouse gas sources at refineries are leaks from valves, flanges, connectors, pumps, and seals on various equipment storing or processing CH₄-containing materials. Other fugitive greenhouse gas sources are oil/water separators, which may release small amounts of CH₄ from separated oils, and the on-site aerobic treatment of wastewater, which produces small amounts of N₂O.

In this EIR, fugitive greenhouse gas emissions sources are accounted for under Source ID 9998 “Greenhouse Gases from Miscellaneous Storage Tanks” and Source ID 9999 “Miscellaneous Greenhouse Gas Sources,” as shown below in Table A4.8-GOP-4. Source ID 9999 “Miscellaneous Greenhouse Gas Sources” also includes greenhouse gas emissions from certain on-site stationary combustion sources (flares, diesel engines, and miscellaneous natural gas combustion), as noted earlier in Table A4.8-GOP-2.

TABLE A4.8-GOP-4 FACILITY ON-SITE STATIONARY FUGITIVE SOURCES

Source ID	2008-2010 Period and Baseline, Project, or Both?	Source Name
9998	Both	Greenhouse gases from Miscellaneous Storage Tanks
9999	Both	Miscellaneous Greenhouse Gas Sources

The methods and data used to estimate greenhouse gas emissions from on-site stationary fugitive sources are described later in this appendix.

1.6 INDIRECT SOURCES

Chevron purchases and imports public utility electricity from Pacific Gas and Electric Company (PG&E) to provide power, heat, cooling, and lighting for the Facility operations described above as well as the on-site buildings. Chevron also purchases and imports public utility water from the East Bay Municipal Utility District (EBMUD) to support Facility and building operations. Because the greenhouse gas emissions associated with electricity generation and water sourcing, distribution, and treatment are generally produced offsite at sources owned or controlled by another entity, they are considered “indirect” sources of greenhouse gas emissions. Greenhouse gas emissions associated with electricity and water usage are typically generated through the combustion of fossil fuels, which produce CO₂, CH₄, and N₂O emissions. The methods and data used to estimate greenhouse gas emissions from indirect sources are described later in this appendix.

1.7 OVERVIEW OF CASES EVALUATED: 2008-2010 PERIOD, BASELINE, AND PROJECT

Operational greenhouse gas emissions both before and after the Modernization Project is implemented must be evaluated in order to determine the net change in emissions. This EIR evaluates four emissions inventories:

- 2008-2010 Period
- Baseline
- Project 93% Utilization Scenario (Facility 93% Utilization and Hydrogen Plant 100% Utilization)

- Project 100% Utilization Scenario (Facility and Hydrogen Plant 100% Utilization)

This section provides an overview of the key premises for each of the four emissions inventories. Subsequent sections provide more detailed descriptions of the data and calculation methods used to derive the four emissions inventories. Emission inventories for an additional 17 Project scenarios were also evaluated including that for significantly heavier, lighter, and sour blends. These emission inventories are included in Section 1.12.

For the 2008-2010 period inventory, a period of 2008-2010 was chosen because it is representative of existing actual Refinery Operations. As described in *Section 4.8: Greenhouse Gases*, and *Appendix 4.8-BASE*, year 2011 was also reviewed and determined to be consistent with the 2008-2010 period, but is not included in the 2008-2010 period.⁴ 2008-2010 period greenhouse gas emissions for on-site stationary combustion and process sources are obtained from Chevron's reports of greenhouse gas emissions to CARB under the California Mandatory Reporting Rule for Greenhouse Gas Emissions (17 CCR, Sections 95100-95158), as presented in *Appendix 4.8-CEI*. Details of the calculation of Baseline indirect emissions are presented in a later section of this appendix.

The Baseline inventory incorporates: (1) equipment changes; (2) new regulations; and (3) emission reduction measures scheduled to be implemented before the January 2016 expected start date of the Modernization Project. As described in *Section 4.8, Greenhouse Gases*, and *Appendix 4.8-BASE*, the only regulation directly affecting Facility operational greenhouse gas emissions is the California Renewables Portfolio Standard, which requires retail sellers of electric services to increase procurement from eligible renewable resources to 33% of total retail sales by 2020. This gradually decreases the greenhouse gas emission factor for electricity usage and therefore reduces greenhouse gas emissions associated with purchased electricity and water usage in the Baseline. Chevron has identified 13 individual greenhouse gas emission reduction measures that will be implemented after the 2008-2010 period but prior to Modernization Project startup, and are to be implemented independent of the Modernization Project. These include measures that are designed to increase energy efficiency and process performance, thus reducing fuel and electricity usage and associated greenhouse gas emissions in the Baseline. Consistent with the Smart Rail court

⁴ 2012 and 2013 are not representative years for greenhouse gas emissions due to the August 2012 fire that damaged the crude unit. See *Chapter 4.3, Air Quality*, for a more complete description of why 2012 and 2013 are not representative years.

decision described in *Section 4.8, Greenhouse Gases*, this EIR uses the Baseline representing January 2016 conditions to evaluate the significance of Project-related greenhouse gas emissions.

For the Modernization Project emissions inventory, with the exception of the future hydrogen plant, source emission factors are derived from the emissions reported in the CARB greenhouse gas emission reports and 2008-2010 period activities (throughputs) reported for the BAAQMD EI. To obtain Modernization Project emissions, these emission factors are multiplied by the Modernization Project activities (throughputs) calculated by the URM, described in *Appendix 4.3-URM*. For a subset of sources, greenhouse gas emissions would not change between the Baseline and the Project because the emissions are independent of production or feedstock type and would remain at the Baseline levels. These sources are described in more detail later in this appendix. For the future hydrogen plant, process greenhouse gas emissions are estimated using methodologies presented in the API Greenhouse Gas Compendium (API, 2009) while combustion greenhouse gas emissions are estimated using the emission factors and methodologies required under the EPA's Mandatory Reporting Rule (40 CFR, Part 98). Furthermore, two Modernization Project emission inventories are evaluated to represent two different Facility utilization rates.

As discussed in the *Chapter 3, Project Description*, following completion of the Modernization Project, Chevron anticipates operating the Refinery "gateway" units⁵ up to an average annual rate of 93%. Praxair will operate the future hydrogen plant to provide the hydrogen required for Chevron; Praxair is also separately pursuing authorization to export hydrogen to other potential off-site customers such as other refineries, and plans to operate the future hydrogen plant to 100% of its operating capacity if the separate export project is approved. This scenario is evaluated as the Modernization Project – Refinery 93% Utilization and Hydrogen Plant 100% Utilization case (abbreviated as "Project 93% Utilization Scenario"). Chevron is also maintaining its legal right to operate the Refinery at 100% of its permitted capacity (such that the "gateway" units are 100% utilized), which in some circumstances may require nearly all of the Praxair hydrogen plant production capacity. This second scenario is evaluated as the Modernization Project – Refinery and Hydrogen Plant 100% Utilization case (abbreviated as "Project 100% Utilization Scenario").

⁵ As described in *Chapter 4.3 Air Quality*, a refinery "gateway" unit is one that accepts feedstocks from outside the refinery. At the Facility, the gateway units include the crude unit, the fluid catalytic cracker, FCC FHT, RLOP, and several hydrocrackers.

Chevron has committed as a Modernization Project objective to "no net increase" in greenhouse gas emissions for Chevron's Project utilization rate. To achieve this "no net increase" objective, Chevron has proposed several Project Design Features, which are detailed in the sections below.

If greenhouse gas emissions exceed that corresponding to the 93% Utilization Scenario, then additional greenhouse gas emissions reductions will be required to adhere to the "no net increase" commitment. In this case, Chevron shall provide to the City of Richmond a notice that it plans to operate at a utilization rate greater than 93%. If utilization exceeds 93%, Chevron will implement several mitigation measures, which are detailed in the sections below,

The following sections of this appendix provide detailed descriptions of the data and calculation methods used to derive the 2008-2010 period, Baseline, and Modernization Project emissions inventories.

1.8 UNITS OF MEASUREMENT: METRIC TONNES OF CARBON DIOXIDE EQUIVALENT

As described earlier, greenhouse gases at the Facility include CO₂, CH₄, and N₂O from on-site stationary combustion and process units as well as indirect emissions associated with purchased electricity and water usage. The effect each greenhouse gas has on global warming is a combination of the volume of its emissions and its global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas will contribute to global warming relative to how much warming would be caused by the same mass of CO₂. CH₄ and N₂O are substantially more potent than CO₂, with GWPs of 21 and 310,⁶ respectively.

Greenhouse gas emissions are typically measured in terms of mass of carbon dioxide equivalent (CO₂e). CO₂e is calculated as the product of the mass of a given greenhouse gas and its specific GWP.

Unlike CAPs and TACs which are typically expressed in terms of short tons or pounds, greenhouse gas emissions are typically expressed in terms of metric tonnes (MT). This is the metric used throughout this EIR. Exact totals presented

⁶ These GWPs are from the Second Assessment Report of the Intergovernmental Panel on Climate Change. The more recent Fourth Assessment Report includes different GWPs, but the GWPs from the Second Assessment Report are used by convention, as these values were used to set the Kyoto Protocol system and therefore are contained in this EIR's regulatory assessment.

in all tables and report sections may not equal the sum of components due to independent rounding of numbers.

1.9 ESTIMATION OF GREENHOUSE GAS EMISSIONS FROM ON-SITE STATIONARY COMBUSTION AND PROCESS SOURCES

1.9.1 2008-2010 Period

2008-2010 period greenhouse gas emissions for on-site stationary combustion and process sources were obtained from Chevron's reports of greenhouse gas emissions to CARB under the California Mandatory Reporting Rule for Greenhouse Gas Emissions (17 CCR, Sections 95100-95158), as presented in *Appendix 4.8-CEI*.⁷ Chevron has been reporting its annual greenhouse gas emissions to CARB since 2008 under the Mandatory Reporting Rule, which requires that certain large industrial facilities report their greenhouse gas emissions on an annual basis. Each reporting entity must certify under the penalty of perjury that the emissions statements are accurate. All CARB reports for facilities emitting greater than 25,000 MT CO₂e must also be verified by an independent third party.⁸

As described in *Section 4.8, Greenhouse Gases*, the 2008-2010 BAAQMD EI (which is the basis of the 2008-2010 period CAP and TAC emissions presented in *Section 4.3, Air Quality*) was also evaluated and shown to have a similar Facility greenhouse gas inventory to the CARB reports for the 2008-2010 period. The small differences in totals are due to the BAAQMD inventory relying on a different methodology than the CARB inventory to calculate greenhouse gas emissions associated with the hydrogen plant, and further, the BAAQMD inventory does not include sulfur recovery unit process greenhouse gas emissions or greenhouse gas emissions from sources that are exempt from District permitting. Therefore, the BAAQMD annual emissions totals are typically smaller than those presented in the CARB inventory reports.

Table A4.8-GOP-5, below, provides the CARB and BAAQMD greenhouse gas emissions totals for Facility on-site combustion and process sources for the

⁷ These reports encompass Facility emissions only and do not include indirect, shipping, or other transportation emissions.

⁸ While 2008 emissions were not required to undergo third-party verification, Chevron voluntarily had emissions for that year verified. Third-party verification is a rigorous process that is closely monitored by CARB. Verifiers must undergo training and accreditation through CARB. Conflicts of interest between the verification body and the reporting entity must be cleared before any verification activities may commence.

2008-2010 period as well as year 2011. Year 2011 emissions are included in this table to further indicate that the 2008-2010 period years are typical of operations and 2011 emissions are typically similar to the 2008-2010 period; however, only years 2008-2010 are considered in the 2008-2010 period evaluation.⁹

**TABLE A4.8-GOP-5 2008-2010 AND 2011 BAAQMD EI AND CARB REPORT
TOTAL GREENHOUSE GAS EMISSIONS FOR ON-SITE STATIONARY
COMBUSTION AND PROCESS SOURCES**

Year	BAAQMD EI (MT CO₂e/Year)	CARB Report (MT CO₂e/Year)
2008-2010 Period		
2008	4,060,366	4,798,282
2009	4,283,141	4,522,383
2010	4,226,040	4,511,882
2008-2010 Average	4,189,849	4,610,849
Non-2008-2010 Period		
2011	4,374,532	4,345,277

Note: This table presents refinery operational emissions only, and does not include shipping or other transportation-related emissions, or indirect emissions from electricity and water usage.

Sources: Appendix 4.3-EI; Chevron Data Transmittal #53A, 2013; Chevron Data Transmittal #53B, 2013; Chevron Data Transmittal #53C, 2013. Total Facility emissions reported to CARB for reporting year 2011 are publically available at: <http://www.arb.ca.gov/cc/reporting/ghg-rep/reported-data/ghg-reports.htm>.

Based on the CARB reports, the average annual greenhouse gas emissions from stationary combustion, process, and fugitive sources at the Facility during the 2008-2010 period was 4,610,849 MT of CO₂e. Table A4.8-GOP-6, below, provides the annual average greenhouse gas emissions associated with each stationary combustion and process source at the Facility for the 2008-2010 period. Here, emissions are presented on a per-Source ID basis for consistency with *Appendix 4.3-OP*. As shown in *Appendix 4.8-CEI*, the CARB reports do not present greenhouse gas emissions on a per-Source ID basis, but rather for categories such as Hydrogen Plant Stationary Combustion, Hydrogen Plant Process Emissions, Refinery Fuel Gas Less Hydrogen Plant and Cogeneration Fuel Gas, Refinery Natural Gas Less Cogeneration Natural Gas, SRU Process Emissions,

⁹ 2012 and 2013 are not representative years for greenhouse gas emissions due to the August 2012 fire that damaged the crude unit. See *Section 4.3, Air Quality*, for a more complete description of why 2012 and 2013 are not representative years.

etc. For purposes of this EIR analysis, emissions presented in Table A4.8-GOP-6 are distributed equally among similar Source IDs. For example, overall sulfur recovery unit process emissions as presented in the CARB reports (2008-2010 average) are 7,599 MT CO₂e/year. In the Facility's Title V operating permit, sulfur recovery unit process emissions are associated with three Source IDs representing three sulfur recovery unit trains: 4227, 4228, and 4229. Therefore, in Table A4.8-GOP-6, each of the three Source IDs is attributed one-third of the overall sulfur recovery unit process emissions (2,533 MT CO₂e/year each).

TABLE A4.8-GOP-6 2008-2010 GREENHOUSE GAS EMISSIONS (ON-SITE STATIONARY COMBUSTION AND PROCESS SOURCES)

Source ID	Source Name	MT CO ₂ e/ Year
4038	#4 Rheniformer, F-3550	60,131
4039	#4 Rheniformer, F-3560	36,405
4040	#4 Rheniformer, F-3570	22,141
4041	F3580, #4 Rheniformer	14,998
4042	#5 Rheniformer F550 W/36 Ultra Low NOx Burners	36,267
4043	F560, #5 Rheniformer	18,444
4044	#5 Rheniformer F570	18,716
4045	#5 Rheniformer F580	8,659
4059	#1 JHT Furnace #247	22,739
4060	#1 JHT Furnace #210a&B	25,150
4061	#5 NHT F410	31,949
4062	#5 NHT F447	39,827
4068	VGO Desulfurizer F-1610	21,154
4069	VGO F1660	6,346
4070	#4 Crude Unit F 1100a	153,888
4071	#4 Crude Unit F1100b	141,025
4072	#4 Crude Unit F1160	47,567
4129	800# Steam Boiler #1 #IPP	35,187
4131	800# Steam Boiler #3 #1PP	38,564
4132	800# Steam Boiler #4 #1 PP	27,087
4133	800# Steam Boiler #5 #1PP	22,667
4135	800# Steam Boiler #7 #1 PP	56,663

TABLE A4.8-GOP-6 2008-2010 GREENHOUSE GAS EMISSIONS (ON-SITE STATIONARY COMBUSTION AND PROCESS SOURCES)

Source ID	Source Name	MT CO ₂ e/ Year
4152	F-100 Asphalt Solution Heater SDA Isomax	5,271
4154	F-120 Asphalt Solution Heater SDA Isomax	5,025
4155	F-135 Hot Oil Furnace	69,226
4158	Hydrogen Plant Preheat Furnace F-340	198,011
4159	F410 TKC Feed Furnace TKC Isomax	16,629
4160	F420 TKC Feed Furnace TKC Isomax	16,974
4161	Hydrocracker	19,569
4162	Hydrocracker	21,361
4163	Hydrocracker	19,202
4164	F-630 Isocracker Feed Furnace Isomax W/Ultra Low NOx Burners	14,343
4165	F620 Isocracker Feed Furnace Isomax W/Ultra Low NOx Burners	10,129
4166	F-610 Isocracker Feed Furnace Isomax W/Ultra Low NOx Burners	13,896
4167	F-710 TKC Fractionator Isomax	44,742
4168	F-730 Isocracker Splitter Feed Furnace Isomax W/Ultra Low	97,156
4169	F-731 Isocracker Reboiler Isomax W/Ultra Low NOx Burners	81,308
4170	F355 Reforming Furnace, Hydrogen Plant	198,011
4171	F355 Reforming Furnace, Hydrogen Plant	198,011
4188	Poly	9,118
4189	Poly	4,058
4192	F-2170 Stack Gas Heater #1 SRU Catalytic Cracker	10,694
4193	F-2270 Tail Gas Heater #2 SRU	10,694
4194	F-2370 Tail Gas Heater #3 SRU	10,694
4227	SRU 1 Thermal Oxidizer	2,533
4228	SRU 2 Thermal Oxidizer	2,533
4229	SRU 3 Thermal Oxidizer	2,533
4237	No. 5 Rheniformer, 23,000 Barrels/Day	87
4250	Hydrogen Manufacturing Plant	907,185
4283	No. 4 Catalytic Reformer, 28,000 Barrels/Day	87

TABLE A4.8-GOP-6 2008-2010 GREENHOUSE GAS EMISSIONS (ON-SITE STATIONARY COMBUSTION AND PROCESS SOURCES)

Source ID	Source Name	MT CO ₂ e/ Year
4285	Fluid Catalytic Cracker Plant	878,128
4330	HNF Reactor Furnace, F-1610	4,088
4331	LNF Reactor Furnace, F-1310	6,107
4332	Hot Oil Furnace, F-1360	17,088
4333	TKC Vacuum Furnace, F-1750	13,218
4334	LNC Atmos Furnace, F-1200	10,198
4335	LNC Vacuum Furnace, F-1250	8,223
4336	HNC Reactor Furnace, F-1410	7,529
4337	HNC Atmos Furnace, F-1500	9,027
4338	HNC Vacuum Furnace, F-1550	12,357
4339	LNC Reactor Furnace, F-1110	4,542
4349	Furnace F-1650	6,934
4350	Gas Turbine With Steam Injection	2,763
4350	Gas Turbine With Steam Injection	254,713
4351	Heat Recovery Steam Generator	70,896
4352	Gas Turbine With Steam Injection	2,763
4352	Gas Turbine With Steam Injection	254,713
4353	Heat Recovery Steam Generator	70,896
9321	Marine Loading Berth #1	723
9322	Marine Loading Berth #2	723
9323	Marine Loading Berth #3	723
9325	Marine Loading Berth #9	723
9326	Marine Loading Berth #11	723
9999 ^a	Miscellaneous Greenhouse Gas Sources	97,398
Total		4,610,849

Notes: SDA = solvent de-asphalting, JHT = jet hydrotreater, NHT = naphtha hydrotreater, SRU = sulfur recovery unit, HNC = heavy neutral hydrocracker, LNC = light neutral hydrocracker, HNF = heavy neutral hydrofinisher, LNF = light neutral hydrofinisher, VGO = vacuum gas oil, TKC = Taylor Katalytic Cracking unit

^a Miscellaneous greenhouse gas sources include: natural gas usage other than cogeneration and SRU, diesel engines, flare releases, wastewater treatment, equipment fugitives, oil/water separations, and sulfur hexafluoride.

1.9.2 Baseline

As described earlier, the Baseline inventory incorporates: (1) equipment changes; (2) new regulations; and (3) emission reduction measures scheduled to be implemented before the January 2016 expected start date of the Modernization Project.

The anticipated equipment changes detailed in *Section 4.3, Air Quality* affect CAP and TAC emissions but do not affect greenhouse gas emissions. Therefore, there are no changes to the Baseline greenhouse gas inventory as compared to the 2008-2010 greenhouse gas inventory due to equipment changes.

As described in *Section 4.8, Greenhouse Gases*, the only regulation directly affecting Facility operational greenhouse gas emissions after the 2008-2010 period but before Modernization Project construction and operation is the California Renewables Portfolio Standard, which reduces indirect greenhouse gas emissions from purchased electricity usage and is described later in this appendix under section *Estimation of Greenhouse Gas Emissions from Indirect Sources*.

Therefore, without emission reduction measures, the Baseline emissions from Facility on-site stationary combustion and process sources are the same as the 2008-2010 period emissions: 4,610,849 MT CO₂e/year.

Chevron has identified 13 individual Greenhouse Gas emission reduction measures that will be implemented after the 2008-2010 period but prior to Modernization Project startup, and are to be implemented independent of the Modernization Project. A listing of these measures along with their annualized greenhouse gas emission reductions is provided in Table A4.8-GOP-7. These measures include upgrading motors, improving computer process controls, changing out equipment, repairs, insulation, improvement of catalyst performance, and improved monitoring and maintenance. Many of these measures will reduce greenhouse gas emissions associated with on-site combustion and process sources. Several of the measures will reduce purchased electricity usage and the associated indirect greenhouse gas emissions. Annual savings from each of these measures range from 30,400 MT CO₂e (Improvement to Cogeneration Selective Catalytic Reduction Catalyst Performance and Gas Turbine) down to 10 MT CO₂e (Upgrade of Standard Motors with Premium Efficiency Motors). In total, these measures will result in an annualized savings in greenhouse gas emissions of 74,610 MT CO₂e.

TABLE A4.8-GOP-7 NON-PROJECT FACILITY MEASURES THAT REDUCE GREENHOUSE GAS EMISSIONS

Measure	Emission Reductions (MT CO ₂ e/Year)
Cogeneration Plant - Improvement to Selective Catalytic Reduction catalyst performance and gas turbine resulting in refinery steam savings.	30,400
Cogeneration Plant - Installation of new deaerator feed water preheat coil in the heat recovery steam generators to recover additional waste heat from the gas turbine exhaust resulting in reduced usage of deaerator steam.	19,400
Crude Unit - Online isolation and cleaning of fouled heat exchanger resulting in decreased furnace fuel consumption.	11,300
Rheniformer 5 - Improve furnace heat transfer through use of coating, reducing furnace firing required to heat process stream.	6,700
Facility Furnaces - Install new furnace analyzers for improved monitoring resulting in decreased furnace fuel consumption.	3,500
Naptha Hydrotreating Unit - Install computer process control to improve NHT F-410 furnace operation resulting in decreased furnace fuel consumption.	1,300
Facility - Operation of Diesel Hydrotreater power recovery turbine resulting in electricity savings.	700
#1 Power Plant Boilers - Reduce usage of boilers through improved planning.	300
Facility - Replace steam turbine in fluid catalytic cracker plant with electrical motor resulting in refinery steam savings.	300
Facility - Install new piping and associated pumps and traps to recover hot condensate from steam traps that currently discharge to industrial drains resulting in refinery steam savings.	300
Facility - Operation of Taylor Katalytic Denitrifier power recovery turbine resulting in electricity savings.	200
Facility - Install insulation on uninsulated steam piping to minimize heat loss resulting in refinery steam savings.	200
Facility - Upgrade standard motors with a premium efficiency motors resulting in electricity savings.	10
TOTAL	74,610

Source: Chevron Data Transmittal #25 (Rev #1), 2014.

Ten of the measures that Chevron has completed or has committed to have received rebates under the Statewide Customized Offering for Business program administered by PG&E and overseen by the California Public Utilities Commission (CPUC). These measures constitute up to 70,610 MT CO₂e in annual greenhouse gas reductions or roughly 95% of the total emission reductions that the Facility will implement before 2016. This program creates incentives for energy efficiency projects by providing rebates on permanent capital improvement

projects that demonstrate a real savings in energy. Energy savings from these 10 measures were verified by a third-party consultant that reviews the baseline and post-project energy use as part of a requirement of the program. Baseline energy usage is based on a few years of data; post-project energy usage is based on 6 months of data.

Table A4.8-GOP-8, below, summarizes the Baseline greenhouse gas emissions from on-site stationary combustion and process sources.

TABLE A4.8-GOP-8 BASELINE GREENHOUSE GAS EMISSIONS (ON-SITE STATIONARY COMBUSTION AND PROCESS SOURCES, INCLUDING REDUCTION MEASURES)

	Emissions (MT CO ₂ e/Year)
2008-2010 Period	4,610,849
Greenhouse Gas Reduction Measures	74,610
Total	4,536,239

1.9.3 Modernization Project

In order to assess Facility operational emissions following Modernization Project construction, three categories of Modernization Project changes to the Baseline must be evaluated.

The first category of emission changes results from physical changes to Facility process units and equipment that will affect emissions (even if it were assumed that there are no changes in utilization and feedstock quality), such as the replacement of the hydrogen plant.

The second category of emission changes results from assuming an increased utilization of the Facility relative to the 2008-2010 period. During the 2008-2010 period, the Facility crude unit operated at an average annual rate of 89% and the existing hydrogen plant operated as needed to produce the level of hydrogen required to process Facility feedstocks. As discussed in the *Chapter 3, Project Description*, following completion of the Modernization Project, Chevron anticipates operating the Facility crude unit and gas oil gateway units at an average annual rate of 93%. Praxair will operate the future hydrogen plant to provide the hydrogen required for Chevron; Praxair is also separately pursuing authorization to export hydrogen to other potential off-site customers such as

other refineries, and plans to operate the future hydrogen plant to 100% of its operating capacity if the separate export project is approved. Chevron is also maintaining its legal right to operate the Refinery at 100% of its permitted capacity, which in some circumstances may require nearly all of the Praxair hydrogen plant production capacity. This second category of emissions relates to the increase in emissions resulting from an increase in Refinery utilization to 93% and 100% (respectively) of the Refinery's permitted capacity, and 100% of the future hydrogen plant capacity. This EIR evaluates 19 Modernization Project emission inventories which include two different Facility utilization rates:

- Project 93% Utilization Scenario (Refinery 93% Utilization and Hydrogen Plant 100% Utilization)
- Project 100% Utilization Scenario (Refinery and Hydrogen Plant 100% Utilization)

The third category of emission changes relates to changes to the quality of the crude and gas oils being processed by the Facility, including heavier crude oils (i.e., lower gravity crude oils) and more “sour” (i.e., higher sulfur content) crude and gas oils. Crude oil sulfur content is increased from 1.58% by weight in the Baseline to 2.5% in the Modernization Project. Gas oil sulfur content is increased from 1.5% in the Baseline to 2.25% in the Modernization Project. The Facility's utilization is affected by the quality of crude oil feedstocks. The Facility's ability to process crude oil that is significantly heavier or lighter than the varying crude oil blends used during the 2008-2010 period is subject to permit-related constraints and equipment limitations. The crude unit divides oil into various “cuts” of differing gravities, and each cut is handled by downstream process equipment. For example, heavier crude oil must be routed to the solvent de-asphalting unit for further processing. The existing permit limit of the solvent de-asphalting is 56,000 barrels/day, but equipment limitations and other factors do not allow the unit to operate at more than 50,000 barrels/day. Significantly lighter crude blends must be processed by the naphtha hydrotreater, which is subject to a permit limit of 57,600 barrels/day. Additional detail on crude oil limitations can be found in *Appendix 4.3-OP*. Thus, if heavier or lighter crude blends are processed, the facility utilization would be lower, which would lead to lower Facility emissions.

These three categories of emissions changes are described in detail in *Section 4.3, Air Quality* and in *Appendix 4.3-OP*. Those documents explain that the three categories of emissions changes are evaluated in the Modernization Project inventory through the use of the URM. The URM is a computer model that was developed to analyze how future crude feedstocks with different fractional characteristics, as well as crude and gas oil feedstocks with different sulfur

content, would affect Facility process unit throughput volumes and production rates. The URM calculations require input values that characterize the crude oil's fractional characteristics and weight, and the sulfur content of the crude and purchased gas oil. Using these input variables, the URM calculates the resulting process unit throughputs, sulfur recovery amount, and hydrogen plant production levels. Process unit throughputs and production volumes generated by the URM are utilized to estimate Modernization Project emissions. The URM is described in more detail in *Section 4.3, Air Quality*, and *Appendix 4.3-URM*. As noted in that chapter the URM assumes the Facility will produce the same kinds of products in roughly the same proportion before and after the Modernization Project. *Appendix 4.3-URM* addresses the effect that the Modernization Project could have on changing the product mix following Modernization Project construction and operation.

Outputs from the URM are sulfur production amount (long tons sulfur per year) for the sulfur recovery unit, hydrogen production level (million standard cubic feet [scf]) per year for the hydrogen plant, and plant throughput (million barrels [MB] per year) for all other combustion and process units. These URM outputs are the “activity metric” used to calculate Modernization Project emissions using the following general equation:

$$E = \text{Activity} \times EF \times C \quad \text{Equation 4.8-GOP-1}^{10}$$

where:

E =	emissions (such as MT CO ₂ e/year)
Activity =	activity metric (such as long tons sulfur/year, million scf hydrogen/year, MB crude/year)
EF =	emission factor (such as MT CO ₂ e/long tons sulfur, MT CO ₂ e/million scf hydrogen, MT CO ₂ e/MB crude)
C =	unit conversion factor, if needed

With the exception of the future hydrogen plant, for each Facility combustion or process source the emission factor in Equation 4.8-GOP-1 above is derived from the emissions reported in the CARB greenhouse gas emission reports¹¹ and 2008-2010 period activities reported in the BAAQMD EI. Specifically, the source's

¹⁰ EF = emission factor.

¹¹ See *Appendix 4.8-CEI: CARB Greenhouse Gas Emissions Inventory*

TABLE A4.8-GOP-9 GREENHOUSE GAS EMISSIONS SOURCES AND UNITS OF SCALING FOR CALCULATION OF PROJECT EMISSIONS

Scaling Unit	Plant
Barrels Fed	Catalytic Reformers Furnaces
	Catalytic Reformer Regeneration
	Crude Unit (Atmospheric and Vacuum) Furnaces
	Fluid Catalytic Cracker Process
	Hydrocracker Furnaces
	Hydrogen Plant Furnaces
	Hydrotreaters (DHT, FCC FHT, GHT, JHT, NHT) Furnaces
	Poly Plant Furnaces
	RLOP (HNC, HNF, LNC, LNF) Furnaces
	SDA Furnaces
Hydrogen Produced	Hydrogen Plant
Sulfur Produced	SRU

Notes: DHT = diesel hydrotreater, FCC FHT = fluid catalytic cracking feed hydrotreater, GHT = gasoline hydrotreater, HNC = heavy neutral hydrocracker, HNF = heavy neutral hydrofinisher, JHT = jet hydrotreater, LNC = light neutral hydrocracker, LNF = light neutral hydrofinisher, NHT = naphtha hydrotreater, RLOP = Richmond lube oil plant, SDA = solvent de-asphalting, SRU = sulfur recovery unit.

CARB-reported 2008-2010 period emissions¹² (in MT CO₂e/year) is divided by the source's 2008-2010 period throughput (in MB/year, long tons sulfur/year, or million scf hydrogen/year) to obtain an emission factor in terms of MT CO₂e/MB, MT CO₂e/long tons sulfur, or MT CO₂e/million scf hydrogen.

Since the Modernization Project is not expected to change the emission factor or emission intensity of any source but the future hydrogen plant, the calculated emission factor for all sources except the future hydrogen plant can be used to calculate Modernization Project emissions. Modernization Project emissions are therefore calculated according to Equation 4.8-GOP-1 above, multiplying the

¹² As described earlier in this appendix, 2008-2010 period emissions are defined as the average of 2008-2010 emissions. Further, on a per-source basis, 2008-2010 period emissions are equivalent to Baseline emissions because there are no equipment or regulatory changes being implemented after the 2008-2010 period but before 2016.

Modernization Project activity obtained from the URM by the calculated emission factor.

For a subset of sources, greenhouse gas emissions are not expected to change with Facility throughput generally, or with Modernization Project changes more specifically. For these sources, emissions are not expected to change between the Baseline and the Modernization Project because the emissions are independent of production or feedstock type and would remain at the Baseline levels. These sources include stationary combustion at the cogeneration plant and power plant, and miscellaneous sources described earlier (including flares, diesel engines, miscellaneous natural gas combustion, equipment fugitives, oil/water separators, and aerobic wastewater treatment). Table A4.8-GOP-10, below, summarizes these sources and provides the reason that no change is expected with the Modernization Project. For these sources, Equation 4.8-GOP-1 can still be used to estimate Modernization Project emissions, but the Activity parameter is the same value for both the Baseline and the Modernization Project calculation.

In summary, for each Facility source except for the future hydrogen plant, Table A4.8-GOP-11 below provides the parameters used in Equation GHG-GOP-1 to calculate Modernization Project emissions: the 2008-2010 greenhouse gas emissions as reported to CARB, 2008-2010 period activity as calculated by the URM based on historical operational data provided by Chevron,¹³ the resulting calculated emission factor, and Modernization Project activity as derived by the URM (for both the 93% and 100% Utilization Scenarios).

The exception to the above scaling methodology is the future hydrogen plant. The future hydrogen plant cannot be scaled from the Baseline emissions, because it uses a different fuel than the existing hydrogen plant.¹⁴ Therefore, greenhouse gas emissions from the future hydrogen plant are estimated using publically available methods, as described below.

¹³ For sources that do not vary with the Project or increased refinery utilization levels, the Adjusted Baseline Activity and Project Activity are both presented as 1.

¹⁴ Unlike the existing hydrogen plant, which produces hydrogen from a process known as “steam reforming,” the future hydrogen plant will utilize pressure swing adsorption technology to produce hydrogen of very high purity. *Chapter 3: Project Description* and *Appendix X, Overview of Oil Refining Process at Chevron Richmond Refinery* provide detailed operational descriptions of the existing and future Hydrogen Plants.

TABLE A4.8-GOP-10 FACILITY SOURCES FOR WHICH PROJECT EMISSIONS ARE EQUAL TO BASELINE EMISSIONS AND DO NOT VARY WITH THE PROJECT OR INCREASED FACILITY UTILIZATION LEVELS

Source Type	Reason for Not Scaling
Component Fugitives	Emissions from process components such as valves and flanges are dependent on the material in the pipe and not flow through the pipe.
Electricity Generation	It is reasonably foreseeable that electricity and steam generation would not be affected by the Modernization Project because of inherent energy efficiencies and power/steam generation from project components.
Flares	Flare pilots operate continuously independently of throughputs. Planned flaring events such as startup and shutdown, as well as emergency flaring events, occur periodically but are also independent of the quantity of Facility throughputs.
Other Product Loading	The unrefined and refined wax loading racks, point orient wharf, asphalt tank truck loading racks, and main tank car loading rack have all been removed from service. The heavy oil trans-loading rack and non-retail gasoline dispensing facility are used internally by Chevron and are not related to Facility throughputs.
Maintenance Shops	Maintenance shops conduct routine operations that are independent of Facility throughputs, and are not expected to increase (and may well decrease) with the modernization of the Facility by the Modernization Project's process unit and equipment modifications.
Portable Storage Containers	These containers are used internally by the Facility for operations not affected by Facility throughputs, and are sealed.
Wastewater Treatment	The volume of wastewater produced in the Modernization Project has been reduced to the same level as the Baseline through Project Design Features, as discussed further in the <i>Section 4.9, Hydrology and Water Quality</i> .

Source: Chevron Data Transmittals #36K, 36L, 36N (Rev #1), 2013.

TABLE A4.8-GOP-11 CALCULATION OF PROJECT GREENHOUSE GAS EMISSIONS (ON-SITE STATIONARY COMBUSTION AND PROCESS SOURCES, EXCLUDING HYDROGEN PLANT)

Source ID ^a	2008-2010 Period, Baseline, Project, or Both? ^a	Source Name	Emission Factor ^b		Greenhouse Gas Emissions (MT CO ₂ e/Year)	Baseline		Project 93% Utilization		Project 100% Utilization	
			Value	Unit		Through-put Value	Through-put Unit	Through-put Value	Greenhouse Gas Emissions (MT CO ₂ e/Year) ^c	Throughput Value	Greenhouse Gas Emissions (MT CO ₂ e/Year)
4038	Both	#4 Rheniformer, F-3550	3.62	MT/1,000 barrel	60,131	16,608	MB/year	16,608	60,131	17,849	64,624
4039	Both	#4 Rheniformer, F-3560	2.19	MT/1,000 barrel	36,405	16,608	MB/year	16,608	36,405	17,849	39,125
4040	Both	#4 Rheniformer, F-3570	1.33	MT/1,000 barrel	22,141	16,608	MB/year	16,608	22,141	17,849	23,796
4041	Both	F3580, #4 Rheniformer	0.9	MT/1,000 barrel	14,998	16,608	MB/year	16,608	14,998	17,849	16,119
4042	Both	#5 Rheniformer F550 w/36 Ultra Low NOx Burners	2.18	MT/1,000 barrel	36,267	16,608	MB/year	16,608	36,267	17,849	38,977
4043	Both	F560, #5 Rheniformer	1.11	MT/1,000 barrel	18,444	16,608	MB/year	16,608	18,444	17,849	19,822
4044	Both	#5 Rheniformer F570	1.13	MT/1,000 barrel	18,716	16,608	MB/year	16,608	18,716	17,849	20,114
4045	Both	#5 Rheniformer F580	0.52	MT/1,000 barrel	8,659	16,608	MB/year	16,608	8,659	17,849	9,306
4059	Both	#1 JHT Furnace #247	1.02	MT/1,000 barrel	22,739	22,302	MB/year	22,192	22,627	23,908	24,376
4060	Both	#1 JHT Furnace #210A&B	1.13	MT/1,000 barrel	25,150	22,302	MB/year	22,192	25,027	23,908	26,961
4061	Both	#5 NHT F410	1.76	MT/1,000 barrel	31,949	18,177	MB/year	17,703	31,115	19,053	33,489
4062	Both	#5 NHT F447	2.19	MT/1,000 barrel	39,827	18,177	MB/year	17,703	38,787	19,053	41,746
4068	Both	VGO Desulfurizer F-1610	2.01	MT/1,000 barrel	21,154	10,512	MB/year	10,914	21,962	11,680	23,504
4069	Both	VGO F1660	1.01	MT/1,000 barrel	6,346	6,278	MB/year	6,643	6,715	7,118	7,195
4070	Both	#4 Crude Unit F 1100A	1.85	MT/1,000 barrel	153,888	83,184	MB/year	87,307	161,515	93,878	173,672
4071	Both	#4 Crude Unit F1100B	1.7	MT/1,000 barrel	141,025	83,184	MB/year	87,307	148,015	93,878	159,156

TABLE A4.8-GOP-11 CALCULATION OF PROJECT GREENHOUSE GAS EMISSIONS (ON-SITE STATIONARY COMBUSTION AND PROCESS SOURCES, EXCLUDING HYDROGEN PLANT)

Source ID ^a	2008-2010 Period, Baseline, Project, or Both? ^a	Source Name	Emission Factor ^b		Greenhouse Gas Emissions (MT CO ₂ e/Year)	Baseline		Project 93% Utilization		Project 100% Utilization	
			Value	Unit		Throughput Value	Throughput Unit	Throughput Value	Greenhouse Gas Emissions (MT CO ₂ e/Year) ^c	Throughput Value	Greenhouse Gas Emissions (MT CO ₂ e/Year)
4072	Both	#4 Crude Unit F1160	1.45	MT/1,000 barrel	47,567	32,814	MB/year	38,946	56,456	41,866	60,689
4129	Both	800# Steam Boiler #1 #1PP	35187.43	--	35,187	1	--	1	35,187	1	35,187
4131	Both	800# Steam Boiler #3 #1PP	38563.77	--	38,564	1	--	1	38,564	1	38,564
4132	Both	800# Steam Boiler #4 #1 PP	27086.51	--	27,087	1	--	1	27,087	1	27,087
4133	Both	800# Steam Boiler #5 #1PP	22667.41	--	22,667	1	--	1	22,667	1	22,667
4135	Both	800# Steam Boiler #7 #1 PP	56662.79	--	56,663	1	--	1	56,663	1	56,663
4152	Both	F-100 Asphalt Solution Heater SDA Isomax	0.43	MT/1,000 barrel	5,271	12,374	MB/year	15,987	6,811	17,192	7,324
4154	Both	F-120 Asphalt Solution Heater SDA Isomax	0.41	MT/1,000 barrel	5,025	12,374	MB/year	15,987	6,493	17,192	6,982
4155	Both	F-135 Hot Oil Furnace	5.59	MT/1,000 barrel	69,226	12,374	MB/year	15,987	89,443	17,192	96,182
4159	Both	F410 TKC Feed Furnace TKC Isomax	1.26	MT/1,000 barrel	16,629	13,250	MB/year	20,966	26,314	20,966	26,314
4160	Both	F420 TKC Feed Furnace TKC Isomax	1.28	MT/1,000 barrel	16,974	13,250	MB/year	19,585	25,090	19,585	25,090
4164	Both	F-630 Isocracker Feed Furnace Isomax w/Ultra Low NOx Burn	0.93	MT/1,000 barrel	15,343	16,425	MB/year	17,411	16,263	18,725	17,491
4165	Both	F620 Isocracker Feed Furnace Isomax w/Ultra Low NOx Burn	0.62	MT/1,000 barrel	10,129	16,425	MB/year	17,411	10,737	18,725	11,547
4166	Both	F-610 Isocracker Feed Furnace Isomax w/Ultra Low NOx Burn	0.85	MT/1,000 barrel	13,896	16,425	MB/year	17,411	14,730	18,725	15,841
4167	Both	F-710 TKC Fractionator Isomax	3.38	MT/1,000 barrel	44,742	13,250	MB/year	18,945	63,977	18,945	63,977
4168	Both	F-730 Isocracker Splitter Feed Furnace Isomax w/Ultra Low	5.92	MT/1,000 barrel	97,156	16,425	MB/year	17,411	102,985	18,725	110,758

TABLE A4.8-GOP-11 CALCULATION OF PROJECT GREENHOUSE GAS EMISSIONS (ON-SITE STATIONARY COMBUSTION AND PROCESS SOURCES, EXCLUDING HYDROGEN PLANT)

Source ID ^a	2008-2010 Period, Baseline, Project, or Both? ^a	Source Name	Emission Factor ^b		Greenhouse Gas Emissions (MT CO ₂ e/Year)	Baseline		Project 93% Utilization		Project 100% Utilization	
			Value	Unit		Through-put Value	Through-put Unit	Through-put Value	Greenhouse Gas Emissions (MT CO ₂ e/Year) ^c	Throughput Value	Greenhouse Gas Emissions (MT CO ₂ e/Year)
4169	Both	F-731 Isocracker Reboiler Isomax w/Ultra Low NOX Burners	4.95	MT/1,000 barrel	81,308	16,425	MB/year	17,411	86,186	18,725	92,691
4237	Both	NO. 5 Rheniformer, 23,000 barrels/day	0.01	MT/1,000 barrel	87.32	16,608	MB/year	16,608	87.32	17,849	94
4283	Both	NO. 4 Catalytic Reformer, 28,000 barrels/day	0.01	MT/1,000 barrel	87.32	16,608	MB/year	16,608	87.32	17,849	94
4285	Both	Fluid Catalytic Cracker Plant	34.13	MT/1,000 barrel	878,128	25,733	MB/year	27,156	926,705	29,200	996,457
4330	Both	HNF Reactor Furnace, F-1610	1.87	MT/1,000 barrel	4,088	2,190	MB/year	4,083	7,622	4,083	7,622
4331	Both	LNF Reactor Furnace, F-1310	1.09	MT/1,000 barrel	6,107	5,621	MB/year	7,483	8,130	8,030	8,725
4332	Both	Hot Oil Furnace, F-1360	3.04	MT/1,000 barrel	17,088	5,621	MB/year	7,483	22,748	8,030	24,412
4333	Both	TKC Vacuum Furnace, F-1750	2.35	MT/1,000 barrel	13,218	5,621	MB/year	7,483	17,595	8,030	18,882
4334	Both	LNC Atmos Furnace, F-1200	2.22	MT/1,000 barrel	10,198	4,599	MB/year	5,585	12,383	6,023	13,354
4335	Both	LNC Vacuum Furnace, F-1250	1.79	MT/1,000 barrel	8,223	4,599	MB/year	5,585	9,985	6,023	10,768
4336	Both	HNC Reactor Furnace, F-1410	1	MT/1,000 barrel	7,529	7,519	MB/year	8,833	8,845	9,490	9,503
4337	Both	HNC Atmos Furnace, F-1500	1.2	MT/1,000 barrel	9,027	7,519	MB/year	8,833	10,604	9,490	11,393
4338	Both	HNC Vacuum Furnace, F-1550	1.64	MT/1,000 barrel	12,357	7,519	MB/year	8,833	14,516	9,490	15,596
4339	Both	LNC Reactor Furnace, F-1110	0.99	MT/1,000 barrel	4,542	4,599	MB/year	5,585	5,515	6,023	5,947
4349	Both	Furnace F-1650	3.17	MT/1,000 barrel	6,934	2,190	MB/year	2,899	9,179	2,899	9,179
4350	Both	Gas Turbine with Steam Injection	2762.72	--	2,763	1	--	1	2,763	1	2,763

TABLE A4.8-GOP-11 CALCULATION OF PROJECT GREENHOUSE GAS EMISSIONS (ON-SITE STATIONARY COMBUSTION AND PROCESS SOURCES, EXCLUDING HYDROGEN PLANT)

Source ID ^a	2008-2010 Period, Baseline, Project, or Both? ^a	Source Name	Emission Factor ^b		Baseline			Project 93% Utilization		Project 100% Utilization	
			Value	Unit	Greenhouse Gas Emissions (MT CO ₂ e/Year)	Through-put Value	Through-put Unit	Through-put Value	Greenhouse Gas Emissions (MT CO ₂ e/Year) ^c	Throughput Value	Greenhouse Gas Emissions (MT CO ₂ e/Year)
4350	Both	Gas Turbine with Steam Injection	254712.94	--	254,713	1	--	1	254,713	1	254,713
4351	Both	Heat Recovery Steam Generator	70896.08	--	70,896	1	--	1	70,896	1	70,896
4352	Both	Gas Turbine with Steam Injection	2762.72	--	2,763	1	--	1	2,763	1	2,763
4352	Both	Gas Turbine with Steam Injection	254712.94	--	254,713	1	--	1	254,713	1	254,713
4353	Both	Heat Recovery Steam Generator	70896.08	--	70,896	1	--	1	70,896	1	70,896
9321	Both	Marine Loading Berth #1	0.01	MT/1,000 barrel	722.7802	103,745	MB/year	111,183	775	119,650	834
9322	Both	Marine Loading Berth #2	0.01	MT/1,000 barrel	722.7802	103,745	MB/year	111,183	775	119,650	834
9323	Both	Marine Loading Berth #3	0.01	MT/1,000 barrel	722.7802	103,745	MB/year	111,183	775	119,650	834
9325	Both	Marine Loading Berth #9	0.01	MT/1,000 barrel	722.7802	103,745	MB/year	111,183	775	119,650	834
9326	Both	Marine Loading Berth #11	0.01	MT/1,000 barrel	722.7802	103,745	MB/year	111,183	775	119,650	834
9998	Both	Greenhouse Gases from Miscellaneous Storage Tanks	0	MT/barrels/day	155.211	103,745	MB/year	111,183	166	119,650	177
9999	Both	Miscellaneous Greenhouse Gas Sources	97243.27	--	97,243	1	--	1	97,243	1	97,243
4227	Project	SRU 1 Thermal Oxidizer	17.45	MT/1,000 long tons	2,533	145.1605	1,000 long tons/year	219	3,822	219	3,822
4228	Project	SRU 2 Thermal Oxidizer	17.45	MT/1,000 long tons	2,533	145.1605	1,000 long tons/year	219	3,822	219	3,822
4229	Project	SRU 3 Thermal Oxidizer	17.45	MT/1,000 long tons	2,533	145.1605	1,000 long tons/year	219	3,822	219	3,822
4436	Project	SRU 1 Stack Heater	73.67	MT/1,000 long tons	10,694	145	1,000 long tons/year	219	16,134	219	16,134
4437	Project	SRU 2 Stack Heater	73.67	MT/1,000 long tons	10,694	145	1,000 long tons/year	219	16,134	219	16,134

TABLE A4.8-GOP-11 CALCULATION OF PROJECT GREENHOUSE GAS EMISSIONS (ON-SITE STATIONARY COMBUSTION AND PROCESS SOURCES, EXCLUDING HYDROGEN PLANT)

Source ID ^a	2008-2010 Period, Baseline, Project, or Both? ^a	Source Name	Emission Factor ^b		Baseline	Project 93% Utilization		Project 100% Utilization			
			Value	Unit	Greenhouse Gas Emissions (MT CO ₂ e/Year)	Through-put Value	Through-put Unit	Through-put Value	Greenhouse Gas Emissions (MT CO ₂ e/Year) ^c	Throughput Value	Greenhouse Gas Emissions (MT CO ₂ e/Year)
4438	Project	SRU 3 Stack Heater	73.67	MT/1,000 long tons	10,694	145	1,000 long tons/year	219	16,134	219	16,134
4161	Project	TKN Isocracker	1.19	MT/1,000 barrel	19,569	16,425	MB/year	17,411	20,743	18,725	22,309
4162	Project	TKN Isocracker	1.3	MT/1,000 barrel	21,361	16,425	MB/year	17,411	22,642	18,725	24,351
4163	Project	TKN Isocracker	1.17	MT/1,000 barrel	19,201	16,425	MB/year	17,411	20,354	18,725	21,890
4188	Project	Poly	3.73	MT/1,000 barrel	9,118	2,446	MB/year	2,592	9,663	2,774	10,343
4189	Project	Poly	1.66	MT/1,000 barrel	4,058	2,446	MB/year	2,592	4,301	2,774	4,604
Total			3,109,632			3,306,773			3,470,759		

Note: JHT = jet hydrotreater, NHT = naphtha hydrotreater, HNC = heavy neutral hydrocracker, LNC = light neutral hydrocracker, HNF = heavy neutral hydrofinisher, LNF = light neutral hydrofinisher, VGO = vacuum gas oil, TKC = Taylor Katalytic Cracking unit, TKN = Taylor Katalytic Denitrification unit, LSFO = low sulfur fuel oil, MB = million barrels.

a For Source IDs that only exist in the Project, Baseline emissions and throughputs are taken from the analogous Baseline Source IDs.

b For sources that do not vary with the Project or increased refinery utilization levels, the Baseline activity and Project activity are both presented as 1. Therefore, the emission factor is presented as equivalent to the Baseline emissions in MT CO₂e/year, which are equivalent to the Project emissions.

c The Project emissions presented in this table may not exactly equal the product of the emission factor and throughput, due to independent rounding of numbers.

Process CO₂ emissions¹⁵ from the future hydrogen plant are calculated using the following equation from the API Greenhouse Gas Compendium (API, 2009):

$$E_{CO_2} = FR \times CF \times \frac{44 \text{ mass units } CO_2 / \text{mole}}{12 \text{ mass units } C / \text{mole}} \quad \text{Equation 4.8-GOP-2 (API Equation 5-8)}$$

Where:

E_{CO₂} = annual emissions of CO₂ (tonnes/year)

FR = feedstock rate in units of mass per year (feedstock rate excluding H₂O fed)

CF = weight fraction of carbon in the feedstock

44 = molecular weight CO₂

12 = molecular weight of carbon

In order to use this equation for estimating Modernization Project emissions, it must be modified to scale for different throughputs. First, Chevron provided the feedstock rate and carbon fraction in units of lb-mole rather than mass units (Chevron Data Transmittal #11, 2011). This removes the molecular weight of carbon from the equation. Second, the equation must be modified to account for hydrogen production, since hydrogen produced, as opposed to feedstock rate, is the metric provided by the URM. To do this, the feedstock rate provided by Chevron is divided by the corresponding hydrogen production provided by the URM,¹⁶ and a new term for hydrogen production was added to the equation. The revised equation is as follows:

$$E_{CO_2} = FR' \times URM \times CF' \times 44 \text{ mass units } CO_2 / \text{mole} \quad \text{Equation 4.8-GOP-3}$$

where:

FR' = feedstock rate (lb-mole feedstock / scf hydrogen produced), calculated based on maximum hydrogen production rate (244,000 million scf/day) provided by Chevron (Chevron Data Transmittal #11, 2011).

URM = hydrogen production from the URM (millionscf hydrogen/day), from each URM run). For the Modernization Project, the hydrogen production rate is 244,000 million scf hydrogen/day.

¹⁵ There are no process CH₄ or N₂O emissions associated with Hydrogen Plant operations, only process CO₂ emissions.

¹⁶ Hydrogen production rates for each URM case are presented in *Appendix AQ-URM: Unit Rate Model*.

CF' = mole fraction of carbon in feedstock (lb-mole C/lb-mole feed), provided by Chevron (Chevron Data Transmittal #11, 2011).

Combustion greenhouse gas emissions (CO₂, N₂O, and CH₄) from the future hydrogen plant are calculated based on emission factors from the EPA's Mandatory Reporting Rule (EPA, 2009, Tables C-1 and C-2). In order to scale for hydrogen production in the URM, the emission factors are converted as follows:

$$EF' = EF \times \frac{MF}{H_2} \times 0.11 \times C \quad \text{Equation 4.8-GOP-4}$$

where:

EF' = Adjusted emission factor (lbs/scf hydrogen)
EF = Base emission factor (lbs/million British Thermal Units [BTU]) from EPA Mandatory Reporting Rule
MF = Maximum Permitted firing rate (8,059,200 million BTU/year per furnace, for two furnaces) (Chevron Data Transmittal #21A, 2012)
H₂ = Maximum hydrogen production (million scf hydrogen/day) (Chevron Data Transmittal #11, 2011)
0.11 = Permitted maximum percent of natural gas fired in the future Hydrogen Plant (11%). The other 89% is PSA tail gas. All of the greenhouse gases from the PSA tail gas are accounted for in the process emissions, described earlier (Chevron Data Transmittal #21A, 2012).
C = Unit conversion

Table A4.8-GOP-12, below, presents the greenhouse gas process and combustion emissions from the future hydrogen plant at 100% utilization.

TABLE A4.8-GOP-12 PROJECT GREENHOUSE GAS EMISSIONS FROM THE FUTURE HYDROGEN PLANT

	Project – Hydrogen Plant 100% Utilization Scenario (MT CO₂e/Year)
Future Hydrogen Plant Emissions (Source IDs 4471 and 4472)	2,023,589
Future Hydrogen Plant Emissions from Flare Pilot and Purge (Source ID 6021)	744
Total	2,024,333

Table A4.8-GOP-13 summarizes the on-site stationary combustion and process emissions, including the future hydrogen plant, for each Modernization Project case.

TABLE A4.8-GOP-13 PROJECT GREENHOUSE GAS EMISSIONS (ON-SITE STATIONARY COMBUSTION AND PROCESS SOURCES, INCLUDING HYDROGEN PLANT)

	Project 93% Utilization Scenario (MT CO₂e/Year)	Project 100% Utilization Scenario (MT CO₂e/Year)
On-Site Stationary Combustion and Process Sources	3,306,773	3,470,759
Future Hydrogen Plant	2,024,333	2,024,333
Greenhouse Gas Reduction Measures ^a	74,610	74,610
Total Project Greenhouse Gas Emissions	5,256,496	5,420,481

Note:

^a Greenhouse Gas Reduction Measures represents the non-project facility measures that reduce greenhouse gas emissions prior to the operation of the project in 2016.

1.10 ESTIMATION OF GREENHOUSE GAS EMISSIONS FROM INDIRECT SOURCES

Greenhouse gas emissions are produced during electricity generation, typically through the combustion of fossil fuels which produce CO₂, CH₄, and N₂O. Therefore, imported (purchased) electricity¹⁷ used for powering equipment, lighting, space heating, and cooling at the Facility and its on-site buildings are all indirect sources of greenhouse gases. In addition, electricity is required to source, distribute, and treat water used at the Facility, and the emissions associated with this electricity usage are also considered indirect sources of greenhouse gases. These emissions are known as “indirect” because they are produced offsite at sources owned or controlled by another entity, such as the public electricity utility (PG&E) or municipal water provider (EBMUD), but are a result of operations at the Facility.

¹⁷ This is distinct from electricity generated on site. Emissions from electricity generated off site are already included in the Facility’s emissions inventory in its CARB reports.

1.10.1 Purchased Electricity Usage

Indirect greenhouse gas emissions from imported (purchased) electricity usage are calculated using equation 4.8-GOP-1 where the activity is electricity usage in megawatt-hours (MWh)/year and the emission factor is pounds of CO₂e per MWh (e.g., lbs CO₂e/MWh). Since the Facility purchases its electricity from PG&E, PG&E-specific emission factors are used.

Table A4.8-GOP-14, below, shows the activities, emission factors, and greenhouse gas emissions associated with purchased electricity usage for the 2008-2010 period, Baseline, and Modernization Project inventories. The sections below describe the emissions calculations in more detail.

1.10.1.1 2008-2010 Period

Average annual 2008-2010 period electricity usage (MWh/year) is calculated by multiplying the annual average power (MW) provided by Chevron (Chevron Data Transmittal #36I (Rev #2), 2014) by the annual hours of operation (8,760 hours/year in 2009 and 2010 and 8,784 hours/year in 2008 for the leap year). The CO₂ emission factor (MT CO₂/year) is the average of the 2008-2010 emission factors provided by PG&E in its April 2013 report "Greenhouse Gas Emission Factors: Guidance for PG&E Customers" (PG&E, 2013). These historical emission factors are from PG&E's third-party-verified greenhouse gas inventory submitted to the California Climate Action Registry or The Climate Registry. The CH₄ and N₂O emission factors are from the CARB Local Government Operations Protocol Table G.7 (CARB, 2010). Emission factors for the most recent year (2007) are used. The CO₂e emission factor is calculated based on the Intergovernmental Panel on Climate Change (IPCC) GWP as provided in Local Government Operations Protocol Table E.1. The GWP for CO₂, CH₄, and N₂O are 1, 21, and 310, respectively.

1.10.1.2 Baseline

Per Chevron, the Baseline annual average electricity usage is assumed to be equivalent to 2008-2010 period electricity usage (Chevron Data Transmittal #36I (Rev #2), 2014). The CO₂ emission factor is the 2016 emission factor provided by PG&E in its April 2013 report Greenhouse Gas Emission Factors: Guidance for PG&E Customers (PG&E, 2013). The emission factor is calculated using the CPUC Greenhouse Gas Calculator, which factors in projected greenhouse gas reductions under the Global Warming Solutions Act of 2006 (AB 32). The CO₂e emission factor is calculated in the same manner as for the 2008-2010 period calculation.

TABLE A4.8-GOP-14 FACILITY PURCHASED ELECTRICITY USAGE, EMISSION FACTOR, AND ANNUAL GREENHOUSE GAS EMISSIONS

Year	Imported (Purchased) Electricity (MWh/year)	Greenhouse Gas Emission Factors				Greenhouse Gas Emissions from Imported (Purchased) Electricity			
		CO ₂	CH ₄	N ₂ O	CO ₂ e	CO ₂	CH ₄	N ₂ O	CO ₂ e
		(lb / MWh)				(MT/year)			
2008	105,408	641			644.7	30,648	1.4	0.5	30,825
2009	63,072	575	0.029	0.010	578.7	16,450	0.8	0.3	16,556
2010	85,848	445			448.7	17,328	1.1	0.4	17,473
2008-2010 Period Average	84,776	553.7	0.029	0.010	557.4	21,475	1.1	0.4	21,618
Baseline (2016)	84,776	370.0	0.029	0.010	373.7	14,228	1.1	0.4	14,371
Project 93% and 100% Utilization Scenarios (2016)	84,776	370.0	0.029	0.010	373.7	14,228	1.1	0.4	14,371

1.10.1.3 Modernization Project

As indicated by Chevron, annual average electricity usage for the Modernization Project 93% and 100% Utilization Scenarios is not anticipated to change as compared to the 2008-2010 period electricity usage (Chevron Data Transmittal #36I (Rev #2), 2014). The CO₂e emission factor is equivalent to that used in the Baseline.

1.10.2 Purchased Water Usage

Indirect greenhouse gas emissions from water usage are also calculated using Equation 4.8-GOP-1. Here, the activity is water usage in million gallons of water per year. The emission factor is the electricity intensity factor appropriate for Northern California (in units of MWh per million gallons of water) multiplied by the appropriate PG&E electricity emission factor described above (in units of lb CO₂e/MWh) to give an overall emission factor in units of lb CO₂e per million gallons.

Electricity usage and the resulting greenhouse gas emissions associated with water usage arise out of the sourcing, treatment, and distribution of water. Therefore, reclaimed (also known as recycled) water is associated with a lower electricity intensity factor than freshwater (2.1 MWh per million gallons vs. 3.5 MWh per million gallons) because water reclaimed from a process or facility requires less treatment before re-use at another process or facility (CEC, 2006; CAPCOA, 2010). The Facility receives both freshwater and reclaimed water from EBMUD. Details of the annual quantities of each type of water are described in the table and sections below.

Table A4.8-GOP-15, below, shows the activities, electricity intensity factors, electricity emission factors, and greenhouse gas emissions associated with water usage for the 2008-2010 period, Baseline, and Project inventories. The sections below describe the emissions calculations in more detail.

1.10.2.1 2008-2010 Period

Average annual 2008-2010 period freshwater and reclaimed water usage (in million gallons/year) was provided by Chevron (Chevron Data Transmittal #45B (Rev #3), 2014). Consistent with California Energy Commission (CEC) and California Air Pollution Control Officers Association (CAPCOA) methodologies, electricity intensity factors of 3.5 MWh per million gallons and 2.1 MWh per million gallons are used for freshwater and reclaimed water, respectively (CEC, 2006; CAPCOA, 2010). No Facility wastewater is processed by EBMUD (Chevron Data Transmittal #51 (Rev #1), 2013); therefore, energy associated with on-site water treatment is assumed to be accounted for under the stationary combustion

and/or purchased electricity portion of the Facility's greenhouse gas emissions inventory. The same electricity CO₂e emission factor is used as for the 2008-2010 period calculation of indirect greenhouse gas emissions from electricity usage, described earlier. Specifically, the average of 2008-2010 PG&E emission factors is used.

1.10.2.2 Baseline

The average annual Baseline freshwater and reclaimed water usage is assumed to be equivalent to 2008-2010 period water usage. The CEC and CAPCOA electricity intensity factors presented in the 2008-2010 period calculation of greenhouse gas emissions from water usage represent the best available data for future years, so the same electricity intensity factors are used for the Baseline calculation. Further, the same electricity CO₂e emission factor is used as for the Baseline calculation of indirect greenhouse gas emissions from electricity usage, described earlier. Specifically, the 2016 PG&E emission factor is used.

1.10.2.3 Modernization Project

The average annual freshwater and reclaimed water usage for the Modernization Project 93% and 100% Utilization Scenarios was provided by Chevron (Chevron Data Transmittal #45B (Rev #3), 2014). The CEC and CAPCOA electricity intensity factors presented in the 2008-2010 period calculation of greenhouse gas emissions from water usage represent the best available data for future years, so the same electricity intensity factors is used for the Modernization Project calculation. Further, the same electricity CO₂e emission factor is used as for the Modernization Project calculation of indirect greenhouse gas emissions from electricity usage, described earlier. Specifically, the 2016 PG&E emission factor is used.

1.11 ESTIMATION OF GREENHOUSE GAS REDUCTIONS FROM PROJECT DESIGN FEATURES AND MITIGATION MEASURES

1.11.1 Project Design Features

Chevron has committed as a Modernization Project objective to "no net increase" in greenhouse gases for Chevron's Project utilization rate. To achieve this "no net increase" objective, Chevron has proposed the following Project Design Features:

1.11.1.1 Chevron Facility Greenhouse Gas Reductions

Chevron will implement the following measures within the Facility and related Chevron operations. The minimum amount of greenhouse gas reductions to be

TABLE A4.8-GOP-15 FACILITY PURCHASED WATER USAGE, ELECTRICITY INTENSITY FACTOR, ELECTRICITY EMISSION FACTOR, AND ANNUAL GREENHOUSE GAS EMISSIONS

Case	Water Type ^a	Water Usage (million gallons/year)	Electricity Intensity Factor (kWh/million gallons)	Electricity Emission Factor (lb CO ₂ e/MWh)	Annual Greenhouse Gas Emissions from Water Usage (MT CO ₂ e/year)
2008-2010 Period Average	Fresh	2,519	3,500	557.4	2,229
	NRWRP Reclaim	1,424	2,100	557.4	756
	RARE Reclaim	146	2,100	557.4	78
	TOTAL	4,088	--	--	3,062
Baseline (2016)	Fresh	1,424	3,500	373.7	845
	NRWRP Reclaim	1,424	2,100	373.7	507
	RARE Reclaim	1,241	2,100	373.7	442
	TOTAL	4,088	--	--	1,793
Project 93% Utilization Scenario (2016)	Fresh	1,278	3,500	373.7	758
	NRWRP Reclaim	1,716	2,100	373.7	611
	RARE Reclaim	1,351	2,100	373.7	481
	TOTAL	4,344	--	--	1,849
Project 100% Utilization Scenario (2016)	Fresh	1,351	3,500	373.7	801
	NRWRP Reclaim	1,825	2,100	373.7	650
	RARE Reclaim	1,460	2,100	373.7	520
	TOTAL	4,636	--	--	1,971

Note: ^aWater types provided by EBMUD to the Facility include freshwater, reclaimed water from the North Richmond Water Reclamation Plant (NRWRP) for use in the Facility's cooling towers, and reclaimed water from the Richmond Advanced Recycled Expansion (RARE) Water Project for use in the Facility's boiler feed water applications.

kWh = kilowatt hours

achieved by these Project Design Features is 1,312 MT CO₂e. All reductions will be monitored for verification.

1.11.1.2 Water Conservation

This Project Design Feature would involve the implementation of two Facility water reuse projects which were identified to reduce EBMUD water consumption and wastewater discharge. In aggregate, they are estimated to reduce EBMUD water consumption by as much as 95 million gallons per year.

- Stripped Sour Water Reuse in the Distillation and Reforming Area. Reuse stripped sour water from the sour water concentrator at the existing sulfur recovery unit to supply storage vessel D-852 for use in the distillation and reforming wash water system. This would displace the current use of boiler feed water in the distillation and reforming wash water system. This requires two larger electric pumps at sulfur recovery unit sour water concentrator and/or piping modifications at the distillation and reforming wash water system. The incremental increase in electricity demand from the pumps is 7 kilowatts.

The sulfur recovery unit sour water concentrator uses steam to remove hydrogen sulfide and ammonia from sour water. Stripped sour water is a product of the sulfur recovery unit sour water concentrator. Boiler feed water is tertiary or fresh water that has been further treated to be suitable for use as feed in boilers to produce steam. D-852 is a storage vessel for water to supply water throughout the distillation and reforming area.

- Stripped Sour Water Reuse in the South Isomax Area. Reuse stripped sour water from sour water stripping plants (8 and 18 Plants) to supply storage vessel V-891 for use in the South Isomax process water system. This would displace the use of cold pump condensate in the South Isomax process water system. This requires installation of a heat exchanger at 8 Plant to cool the temperature of the stripped sour water closer to the operating temperature of cold pump condensate.

V-891 is a storage vessel for water which supplies wash water throughout the South Isomax area. cold pump condensate is steam that has been condensed to liquid water and further cooled.

The corresponding electricity savings (from reduced water supply, treatment, distribution and wastewater treatment) were calculated using California Energy Commission default water and wastewater electricity intensities for Northern California (CEC, 2006). The greenhouse gas emissions associated with the incremental increase in electricity demand for the pumps were taken into

account. The reuse of water would result in net greenhouse gas emission reductions of 109 MT CO₂e per year. This was conservatively calculated using a projected electricity emission factor for 2016. The net greenhouse gas emission reduction may be as high as 275 MT CO₂e per year, however, depending on how PG&E reduces its greenhouse gas intensity to meet the RPS requirements.

The projected 2016 greenhouse gas emission factor was calculated based on: (1) the CO₂ emission factor for PG&E projected for 2016; and (2) CH₄ and N₂O emission factors taken from the California Air Resources Board (CARB) (PG&E, 2013; CARB, 2010).¹⁸ The CH₄ and N₂O emission factors were multiplied by their respective GWPs to obtain CO₂e emission factors, then added to the PG&E CO₂ emission factor to obtain a PG&E greenhouse gas emission factor of 0.374 pound of CO₂e per kilowatt hour (lbs CO₂e/kwh). The less conservative emission factor is based on the default emission factor from the CARB Greenhouse Gas Reporting Rule (CCR Section 95111(b)(1)).

1.11.1.3 LED Lighting Retrofits

Chevron shall upgrade approximately 6,000 lighting fixtures with more efficient light emitting diode (LED) lighting, with expected energy reductions of 2,000 MWh per year (MWh/year). Corresponding greenhouse gas emission reductions would be 339 MT CO₂e per year. This was conservatively calculated using an emission factor projected for 2016 (370 lb/MWh) and the CH₄ and N₂O emission factors reported by CARB (PG&E, 2013; CARB, 2010).¹⁹ Greenhouse gas emission reductions may be as high as 857 MT CO₂e/year depending on how PG&E reduces its greenhouse gas intensity to meet the RPS requirements.

1.11.1.4 Marin Clean Energy Participation

Chevron would participate in Marin Clean Energy for Chevron facilities at or co-located to the Facility. Marin Clean Energy is a Community Choice Aggregator under California law that provides lower-CO₂ source electricity to area residents and business within their service area. Marin Clean Energy delivers power via

¹⁸ The CO₂ emission factor is the 2016 emission factor provided by PG&E in its April 2013 report Greenhouse Gas Emission Factors: Guidance for PG&E Customers. The emission factor was calculated using the CPUC greenhouse gas calculator, which factors in projected greenhouse gas reductions under the Global Warming Solutions Act of 2006 (AB 32). The CH₄ and N₂O emission factors are from the CARB Local Government Operations Protocol Table G.7. Emission factors for the most recent year (2007) were used. The CO₂e emission factor was calculated based on the IPCC GWP as provided in Local Government Operations Protocol Table E.1. The GWP for CO₂, CH₄, and N₂O are 1, 21, and 310, respectively.

¹⁹ Ibid.

PG&E, which continues to maintain the power transmission and distribution infrastructure, deliver electricity and handle billing. The electricity Marin Clean Energy customers receive is deemed 50% to 100% renewable energy. By offering a much higher percentage of renewable energy than is available from PG&E, Marin Clean Energy lowers customers' greenhouse gas emissions associated with electricity generation.

Chevron's participation in Marin Clean Energy would be inclusive of its commercial and, if practicable, industrial accounts at Richmond (Weisz, 2014). Commercial and industrial accounts provide 100 MWh and 85,000 MWh per year of electricity to Chevron facilities (Chevron Data Transmittal #47B (Rev #3), 2014). Implementation of this Project Design Feature would reduce greenhouse gas emissions by 0.3 MT CO₂e per year for commercial accounts and 288 MT CO₂e per year for industrial accounts based on conservative calculations (MEA, 2013; PG&E, 2013).²⁰ Greenhouse gas emission reductions may be as high as 26 MT CO₂e per year for commercial accounts and 22,308 MT CO₂e per year for industrial accounts depending on how PG&E reduces its greenhouse gas intensity to meet the RPS.

1.11.1.5 Fluid Catalytic Cracker Cooling Water Tower Motor Upgrade

Chevron would upgrade the motors which drive the cooling fans in the fluid catalytic cracker cooling water tower to adjustable speed direct drive cooling tower motors. In the existing configuration, all fans are driven by single speed (the motor is either on or off) induction motors through right angle gearboxes. Since the cooling water tower typically operates at a fraction of its design capacity, electricity can be saved by using adjustable speed motors. The use of direct drive systems also improves energy efficiency by eliminating the losses in the mechanical translation of energy in the existing right angle gearbox assemblies. This Project Design Feature is estimated to reduce electricity consumption by 3,400 MWh/year (Chevron Data Transmittal #47B (Rev #3), 2014), which corresponds to a reduction in 576 MT CO₂e per year based on

²⁰ The greenhouse gas savings was calculated by multiplying 100 MWh/year of electricity usage by the difference between the PG&E 2016 emission factor (374 lbs CO₂e/MWh) and the estimated Marin Clean Energy 2016 emission factor (366 lbs CO₂e/MWh), which represents the greenhouse gas savings per MWh achieved by switching from PG&E to MCE electricity deliveries. Only the Marin Clean Energy 2011 emission factor (389 lbs CO₂e/MWh) is publically available; therefore, the Marin Clean Energy 2016 emission factor was estimated by applying the same percent reduction that is reported by PG&E for the same years (a 6% reduction from 2011 to 2016).

conservative calculations (PG&E, 2013; CARB, 2010).²¹ Greenhouse gas emission reductions may be as high as 1,457 MT CO₂e per year depending on how PG&E reduces its greenhouse gas intensity to meet the RPS.

1.11.1.6 Community Greenhouse Gas Reduction Programs

See *Appendix 4.8-CGRP* for a description of the CGRPs and associated greenhouse gas reductions.

1.11.1.7 Cap and Trade Allowances and Supplemental Greenhouse Gas Reduction Fund

- A detailed discussion of how Chevron will use cap-and-trade allowances to meet its commitment to “no net increase” and pay into a supplemental greenhouse gas reduction fund is included in *Section 4.8, Greenhouse Gases*.

Chevron's Project Design Features are included as part of the Modernization Project, and will be monitored and tracked as conditions of Modernization Project approval as described further in *Section 4.8.6, Mitigation Monitoring and Reporting*.

1.11.1.8 Summary of Greenhouse Gas Reductions from Project Design Features

Table A4.8-GOP-16 summarizes the greenhouse gas emission reductions from these supplemental Project Design Features.

1.12 SUMMARY OF FACILITY GREENHOUSE GAS EMISSIONS

Table A4.8-GOP-17 summarizes the 2008-2010 period, Baseline and Project Facility greenhouse gas emissions without Project Design Features. Emissions are presented for the four reasonably foreseeable crude blends, which are analyzed at both the 93% and 100% utilization levels, with each case presented both with and without full hydrogen plant utilization. In addition, the maximum utilization for significantly heavier, lighter, or sour blends is also presented. Total

²¹ The CO₂e reduction was calculated using the 2016 emission factor provided by PG&E in its April 2013 report Greenhouse Gas Emission Factors: Guidance for PG&E Customers. The emission factor was calculated using the CPUC greenhouse gas calculator, which factors in projected greenhouse gas reductions under the Global Warming Solutions Act of 2006 (AB 32). The CH₄ and N₂O emission factors are from the CARB Local Government Operations Protocol Table G.7. Emission factors for the most recent year (2007) were used. The CO₂e emission factor (373.7 lb CO₂e/MWh) was calculated based on the IPCC GWP as provided in Local Government Operations Protocol Table E.1. The GWP for CO₂, CH₄, and N₂O are 1, 21, and 310, respectively.

TABLE A4.8-GOP-16 FACILITY PROJECT DESIGN FEATURE EMISSION REDUCTIONS

Project	Annual Greenhouse Gas Emission Reduction (MT CO₂e)
Water Conservation	109
LED Lighting Retrofits	339
Marin Clean Energy Participation	288
Fluid Catalytic Cracker Cooling Water Tower Motor Upgrade	576
Community Greenhouse Gas Reduction Programs	5,500
Cap-and-Trade Allowances and Local Greenhouse Gas Reduction Fund	718,767
Total	725,579

emissions, including transportation are presented in the table. Details on transportation emissions calculations can be found in *Appendix 4.3-SHP* and *Appendix 4.3-TRANS*.

1.13 REFERENCES

- American Petroleum Institute (API). 2009. *Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry*. Equation 5-6. August. http://www.api.org/ehs/climate/new/upload/2009_ghg_compendium.pdf.
- California Air Pollution Control Officers Association (CAPCOA). 2010. *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures*, Measure WSW-1 Use Reclaimed Water. August. Accessed December 20, 2013. <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>.
- California Air Resources Board (CARB). 2010. *Local Government Operations Protocol for the Quantification and Reporting of Greenhouse Gas Emissions Inventories, Version 1.1*. May. Accessed March 2013. http://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf.
- California Code of Regulations (CCR), Title 17, Sections 95100-95158.

TABLE A4.8-GOP-17 FACILITY MODERNIZATION PROJECT GREENHOUSE GAS EMISSIONS BY CASE

Emissions Case	Emissions (MT CO ₂ e/year)				
	Facility	Electricity and Water	Shipping	Rail and On-Road Mobile	Total
2008-2010 Period	4,610,849	24,680	41,333	9,969	4,686,831
Baseline (2016)	4,536,239	16,164	40,910	9,634	4,602,947
Project Crude Blend, Max Hydrogen Production, 100% Utilization Scenario	5,420,481	16,341	52,170	12,717	5,501,709
Project Crude Blend, Max Hydrogen Production, 93% Utilization Scenario	5,256,496	16,220	44,057	11,753	5,328,526
Project Crude Blend, 100% Utilization	5,164,638	16,341	52,170	12,717	5,245,866
Project Crude Blend, 93% Utilization	4,877,238	16,220	44,057	11,753	4,949,268
Sourest Crude Blend, Max Hydrogen Production, 100% Utilization	5,425,956	16,341	52,021	13,042	5,507,360
Sourest Crude Blend, Max Hydrogen Production, 93% Utilization	5,263,831	16,220	47,966	12,314	5,340,331
Sourest Crude Blend, 100% Utilization	5,213,062	16,341	52,021	13,042	5,294,466
Sourest Crude Blend, 93% Utilization	4,966,436	16,220	47,966	12,314	5,042,936
Heaviest Crude Blend, Max Hydrogen Production, 100% Utilization	5,409,068	16,341	51,243	12,516	5,489,168
Heaviest Crude Blend, Max Hydrogen Production, 93% Utilization	5,246,362	16,220	47,155	11,699	5,321,436
Heaviest Crude Blend, 100% Utilization	5,170,328	16,341	51,243	12,516	5,250,428
Heaviest Crude Blend, 93% Utilization	4,921,208	16,220	47,155	11,699	4,996,282
Lightest/Max Shipping, Max Hydrogen Production, 100% Utilization	5,414,735	16,341	50,080	10,949	5,492,105
Lightest/Max Shipping, Max Hydrogen Production, 93% Utilization	5,267,539	16,220	47,883	9,758	5,341,400
Lightest/Max Shipping, 100% Utilization	4,982,567	16,341	50,080	10,949	5,059,937

TABLE A4.8-GOP-17 FACILITY MODERNIZATION PROJECT GREENHOUSE GAS EMISSIONS BY CASE

Emissions Case	Emissions (MT CO ₂ e/year)				
	Facility	Electricity and Water	Shipping	Rail and On-Road Mobile	Total
Lightest/Max Shipping, 93% Utilization	4,723,118	16,220	47,883	9,758	4,796,979
Max Sour	5,216,901	16,341	52,004	13,062	5,298,308
Max Heavy	4,914,489	16,341	37,224	10,525	4,978,579
Max Light	4,596,660	16,341	50,730	10,449	4,674,180

California Energy Commission (CEC). 2006. *Refining Estimates of Water-Related Energy Use in California*. December. Accessed on December 16, 2013.
http://www.energy.ca.gov/pier/project_reports/CEC-500-2006-118.html.

Chevron Data Transmittal #11: Hydrogen Plant Information, 2011.

Chevron Data Transmittal #21A: BAAQMD Permit Conditions, 2012.

Chevron Data Transmittal #25 (Rev #1): Miscellaneous GHG Projects, 2014.

Chevron Data Transmittal #36I (Rev #2): Imported Electricity, 2014.

Chevron Data Transmittal #36K: Stationary Source Emissions #1, 2013.

Chevron Data Transmittal #36L: Stationary Source Emissions #2, 2013.

Chevron Data Transmittal #36N (Rev #1): Stationary Source Emissions #3, 2013.

Chevron Data Transmittal #45B (Rev #3): Municipal Water Use, 2014.

Chevron Data Transmittal #47B (Rev #3): Marine Engines, Water Reuse, MCE, FCC CWT, 2014.

Chevron Data Transmittal #51 (Rev #1): Post Project Wastewater, 2013.

Chevron Data Transmittal #53A: AB32 2008 Report, 2013.

Chevron Data Transmittal #53B: AB32 2009 Report, 2013.

Chevron Data Transmittal #53C: AB32 2010 Report, 2013.

Code of Federal Regulations (CFR), Title 40, Part 98. Marin Energy Authority (MEA). 2013. *Marin Energy Authority Board of Directors Meeting Packet: Understanding MCE's GHG Emission Factors (page 79) and MCE Emission Factor Certification Template, as provided by The Climate Registry (page 84)*. June. [http://www.marinenergyauthority.com/Project Design Feature/06.06.13_Board_Packet.pdf](http://www.marinenergyauthority.com/Project%20Design%20Feature/06.06.13_Board_Packet.pdf).

Pacific Gas and Electric Company (PG&E). 2013. *Greenhouse Gas Emission Factors: Guidance for PG&E Customers*. April. Accessed November 13, 2013.
http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf.

U.S. Environmental Protection Agency (EPA). 2009. *Mandatory Greenhouse Gas Reporting*. Federal Register, Vol. 74, No. 209. <http://www.epa.gov/ghgreporting/documents/pdf/2009/GHG-MRR-FinalRule.pdf>.

Weisz, Dawn, Executive Officer, Marin Clean Energy. 2014. Personal communication with ENVIRON, February 11.

APPENDIX 4.8 - REG

REG: Greenhouse Gas Regulations

APPENDIX 4.8

REG: GREENHOUSE GAS REGULATIONS

Climate change has relatively recently become widely recognized as a threat to the global climate, economy, and population. As a result, the climate change regulatory setting—at the international, federal, state, regional, and local levels—is complex and evolving. This section identifies key legislation, executive orders, and seminal court cases related to climate change that are germane to the Modernization Project greenhouse gas (GHG) emissions.

The regulatory setting is particularly relevant in evaluating (GHG) impacts for California Environmental Quality Act (CEQA) purposes because legal and regulatory requirements, as well as other policies and initiatives, restrict GHG emissions and reduce them gradually over time. This evolving regulatory regime in turn factors into the analysis of the Baseline against which Project impacts are evaluated to make a significance determination under CEQA.

1.1 INTERNATIONAL PROVISIONS

The Kyoto Protocol, adopted on December 11, 1997, is an international agreement that is linked to the United Nations Framework Convention on Climate Change (UNFCCC, 1998). It sets targets and timetables for 37 industrialized countries and the European community for reducing GHG emissions. The targets amount to an average of 5% reduction against 1990 levels over the 5-year period from 2008 to 2012.

Negotiations after Kyoto have continued in an attempt to address the period after the first “commitment period” of the Kyoto Protocol concluded at the end of 2012. In Durban, South Africa, in 2011, parties to the protocol agreed in principle to negotiate a new comprehensive and legally binding climate agreement by 2015 and to enter it into force for all parties from 2020. However, significant divisions remain in determining the parameters of any such new protocol, including its enforcement mechanisms and the degree to which developing economies will begin to be subject to binding emissions targets.

1.2 FEDERAL PROVISIONS

Although the U.S. is not a party to the Kyoto Protocol, in 2002, President George W. Bush set a national policy goal of reducing the GHG emission intensity (tons of GHG emissions per million dollars of gross domestic product) of the U.S. economy by 18% by 2012 (NOAA, 2002). The goal did not establish binding reduction mandates. Rather, the U.S. Environmental Protection Agency (EPA)

began to administer a variety of voluntary programs and partnerships with industries that produce and use synthetic gases to reduce emissions of particularly potent GHGs.

1.2.1 US Supreme Court Ruling in *Massachusetts et al. v. Environmental Protection Agency*

The Bush Administration's approach to addressing climate change was challenged in *Massachusetts et al. v. Environmental Protection Agency*, 549 U.S. 497 (2007). In this decision, the U.S. Supreme Court held that the EPA was authorized by the Clean Air Act to regulate carbon dioxide (CO₂) emissions from new motor vehicles. The court did not mandate that the EPA enact regulations to reduce GHG emissions, but found that the only instances in which the EPA could avoid taking action were if it found that GHGs do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHGs contribute to climate change.

1.2.2 Endangerment Finding

On December 7, 2009, the EPA Administrator issued an "endangerment finding" and a "cause or contribute finding" under Section 202(a) of the Clean Air Act, concluding that GHGs threaten the public health and welfare of current and future generations and that motor vehicles contribute to GHG pollution.

These findings do not impose any requirements on industry or other entities. However, this action was a prerequisite to finalizing the EPA's proposed GHG emissions standards for light-duty vehicles (EPA, 2009; EPA, 2010; and DOT, 2010) and provided the basis for adopting new national regulations to mandate GHG emission reductions under the federal Clean Air Act.

1.2.3 EPA Rulemaking

The following sections summarize EPA's recent regulatory activities with respect to various types of GHG sources.

1.3.1.1.1 Stationary Sources

This section describes EPA's recent regulatory activities with respect to stationary sources, which are sources of pollutants that do not move from one location. The Chevron Refinery is a stationary source. Other examples of stationary sources include power plants, gas stations, incinerators, boilers, and houses.¹

¹ Houses use electricity for lighting, space heating and cooling, and potable water conveyance. Greenhouse gas emissions associated with the generation and transmission

1.3.1.1.2 *Mandatory Reporting Rule*

Congress passed “The Consolidated Appropriations Act of 2008” (HR 2764) in December 2007, requiring reporting of GHG data and other relevant information from large emission sources and suppliers in the United States. The rule is referred to as 40 CFR Part 98 – Greenhouse Gas Reporting Program (GHGRP). The stated purpose of the rule is to collect accurate and timely GHG data to inform future policy decisions. Facilities that emit 25,000 metric tonnes of GHGs or more per year are required to submit annual reports to EPA. Suppliers of certain products that result in GHG emissions if released and facilities that inject CO₂ underground for geologic sequestration are also subject to the rule.

This program is expected to cover approximately 85% of the nation’s GHG emissions and applies to roughly 10,000 facilities, including the Chevron Richmond Facility. The EPA’s new reporting system will provide a better understanding of GHG sources and will guide development of policies and programs to reduce emissions. The data also will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost-effective methods to reduce GHG emissions in the future.

1.3.1.1.3 *Tailoring Rule*

In May 2010, the EPA issued the “Tailoring Rule” establishing permitting requirements for GHG emissions under the Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs. A determination of the Best Available Control Technology (BACT) for GHGs is a requirement established by the program in the same manner as it is done for any other PSD regulated pollutant. The Tailoring Rule sets thresholds for GHG emissions that define when permits under the PSD and Title V Operating Permit programs are required for new and existing industrial facilities. This rule generally establishes that first-time new construction projects that emit GHG emissions of at least 100,000 tons per year and modifications at existing facilities that increase GHG emissions by at least 75,000 tons per year are subject to PSD. The rule also establishes that facilities that emit or have the potential to emit at least 100,000 tons per year CO₂e will be subject to Title V permitting requirements. Each new source or modified emission unit subject to PSD is required to undergo a BACT review.

of electricity are known as indirect greenhouse gas emissions. Regulatory actions to reduce indirect greenhouse gas emissions from electricity usage are described in more detail in *Section 4.6, Energy*.

1.3.1.1.4 *U.S. Supreme Court Review of GHG Regulations for Stationary Sources*

On October 15, 2013, the U.S. Supreme Court granted certiorari to address the permissibility of the EPA's determination that its regulation of GHG emissions from new motor vehicles triggered a statutory requirement for the EPA to regulate GHG emissions from stationary sources. Petitioners assert that the trigger for the EPA to regulate GHG emissions from stationary sources should be whether the EPA has promulgated a National Ambient Air Quality Standard for GHGs, instead of whether GHGs are regulated under any provision of the Clean Air Act. If the Supreme Court determines that the proper trigger for stationary source GHG regulation has not yet occurred, it would have potentially significant implications for the EPA's current stationary source GHG permitting rules (e.g., Tailoring Rule) under the PSD and Title V programs. The Supreme Court's decision is expected by early summer of 2014.

1.3.1.1.5 *Climate Action Plan and New Power Plants*

In June 2013, President Barack Obama issued a Climate Action Plan to reduce carbon pollution. The Climate Action Plan established a multi-faceted approach to reduce carbon pollution, ranging from calling for carbon pollution standards for new and existing power plants, to new federal funding for renewables, to directing the development of new efficiency standards for appliances and federal buildings, among other measures.

In accordance with the President's Climate Action Plan, the EPA issued a new proposal on September 20, 2013 for a rule under Section 111 of the federal Clean Air Act establishing the first carbon pollution standards for new power plants. The EPA's proposed rule would set separate standards for natural gas-fired stationary combustion turbines and for fossil fuel-fired utility boilers and integrated gasification combined cycle units. The standards limit CO₂ emissions to between 1,000 and 1,100 pounds CO₂ per megawatt-hour electricity generated, depending on the type and size of the unit. As proposed, the new source performance standard would not apply to currently operating power plants or permitted plants that began construction before September 20, 2013. It also would not apply to units undergoing modification or to reconstructed units, to liquid oil-fired stationary combustion turbine electric utility generating units, to low capacity factor units that sell less than one-third of their power to the grid, or to plants that do not burn fossil fuels (e.g., plants that burn only biomass). The public comment period for the proposed regulation closes 60 days after the date of publication of the proposed rule in the Federal Register (EPA, 2013a; EPA, 2013b).

1.3.1.1.6 *Mobile Sources*

This section describes the EPA's recent regulatory activities with respect to mobile sources, which include vehicles that operate on roads and highways as well as non-road vehicles, engines, and equipment. Examples of mobile sources include cars, trucks, construction equipment, lawn mowers, railroad locomotives, ships, and airplanes.

1.3.1.1.7 *Corporate Average Fuel Economy*

First enacted by Congress in 1975 as part of the 1975 Energy Policy Conservation Act in response to the 1973-1974 oil crises, Corporate Average Fuel Economy (CAFE) standards seek to reduce energy consumption by increasing the fuel economy of passenger cars and light-duty trucks. The CAFE regulation requires each car manufacturer to meet a standard for the sales-weighted fuel economy for the entire fleet of vehicles sold in the U.S. in each model year. Fuel economy, expressed in miles per gallon (mpg), is defined as the average distance traveled by an automobile (in miles) per gallon of gasoline or equivalent amount of other fuel. The National Highway Traffic Safety Administration (NHTSA) of the U.S. Department of Transportation (DOT) administers the CAFE program, and the EPA provides the fuel economy data. NHTSA sets fuel economy standards for passenger cars and light-duty trucks sold in the U.S. while the EPA calculates the average fuel economy for each manufacturer.

1.3.1.1.8 *EPA and NHTSA Joint Rulemaking for Vehicle Standards*

In response to a *U.S. Presidential Memorandum Regarding Fuel Efficiency Standards* dated May 21, 2010, the EPA and NHTSA are taking coordinated steps to enable the production of a new generation of clean vehicles, through reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. In April 2010, the EPA and NHTSA issued a Final Rulemaking establishing new federal GHG and fuel economy standards for model years 2012 to 2016 passenger cars, light-duty trucks, and medium-duty passenger vehicles. The agencies extended the national program of harmonized GHG and fuel economy standards to model years 2017 through 2025 in a joint Final Rulemaking issued on August 28, 2012. These standards are projected to achieve a fleet-wide average CO₂ emission level of 163 grams per mile in model year 2025. (This would be equivalent, on a mpg-equivalent basis, to 54.5 mpg if all of the CO₂ emissions reductions were achieved with fuel economy technology.)

In addition, on August 9, 2011, the EPA and NHTSA finalized regulations to reduce GHG emissions and improve fuel efficiency of medium- and heavy-duty vehicles, including large pickup trucks and vans, semi-trucks, and all types and sizes of work trucks and buses. The regulations incorporate all on-road vehicles

rated at a gross vehicle weight at or above 8,500 pounds, and the engines that power them. Under the regulations, fuel economy will be improved and GHG emissions will be reduced in model years 2014-2018.

1.2.4 Additional Federal GHG Rules and Policies

In addition to the rules and regulations developed with respect to stationary and mobile sources, discussed above, various other federal developments have occurred that aim to reduce GHGs from other sources, including land use activities.

1.3.1.1.9 Energy Independence and Security Act

On December 19, 2007, President Bush signed the Energy Independence and Security Act (EISA) of 2007. Among other key measures, the EISA would do the following, which would aid in the reduction of national GHG emissions:

1. Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
2. Set a target of 35 mpg for the combined fleet of cars and light trucks by model year 2020, and direct NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
3. Prescribe or revise standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Additional provisions of the EISA address energy savings in government and public institutions, promotion of research for alternative energy, additional research in carbon capture, international energy programs, and the creation of “green jobs.”

1.3.1.1.10 American Recovery and Reinvestment Act

On February 17, 2009, President Obama signed the American Recovery and Reinvestment Act (ARRA) of 2009. ARRA was passed in response to the economic crisis of the late 2000s, with the primary purpose to maintain existing jobs and create new jobs. Among the secondary objectives of ARRA was investment in “green” energy programs, including funding the following through grants, loans, or other funding; private companies developing renewable energy technologies; local and state governments implementing energy efficiency and clean energy programs; research in renewable energy, biofuels, and carbon capture; and

development of high efficiency or electric vehicles (The Recovery Act, 2009; EPA, 2009).

1.3.1.1.11 *Renewable Fuel Standards (RFS1 and RFS2)*

Created under the Energy Policy Act of 2005, the RFS program established the first renewable fuel volume mandate in the United States. The original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA of 2007, the RFS program was expanded to include diesel and to increase the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022. In addition, it requires the EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

In January 2011, the EPA established the volume requirements and associated percentage standards that applied in calendar year 2011 for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel (RFS2). The final percentage standard sets 8% of renewable fuel per total volume. The rule also announced the 2011 price for cellulosic biofuel waiver credits (\$1.13 per credit) and the EPA's assessment of the aggregate compliance provision for domestic feedstocks. The regulation increased the volume of fuel required to be blended into transportation fuel from 12.2 billion gallons in 2009 to 74 billion gallons by 2022; this includes 16.0 billion gallons for cellulosic biofuel, at least 1 billion gallons for biomass-based diesel fuel, 21.0 billion gallons for advanced biofuel, and 36.0 billion gallons for renewable fuel.

1.3.1.1.12 *Council on Environmental Quality National Environmental Policy Act Guidelines on GHGs*

On February 18, 2010, the White House Council on Environmental Quality (CEQ) published draft guidance on the consideration of GHGs and climate change for National Environmental Policy Act (NEPA) analyses (Sutley, 2010). It recommends that proposed federal actions that are reasonably expected to directly emit 25,000 metric tonnes of CO₂e per year should prepare a quantitative and qualitative NEPA analysis of direct and indirect GHG emissions.

The draft guidance provides reporting tools and instructions on how to assess the effects of climate change. The draft guidance does not apply to land and resource management actions, nor does it propose to regulate GHGs. CEQ received public comment on this guidance for 90 days. Although CEQ has not yet issued final guidance, various NEPA documents are beginning to incorporate the approach recommended in the draft guidance.

1.2.5 Voluntary Programs

The following voluntary programs developed by the EPA provide opportunities for industry, the EPA, and other organizations in both the public and private sectors to work together to reduce GHG emissions (EPA, 2013d).

1.3.1.1.12.1.1.1 Center for Corporate Climate Leadership

The EPA's Center for Corporate Climate Leadership serves as a resource center for all companies looking to expand their work in the area of GHG measurement and management.

1.3.1.1.13 Combined Heat and Power Partnership

The Combined Heat and Power (CHP) Partnership is a voluntary program to reduce the environmental impact of power generation by promoting the use of CHP, which is an efficient, clean, and reliable approach to generating power and thermal energy from a single fuel source.

1.3.1.1.14 Green Power Partnership

The Green Power Partnership is a voluntary partnership between the EPA and organizations that are interested in using green power, which is electricity produced from a subset of renewable resources, such as solar, wind, geothermal, biomass, and low-impact hydropower.

1.3.1.1.15 National Clean Diesel Campaign

The EPA's National Clean Diesel Campaign (NCDC) promotes diesel emission reduction strategies. The NCDC works to reduce the pollution emitted from diesel engines across the country through the implementation of varied control strategies by working with manufacturers, fleet operators, air quality professionals, environmental and community organizations, and state and local officials to reduce diesel emissions. NCDC activities include developing new emissions standards for locomotive and marine diesel engines; and promoting the reduction of emissions for existing diesel engines, including using cleaner fuels, retrofitting and repairing existing fleets, and reducing idling, among others.

1.3.1.1.16 State and Local Climate and Energy Program

The EPA also administers the State and Local Climate and Energy Program, which provides technical assistance, analytic tools, and outreach support to state, local, and tribal governments (EPA, 2013c).

1.3 MULTI-STATE AREA PROVISIONS

The Western Regional Climate Action Initiative (WCI) was established in 2007 by the governors of five U.S. states (Arizona, California, New Mexico, Oregon, and Washington) as a partnership to implement a regional, economy-wide cap-and-trade system to reduce global warming pollution. By the end of 2008, the partnership had expanded to include Montana, Utah, and four Canadian provinces (British Columbia, Manitoba, Ontario, and Quebec).

The WCI partners set a goal of reducing the region's GHG emissions from the electricity, industrial, and transportation sectors to 15% below 2005 levels by 2020. By December 2011, California and Quebec had adopted cap-and-trade regulations based on WCI recommendations, while the rest of the partner states declined to actively implement a cap-and-trade program. The partnership was then streamlined to include only California and the four Canadian provinces actively implementing or considering cap-and-trade programs. In May 2013, CARB adopted a final rule linking California's and Quebec's cap-and-trade programs (as of January 1, 2014) for the purpose of allowing the two entities to mutually recognize each other's compliance instruments. In October 2013, California and Quebec entered into an agreement to integrate and harmonize their cap-and-trade programs.

1.4 CALIFORNIA PROVISIONS

California has adopted various administrative initiatives and also enacted a variety of legislation relating to climate change, much of which sets aggressive goals for GHG emissions reductions within the state. However, none of this legislation provides definitive direction regarding the treatment of climate change in environmental review documents prepared under CEQA. In particular, the amendments to the CEQA Guidelines do not require or suggest specific methodologies for performing an assessment or thresholds of significance, and do not specify GHG reduction mitigation measures. Instead, the CEQA Guidelines amendments continue to rely on lead agencies to choose methodologies and make significance determinations based on substantial evidence, as discussed in further detail below (CNRA, 2009c). Consequently, no State agency has promulgated binding regulations for analyzing GHG emissions, determining their significance, or mitigating any significant effects in CEQA documents.

The discussion below provides a brief overview of CARB and Office of Planning and Research (OPR) documents and of the primary legislation that relates to climate change and that may affect the emissions associated with the Project. It begins with an overview of the primary regulatory acts that have driven GHG regulation in California, which underlie many of the GHG rules and regulations that have been developed.

1.4.1 Executive Order S-3-05 (State-Wide GHG Targets)

California Executive Order S-03-05 (June 1, 2005) establishes the goal of reducing GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. Although the 2020 target is the core of AB 32 and has effectively been incorporated into AB 32, the 2050 target remains the goal of the Executive Order only.²

1.4.2 Assembly Bill 32 (Statewide GHG Reductions)

The California Global Warming Solutions Act of 2006 (Assembly Bill (AB) 32) was signed into law in September 2006 after considerable study and expert testimony before the Legislature (State of California, 2006a). The law instructed CARB to develop and enforce regulations for the reporting and verification of state-wide GHG emissions. The bill directed CARB to set a state-wide GHG emission limit based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

The heart of the bill is the requirement that state-wide GHG emissions be reduced to 1990 levels by 2020. Based on CARB's calculation of 1990 baseline emissions levels, California must reduce GHG emissions by approximately 28.5% below "business-as-usual" (BAU) predictions of year 2020 GHG emissions to achieve this goal.

In July 2011, CARB revised its "BAU" GHG emission estimate for 2020 in order to account for the recent economic downturn in its emission projections (CARB, 2011c). The estimate presented in the Scoping Plan (596 million metric tonnes CO₂e (MMT CO₂e) was based on pre-recession, 2007 data from the Integrated Energy Policy Report. CARB has updated the projected "BAU" 2020 GHG emissions to 545 MMT CO₂e.

AB 32 requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. Key AB 32 milestones for CARB's actions include the following:

- *June 30, 2007: Identification of discrete early action GHG emissions reduction measures.* On June 21, 2007, CARB satisfied this requirement by approving three early action measures (CARB, 2007b). These were later supplemented by adding six other discrete early action measures (CARB, 2007c).

² On November 6, 2013, the BAAQMD Board passed a resolution adopting the 2050 target of 80 percent below 1990 levels. Details of this resolution are described in the "Regional Provisions" section of this "Regulatory Setting" section.

- *January 1, 2008: Identification of the 1990 baseline GHG emissions level and approval of a state-wide limit equivalent to that level and adoption of reporting and verification requirements concerning GHG emissions.* On December 6, 2007, CARB approved a state-wide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline (CARB, 2007a).
- *January 1, 2009: Adoption of a scoping plan for achieving GHG emission reductions.* On December 11, 2008, CARB adopted *Climate Change Scoping Plan: A Framework for Change* (Scoping Plan), discussed in more detail below (CARB, 2008).
- *January 1, 2010: Adoption and enforcement of regulations to implement the “discrete” actions.* Several early action measures have been adopted and became effective on January 1, 2010 (CARB, 2007b; CARB, 2007c).
- *January 1, 2011: Adoption of GHG emissions limits and reduction measures by regulation.* On October 28, 2010, CARB released its proposed cap-and-trade regulations, which would cover sources of approximately 85% of California’s GHG emissions (CARB, 2010d). CARB’s Board ordered CARB’s Executive Director to prepare a final regulatory package for cap-and-trade on December 16, 2010 (CARB, 2010a).
- *January 1, 2012.* GHG emissions limits and reduction measures adopted in 2011 become enforceable.

1.3.1.1.17 Scoping Plan

As noted above, on December 11, 2008, CARB adopted the Scoping Plan to establish an overall framework for the measures that will be adopted to reduce California’s GHG emissions. CARB determined that achieving the 1990 emission level would require a reduction of GHG emissions of approximately 28.5% below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as “business as usual [BAU]”). The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and CAT early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. Many of these measures and regulations have become effective on January 1, 2012. The key elements of the Scoping Plan (CARB, 2008) include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a state-wide renewables energy mix of 33%;

- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

In 2009, a coalition of environmental groups brought a challenge to the Scoping Plan alleging that it violated AB 32 and that the environmental review document (called a "Functional Equivalent Document") violated CEQA by failing to appropriately analyze alternatives to the proposed cap-and-trade program. On May 20, 2011, the San Francisco Superior Court entered a final judgment ordering that CARB take no further action with respect to cap-and-trade rulemaking until it complies with CEQA (*California Air Resources Board, et al., v. Association of Irrigated Residents, et al.*, 2011). CARB appealed the decision on May 23, 2011. The portions of the Scoping Plan that do not relate to cap and trade remained valid during the litigation. While the appeal was pending, CARB prepared a supplement to the Functional Equivalent Document that included the analysis that the trial court had determined was inadequate under CEQA. CARB certified the supplement to the Functional Equivalent document and readopted the Scoping Plan on August 24, 2011 (CARB, 2011b). On June 19, 2012, the California First District Court of Appeal upheld the Scoping Plan and affirmed CARB's approval of the Scoping Plan as in compliance with AB 32 (*Association of Irrigated Residents, et al., v. California Air Resources Board, et al.*, 2012).

In connection with the preparation of the supplement to the Functional Equivalent Document, CARB released revised estimates of the expected 2020 emissions reductions in consideration of the economic recession and the availability of updated information from development of measure-specific regulations. Incorporation of revised estimates in consideration of the economic recession reduced the projected 2020 emissions from 596 MMT CO₂e to 545 MMT CO₂e (CARB, 2011c). Under this scenario, achieving the 1990 emissions level would require a reduction of GHG emissions of 118 MMT CO₂e, or 21.7% (down from 28.5%), to achieve in 2020 emissions levels in the "BAU" condition.

The 2020 AB 32 baseline was also updated to account for measures incorporated into the inventory, including Pavley (vehicle model years 2009-2016) and the Renewables Portfolio Standard (RPS) (12% to 20%). Inclusion of these measures further reduced the 2020 baseline to 507 MMT CO₂e. As a result, based on both the economic recession and the availability of updated information from the development of measure-specific regulations, achieving the 1990 emission level would now require a reduction of GHG emissions of 80 MMT CO₂e or a reduction by approximately 16% (down from 28.5%) to achieve in 2020 emissions levels in the "BAU" or "No Action Taken" (NAT) condition (CARB, 2011b, CARB, 2011c).

On October 1, 2013, CARB released a discussion draft first update to the Scoping Plan. The discussion draft recalculates 1990 GHG emissions using the IPCC Fourth Assessment Report (AR4) released in 2007. The first draft update to the Scoping Plan states that, based on the AR4 global warming potentials, the 427 MMT CO₂e 1990 emissions level and the 2020 GHG emissions limit would be slightly higher than identified in the Scoping Plan, at 431 MMT CO₂e (CARB, 2013b). Based on (1) the revised estimates of expected 2020 emissions identified in the 2011 supplement to the Functional Equivalent Document, and (2) updated 1990 emissions levels identified in the draft first update to the Scoping Plan, achieving the 1990 emission level would require a reduction of 76 MMT CO₂e (down from 80 MMT CO₂e) or a reduction by approximately 15% (down from 28.5%) to achieve in 2020 emissions levels in the "BAU" or No Action Taken (NAT) condition.

The Scoping Plan identifies over 70 measures for reducing GHG emissions in sectors including transportation, electricity and natural gas, water, green buildings, industry, recycling and waste, and agriculture. Many of these measures incorporate laws, policies, and measures that are not solely driven by the AB 32 directive, including ship electrification (shorepower), high speed rail, RPS, and the Goods Movement Emission Reduction Plan. Regulatory development for other measures is ongoing. Of these measures, 44 were identified as Early Action Measures, which were adopted by CARB and made enforceable in 2010. These measures included regulations affecting landfills, motor vehicle fuels, refrigerant in cars, port operations, and many other sources.

Specific measures discussed in the Scoping Plan that are relevant to the Project include:

- Cap and Trade
- Renewable Portfolio Standard
- Low Carbon Fuel Standard
- Advanced Clean Cars
- Heavy Duty Truck Greenhouse Gas Regulation (SmartWay)

- Goods Movement
- Vessel Speed Reduction
- Freight Transport Efficiency
- Energy Efficiency and Co-Benefits Assessment for Large Industrial Sources
- Refinery Flare Recovery Process Improvements
- Removal of Methane Exemption from Existing Refinery Regulations

These are further discussed in following sections.

The Scoping Plan notes that local governments are “essential partners” in the effort to reduce GHG emissions, and that they have “broad influence and, in some cases, exclusive jurisdiction” over activities that contribute to GHG emissions. The Scoping Plan encourages local governments to adopt goals for reducing municipal GHG emissions and move toward adoption of a goal for reducing community emissions. These targets should parallel the State’s commitment to reduce GHG emissions by approximately 15% of current levels by 2020. The Scoping Plan also observes that “[l]ocal governments have the ability to directly influence both the siting and design of new residential and commercial developments in a way that reduces GHGs associated with vehicle travel, as well as energy, water, and waste” (CARB, 2008) and that “[i]ncreasing low-carbon travel choices (public transit, carpooling, walking and biking) combined with land use patterns and infrastructure that support these low-carbon modes of travel, can decrease average vehicle trip lengths by bringing more people closer to more destinations.” (CARB, 2008) It also notes that regional targets would be set and achieved on a regional basis through the Senate Bill (SB) 375 implementation process, which “maintains regions’ flexibility.” SB 375 is discussed below.

1.3.1.1.18 *Energy and Co-Benefits Assessment of Large Industrial Facilities*

In May 2011, CARB adopted the Regulation for Energy Efficiency and Co-Benefits Assessment of Large Industrial Facilities (CCR Title 17, Subchapter 10, Article 4, Subarticle 9). Stationary sources that emitted greater than 0.5 MMT CO₂e in 2009 and transportation fuel refineries and cement plants that emitted greater than 0.25 MMT CO₂e in 2009 are subject to this regulation. The regulation required these facilities to conduct a one-time assessment of the facility’s fuel and energy consumption and emissions of GHGs, criteria pollutants, and toxic air contaminants. As part of the assessment, facilities were required to identify potential energy efficiency improvement projects for equipment, processes, or systems the cumulatively account for at least 95% of the facility’s total GHG emissions. Assessment reports were due to CARB by December 15, 2011 (CARB, 2013f). The Chevron Facility is subject to this regulation (CARB, 2013d) and submitted the assessment report in accordance with the requirements of the regulation. On June 6, 2013, CARB published the Refinery Sector Public Report

summarizing the information received from the assessment reports for all refinery facilities in California (CARB, 2013c). In the report, a total of 76 potential energy efficiency improvement projects were identified for the Facility. These efficiency measures targeted boilers, electrical equipment, engines, and thermal equipment. Of those 76 measures, Chevron has completed or has started implementing 57 measures. Two of the projects were completed in 1992 and 1995, while the remaining projects were implemented between 2006 and 2011. Ten measures have been identified to be scheduled for the future and 9 projects are currently under investigation. In total, GHG emission reductions are estimated to range between 322,300 – 608,600 MT CO₂e, reflecting an increase in energy efficiency at the facility. CARB intends to prepare a final report with its conclusions and recommendations, based on the sector reports, in 2013.³

1.3.1.1.19 *California Mandatory Reporting Rule*

CARB adopted the California Mandatory Reporting Rule in December 2007 (CCR Title 17, Subchapter 10, Article 2). In December 2010, CARB adopted proposed revisions to support a California GHG cap-and-trade program and to harmonize with the Federal Rule. The revised rule, in effect starting January 1, 2012, eliminates many of the differences between the federal and California rules, though some remain. Additional modifications and clarifications were made to the rule in 2012 rulemaking and took effect starting January 1, 2013.

The California Mandatory Reporting Rule requires the reporting of GHG emissions from essentially the same source categories specified in the EPA Mandatory Reporting Rule, but with some differences. Most of the differences in the rules are related to ensuring that all sources subject to the California cap-and-trade regulations will also be subject to the California rule, and that GHG emissions reporting for those sources will meet the requirements of the cap-and-trade program. Additionally, California requires that emission reports be verified by a third party, and that sources emitting less than the federal reporting threshold but more than the California reporting threshold are subject to abbreviated reporting requirements.

1.3.1.1.20 *Cap-and-Trade Program*

The California Global Warming Solutions Act of 2006 (AB 32) allowed, but did not require, CARB to include among the mechanisms intended to reduce GHG emissions a “system of market-based declining annual aggregate emission limits.” The legislation required CARB to develop a Scoping Plan to describe the various mechanisms that would be used. In turn, the Scoping Plan, approved by CARB on December 11, 2008, directed CARB staff to develop, among other

³ The CARB report has not been issued as of the publication date of this report.

programs, a cap-and-trade mechanism that would apply a declining aggregate cap on GHG emissions⁴ and provide a flexible compliance system using tradable instruments.

On October 20, 2011, CARB adopted the final cap-and-trade regulation (CCR Title 17, Subchapter 10, Article 5). The program started on January 1, 2012, and will proceed in “compliance phases,” the first of which began on January 1, 2013. In the first phase, the program will apply to electric utilities, importers of electricity, and specified industries, including refineries. Approximately 350 electric utilities and approximately 600 industrial facilities were included in the initial phase of the program. In 2015, importers and distributors of fossil fuels will be added to the program in the second phase. The program will impose a “cap” on the total GHG emissions from covered entities in the state, and the quantity of emissions allowed under the cap will decrease each year, ultimately reaching the goal of returning state-wide GHG emissions to 1990 levels by 2020. (The quantity of allowed emissions actually increases between 2014 and 2015, but that is to account for the addition of the fuel importers and distributors and additional electricity importers to the program; the net effect is to reduce overall GHG emissions.)

To encourage emission sources to emit less as the cap decreases, “allowances,” or permission to emit GHGs, will be made available in decreasing quantities. Allowances will be both freely allocated and auctioned off. The amount of freely given allowances will decrease over time, and the severity of the decrease will vary by industrial sector, with those thought to be less vulnerable to out-of-state competition receiving fewer allowances more quickly. Similarly, the amount of allowances available for purchase at auction will decrease. The intent is to make reducing GHG emissions more financially attractive as the number of available allowances decreases, making each allowance more costly.

In May 2012, CARB considered proposed amendments to the California GHG emissions cap-and-trade program to (1) add security to the market system and help staff implement the cap-and-trade program, and (2) link the California cap-and-trade program with that of the Canadian province Quebec. The first set of amendments proposed additional information-gathering requirements during registration for the cap-and-trade program, rules and intermediate deadlines for participation in the first auction in November 2012, and provisions for implementing the allowance and offset registry and market monitoring. These amendments were approved in June 2012 and became effective in September

⁴ The cap-and-trade regulation applies to the following GHGs: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).

2012. The second set of amendments allows acceptance of Quebec compliance instruments for compliance with California's cap-and-trade regulation, and establishes requirements for linked compliance instrument registries and auctions. In June 2012, the California legislature passed SB 1018, which prohibits CARB from adopting any linkage programs until the Governor has reviewed the program and made four specific findings with the advice of the Attorney General. In January 2013, CARB issued revised amendments and supplementary documentation for public review. On April 8, 2013, Governor Brown issued a letter to CARB making the required findings under SB 1018 (Brown, 2013). On May 10, 2013, CARB adopted final regulatory amendments to provide for linkage of the Quebec and California cap-and-trade programs (CARB, 2013a).

1.3.1.1.20.1 Co-Pollutant Benefits

Implementation of the cap-and-trade program will also reduce state-wide emissions of criteria and toxic air pollutants. Because GHG emissions are largely the result of fuel combustion, as the cap decreases and state-wide combustion decreases, criteria and toxic air pollutants associated with combustion will also decrease state-wide. CARB also evaluated the potential for localized impacts from short-term increases in construction and operational emissions at facilities modifying operations in response to cap-and-trade compliance obligations. CARB's analysis indicated that localized impacts are unlikely due to existing local and state air quality regulations; however, where there is potential for significant impact from a proposed project, it would be addressed by local permitting agencies and CEQA lead agencies through the permitting and CEQA processes in which mitigation measures are evaluated.

1.3.1.1.20.2 Refinery Efficiency Metrics

The refinery industry uses "efficiency metrics" to identify industry performance standards and evaluate the operational efficiency of refineries in terms of energy usage and associated greenhouse gas emissions. More recently, the CARB cap-and-trade regulation used efficiency metrics to determine the allowance allocation for a given refinery, where more efficient refineries are rewarded with more directly allocated allowances. Efficiency metrics are intended to allow an equitable comparison across refineries, normalizing for differences in crude feed, products, and associated processing energy intensity. Different definitions of efficiency metrics exist, including the "Simple Barrel" method, the Solomon Energy Intensity Index (EII) method, and the Complexity Weighted Barrel (CWB) method. The more sophisticated efficiency metrics allow comparison of refineries of differing complexity without automatically penalizing the more complex refineries that fundamentally require more energy input to create more processed and higher-value products (e.g., gasoline, distillates), as compared to less complex refineries (e.g., topping refineries) that fundamentally require less

energy input to create less processed and lower-value products (e.g., naphtha, asphalt). More detailed descriptions of the Simple Barrel, Solomon EII, and CWB methods are as follows:

- **Solomon EII Method.** The Solomon EII is a proprietary method developed by Solomon Associates that compares a refinery's actual energy usage to the "standard" energy usage of a refinery of similar size and configuration. Here, energy efficiency is used as a proxy for GHG emissions efficiency. The "standard" energy usage value is calculated by Solomon Associates based on information reported by refineries that account for approximately 85% of global refining capacity and 90% of California's refining capacity (CARB, 2011a). Established in 1980, the Solomon EII method is considered the industry standard for comparing energy efficiency across refineries, and is used by industry and government entities alike, including the Western States Petroleum Association (WSPA), EPA Energy Star, and CARB. CARB adopted the Solomon EII method for calculating allowances in the cap-and-trade regulation first compliance period (2013-2014) for all refineries with an EII value. Refineries without an EII value are typically smaller and simpler; for these refineries, the cap-and-trade regulation uses the Simple Barrel method, as described below, to calculate allowances.
- **CWB Method.** The CWB method was initially developed during an Emissions Allocation Study for the Western States Petroleum Association. CARB has adopted a CWB method for calculating allowances for all refineries in the cap-and-trade regulation second compliance period (2015-2017) and onward. The CWB method is directly based on GHG intensity rather than an energy intensity proxy. The CWB method evaluates the GHG efficiency of each refinery process (e.g., vacuum distillation, fluid catalytic cracking, alkylation) and determines the refinery's overall efficiency from the sum of these processes. In this way, the CWB method accounts for differences in GHG emissions due to differences in refinery configurations, inputs, and outputs. The CWB method is more transparent than the Solomon EII method in that it is not based on a proprietary index; the California Mandatory Reporting Rule requires refineries to report all input and output information needed to perform the cap-and-trade CWB evaluation.
- **Simple Barrel Method.** The Simple Barrel method evaluates refinery efficiency based on total GHG emissions per barrel of product produced. Here, "total barrels of product" includes all products the refinery produces (e.g., gasoline, diesel, jet fuel, residual fuel oil, asphalt), regardless of the energy intensity needed to produce more sophisticated and higher-value products. CARB adopted the Simple Barrel method for calculating allowances in the cap-and-trade regulation first compliance period (2013-2014) for all refineries without a Solomon EII value. The refinery's total GHG emissions are

obtained from reports required by the EPA and California Mandatory Reporting Rule, and the total barrels of product produced are obtained from information reported to the EPA and the California Energy Commission (CEC). While the Simple Barrel method is indeed simple and relatively transparent, CARB noted that the method may disadvantage more complex refineries that produce more complex and higher-value products when compared to simpler refineries that produce simpler and lower-value products (CARB, 2010b).

A related efficiency metric is one that evaluates refinery efficiency based on total GHG emissions per barrel of crude oil refined. A recent study (Karras, 2011) by Communities for a Better Environment (CBE) commissioned by the Union of Concerned Scientists reported that California refineries on average emit 19 to 33% more GHGs per barrel of crude oil refined than refineries in any other major U.S. refining region. Proponents of this efficiency metric argue that California's greater GHG emissions can be attributed to California refineries processing denser crude of higher sulfur content, which require more energy input per barrel in order to refine into desirable products (Karras, 2010; Karras, 2011). The study notes that the declining availability of "cleaner" California and Alaska crude oils has resulted in California refineries importing "lower quality" foreign crude. Similar to the Simple Barrel method, this method disadvantages more complex refineries as compared to simpler refineries.

1.4.3 Regulation of Energy-Related Sources

1.3.1.1.21 *Renewables Portfolio Standard (SB 1078, SB 107, and SB X1-2)*

Established in 2002 under SB 1078 (State of California, 2002b), and accelerated in 2006 under SB 107 (State of California, 2006b) and again in 2011 under SB X1-2 (State of California, 2011), California's RPS requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33% of total retail sales by 2020. The 33-percent standard is consistent with the RPS goal established in the Scoping Plan (CARB, 2008). As interim measures, RPS requires 20% of retail sales to be sourced from renewable energy by 2013, and 25% by 2016. Initially, the RPS provisions applied to investor-owned utilities, community choice aggregators, and electric service providers. Senate Bill (SB) X1-2 added, for the first time, publicly owned utilities to the entities subject to RPS (State of California, 2011). The expected growth in RPS to meet the standards in effect in 2008 is not reflected in the "BAU" calculation in the AB 32 Scoping Plan, discussed above. In other words, the Scoping Plan's BAU 2020 does not take credit for implementation of RPS that occurred after its adoption (CARB, 2008).

1.3.1.1.22 *GHG Emissions Standard for Baseload Generation (SB 1368)*

SB 1368 (September 29, 2006) prohibits any retail seller of electricity in California from entering into a long-term financial commitment for baseload

generation if the GHG emissions are higher than those from a combined-cycle natural gas power plant (State of California, 2006b). This performance standard applies to electricity generated out-of-state as well as in the state, and to publicly owned as well as investor-owned electric utilities.

1.4.4 Regulation of Mobile Sources

1.3.1.1.23 Senate Bill 375 (Land Use Planning)

SB 375 provides for a new planning process to coordinate land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32 (State of California, 2008). SB 375 will be implemented over the next several years. SB 375 requires Metropolitan Planning Organizations (MPOs) relevant to the project area (including the Association of Bay Area Governments [ABAG]) to incorporate a “sustainable communities strategy” (SCS) in their regional transportation plans (RTPs) that will achieve GHG emission reduction targets set by CARB, primarily by reducing vehicle miles traveled (VMT) from light-duty vehicles through development of more compact, complete, and efficient communities.

SB 375 also required CARB to appoint a Regional Targets Advisory Committee (RTAC) to recommend factors for CARB to consider and methodologies for it to use in setting GHG emission reduction targets (Regional Targets) for each region. On September 29, 2009, the RTAC released its recommendations to CARB, who, on September 23, 2010, adopted Regional Targets applying to the years 2020 and 2035 (CARB, 2010c). In 2011, CARB adopted Regional Targets of 7% for 2020 and 15% for 2035 for the area under ABAG’s jurisdiction, which includes the Chevron Refinery. On July 18, 2013, the Metropolitan Transportation Commission and ABAG approved the final Plan Bay Area, which includes the Bay Area region’s first SCS as well as a new 2040 RTP and establishes the strategies for meeting the Bay Area’s Regional Targets (MTC, 2013).

The SCS is relevant to the Project only in that the Project is an employer. The SCS for the San Francisco Bay Area is discussed in the “Regional Provisions” section below.

1.3.1.1.24 Mobile Source Reductions (Pavley) (AB 1493)

AB 1493 required CARB to adopt regulations by January 1, 2005, to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks of model years 2009 through 2016 (State of California, 2002a). The bill required the California Climate Action Registry (CCAR) to develop and adopt protocols for the reporting and certification of GHG emissions reductions from mobile sources for use by CARB in granting emission reduction credits. The bill authorizes CARB to grant emission reduction credits for reductions of GHG emissions prior to the

date of the enforcement of regulations, using model year 2000 as the baseline for reduction.

In 2004, CARB applied to the EPA for a waiver under the federal Clean Air Act to authorize implementation of these regulations. The waiver request was formally denied by the EPA in December 2007 after California filed suit to prompt federal action. In January 2008, the State Attorney General filed a new lawsuit against the EPA for denying California's request for a waiver to regulate and limit GHG emissions from these vehicles. In January 2009, President Obama issued a directive to the EPA to reconsider California's request for a waiver. On June 30, 2009, the EPA granted the waiver to California for its GHG emission standards for motor vehicles. As part of this waiver, the EPA specified the following provision: CARB may not hold a manufacturer liable or responsible for any non-compliance caused by emission debits generated by a manufacturer for the 2009 model year. CARB has adopted a new approach to passenger vehicles – cars and light trucks – by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California. These standards will apply to all passenger and light-duty trucks used by employees of and deliveries to the Project.

1.3.1.1.25 *Low Carbon Fuel Standard*

Executive Order S-01-07 (January 18, 2007) requires a 10% or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB. CARB identified the Low Carbon Fuel Standard (LCFS) as a Discrete Early Action item under AB 32, and the final resolution (09-31) was issued on April 23, 2009. In 2009, CARB approved for adoption the LCFS regulation, which became fully effective in April 2010 and is codified in Title 17, California Code of Regulations, Sections 95480-95490. The LCFS will reduce GHG emissions by reducing the carbon intensity of transportation fuels used in California by at least 10% by 2020. Carbon intensity (CI) is a measure of the GHG emissions associated with the various production, distribution, and use steps in the "lifecycle" of a transportation fuel. The LCFS applies to fuel producers, importers, and distributors, including refineries like the Chevron Facility. To comply with the LCFS, refineries could consider measures to reduce GHG impacts along the full "lifecycle" of the transportation fuel, for example choosing to purchase crude oils and feeds of lower carbon content, improving the energy efficiency of refinery processes and equipment, and/or producing fuels of lower carbon content, such as ethanol-blended gasoline products. A recent study reported that in response to increased worldwide demand and oil prices, the number of types of crude oils being traded worldwide is growing, with the current 160 crude oil types varying widely in terms of geographic source, carbon

content, and energy intensity associated with extraction and processing (Gordeon, 2012).

On December 29, 2011, the U.S. District Court for the Eastern District of California issued several rulings in the federal lawsuits challenging the LCFS. Opponents argued that the LCFS violates the Supremacy Clause (US Constitution, Article VI, Clause 2)⁵ and Commerce Clause (US Constitution, Article 1, Section 8, Clause 3)⁶ of the U.S. Constitution by discriminating against fuel produced out-of-state. One of the district court's rulings preliminarily enjoined CARB from enforcing the regulation. In January 2012, CARB appealed that decision to the Ninth Circuit Court of Appeals (Ninth Circuit), and then moved to stay the injunction pending resolution of the appeal. On April 23, 2012, the Ninth Circuit granted CARB's motion for a stay of the injunction while it continued to consider CARB's appeal of the lower court's decision. On September 18, 2013, the Ninth Circuit issued its decision affirming the district court's conclusion that LCFS ethanol and initial crude-oil provisions are not facially discriminatory, but remanded to the district court to determine whether the LCFS ethanol provisions are discriminatory in purpose and effect. Additionally, the Ninth Circuit remanded to the district court with instructions to vacate the preliminary injunction against CARB's enforcement of the regulation (*Rocky Mountain Farmers Union v. CARB*, 2013).

CARB staff is developing proposed amendments for consideration by the CARB Board.⁷ Amendments under consideration specifically concerning refineries include allowing individual refiners a one-time opportunity to "opt out" of using the California average to calculate LCFS credits or deficits and instead use a refinery-specific or hybrid approach, and accounting for lifecycle carbon intensity associated with low-energy refineries. Additional amendments under consideration include updating the Indirect Land Use Change (iLUC) values, allowing electricity credits for electric rail and electric forklifts, adding a provision to address cost containment, incorporating additional fuel pathways

⁵ The Supremacy Clause establishes the U.S. Constitution, federal statutes, and the U.S. Treaties as "the supreme law of the land," establishing that federal laws take precedence over state laws.

⁶ The Commerce Clause grants the federal government the authority "To regulate Commerce within foreign Nations, and among the several States and with the Indian Tribes." Case law has determined that pollution and hazardous materials can be considered "commerce" because they can be produced in one state but dispersed or transported to other states.

⁷ According to the CARB LCFS website (<http://www.arb.ca.gov/fuels/lcfs/regamend13/regamend13.htm>), these amendments were scheduled for consideration at the October 2013 Board hearing. As of the date of the publication of this DEIR, CARB has not taken action to finalize or implement these amendments.

for alternative fuels including biodiesel, and developing sustainability provisions for awarding carbon intensity credits (e.g., for biofuel facilities) (CARB, 2013g).

1.3.1.1.26 *Clean Cars*

In January 2012, CARB approved the Advanced Clean Cars Program, which established an emissions control program for cars and light-duty trucks (such as SUVs, pickup trucks, and minivans) of model years 2017-2025. When the program is fully implemented, new vehicles will emit 75% less smog-forming pollutants than the average new car sold today, and GHG emissions will be reduced by nearly 35%. The program also requires car manufacturers to offer for sale an increasing number of zero-emission vehicles (ZEVs) each year, including battery electric, fuel cell, and plug-in hybrid electric vehicles.

In December 2012, CARB adopted regulations allowing car manufacturers to comply with California's GHG emissions requirements for model years 2017-2025 through compliance with the EPA GHG requirements for those same model years (CARB, 2012).

1.3.1.1.27 *SmartWay Truck Efficiency Regulation*

The SmartWay Truck Efficiency Regulation, approved by CARB in December 2008, requires heavy-duty long-haul tractors and box-type trailers to be equipped with technologies that reduce GHG emissions by improving fuel economy. These technologies include fuel-efficient and rolling-resistant tires and devices to improve truck aerodynamics. To comply with the regulation, fleet operators must either use EPA SmartWay-certified tractors and trailers or retrofit their existing fleet with SmartWay-verified technologies. All tractors and trailers must comply with the regulation when operated on California highways, regardless of where the vehicle is registered (CCR Title 17, Sections 95300 to 95312).

1.3.1.1.28 *Regulation of Ships*

1.3.1.1.28.1 *CARB Measures to Reduce Emissions from Goods Movement Activities*

The Goods Movement Emission Reduction Program (CARB, 2013e) and the 2006 Emission Reduction Plan for Ports and Goods Movement (Plan) in California (CARB, 2006) establish measures that reduce emissions (NO_x, PM, and GHGs) from the main sources associated with port cargo handling activities, including ships, harbor craft, terminal equipment, trucks, and locomotives. These measures reduce emissions, including GHG emissions, by requiring cleaner technologies and upgrades, low-carbon fuels, and/or programs that reduce fuel consumption through reduction of vehicle use or vehicle miles traveled. The Goods Movement Emission Reduction Program is a partnership among CARB, local air districts, and local seaports to reduce emissions and health risks from

freight movement. This program does not apply to oil loading and unloading that occurs via pipeline.

In addition, the California Environmental Protection Agency (Cal/EPA) (CARB's parent agency) has partnered with the California Business, Transportation and Housing Agency to prepare the Goods Movement Action Plan (GMAP) (CA DOT, 2007). The GMAP guides state-wide policy and planning for freight transport, trade corridors, and related air quality issues, as well as guides project selection for the allocation of funds under the Trade Corridors Improvement Fund (TCIF) Program, a state-wide fund used for infrastructure improvements along federally designated trade corridors of national significance (State of California, 2007). The GMAP was issued in two phases in 2005 and 2007. The Phase I report described the goods movement industry and its growth potential, the four priority regions and corridors (Los Angeles/Inland Empire, San Diego/Border, Central Valley, and Bay Area), the environmental and community impacts and preliminary mitigation approaches, and public safety and security issues. The Phase II report presents guidelines for integrating state-wide efforts to improve the goods movement system while mitigating environmental impacts (BTH and Cal/EPA, 2007).

1.3.1.1.28.2 CARB Vessel Speed Reduction for Ocean-Going Vessels

CARB is in the process of evaluating a state-wide vessel speed reduction program for ocean-going vessels. This program would require vessels within a certain distance of a port to slow to a specified speed. Reducing vessel speeds to an optimal value that minimizes fuel consumption on a per-distance basis translates into reduced GHG emissions (CARB, 2009b). Voluntary vessel speed reduction programs are already in place at several ports including the Port of Long Beach, the Port of Los Angeles, and the Port of San Diego.

1.3.1.1.29 Regulation of Trains

In response to the goals of AB 32, Measure T-6 "Freight Transport Efficiency" of CARB's Scoping Plan is intended to address GHG emissions from the freight transport sector by achieving at least a 3.5 MMT CO₂e reduction in GHG emissions from the sector by 2020. In May 2009, CARB held a workshop (CARB, 2009a) to outline objectives and research topics for further investigation; as of October 2013, however, CARB has not yet implemented any regulations or issued any formal regulatory documents for this measure.

1.4.5 CEQA Guidelines Amendments (SB 97)

The 2009 CEQA Guidelines amendments adopted pursuant to SB 97 state in Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate"

GHG emissions. The CEQA Guidelines amendments note that an agency may identify emissions either by selecting a “model or methodology” to quantify the emissions or by relying on “qualitative analysis or other performance based standards.” (CNRA, 2009c) Section 15064.4(b) provides that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent a project may increase or reduce GHG emissions as compared to the environmental setting.
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a state-wide, regional, or local plan for the reduction or mitigation of GHG emissions (CNRA, 2009c).

In addition, Section 15064.7(c) of the CEQA Guidelines amendments specifies “[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence” (CNRA, 2009c). Similarly, the revision to Appendix G, Environmental Checklist Form, which is often used as a basis for lead agencies' selection of significance thresholds, does not prescribe specific thresholds. Rather, Appendix G asks whether the project would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? or
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

This indicates that the determination of what is a significant effect on the environment should be left to the lead agency.

Accordingly, the CEQA Guidelines amendments do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Amendments emphasize the lead agency’s discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA, 2009c).

The CEQA Guidelines amendments indicate that lead agencies should consider all feasible means, supported by substantial evidence and subject to monitoring and reporting, of mitigating the significant effects of GHG emissions. As pertinent to the Project, these potential mitigation measures, set forth in Section 15126.4(c), may include (1) measures in an existing plan or mitigation program for the reduction of GHG emissions that are required as part of the lead agency's decision; (2) reductions in GHG emissions resulting from a project through implementation of project design features; (3) off-site measures, including offsets, to mitigate a project's emissions; and (4) carbon sequestration measures (CNRA, 2009c).

Among other things, the CNRA noted in its Public Notice for these changes that impacts of GHG emissions should focus on the cumulative impact on climate change. The Public Notice states:

While the Proposed Amendments do not foreclose the possibility that a single project may result in greenhouse gas emissions with a direct impact on the environment, the evidence before [CNRA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of greenhouse gas emissions should center on whether a project's incremental contribution of greenhouse gas emissions is cumulatively considerable (CNRA, 2009b).

Thus the CEQA Guidelines amendments continue to make clear that the significance of GHG emissions is most appropriately considered on a cumulative level.

As described in the Final Statement of Reasoning (CNRA, 2009a) for the 2009 CEQA Guidelines amendments, the CEQA Guidelines specifically do not address lifecycle emission for two reasons. First, there are different interpretations of the meaning of "lifecycle" amongst lead agencies, which could lead to confusion on how to evaluate the contribution of lifecycle emissions to a project. Furthermore, requiring an analysis of lifecycle emissions may be inconsistent with CEQA, as the emissions may be outside the scope of the "indirect emissions" that are evaluated with a project. Lead agencies must evaluate substantial evidence to determine which emissions are indirect effects of a project and which emissions are outside the scope of CEQA.

1.4.6 Other State GHG Regulatory Activities

1.3.1.1.30 CARB Executive Order S-13-08

On November 14, 2008, Governor Arnold Schwarzenegger signed Executive Order S-13-08, which called on State agencies to develop a strategy for

identification of and preparation for expected climate change impacts in California. The resulting *2009 California Climate Adaptation Strategy* (CAS) report was developed by the CNRA in coordination with the CAT. The report presents the best available science relevant to climate impacts in California and proposes a set of recommendations for California decision-makers to assess vulnerability and promote resiliency in order to reduce California's vulnerability to climate change. Guidance regarding adaptation strategies is general in nature and emphasizes incorporation of strategies into existing planning policies and processes. An update to the CAS report is planned for release as a draft for public comment by the end of 2013 (State of California, 2013b).

In addition to requiring the CAT to create a Climate Adaptation Strategy, Executive Order S-13-08 ordered the creation of a comprehensive Sea Level Rise Assessment Report. The report, published in June 2012, indicates that the sea level along most of California's coast is expected to rise about 1 meter over the next century and is likely to increase the risk of damage in the form of flooding, coastal erosion, and wetland loss due to storm surges and high waves. The sea level increase is slightly higher than projected for global sea levels (NRC, 2012; ONPI, 2012).

Executive Order S-13-08 also called for the California Ocean Protection Council (OPC) to work with the other CAT State agencies to develop interim guidance for assessing the potential impacts of sea level rise due to climate change in California. In coordination with National Academy of Sciences (NAS) efforts, the OPC drafted interim guidance recommending that State agencies consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability, reduce expected risks, and increase resiliency to sea level rise. The draft resolution and interim guidance document is consistent with the Ocean Protection Act (Division 26.5, Public Resource Code Section 35615(a)(1)), which specifically directs the OPC to coordinate activities of State agencies to improve the effectiveness of State efforts to protect ocean resources (State of California, 2013c; CO-CAT, 2010).

1.3.1.1.31 Other Potentially Applicable Regulations or Policies

1.3.1.1.31.1 Assembly Bill 1613 (Waste Heat and Carbon Emissions Reduction Act)

AB 1613 directed the CEC, the CPUC, and CARB to implement the Waste Heat and Carbon Emissions Reduction Act. The Act is designed to encourage the development of new combined heat and power (CHP) systems in California with a generating capacity of not more than 20 megawatts. In June 2010, the CEC published modified final guidelines establishing technical criteria for eligibility of CHP systems for programs to be developed by the CPUC and publicly owned

utilities (CEC, 2010). Section 2843 of the Act provides that the CEC's guidelines require that CHP systems:

- Be designed to reduce waste energy;
- Have a minimum efficiency of 60%;
- Have NO_x emissions of no more than 0.07 pounds per megawatt-hour;
- Be sized to meet the eligible customer generation thermal load;
- Operate continuously in a manner that meets the expected thermal load and optimizes the efficient use of waste heat; and
- Be cost-effective, technologically feasible, and environmentally beneficial.

As directed by AB 1613, the CPUC also established (1) a standard tariff for the sale of electricity to electricity corporations for delivery to the electrical grid (State of California, 2013a); and (2) a "pay as you save" pilot program requiring electricity corporations to finance the installation of qualifying CHP systems by non-profit and government entities. A January 2011 decision by an administrative law judge determined that the pilot program will not be established due to lack of customer interest and difficulties in instituting a program that meets California Department of Corporations requirements (Decision 11-01-010 Before the Public Utilities Commission of the State of California, 2011).

1.3.1.1.31.2 Senate Bill X7 7 (Water Conservation Act of 2009)

The Water Conservation Act of 2009 sets an overall goal of reducing per-capita urban water use by 20% by December 31, 2020. The state is required to make incremental progress toward this goal by reducing per-capita water use by at least 10% by December 31, 2015. Reduction in water consumption directly reduces the energy necessary and the associated emissions to convey, treat, and distribute the water; it also reduces emissions from wastewater treatment.

The Department of Water Resources adopted a regulation on February 16, 2011 that sets forth criteria and methods for exclusion of industrial process water from the calculation of gross water use for purposes of urban water management planning. The regulation would apply to all urban retail water suppliers required to submit an Urban Water Management Plan, as set forth in the Water Code, Division 6, Part 2.6, Sections 10617 and 10620.

1.5 REGIONAL PROVISIONS

1.5.1 BAAQMD Regional Climate Protection Strategy Resolution

On November 6, 2013, the BAAQMD Board passed a resolution adopting a regional target of achieving 80% below 1990 levels of GHG emissions by 2050.

This reduction goal matches that of Executive Order S-3-05, described earlier. In addition, the resolution commits the BAAQMD to develop a regional climate protection strategy, including a Bay Area climate protection work program that will be included as an element of the BAAQMD's 2014 Clean Air Plan (BAAQMD, 2013).

1.5.2 ABAG/MTC Sustainable Communities Strategy (SB 375)

As discussed above, SB 375 is intended to help achieve AB 32's goals by coordinating land use and transportation planning, along with funding priorities. SB 375 requires each Metropolitan Planning Organization (MPO) in California to develop an Sustainable Communities Strategy (SCS) as part of its Regional Transportation Plan (RTP) that will achieve the GHG reduction targets required by AB 32. As described above, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) developed an SCS for the San Francisco Bay Area and incorporated it and a new RTP into a "Plan Bay Area." Plan Bay Area includes the Chevron Facility as a job center. Plan Bay Area developed under SB 375 included the Facility as an industrial source in its employment analysis. The Project will preserve this industrial source employment status, and is thus consistent with Plan Bay Area.

1.5.3 San Francisco Bay Plan

The San Francisco Bay Conservation and Development Commission (BCDC) was first established as a temporary state agency by the McAteer-Petris Act. BCDC was charged with preparing a plan for the long-term use of the bay and regulating development in and around the bay while the plan was being prepared. The San Francisco Bay Plan, which was completed in January 1969, includes policies on issues critical to the wise use of the bay ranging from ports and public access to design and transportation. The Bay Plan also contains maps of the entire bay that designate shoreline areas that should be reserved for water-related purposes like ports, industry, public recreation, airports, and wildlife refuges.

In August 1969, the McAteer-Petris Act was amended to make BCDC a permanent agency and to incorporate the policies of the Bay Plan into State law. In 1977, BCDC's authority was expanded to provide special protection of the Suisun Marsh. BCDC is also the federally designated State coastal management agency for the San Francisco Bay segment of the California coastal zone. This designation empowers BCDC to use the authority of the federal Coastal Zone Management Act to ensure that federal projects and activities are consistent with the policies of the Bay Plan and State law.

On October 6, 2011, BCDC approved amendments to the Bay Plan (BCDC, 2011a; BCDC, 2011b). The amendments address climate change by updating several sections of the Bay Plan (including Safety of Fills, Tidal Marshes and Tidal Flats, Shoreline Protection, and Public Access) and by adding a new climate change section with new findings and policies. There are five policy goals for the approved amendments:

1. Update language on sea level rise. This current policy language recommends that new development not be approved in low-lying areas that are in danger of flooding now or in the future unless the development is elevated above possible flood levels. The amended policies allow protection from flooding, encourage innovative means of dealing with flood danger, and make it clear that local governments will determine how best to deal with development proposals inland of BCDC's jurisdiction.
2. Encourage a variety of types of projects that have regional benefits. Proposed new development will continue to be evaluated by BCDC on a case-by-case basis to determine if the benefits of a project outweigh the risk from flooding and to ensure steps are taken to deal with the flooding danger.
3. Continue to protect the bay and other valuable natural resources within BCDC's jurisdiction.
4. Continue to protect existing tidal wetlands and, where appropriate, expand them. To accomplish this, resource protection and habitat enhancement in undeveloped low-lying areas will be encouraged, but development will not be absolutely prohibited in these areas.
5. Work with its regional partners, local governments, businesses, labor, environmentalists, investors, insurers, and the general public to develop a comprehensive regional strategy that deals with all the impacts of climate change.

1.6 REFERENCES

Association of Irrigated Residents, et al., v. California Air Resources Board, et al, 2012. 206 Cal. App. 4th 1487.

Bay Area Air Quality Management District (BAAQMD). 2013. *Air District Board passes climate protection resolution*. November 6. Accessed November 12, 2013.
http://www.baaqmd.gov/~media/Files/Communications%20and%20Outreach/Publications/News%20Releases/2013/climateres_131106.ashx?la=en.

Brown, E.G. 2013. *Letter from Governor Brown to Mary Nichols, CARB, April 8, 2013 Re: Request for Findings Under SB 1018*. Accessed October 14, 2013. http://gov.ca.gov/docs/Request_for_SB_1018_Findings.pdf.

Business, Transportation and Housing Agency (BTH) and California Environmental Protection Agency (Cal/EPA). 2007. *Goods Movement Action Plan*. January. Accessed on November 12, 2013. <http://www.arb.ca.gov/gmp/docs/gmap-1-11-07.pdf>.

California Air Resources Board (CARB). 2006. *Emission Reduction Plan for Ports and Goods Movement in California. Resolution 06-14*, April. Accessed March 1, 2013. http://www.arb.ca.gov/planning/gmerp/march21plan/docs/resolution_06-14.pdf.

California Air Resources Board (CARB). 2007a. *California Greenhouse Gas Inventory (millions of metric tonnes of CO2 equivalent) by IPCC Category*. Sacramento, CA, November. Accessed March 1, 2013. http://www.arb.ca.gov/cc/inventory/archive/tables/ghg_inventory_ipcc_90-04_all_2007-11-19.pdf.

California Air Resources Board (CARB). 2007b. *Summary of Board Meeting: Consideration of Recommendations for Discrete Early Actions for Climate Change Mitigation in California*. Sacramento, CA, June 21.

California Air Resources Board (CARB). 2007c. *Summary of Board Meeting: Public Meeting to Consider Approval of Additions to Reduce Greenhouse Gas Emissions under the California Global Warming Solutions Act of 2006 and to Discuss Concepts for Promoting and Recognizing Voluntary Early Actions*. Sacramento, CA, October 25.

California Air Resources Board (CARB). 2008. *Climate Change Scoping Plan*. Sacramento, CA, December. Accessed March 1, 2013. http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf.

California Air Resources Board (CARB). 2009a. *Freight Transport Efficiency*. Accessed March 1, 2013. <http://www.arb.ca.gov/cc/freight/freight.htm>.

California Air Resources Board (CARB). 2009b. *Vessel Speed Reduction for Ocean-going Vessels*. Accessed October 14, 2013. <http://www.arb.ca.gov/ports/marinevess/vsr/vsr.htm>.

California Air Resources Board (CARB). 2010a. *California Cap-and-Trade Program. Final Resolution*. Sacramento, CA. Accessed March 1, 2013.

[http://www.arb.ca.gov/
regact/2010/capandtrade10/res1042.pdf](http://www.arb.ca.gov/regact/2010/capandtrade10/res1042.pdf).

California Air Resources Board (CARB). 2010b. *Cap and Trade Regulation, Initial Statement of Reasons, Appendix J: Allowance Allocation*, page J-42, October. Accessed March 1, 2013. <http://www.arb.ca.gov/regact/2010/capandtrade10/capv4appj.pdf>.

California Air Resources Board (CARB). 2010c. *Notice of Decision: Regional Greenhouse Gas Emissions Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375*. Sacramento, CA. Accessed March 1, 2013. <http://www.arb.ca.gov/cc/sb375/notice%20of%20decision.pdf>.

California Air Resources Board (CARB). 2010d. *Proposed Regulation to Implement the California Cap-and-Trade Program*. Sacramento, CA. Accessed March 1, 2013. <http://www.arb.ca.gov/regact/2010/capandtrade10/capandtrade10.htm>.

California Air Resources Board (CARB). 2011a. *Appendix A to 2nd 15-day Cap-and-Trade Regulatory Text: Refinery Allocation Method*, September. Accessed March 1, 2013. <http://www.arb.ca.gov/regact/2010/capandtrade10/2nd15dayappa.pdf>.

California Air Resources Board (CARB). 2011b. *Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document*. Accessed September 16, 2013. http://www.arb.ca.gov/cc/scopingplan/document/final_supplement_to_sp_fed.pdf.

California Air Resources Board (CARB). 2011c. *Status of Scoping Plan Recommended Measures*. July. Accessed March 1, 2013. http://www.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf.

California Air Resources Board (CARB). 2011d. *Supplement to the AB 32 Scoping Plan Functional Equivalent Document*, approved by Resolution 11-27, August 24. Accessed September 28, 2013. <http://www.arb.ca.gov/cc/scopingplan/fed.htm>.

California Air Resources Board (CARB). 2012. *Lev III and ZEV Regulation Amendments For Federal Compliance Option*, December 31. Accessed October 14, 2013. <http://www.arb.ca.gov/regact/2012/leviiidtc12/leviiidtc12.htm>.

California Air Resources Board (CARB). 2013a. *Cap and Trade Linkage*. Accessed October 14, 2013. <http://www.arb.ca.gov/cc/capandtrade/linkage/linkage.htm>.

California Air Resources Board (CARB). 2013b. *Climate Change Scoping Plan First Update, Discussion Draft for Public Review and Comment*, October. Accessed October 2, 2013. http://www.arb.ca.gov/cc/scopingplan/2013_update/discussion_draft.pdf.

California Air Resources Board (CARB). 2013c. *Energy Efficiency and Co-Benefits Assessment of Large Industrial Sources: Refinery Sector Public Report*, June 6. Accessed October 14, 2013. <http://www.arb.ca.gov/cc/energyaudits/eeareports/refinery.pdf>.

California Air Resources Board (CARB). 2013d. *Forty-Five Industrial Facilities Subject to Energy and Co-Benefits Assessment of Large Industrial Facilities Regulation*, February. Accessed March 1, 2013. <http://www.arb.ca.gov/cc/energyaudits/eeafacilitylist.pdf>.

California Air Resources Board (CARB). 2013e. *Goods Movement Emission Reduction Program*. Accessed March 1, 2013. <http://www.arb.ca.gov/bonds/gmbond/gmbond.htm>.

California Air Resources Board (CARB). 2013f. *Letter to facilities subject to the Energy Efficiency and Co-Benefits Assessment Regulation*, February. Accessed March 1, 2013. <http://www.arb.ca.gov/cc/energyaudits/letter.pdf>.

California Air Resources Board (CARB). 2013g. *Low Carbon Fuel Standard Proposed Amendments*, March. Accessed March 8, 2013. <http://www.arb.ca.gov/fuels/lcfs/regamend13/030513presentation.pdf>.

California Air Resources Board, et al., v. Association of Irrigated Residents, et al., 2011. Accessed August 22, 2013. http://www.crpe-ej.org/crpe/images/stories/7.25.11_Petition_for_Review_FINAL_with_Exhibits_smaller_version.pdf.

California Code of Regulations (CCR), Title 17, Sections 95300 to 95312.

California Code of Regulations (CCR), Title 17, Subchapter 10, Article 4, Subarticle 9.

California Code of Regulations (CCR), Title 17, Subchapter 10, Article 2.

California Code of Regulations (CCR), Title 17, Subchapter 10, Article 5,
California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms. Accessed March 1, 2013.
<http://www.arb.ca.gov/cc/capandtrade/finalregorder.pdf>.

California Department of Transportation (CA DOT). 2007. *Goods Movement Action Plan*. Accessed November 12, 2013.
<http://www.dot.ca.gov/hq/tpp/offices/ogm/gmap.html>.

California Energy Commission (CEC). 2010. *Guidelines for Certification of Combined Heat and Power Systems Pursuant to the Waste Heat and Carbon Emissions Reduction Act*, Public Utilities Code, Section 2840 et seq.: Commission Modified Final Guidelines, May. Accessed March 1, 2013.
<http://www.energy.ca.gov/2009publications/CEC-200-2009-016/CEC-200-2009-016-CMF-REV2.PDF>.

California Natural Resources Agency (CNRA). 2009a. *Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97*. Accessed March 8, 2013. http://ceres.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf.

California Natural Resources Agency (CNRA). 2009b. *Notice of Public Hearings and Notice of Proposed Amendment of Regulations Implementing the California Environmental Quality Act*. Accessed March 1, 2013.
http://www.ceres.ca.gov/ceqa/docs/Notice_of_Proposed_Action.pdf.

California Natural Resources Agency (CNRA). 2009c. *Revised Text of Proposed Guideline Amendments*. Sacramento, CA. Accessed March 1, 2013.
http://ceres.ca.gov/ceqa/docs/Text_of_Proposed_Changes.pdf.

Decision 11-01-010 Before the Public Utilities Commission of the State of California. 2011. *Order Instituting Rulemaking on the Commission's Own Motion into combined heat and power pursuant to Assembly Bill (AB) 1613*. Accessed March 1, 2013. http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/129669.pdf.

Gordeon, D. 2012. Carnegie Endowment for International Peace. *The Carbon Contained in Global Oils*, December. Accessed March 15, 2013.
<http://www.carnegieendowment.org/2012/12/18/carbon-contained-in-global-oils/euzi>.

Karras, G. 2010. *Communities for a Better Environment. Combustion Emissions from Refining Lower Quality Oil: What is the Global Warming Potential*.

Environmental Science and Technology, Vol. 44, No. 24, p. 9584-9589, November. Accessed March 1, 2013. <http://pubs.acs.org/doi/pdfplus/10.1021/es1019965>.

Karras, G. 2011. *Communities for a Better Environment. Oil Refinery CO₂ Performance Measurement, Prepared for the Union of Concerned Scientists*, September. Accessed March 1, 2013. http://www.ucsusa.org/assets/documents/global_warming/oil-refinery-CO2-performance.pdf.

Massachusetts et al. vs. Environmental Protection Agency. 2007. 549 U.S. 497.

Metropolitan Transportation Commission (MTC). 2013. *Plan Bay Area*. Accessed October 14, 2013. http://www.mtc.ca.gov/planning/plant_bay_area/.

National Oceanic and Atmospheric Administration (NOAA). 2002. *President Announces Clear Skies and Global Climate Change Initiative*, February. Accessed March 1, 2013. <http://georgewbush-whitehouse.archives.gov/news/releases/2002/02/20020214-5.html>.

National Research Council (NRC). 2012. National Research Council of the National Academies: Committee on Sea Level Rise in California, Oregon, and Washington; Board on Earth Sciences and Resources and Ocean Studies Board; Division of Earth and Life Studies. *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*, June. Accessed March 1, 2013. http://www.nap.edu/openbook.php?record_id=13389&page=R1.

Office of News and Public Information (ONPI). 2012. Office of News and Public Information of the National Academies. *California Sea Level Projected to Rise a Higher Rate than Global Average; Slower Rate for Oregon, Washington, But Major Earthquake Could Cause Sudden Rise*, June 22. Accessed March 1, 2013. <http://www8.nationalacademies.org/onpinews/newsitem.aspx?recordid=13389>.

Rocky Mountain Farmers Union v. CARB. 2013. U.S. Court of Appeals for the Ninth Circuit, No. 12-15131. Accessed October 2, 2013. <http://cdn.ca9.uscourts.gov/datastore/opinions/2013/09/18/12-15131.pdf>.

San Francisco Bay Conservation and Development Commission (BCDC). 2011a. Commission Meeting Summary, October 6. Accessed March 1, 2013. <http://www.bcdc.ca.gov/meetings/commission/2011/10-06Summary.shtml>.

San Francisco Bay Conservation and Development Commission (BCDC). 2011b. *Revised Staff Report and Staff Recommendation for Proposed Bay Plan Amendment 1-08 Concerning Climate Change*, September 23. Accessed March 1, 2013. http://www.bcdc.ca.gov/proposed_bay_plan/10-01Recom.pdf.

Sea-Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT). 2010. *State of California Sea-Level Rise Interim Guidance Document*, October. Accessed March 1, 2013. http://www.opc.ca.gov/webmaster/ftp/project_pages/Climate/SLR_Guidance_Document.pdf.

State of California. 2002a. *Assembly Bill 1493* (2001-2002 Reg. Session) Stats. 2002, ch. 200.

State of California. 2002b. *Senate Bill 1078* (2001-2002 Reg. Session) Stats. 2002, ch 516.

State of California. 2006a. *Assembly Bill 32* (2005-2006 Reg. Session) Stats. 2005, ch. 488.

State of California. 2006b. *Senate Bill 1368* (2005-2006 Reg. Session) Stats. 2006, ch. 598.

State of California. 2007. *Strategic Growth Plan Bond Accountability: Trade Corridors Improvement Fund*. Accessed November 12, 2013. <http://www.bondaccountability.dot.ca.gov/bondacc/MainMenuAction.do?%3E&page=1000017>.

State of California. 2008. *Senate Bill 375* (2007-2008 Reg. Session) Stats. 2008, ch. 728.

State of California. 2011. *Ass'n of Irrigated Residents v. California Air Resources Board* (Super. Ct. San Francisco County, March 18, 2011, No. CPF-09-509562).

State of California. 2013a. *CHP Feed-in Tariff*. August. Accessed November 26, 2013. <http://www.cpuc.ca.gov/PUC/energy/CHP/feed-in+tariff.htm>.

State of California. 2013b. *Climate Change Portal: California Climate Adaptation Strategy*. Accessed October 14, 2013. <http://www.climatechange.ca.gov/adaptation/strategy/index.html>.

- State of California. 2013c. *The Coastal and Ocean Resources Working Group for the Climate Action Team (CO-CAT)*. Accessed March 1, 2013. <http://www.opc.ca.gov/2010/07/coastal-and-ocean-climate-action-team-co-cat/>.
- Sutley, N.H. Council on Environmental Quality. 2010. *Memorandum for Heads of Federal Departments and Agencies: Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*, February. Accessed March 1, 2013. <http://www.whitehouse.gov/sites/default/files/microsites/ceq/20100218-nepa-consideration-effects-ghg-draft-guidance.pdf>.
- The Recovery Act. 2009. Accessed March 1, 2013. http://www.recovery.gov/About/Pages/The_Act.aspx.
- United Nations Framework Convention on Climate Change (UNFCCC). 1998. *Kyoto Protocol to the United Nations Framework Convention on Climate Change*. Accessed March 1, 2013. http://unfccc.int/kyoto_protocol/items/2830.php.
- United States Environmental Protection Agency (EPA) and Department of Transportation (DOT). 2010. *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards*. Final Rule. 75 Fed. Reg. 25324-25728.
- United States Environmental Protection Agency (EPA). 2009. *Recovery: EPA Gets Involved*. Accessed November 25, 2013. <http://www.epa.gov/recovery>.
- United States Environmental Protection Agency (EPA). 2013a. *EPA FACT SHEET: Reducing Carbon Pollution from Power Plants*. Accessed October 13, 2013. <http://www2.epa.gov/sites/production/files/2013-09/documents/20130920technicalfactsheet.pdf>
- United States Environmental Protection Agency (EPA). 2013b. *Proposed Carbon Pollution Standard for New Power Plants*. Accessed October 13, 2013. <http://www2.epa.gov/carbon-pollution-standards>.
- United States Environmental Protection Agency (EPA). 2013c. *State and Local Climate and Energy Program*. November. Accessed October 13, 2013. <http://www.epa.gov/statelocalclimate/index.html>.
- United States Environmental Protection Agency (EPA). 2013d. *Voluntary Energy and Climate Programs*. Accessed October 13, 2013. <http://www.epa.gov/climatechange/EPAactivities/voluntaryprograms.html>.

APPENDIX 4.8 - SET

Greenhouse Gas Setting

APPENDIX 4.8-SET

GREENHOUSE GAS SETTING

There is international scientific consensus that anthropogenic emissions of greenhouse gases¹ have and will continue to contribute to changes in the global climate. Although there is uncertainty concerning the magnitude, rate, and ultimate effects of this change, it is generally accepted that climate change will result in a number of substantial adverse environmental impacts.

Climate change is the cumulative effect of all natural and anthropogenic sources of greenhouse gases on a global scale. The greenhouse gas emissions from an individual project, even a very large development project, would not individually generate sufficient greenhouse gas emissions to measurably influence global climate change (AEP, 2007; OPR, 2008). Consideration of a project's climate change impact, therefore, is essentially an analysis of a project's contribution to a cumulatively significant global impact through its emission of greenhouse gases. While it is possible to examine the quantity of greenhouse gases that would be emitted from individual project sources, it is not currently possible to link these greenhouse gases emitted from a specific source or location to particular global climate changes.

Although environmental impacts associated with climate change cannot be directly linked to individual development projects, the State of California recognizes the link between development activities and greenhouse gas emissions and is in the process of developing standards for assessment and, ultimately, regulation of the greenhouse gas emissions associated with land use. The State of California, through Assembly Bill (AB) 32 and Executive Order S-3-05, has set state-wide targets for the reduction of greenhouse gas emissions. The goal of AB 32 and Executive Order S-3-05 is to reduce future greenhouse gas emissions in a state that is expected to experience rapid growth in population and economic output. While the California Environmental Quality Act (CEQA) focuses on emissions associated with new development, other regulatory means will need to be implemented to address reductions in existing emissions.

¹ For the purposes of this analysis, the term "greenhouse gases" refers to carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride, those gases regulated under California AB 32 and the Kyoto Protocol of the United Nations Framework Convention on Climate Change. Although the State of California also declared nitrogen trifluoride a greenhouse gas, there is no nitrogen trifluoride associated with this project. Therefore, nitrogen trifluoride will not be further considered.

1.1 GLOBAL SETTING

This section describes the status of global science on climate change and the scientific consensus regarding the role of anthropogenic greenhouse gas emissions in contributing to climate change and global warming. This section also describes global-scale estimates of greenhouse gas trends and projected effects on climate.

1.1.1 Global Climate Change

Global warming and global climate change are both terms that describe changes in the earth's climate. Global climate change is a broad term used to describe any worldwide, long-term change in the earth's climate. This change could be, for example, an increase or decrease in temperatures, the start or end of an ice age, or a shift in precipitation patterns. The term global warming is more specific than global climate change and refers to a general increase in temperatures across the earth. Though global warming is characterized by rising temperatures, it can cause other climatic changes, such as a shift in the frequency and intensity of rainfall or hurricanes. Global warming does not necessarily imply that all locations will be warmer. Some specific, unique locations may be cooler even though the world, on average, is warmer. All of these changes fit under the umbrella of global climate change.²

While global warming can be caused by natural processes, there is a general scientific consensus that most current global warming is the result of human activity on the planet (IPCC, 2007a). This human-made, or anthropogenic, warming is primarily caused by increased emissions of greenhouse gases that keep the earth's surface warm. This is called "the greenhouse effect." The greenhouse effect and the role that greenhouse gases play in it are described below.

1.1.2 The Greenhouse Effect

Greenhouses allow sunlight to enter, and then they capture some of the heat generated by the sunlight. Similarly, the earth's atmosphere acts like a greenhouse by retaining some of the heat that is generated by the sun. When solar radiation from the sun reaches the earth, much of it penetrates the atmosphere to ultimately reach the earth's surface; this solar radiation is absorbed by the earth's surface and then re-emitted as heat in the form of

² Other definitions of "greenhouse effect" and "global warming" can be found on Merriam-Webster online at <http://www.m-w.com/>. A definition for "climate change" can be found at <http://dictionary.reference.com>, which uses Webster's New Millennium™ Dictionary of English, Preview Edition (v 0.9.6). (Websites accessed March 1, 2013.)

infrared radiation.³ The warming potential of greenhouse gases does not come from the absorption of solar radiation but from the absorption of infrared radiation. When the infrared radiation is absorbed by the molecules of greenhouse gases, it is re-radiated in all directions. A portion of the infrared radiation is emitted back toward the surface of the earth, in effect “trapping” the heat in the atmosphere.⁴ This phenomenon is referred to as the “greenhouse effect.”

The earth’s greenhouse effect has existed far longer than humans have and has played a key role in the development of life. Concentrations of major greenhouse gases, such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and water vapor, have been naturally present for millennia at relatively stable levels in the atmosphere, maintaining hospitable temperatures on the surface of the earth. Without these greenhouse gases, the earth’s temperature would be too cold for life to exist.

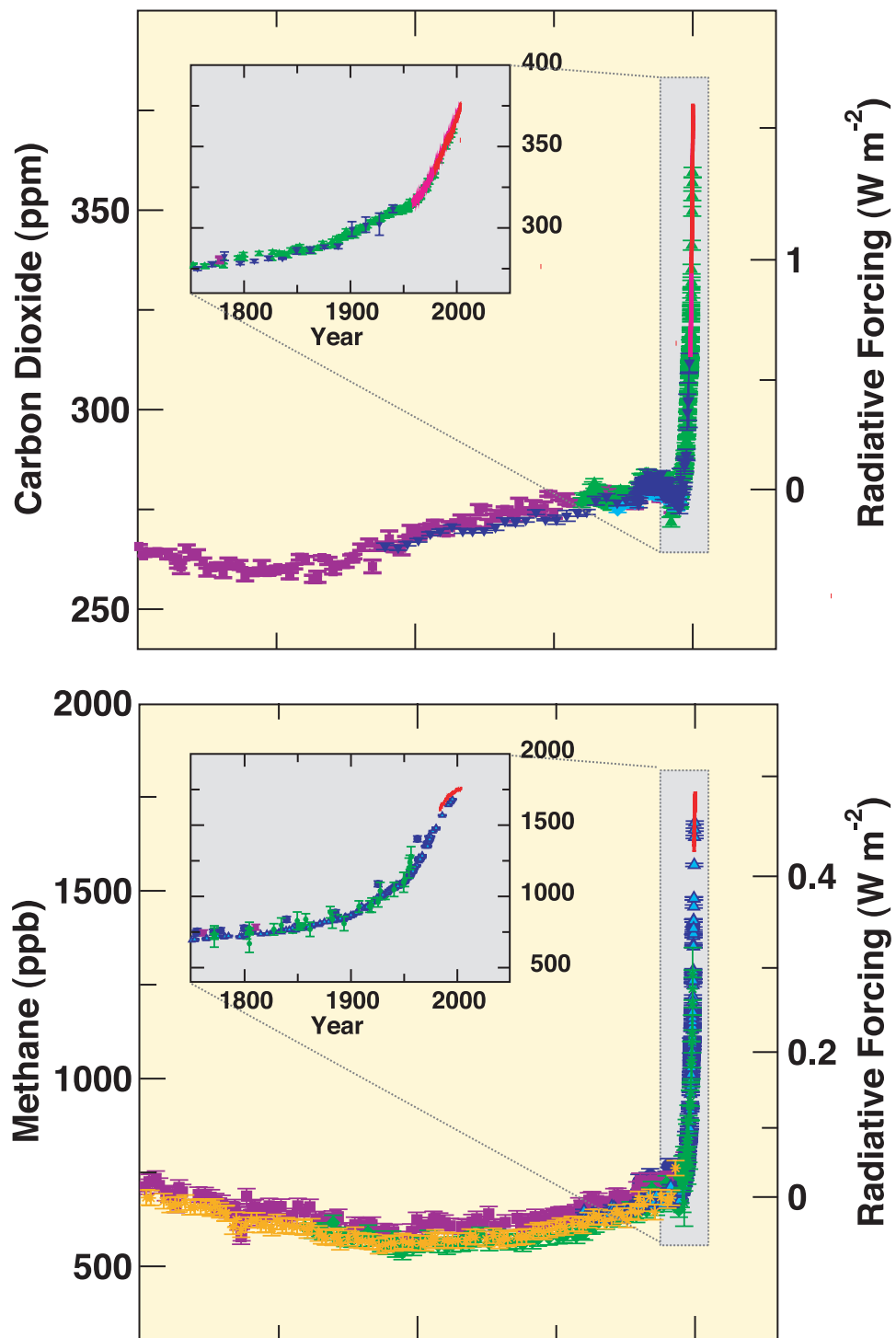
In the absence of major industrial human activity, natural processes have maintained atmospheric concentrations of greenhouse gases, and, therefore, global temperatures at constant levels over the last several centuries.⁵ As human industrial activity has increased, atmospheric concentrations of certain greenhouse gases have grown dramatically. Figure A4.8-SET-1 shows the increase in concentrations of CO₂ and CH₄ over the past 10,000 years, and particularly the dramatic increase since the Industrial Revolution. As the concentrations of greenhouse gases increase due to human activity, more infrared radiation is reflected back toward the earth, subsequently heating the surface of the earth to higher temperatures. This is the process that is described as human-induced global warming.

In 2007, the Intergovernmental Panel on Climate Change (IPCC) began releasing components of its Fourth Assessment Report (IPCC, 2007b), providing a comprehensive assessment of climate change science. The Fourth Assessment Report states that there is a scientific consensus that the global increases in greenhouse gases since 1750 are mainly due to human activities such as fossil fuel use, land use change (e.g., deforestation), and agriculture. In addition, the report states that it is likely that these changes in greenhouse gas concentrations

³ All light, be it visible, ultraviolet, or infrared, carries energy.

⁴ Infrared radiation is characterized by longer wavelengths than solar radiation. Greenhouse gases reflect radiation with longer wavelengths. As a result, instead of escaping back into space, greenhouse gases reflect much infrared radiation (i.e., heat) back to the earth.

⁵ Examples of natural processes include the addition of greenhouse gases to the atmosphere from respiration, fires, and decomposition of organic matter. The removal of greenhouse gases is mainly from plant and algae growth and absorption by the ocean.



01.29.2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.8-1.ai
Source:IPCC2007a.

Figure A4.8-SET-1
Chevron Refinery Modernization Project EIR
Increases in Carbon Dioxide and Methane Concentrations Over Time

have contributed to global warming. Confidence levels of claims in this report have increased since the release of the Third Assessment Report (IPCC, 2001) due to the large number of simulations run and the broad range of available climate models.

1.1.3 Greenhouse Gases and Greenhouse Gas Emission Sources

The term “greenhouse gases” includes gases that contribute to the natural greenhouse effect, such as CO₂, CH₄, N₂O, and water vapor, as well as gases that are only human-made and that are emitted through the use of modern industrial products, such as hydrofluorocarbons (HFCs), chlorinated fluorocarbons (CFCs), and sulfur hexafluoride (SF₆). These last three families of gases, while not naturally present in the atmosphere, have properties similar to the naturally occurring greenhouse gases that also cause them to trap infrared radiation when they are present in the atmosphere, thus making them greenhouse gases. These six gases comprise the major greenhouse gases that are recognized by the Kyoto Protocol (water is not included).⁶ A seventh gas, nitrogen trifluoride, was recently recognized by the California Air Resources Board (CARB) as a greenhouse gas.⁷ There are other greenhouse gases that are not recognized by the Kyoto Protocol or CARB, due to either the smaller role that they play in climate change or the uncertainties surrounding their effects. Atmospheric water vapor is not recognized by the Kyoto Protocol or CARB because there is not an obvious correlation between atmospheric water vapor concentrations and specific human activities. Atmospheric water vapor appears to act in a positive feedback manner; higher temperatures lead to higher atmospheric water vapor concentrations, which in turn cause more global warming (IPCC, 2001).

The effect each greenhouse gas has on global warming is a combination of the volume of its emissions and its global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas will contribute to global warming relative to how much warming would be caused by the same mass of CO₂. CH₄ and N₂O are substantially more potent than CO₂, with GWPs of 21 and 310,⁸

⁶ The Kyoto Protocol sets legally binding targets and timetables for cutting the greenhouse gas emissions of industrialized countries. The U.S. has not approved the Kyoto Protocol.

⁷ Senate Bill 104, which directs CARB to regulate nitrogen trifluoride and possibly other gases found to be at least as harmful as CO₂ was signed into law by Governor Schwarzenegger in October 2009.

⁸ These GWPs are from the IPCC’s Second Assessment Report (IPCC, 1996). The more recent Fourth Assessment Report (IPCC, 2007b) includes different GWPs, but the GWPs from the Second Assessment Report will continue to be used by convention for reporting of 2013 emissions to CARB, as these values were used to set the Kyoto Protocol system and therefore are contained in this regulatory assessment. CARB has not yet decided when Fourth Assessment Report GWPs will be required for mandatory greenhouse gas reporting.

respectively. However, these natural greenhouse gases are nowhere near as potent as synthetic chemicals such as SF_6 and perfluoromethane, which have GWPs of 23,900 and 6,500, respectively compared to the GWP of 1 for CO_2 (CCAR, 2008).

Greenhouse gas emissions are typically measured in terms of mass of carbon dioxide equivalent (CO_2e). CO_2e is calculated as the product of the mass of a given greenhouse gas and its specific GWP.

The most important greenhouse gas in human-induced global warming is CO_2 . While many gases have much higher GWPs than the naturally occurring greenhouse gases, CO_2 is emitted in such vastly higher quantities that it accounts for 85% of the GWP of all greenhouse gases emitted by the United States (EPA, 2008). Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions and thus substantial increases in atmospheric CO_2 concentrations. In 2005, atmospheric CO_2 concentrations were about 379 parts per million (ppm), over 35% higher than the pre-industrial concentrations of about 280 ppm (IPCC, 2007a). In addition to the sheer increase in the volume of its emissions, CO_2 is a major factor in human-induced global warming because of its lifespan in the atmosphere of 50 to 200 years.

Concentrations of the second most prominent greenhouse gas, CH_4 , have also increased due to human activities such as rice production, degradation of waste in landfills, cattle farming, and natural gas mining. In 2005, atmospheric levels of CH_4 were more than double pre-industrial levels, up to 1,774 parts per billion (ppb) as compared to 715 ppb (IPCC, 2007a). CH_4 has a relatively short atmospheric lifespan of only 12 years but has a higher GWP than CO_2 .

N_2O concentrations increased from about 270 ppb in pre-industrial times to about 319 ppb by 2005 (IPCC, 2007a). Most of this increase can be attributed to agricultural practices (such as soil and manure management), as well as fossil-fuel combustion and the production of some acids. N_2O 's 120-year atmospheric lifespan increases its role in global warming.

Besides CO_2 , CH_4 , and N_2O , there are several gases and categories of gases that were not present in the atmosphere in pre-industrial times but now exist and contribute to warming. These include CFCs, used often as refrigerants, and their more stratospheric-ozone-friendly replacements, HFCs. Fully fluorinated species, such as SF_6 and perfluoromethane, are present in the atmosphere in relatively small concentrations but have extremely long life spans of 50,000 and 3,200 years each, making them potent greenhouse gases.

1.1.4 Current and Projected Climatic Impacts of Global Warming

A strong indication that anthropogenic global warming is currently taking place is the fact that the top seven warmest years since the 1890s occurred after 1997. Furthermore, a warming of about 0.2 degree Celsius (°C) per decade is projected by currently accepted models.

There is scientific consensus that global climate change will increase the frequency of heat extremes, heat waves, and heavy precipitation events. Other likely direct effects include an increase in the areas affected by drought and by floods, an increase in tropical cyclone activity, a rise in sea level, and recession of polar ice caps. The impacts of global warming have already been demonstrated by substantial ice loss in the Arctic (IPCC, 2007a, 2007c). Figure A4.8-SET-2 shows the rise of global temperatures, the global rise of sea level, and the loss of snow cover from 1850 to the present. Scenarios⁹ for 2100 modeled in the IPCC's Fourth Assessment Report include the following:

Temperature Increase by 2100

Low Emissions Scenario: 1.8°C (best estimate), with a range of 1.1°C to 2.9°C

High Emissions Scenario: 4.0°C (best estimate), with a range of 2.4°C to 6.4°C

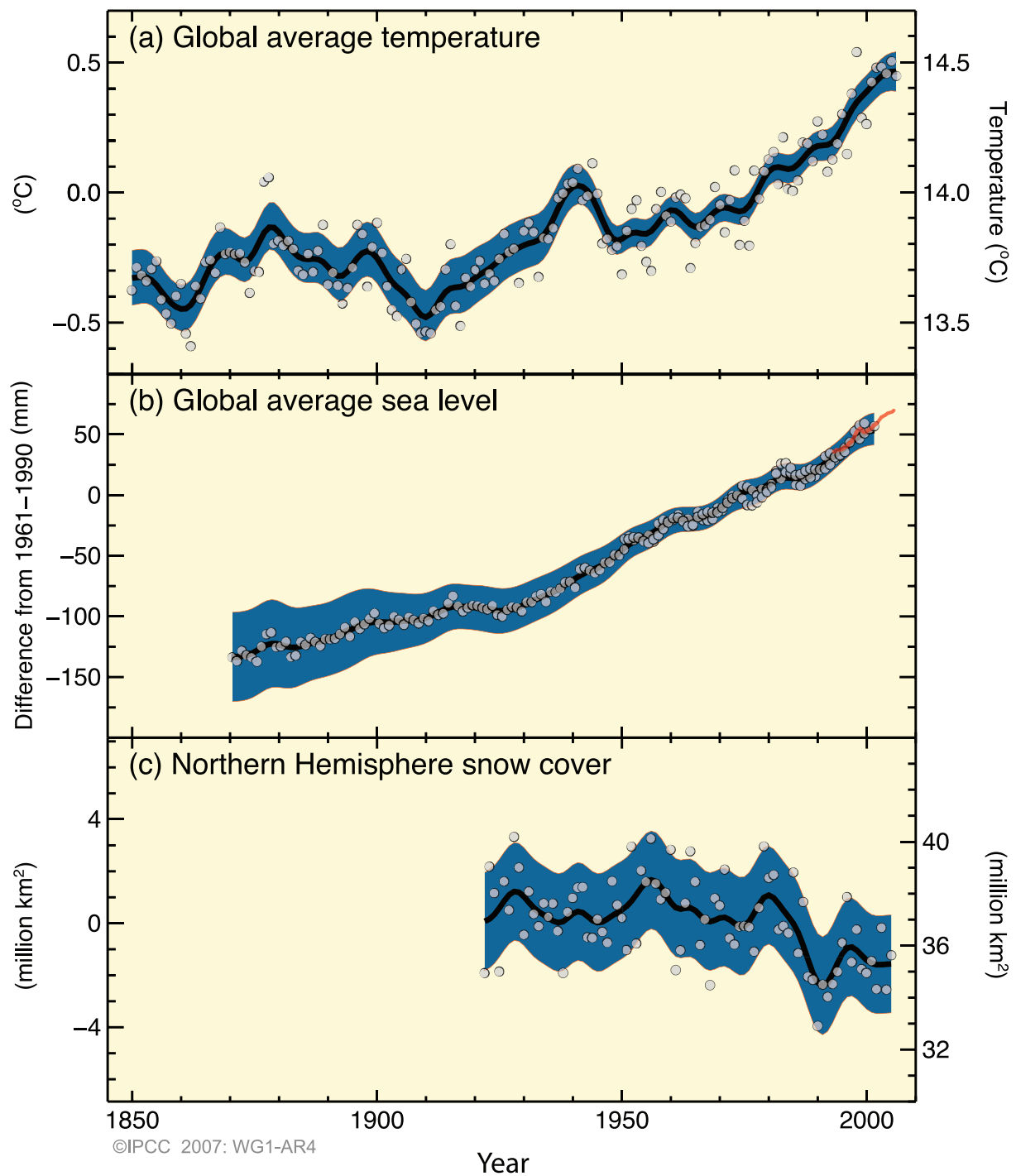
Sea Level Rise by 2100

Low Emissions Scenario: 0.18 to 0.38 meters (range)

High Emissions Scenario: 0.26 to 0.59 meters (range)

It is important to recognize that the climatic conditions experienced by Richmond over the Chevron facility's designed lifetime are likely to be different from those observed worldwide over the past century. Consequently, it is useful to consider the implications of changing climatic conditions to the facility. Temperature increases and sea level rise in modeled scenarios in the IPCC Fourth Assessment Report may result in potential implications for the Chevron facility including the following:

⁹ Future greenhouse gas emissions are the product of very complex dynamic systems, determined by driving forces such as demographic development, socio-economic development, and technological change. Their future evolution is highly uncertain. Scenarios are alternative images of how the future might unfold and are an appropriate tool with which to analyze how driving forces may influence future emission outcomes and to assess the associated uncertainties. They assist in climate change analysis, including climate modeling and the assessment of impacts, adaptation, and mitigation. The possibility that any single emissions path will occur as described in scenarios is highly uncertain. More information on the IPCC's selection of scenarios is available at <http://www.ipcc.ch/ipccreports/sres/emission/index.htm>, accessed March 1, 2013.



01.29.2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.3-21d-21e.ai
Source:IPCC2007a.

Figure A4.8–SET–2
Chevron Refinery Modernization Project EIR
Global Warming Trends and Associated Sea Level Rise and Snow Cover Decrease

- **Sea Level Rise:** Due to the facility's location, it is reasonable to consider that rising sea levels may affect the facility. It is not possible to reliably quantify these risks at this time; however, sea level rise impacts are discussed below and further reviewed in *Section 4.9, Hydrology and Water Quality* of this EIR.

Temperature: Rising temperatures could have a variety of impacts, including stress on sensitive populations (e.g., sick and elderly), additional burden on building systems (e.g., demand for air conditioning), and, indirectly, increasing emissions of greenhouse gases and criteria pollutants associated with energy generation. It is not possible to reliably quantify these risks at this time.

- **Precipitation:** Climate change is expected to alter seasonal and inter-annual patterns of precipitation. These changes continue to be one of the most uncertain aspects of future scenarios. For the Modernization Project, the most relevant direct impacts are likely to be changes in the timing and volume of stormwater runoff. It is not possible to reliably quantify the implications of these changes at this time.
- **Wildfire:** Changes in temperature and precipitation may combine to alter risks of wildfire. Changes in wildfire hazard are unlikely to affect the facility, however.
- **Water Supply Reliability:** Changes in temperature and precipitation may also influence seasonal and inter-annual availability of water supplies. Consequently, it is reasonable to consider that climate change may affect water supply reliability.

1.2 UNITED STATES SETTING

Total U.S. greenhouse gas emissions were approximately 6.6 billion metric tonnes (GT) CO₂e in 2009, 6.8 GT CO₂e in 2010, and 6.7 GT CO₂e in 2011 (EPA, 2013). Per capita emissions were approximately 21.6 metric tonnes (MT) CO₂e per person in the U.S. in 2010 (CAIT, 2013). While emissions did decrease from 2010 to 2011, U.S. emissions have increased by an annual average rate of 0.4% since 1990. Changes in fuel consumed to generate electricity—a decrease in coal consumption, an increase in natural gas consumption, and an increase in hydropower—coupled with a decrease in electricity demand due to a mild winter caused the decrease in total greenhouse gas emissions from 2010 to 2011.

Approximately 79% of the CO₂e emissions in the U.S. are comprised of CO₂ emissions from energy-related fossil fuel combustion (EPA, 2013).

According to the Emissions Database for Global Atmospheric Research (EDGAR), global greenhouse gas emission totaled approximately 50.1 GT CO₂e in 2010 (Joint Research Centre, European Commission, 2013). The top 10 emitting countries in 2010 were as follows:

China – 11.1 GT CO₂e
United States – 6.7 GT CO₂e¹⁰
India – 2.7 GT CO₂e
Russian Federation – 2.5 GT CO₂e
Indonesia – 1.9 GT CO₂e
Brazil – 1.6 GT CO₂e
Japan – 1.4 GT CO₂e
The Democratic Republic of Congo – 1.1 GT CO₂e
Germany – 0.98 GT CO₂e
Canada – 0.73 GT CO₂e

In 2011, CO₂e emissions from industrialized countries reporting their inventories to the United Nations Framework Convention on Climate Change (UNFCCC) were as follows (UNFCCC, 2013):

United States – 6.7 GT CO₂e
European Union (27 members) – 4.6 GT CO₂e
Russian Federation – 2.3 GT CO₂e
Japan – 1.3 GT CO₂e
Canada – 0.70 GT CO₂e

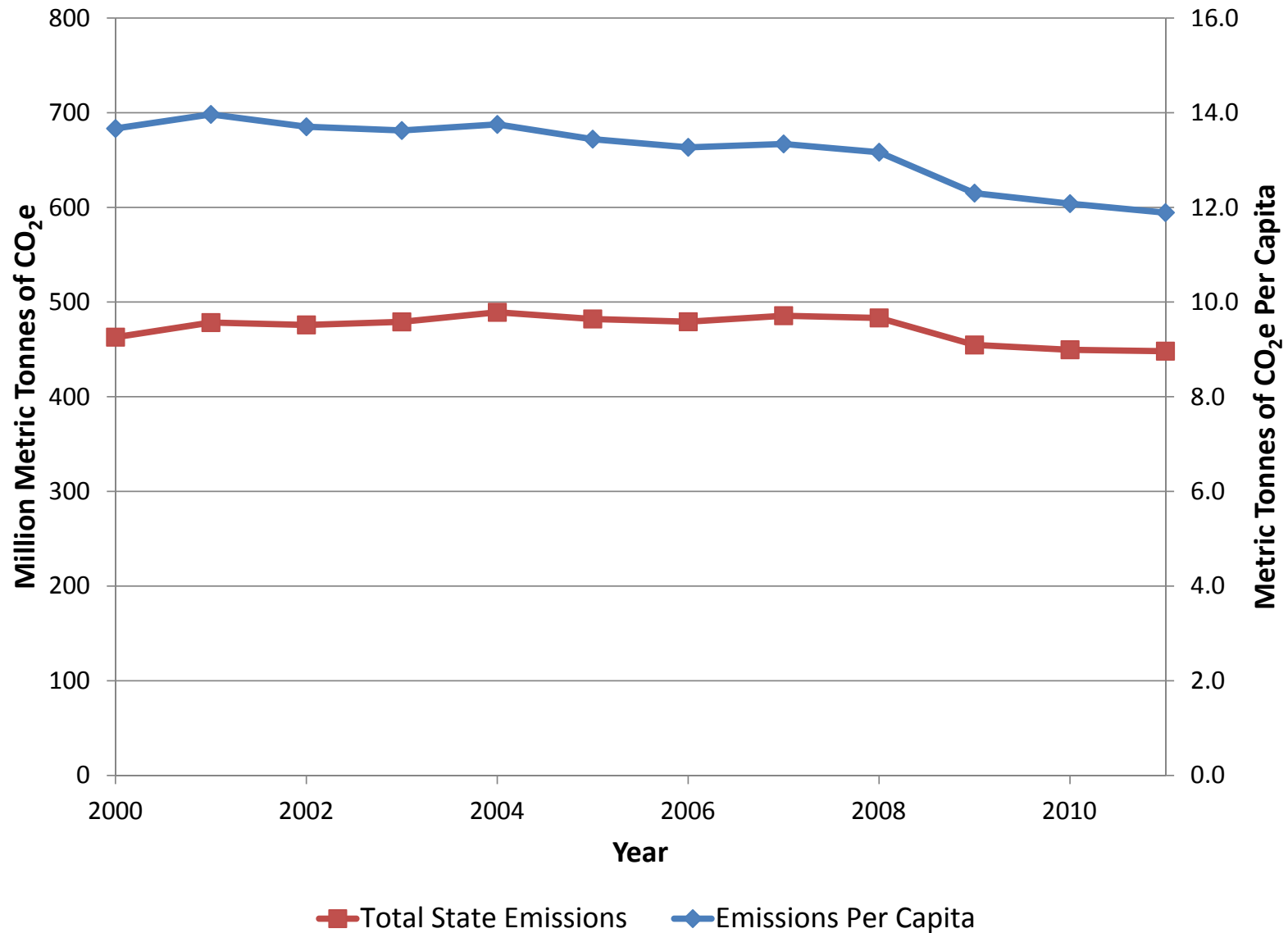
1.3 CALIFORNIA SETTING

In 2011, California emitted approximately 448 million metric tonnes (MMT) CO₂e, or about 6.7% of the total U.S. emissions where California is over 12% of the US population. Figure A4.8-SET-3 shows greenhouse gas emissions in California from 2000 to 2011.

In 2011, the largest source of greenhouse gas emissions in California (approximately 38%) was the transportation sector (CARB, 2013a). High GWP gases¹¹ accounted for approximately 3% of the CO₂e emissions in 2011 (CARB, 2013a). California's per-capita greenhouse gas emissions were 11.8 MT CO₂e per person in 2010 and 11.9 MT CO₂e per person in 2011 (CARB, 2013a). Figure A4.8-SET-4 shows California's per-capita greenhouse gas emissions compared to other states and the U.S. as a whole in 2010. Since 2000, California's per-capita greenhouse gas emissions have trended downward despite population growth, with the exception of a slight increase from 2010 to 2011. An overall decrease in gross greenhouse gas emissions since 2004 has also contributed to the decrease in per-capita greenhouse gas emissions (CARB, 2013a). Figure A4.8-SET-3 shows the downward trend in both overall emissions and per-capita emissions.

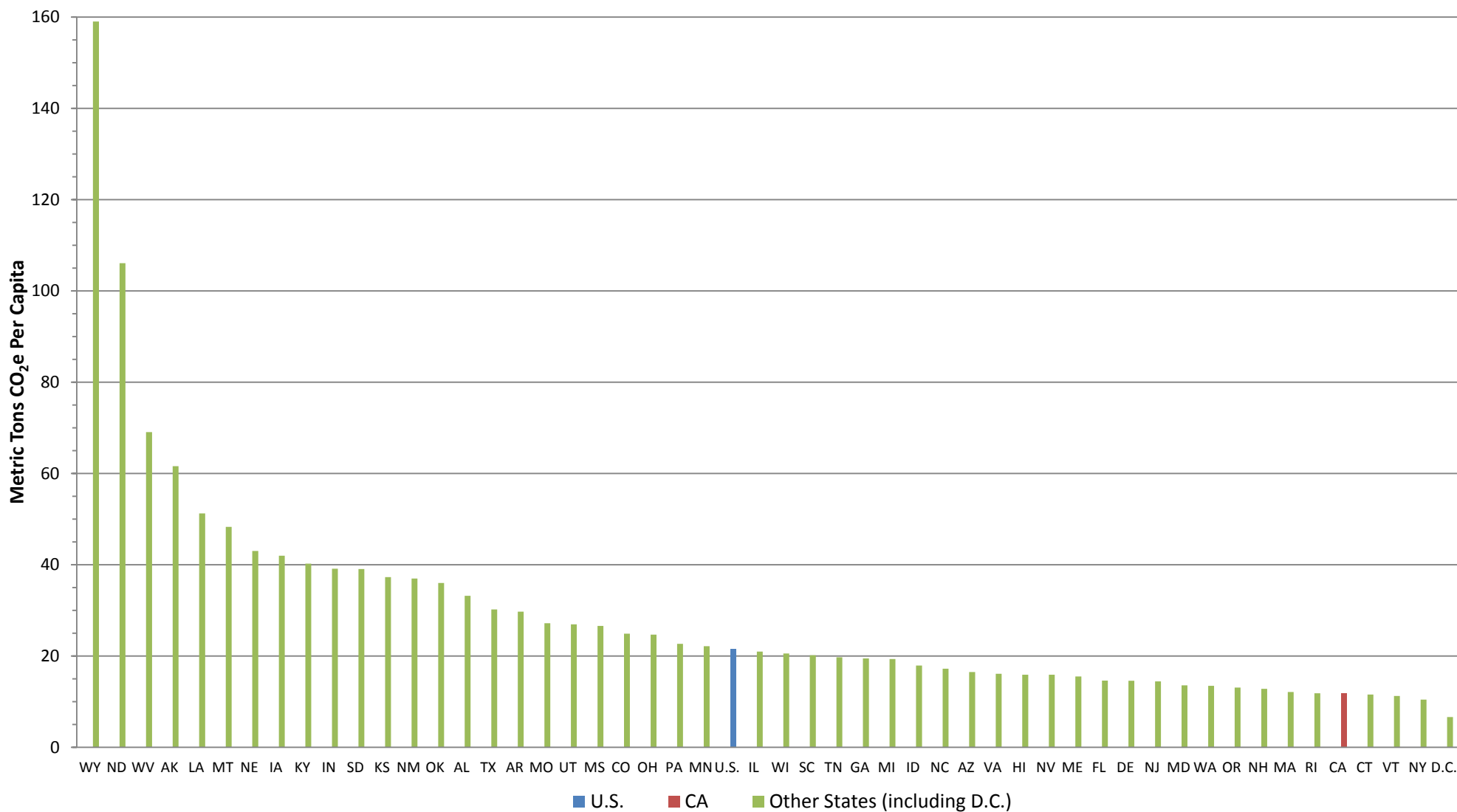
¹⁰ Slight difference between EPA value (6.8 GT CO₂e) and EDGAR value (6.7 GT CO₂e) may be due to differences in sources and methodology used by the two organizations.

¹¹ Such as HFCs and PFCs.



01.31.2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.8-3.ai
Source: CARB, 2013a; CA DOF, 2012; US Census, 2011

Figure A4.8-SET-3
Chevron Refinery Modernization Project EIR
GHG Emissions in California (2000-2011)



01.31.2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.8-4.ai

Source: CAIT 2013.

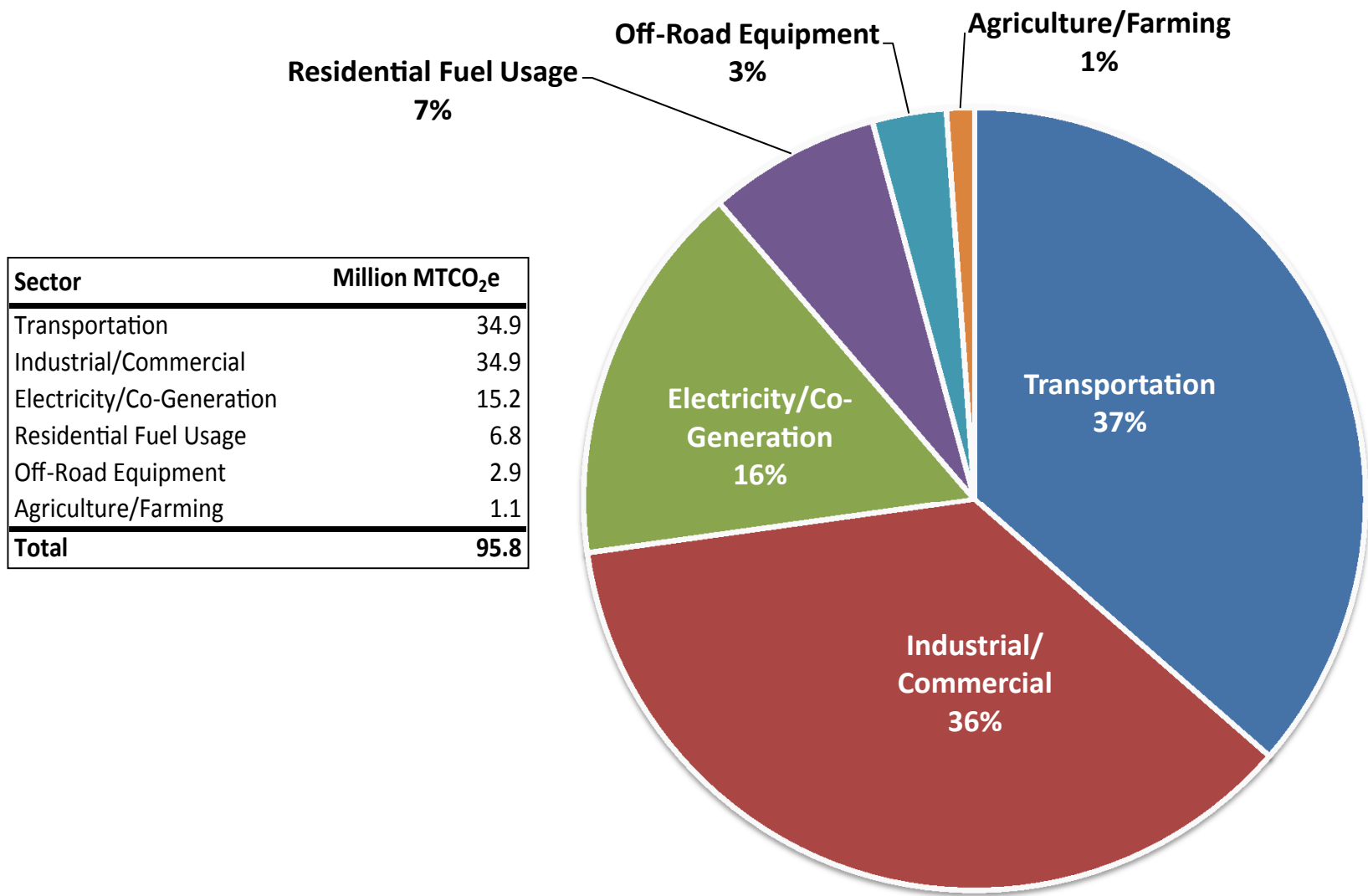
Figure A4.8-SET-4
Chevron Refinery Modernization Project EIR
U.S. GHG Emissions per Capita (2010)

In 2011, emissions from facilities required to report their greenhouse gas inventories to CARB under the California Mandatory Reporting Rule dropped for the third straight year from 133 MMT CO₂e in 2008 to 111 MMT CO₂e in 2011, coming in below the cap that CARB set for the first year of cap-and-trade emissions trading in 2013. The majority of emissions reductions were achieved in the electricity generation sector. CARB attributed the reductions in this sector to both increases in renewable power generation and decreases in state electricity consumption (CARB, 2013a). CARB forecasted 463 MMT CO₂e emissions in 2011; actual emissions were approximately 3% lower than forecasted. The forecast projects California's greenhouse gas emissions will reach approximately 507 MMT CO₂e by 2020 if no measures are taken to mitigate or decrease emissions (CARB, 2013b).

1.4 BAY AREA SETTING

The Bay Area Air Quality Management District (BAAQMD) published an updated inventory of greenhouse gas emissions in the San Francisco Bay Area Air Basin (Bay Area Basin) in February 2010 based on a 2007 inventory year. Total greenhouse gas emissions within the Bay Area Basin in 2007 were estimated as 95.8 MMT CO₂e. Fossil fuel consumption in the transportation sector and the industrial/commercial sector were the two largest sources of the Bay Area Basin's greenhouse gas emissions in 2007, each contributing about 36.4% of greenhouse gas emissions in the Bay Area Basin. The transportation and industrial/commercial sectors were followed by electricity/co-generation (15.9%), residential fuel usage (7.1%), off-road equipment (3.1%), and agriculture/farming (1.2%), as shown in Figure A4.8-SET-5 (BAAQMD, 2010).

To reduce future greenhouse gas emissions, the 2010 BAAQMD CEQA Guidelines, updated May 2011, (2010 BAAQMD CEQA Guidelines) suggest adopting a climate action plan that includes both a greenhouse gas emission inventory and a forecast of future emissions. In accordance with the 2010 BAAQMD CEQA Guidelines, the BAAQMD has created a forecast of greenhouse gas emissions through 2020 by applying sector-specific growth factors to the baseline year emissions (BAAQMD, 2011b). The BAAQMD greenhouse gas Plan Level Guidance document identifies specific growth metrics and data sources for the various sectors including residential, commercial, industrial, transportation, waste, water treatment, and agriculture (BAAQMD, 2011a). The BAAQMD projects that greenhouse gas emissions will increase by approximately 1.4% per year if current trends continue without mitigation (BAAQMD, 2010).



01:31.2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.8-5.ai
 Source: BAAQMD 2010.

Figure A4.8-SET-5
 Chevron Refinery Modernization Project EIR
 2007 San Francisco Bay Area GHG Emissions by Sector

1.5 LOCAL SETTING

The City of Richmond prepared its first greenhouse gas inventory in February 2009 for an inventory year of 2005, in conjunction with Local Governments for Sustainability. The 2005 inventory¹² quantifies greenhouse gas emissions from municipal government operations as well as from the community within Richmond's city limits. Total greenhouse gas emissions were estimated as 5.8 MMT CO₂e, with municipal sources contributing less than 0.2% of the emissions. The Chevron facility contributed 60% of emissions in the commercial/industrial sector (City of Richmond and ICLEI, 2009). The rest of the emissions were attributed to other Richmond sources. These sources are commercial/industrial (70%), transportation (22%), residential (5%), and waste generation (2%) and landfill (1%). Figure A4.8-SET-6 shows the percentage of greenhouse gas emissions from the Chevron facility and the percentage of greenhouse gas emissions from other Richmond sources, broken down by sector. Figures A4.8-SET-7 and A4.8-SET-8 show the breakdown of greenhouse gas emissions by sector for Oakland and Contra Costa County, respectively. Oakland is shown here for comparison purposes since it is similarly situated with areas of heavy industry. And similar to Richmond, large sources of greenhouse gas emissions are outside the control of the City of Oakland.

1.6 CLIMATE CHANGE EFFECTS

The California Natural Resources Agency (CNRA) (CNRA, 2009a, 2009b) prepared a document that discusses the impacts of climate change upon California, as well as California's climate adaptation strategy. A first-year progress report was subsequently published 1 year after release of the original document (CNRA, 2010). In December 2013, CNRA released a draft update to the 2009 Climate Adaptation Strategy for public comment (CNRA, 2013). This update discusses nine broad areas that will be affected by climate change, developed seven strategies to help safeguard California, and summarized efforts to date. The document's goal is to protect California by reduce climate risks by helping inform decision makers. The categories below are topics emphasized in the November 2008 Executive Order (S-13-08), which called on State agencies to develop California's first strategy to identify and prepare for these expected climate impacts.

¹² Though the inventory was prepared in 2009, a baseline year of 2005 was chosen due to data availability and the decision to prepare a baseline inventory for the same year as other Bay Area cities.

Most Recent Reported Richmond GHG Inventory

(Chevron and Other Richmond Emission Estimates Combined):

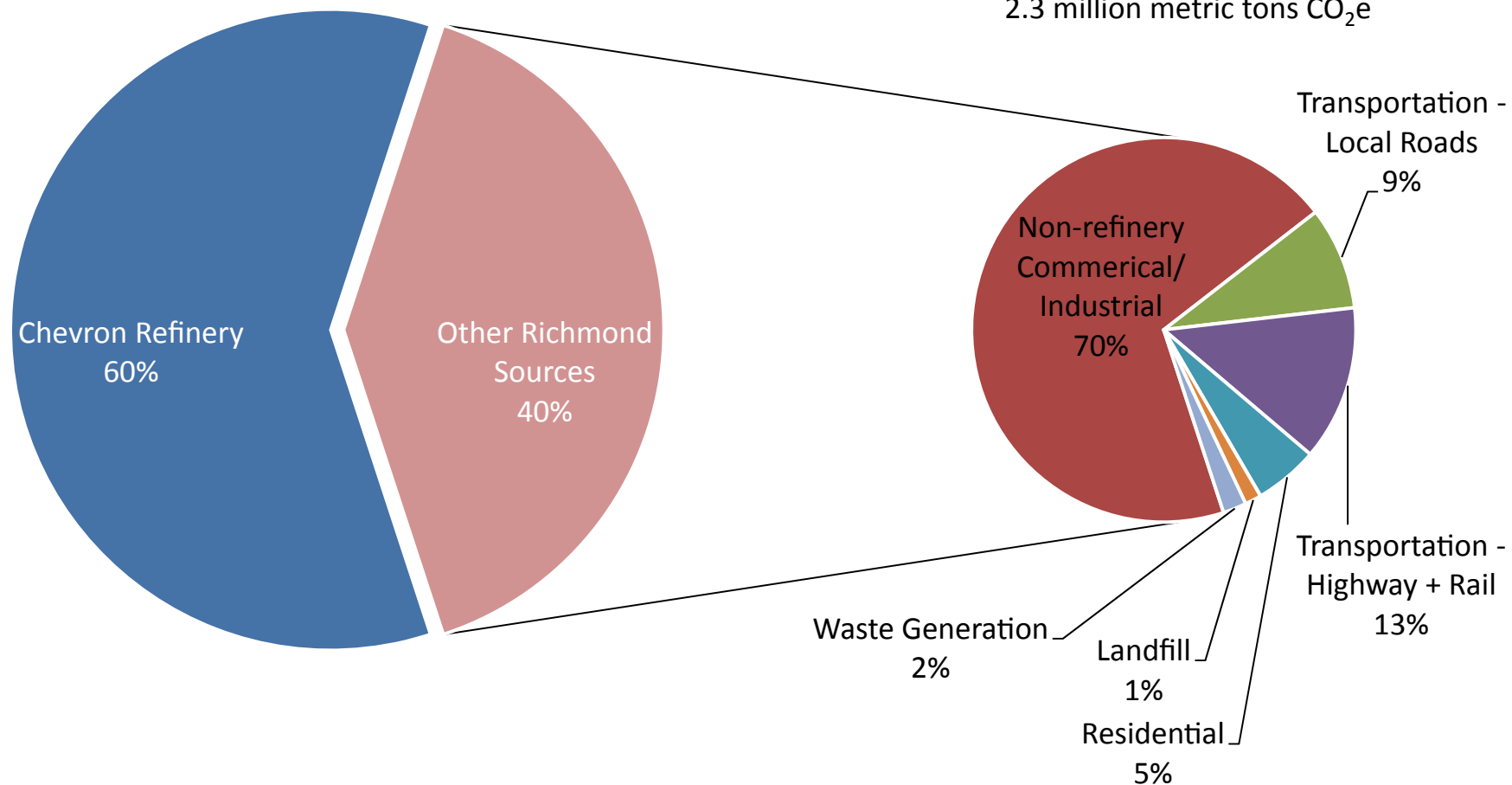
2.3 million metric tons CO₂e (Other Richmond Sources)

3.5 million metric tons CO₂e (Chevron)

5.8 million metric tons CO₂e (total)

Other Richmond Emissions:

2.3 million metric tons CO₂e

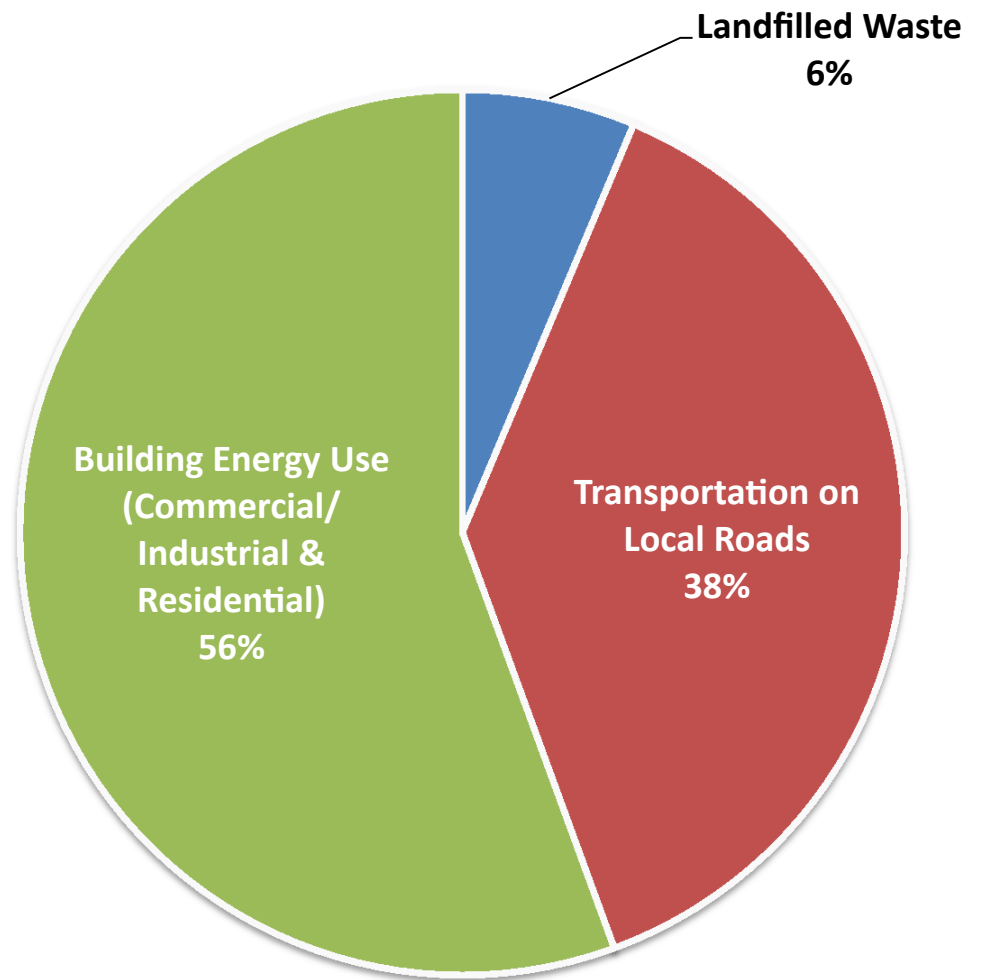


01:31.2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.8-5.ai

Source: City of Richmond and ICLEI 2009.

Figure A4.8-SET-6
Chevron Refinery Modernization Project EIR
City of Richmond GHG Emissions (2005)

Sector	MTCO ₂ e
Landfilled Waste	126,361
Transportation on Local Roads	759,884
Building Energy Use (Commercial/Industrial & Residential)	1,108,904
Total	1,995,149



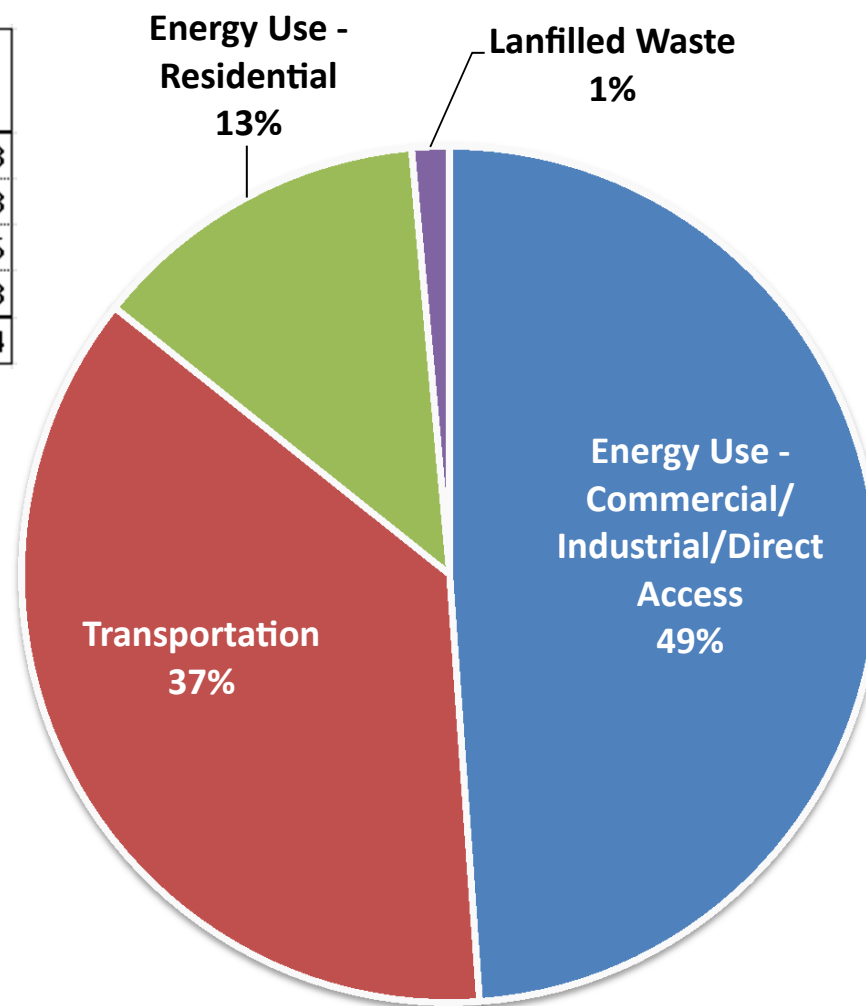
01.31.2014 file path: U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.8-7.ai

Source: City of Oakland 2011.

NOTE: This figure depicts GHG emissions over which the City Government has a relatively high degree of influence. These sources include emissions occurring within Oakland's boundaries, as well as external emissions from citywide electricity consumption and waste sent to landfill. This does not include port operations, transportation on highways, air travel on flights departing from Oakland, or upstream lifecycle GHG emissions associated with material consumption. A full list of Oakland GHG emissions by source can be found in the Draft Appendix to the City of Oakland Energy and Climate Action Plan (March 1, 2011).

Figure A4.8-SET-7
Chevron Refinery Modernization Project EIR
City of Oakland GHG Emissions (2005)

Sector	County Total (MTCO ₂ e)
Energy Use - Commercial/Industrial/Direct Access	6,030,798
Transportation	4,542,073
Energy Use - Residential	1,587,655
Lanfilled Waste	175,378
Total	12,335,904



01:31:2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\Illustrator Files\Figure 4.8-7.ai

Source: Contra Costa County 2008

Figure A4.8-SET-8
Chevron Refinery Modernization Project EIR
Contra Costa County GHG Emissions (2005)

1.6.1 Changing Temperatures

The CNRA described new projections by Massachusetts Institute of Technology modelers predicting a median probability of surface warming of 5.2°C by the year 2100, which is much higher than previous modeling completed in 2003 (Chandler, 2009). Researchers modeled temperature changes specifically related to California (Moser et al., 2008). The model predicted greater temperature increases in summer than in winter and larger increases inland compared to the coast.

1.6.2 Tipping Elements

The CNRA emphasized “tipping elements,” which bring about “abrupt changes that could push natural systems past thresholds beyond which they could not recover.” According to the CNRA, there are five main events (see Table A4.8-SET-1) that could bring about abrupt environmental changes. Each of these five has a particular tipping temperature at which the event is likely to occur. The consequence of crossing each threshold could cause a 7- to 12-meter rise in sea level over the course of several centuries.

TABLE A4.8-SET-1 TIPPING ELEMENTS THAT COULD TRIGGER ABRUPT ENVIRONMENTAL CHANGES

Additional Warming (°F)	Environmental Change	Length of Time for Change to Complete
1-3	Rapid Arctic sea ice melt	10 years
2-4	Irreversible melting of the Greenland Ice Sheet	300 years or more
5-9	Irreversible melting of the West Antarctic Ice Sheet	300 years or more
5-7	Amazon forest die-back	None given
6-11	Intensification of El Niño Southern Oscillation cycles	None given

Note: °F = degrees Fahrenheit

Source: CNRA, 2009a.

1.6.3 Extreme Natural Events

In addition, the CNRA listed extreme natural events are likely to occur, including higher nighttime temperatures and longer, more frequent heat waves overall; a 12–35% decrease in precipitation levels by mid- to late-21st century; increased evaporation and faster incidences of snowmelt that will increase drought conditions; and more precipitation in the form of rain as compared to snow that

will decrease water storage in California during the dry season and increase flood events during the wet season (Cayan et al., 2009).

1.6.4 Precipitation Changes

The CNRA also stated that climate change will intensify California's "Mediterranean climate pattern," with the majority of annual precipitation occurring between November and March and drier conditions during the summer (Cayan et al., 2006). This will increase droughts and floods and will affect river systems. One of the ways to quantify potential impacts related to river systems was by calculating a rise in water temperature and its effects on fisheries resources (Crossin et al., 2008).

1.6.5 Sea Level Rise

The CNRA stated that sea level rise can cause damage to coastal communities and loss of land, which according to a study published by the University of California-Berkeley Department of Agricultural and Resource Economics, could reach tens of billions of dollars per year in direct costs and trillions of dollars of assets in collateral risk (Kahrl and Roland-Holst, 2008). Current calculations of sea level rise from 1900 to 2000 estimate approximately 7 inches along the California coast (Cayan et al., 2006). Further, up to 55 inches of sea level rise globally by the end of the 21st century is predicted under the "business as usual" model (Cayan et al., 2009).

1.6.6 Water Supply Issues

California Health and Safety Code Section 38501(a) recognizes that climate change "poses a serious threat to the economic well-being, public health, natural resources, and the environment of California," and notes that "the potential adverse impacts of [climate change] include...reduction in the quality and supply of water to the state from the Sierra snowpack." As most of the state, including the San Francisco Peninsula, depends on surface water supplies originating in the Sierra Nevada, this water supply reduction is a concern.

Most of the scientific models addressing climate change show that the primary effect on California's climate would be a reduced snow pack and a shift in stream-flow seasonality. A higher percentage of the winter precipitation in the mountains would likely fall as rain rather than as snow in some locations, reducing the overall snowpack. Further, as temperatures rise, snowmelt is expected to occur earlier in the year, resulting in peak runoff that would likely come a month or so earlier. The end result would be that the state may not have sufficient surface storage to capture the resulting early runoff, and so, absent construction of additional water storage projects, a portion of the current

supplies would be lost to the oceans, rather than be available for use in the state's water delivery systems.

1.6.7 Low Sea Ice Levels

The CNRA stated that substantial sea ice melting from Greenland and the West Antarctic Ice Sheet has the potential to further raise sea levels. The sea ice extent in the Western Nordic Seas (i.e., Greenland, Norway, and Iceland Seas) is at the lowest level observed in the last 800 years. The implication is that a substantial reduction in sea ice in the Arctic sea promotes alterations in atmospheric circulation and precipitation patterns that extend to the mid-latitudes (e.g., the California coast). Additionally, it was reported that the variations in sea ice extent are correlated with changes in sea surface temperatures and atmospheric and ocean heat transport from the North Atlantic (Fauria et al., 2009).

The West Antarctic Ice Sheet is a marine-based ice sheet with edges that flow into floating ice shelves. Both the main sheet and the surrounding shelves have been showing signs of shrinking and collapsing due to global warming. Researchers have tracked the fate of at least nine shelves that have receded or collapsed around the Antarctic Peninsula in the past 50 years (Doyle, 2009).

1.6.8 Ocean Chemistry

The CNRA also noted that an emerging effect from climate change may be acidification of the ocean. In turn, acidification will affect the ability of hard-shelled invertebrates to create their skeletal structures (Risien, 2009). The implications of this change are major losses to shellfish industries and shifts in food resources for ocean fisheries. The primary contributing factors were cited as the increasing level of CO₂ and weather pattern shifts. Increases in CO₂ in the atmosphere result in increased uptake of CO₂ by the oceans, which result in decreased pH (acidification). Weather pattern shifts change the amount of calcium carbonate being delivered by rivers from sources stored in rocks, which further exacerbates the ability of invertebrates to form calcified shells (Griffith et al., 2008).

One of the main contributing factors to CO₂, outside of human influences, is melting permafrost. When permafrost thaws, it releases carbon into soil or beneath lakes and releases CO₂ and methane into the atmosphere. Scientists are now estimating that there is more than twice the total amount of carbon stored in permafrost as there is in atmospheric CO₂, and that microbial decomposition of organic carbon in permafrost “could amount to roughly half [of the CO₂ emissions] resulting from global land-use change during this century” (Schuur et al., 2008; ScienceDaily, 2008).

1.6.9 Socio-Economic Issues

Global temperature increases may have significant negative impacts on ecosystems, natural resources, and human health. Ecosystem structure and biodiversity will be compromised by temperature increases and associated climatic and hydrological disturbances (IPCC, 2007b). The availability and quality of potable water resources may be compromised by increased salinization of ground water due to sea level rise, decreased supply in semi-arid and arid locations, and poorer water quality arising from increased water temperatures and more frequent floods and droughts (IPCC, 2008). These impacts on freshwater systems, in addition to the effects of increased drought and flood frequencies, can reduce crop productivity and food supply.

In addition to compromising food and water resources, climatic changes associated with global warming can affect human health and welfare through other means. Warmer temperatures can cause more ground-level ozone, a pollutant that causes eye irritation and respiratory problems. Ranges of infectious diseases will likely increase, and some areas will face greater incidences of illness and mortality associated with increased flooding and drought events.

In its April 2007 Working Group II Report, the IPCC provided an assessment of the “current scientific understanding of the impacts of climate change on natural, managed and human systems, the capacity of these systems to adapt and their vulnerability” (IPCC, 2007b). Here, the IPCC states that, although some people will gain and some will lose because of global climate change, the overall change will be one of social and economic losses.

California in particular is an area that could be negatively affected by global warming. Global warming could alter the seasonal pattern of snow accumulation and snowmelt that serve as primary sources for California’s drinking water and irrigation water supplies. The scientific community projects extensions in the periods of high forest fire risk. Climatic changes would also affect agriculture, a major California industry, which could result in economic losses. For example, the heat wave in July 2006 is estimated to have cost the California dairy industry in excess of \$1 billion (Environment News Service, 2006).

1.7 REFERENCES

Association of Environmental Professionals (AEP). 2007. *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents*. Accessed March 1, 2013. http://www.placer.ca.gov/Departments/CommunityDevelopment/EnvCoordSvcs/EIR/Homewood/draft_eir/~media/cdr/ECS/EIR/Homewood/ClimateChange/1_AEP2007.ashx.

- Bay Area Air Quality Management District (BAAQMD). 2010. *Source Inventory of Bay Area Greenhouse Gas Emissions: Base Year 2007*, February. Accessed March 1, 2013. http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Emission%20Inventory/regionalinventory2007_2_10.ashx.
- Bay Area Air Quality Management District (BAAQMD). 2011a. *BAAQMD GHG Plan Level Guidance*. Accessed October 18, 2013. <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/GHG%20Plan%20Level%20Guidance.ashx>.
- Bay Area Air Quality Management District (BAAQMD). 2011b. *California Environmental Quality Act Air Quality Guidelines*. Accessed December 1, 2013. http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx.
- California Air Resources Board (CARB). 2013a. *California Greenhouse Gas Emission Inventory*. October. Accessed October 18, 2013. <http://www.arb.ca.gov/cc/inventory/data/data.htm>.
- California Air Resources Board (CARB). 2013b. *Greenhouse Gas Inventory – 2020 Emissions Forecast*. Accessed October 18, 2013. <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>.
- California Climate Action Registry (CCAR). 2008. *General Reporting Protocol – Reporting Entity-Wide Greenhouse Gas Emissions*. SAR values, Appendix C. Accessed March 1, 2013. http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf.
- California Department of Finance, 2012. *E-4 Population Estimates for Cities, Counties, and the State, 2001-2010, with 2000 & 2010 Census Counts*. <http://www.dof.ca.gov/research/demographic/reports/estimates/e-4/2001-10/view.php>.
- California Natural Resources Agency (CNRA). 2009a. *California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008*. Accessed March 1, 2013. http://resources.ca.gov/climate_adaptation/docs/Statewide_Adaptation_Strategy.pdf.
- California Natural Resources Agency (CNRA). 2009b. *California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008*. Accessed March 1, 2013.

http://resources.ca.gov/climate_adaptation/docs/Statewide_Adaptation_Strategy.pdf.

California Natural Resources Agency (CNRA). 2010. *2009 California Climate Adaptation Strategy – First Year Progress Report to the Governor of the State of California*. Accessed March 1, 2013. <http://www.energy.ca.gov/2010publications/CNRA-1000-2010-010/CNRA-1000-2010-010.PDF>.

California Natural Resources Agency (CNRA). 2013. *Safeguarding California: Reducing Climate Risk*. An update to the 2009 California Climate Adaptation Strategy. Public Draft. Accessed February 12, 2014. http://resources.ca.gov/climate_adaptation/docs/Safeguarding_California_Public_Draft_Dec-10.pdf.

Cayan, D., A.L. Luers, M. Hanemann, G. Franco, and B. Croes. 2006. *Scenarios of Climate Change in California: An Overview (White Paper, CEC-500-2005-203-SF)*. Sacramento, CA: CCCC, February. Accessed March 1, 2013. <http://www.energy.ca.gov/2005publications/CEC-500-2005-186/CEC-500-2005-186-SF.PDF>.

Cayan, D., M. Tyree, M. Dettinger, H. Hidalgo, T. Das, E. Maurer, P., Bromirski, N. Graham, and R. Flick. 2009. *Climate Change Scenarios and Sea Level Rise Estimates for the California 2008 Climate Change Scenarios Assessment. PIER Research Report, CEC-500-2009-014*, Sacramento, CA, California Energy Commission. Accessed December 2013. http://resources.ca.gov/climate_adaptation/docs/Statewide_Adaptation_Strategy.pdf.

Chandler, David, 2009. *Climate Change Odds Much Worse Than Thought: New Analysis Shows Warming Could Be Double Previous Estimates*. MIT News Office, May 19. Accessed March 1, 2013. <http://web.mit.edu/newsoffice/2009/roulette-0519.html>.

City of Oakland, 2011. *City of Oakland Draft Energy and Climate Action Plan*, March 1 Edition. Accessed October 419, 2013. <http://www2.oaklandnet.com/oakca1/groups/pwa/documents/policy/oak024383.pdf>.

City of Richmond. 2009. *GHG Inventory Presentation to City Council*, March. Accessed March 1, 2013. <http://www.ci.richmond.ca.us/DocumentView.asp?DID=4280>.

- City of Richmond and Local Governments for Sustainability (ICLEI). 2009. *2005 Greenhouse Gas Emissions Inventory*, February. Accessed March 1, 2013. <http://www.ci.richmond.ca.us/DocumentCenter/Home/View/4279>.
- Contra Costa County. 2008. *Greenhouse Gas Emissions Inventory Report*. June. <http://www.cccounty.us/DocumentCenter/Home/View/2253>
- Crossin, G.T., S.G. Hinch, S.J. Cooke, D.W. Welch, D.A. Patterson, S.R.M. Jones, A.G. Lotto, R.A. Leggatt, M.T. Mathes, J.M. Shrimpton, G. Van Der Kraak, and A.P. Farrell. 2008. *Exposure to High Temperature Influences the Behavior, Physiology, and Survival of Sockeye Salmon During Spawning Migration*. Canadian Journal of Zoology. 86(2): pp. 127-140.
- Doyle, A. 2009. *Antarctic Ice Shelf Set To Collapse Due To Warming*. Roche, A. (ed) In Reuters UK. Thomas Reuters. Accessed March 1, 2013. <http://uk.reuters.com/articlePrint?articleId=UKTRE50I4G520090119>.
- Environment News Service. 2006. *California Heat Wave Costs Agriculture Industry Billions*. August 4. Accessed March 1, 2013. <http://www.ens-newswire.com/ens/aug2006/2006-08-04-09.html#anchor4>.
- Fauria, M., A. Grinsted, S. Helama, J. Moore, M. Timonen, T. Martma, E. Isaksson, and E. Eronen. 2009. *Unprecedented Low Twentieth Century Winter Sea Ice Extent in the Western Nordic Seas Since A.D. 1200*. *Climate Dynamics*, June 12.
- Griffith, E.M., A. Paytan, K. Caldeira, T. D. Bullen, and E. Thomas. 2008. *A Dynamic Marine Calcium Cycle During the Past 28 Million Years*. *Science*. December 12.
- Intergovernmental Panel on Climate Change (IPCC). [year]. *Second Assessment Report*. 1996.
- Intergovernmental Panel on Climate Change (IPCC). 2001. *Third Assessment Report*. Accessed November 8, 2013. http://www.grida.no/climate/ipcc_tar/wg1/143.htm and http://www.grida.no/climate/ipcc_tar/wg1/268.htm.
- Intergovernmental Panel on Climate Change (IPCC). 2007a. *Summary for Policymakers*. In: *Climate Change 2007: The Physical Science Basis*. Accessed March 1, 2013. <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>.

- Intergovernmental Panel on Climate Change (IPCC). 2007b. *IPCC Fourth Assessment Report: Climate Change 2007: Working Groups I, II, and III Reports*. Accessed March 1, 2013.
http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#1.
- Intergovernmental Panel on Climate Change (IPCC). 2007c. *Summary for Policymakers*. In: *Climate Change 2007: Impacts, Adaption and Vulnerability*. Accessed March 1 and November 26, 2013.
<http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>.
- Intergovernmental Panel on Climate Change (IPCC). 2008. *Technical Paper VI: Climate Change and Water*. Accessed March 1, 2013.
<http://www.ipcc.ch/pdf/technical-papers/climate-change-water-en.pdf>.
- Joint Research Centre, European Commission. 2013. *GHG (CO₂, CH₄, N₂O, F-gases) emission time series 1990-2010 per region/country*. Emission Database for Global Atmospheric Research. Accessed October 17, 2013.
<http://edgar.jrc.ec.europa.eu/overview.php?v=GHGs1990-2010>.
- Kahrl, F. and D. Roland-Holst. 2008. *California Climate Risk and Response*. Berkeley, CA: University of California-Berkeley, Department of Agricultural and Resource Economics. Accessed December 2013.
http://www.nextten.org/pdf/report_CCRR/California_Climate_Risk_and_Response.pdf.
- Moser, S., G. Franco, S. Pittiglio, W. Chou, W. and D. Cayan. 2008. *The Future is Now: An Update on Climate Change Science Impacts and Response Options for California. 2008 Climate Change Impacts Assessment Project - Second Biennial Science Report to the California Climate Action Team*, CEC-500-2008-071, Sacramento, CA.
- Office of Planning and Research (OPR). 2008. Technical Advisory. *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*. June 19. Accessed March 1, 2013. <http://opr.ca.gov/docs/june08-ceqa.pdf>.
- Risien, J. (ed.). 2009. *West Coast Regional Marine Research and Information Needs*. Corvallis, Oregon: Oregon Sea Grant. ORESU-Q-09-001.
- Schuur, E.A.G., J. Bockheim, J.G. Canadell, E. Euskirchen, C.B. Field, S.V. Goryachkin, S. Hagemann, P. Kuhry, P.M. Lafleur, H. Lee, G. Mazhitova, F.E. Nelson, A. Rinke, V.E. Romanovshy, N. Shiklomanov, C. Tarnocai, S. Venevsky, J.G. Vogel, and S.A. Zomov. 2008. *Vulnerability of Permafrost*

Carbon to Climate Change: Implications for the Global Carbon Cycle.
BioScience. 58(8), pp. 701-714.

ScienceDaily. 2008. *Thawing Permafrost Likely To Boost Global Warming, New Assessment Concludes*, September 2. Accessed March 1, 2013.
<http://www.sciencedaily.com/releases/2008/09/080901084854.htm>.

State of California. 2009. Senate Bill 104 (Oropeza). California Global Warming Solutions Act of 2006: nitrogen trifluoride. Accessed February 23, 2014.
http://www.leginfo.ca.gov/pub/09-10/bill/sen/sb_0101-0150/sb_104_bill_20091011_chaptered.pdf

United Nations Framework Convention on Climate Change (UNFCCC). 2013. *Time Series Annex I: GHG Total Excluding Land Use, Land-Use Change and Forestry*. Accessed October 17, 2013. http://unfccc.int/ghg_data/ghg_data_unfccc/time_series_annex_i/items/3841.php.

United States Census Bureau. 2011. *2011 American Community Survey 1- year Estimates Total Population*.
http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_1YR_B01003&prodType=table.

United States Environmental Protection Agency (EPA). 2008. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006*. Accessed March 1, 2013.
http://epa.gov/climatechange/emissions/downloads/ghgemissions/08_CR.pdf.

United States Environmental Protection Agency (EPA). 2013. *Inventory of US Greenhouse Gas Emissions and Sinks 1990-2011*. Accessed October 17, 2013. <http://www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2013-Main-Text.pdf>.

World Resources Institute Climate Analysis Indicators Tool (CAIT). 2013. *U.S. State GHG Emissions*. Accessed October 18, 2013. <http://www.wri.org/our-work/project/cait-climate-data-explorer>.

APPENDIX 4.10

Consistency Evaluation of Relevant General
Plan Goals, Policies, and Actions

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
I. ECONOMIC DEVELOPMENT ELEMENT		
1. Goal ED2: Quality Jobs and Revenue Create an attractive business environment that will support business recruitment, expansion and retention. Attract a variety of small and large firms, national and local establishments, and up-and-coming industries and employers across a variety of economic sectors. Offer a broad range of quality employment opportunities for current and future residents with varying degrees of experience, education and training.	This Goal addresses the City's role in creating an attractive business environment. While individual Project applicants have no jurisdiction in directly implementing such policies, the Modernization Project is consistent with this Goal. As described in <i>Section 4.12, Employment, Population, and Housing</i>, the Project would retain the existing workforce and result in 29 additional new permanent full-time employees, approximately 1,002 construction jobs, and additional weatherization and other employment opportunities through the Community Greenhouse Gas Reduction Program. As Richmond's largest existing employer, the Chevron Facility offers employment opportunities to a local labor pool with a variety of experience, education and training.	4.10 Land Use, Plans, and Policies 4.12 Employment, Population, and Housing
2. Goal ED3: An Educated and Skilled Work Force Develop a skilled and educated workforce to support existing businesses and emerging industries. Equip residents with the skills and education necessary to participate in local and regional economies across a variety of sectors, and be fully engaged in the workforce. Encourage existing employers to expand and new employers to move their operations into the City by providing a strong local labor pool.	This Goal addresses the City's role in developing a skilled and educated workforce. While individual Project applicants have no jurisdiction in directly implementing this Goal, the Modernization Project is consistent with this Goal. As described in <i>Section 4.12, Employment, Population, and Housing</i>, the Project would retain the existing workforce and result in additional jobs employing a local labor pool with a variety of experience, education and training.	4.10 Land Use, Plans, and Policies 4.12 Employment, Population, and Housing
3. Policy ED1.4: Air Quality Support regional policies and efforts that improve air quality to protect human and environmental health and minimize disproportionate impacts on sensitive population groups. Work with businesses and industry, residents and regulatory agencies to reduce the impact of direct, indirect and cumulative	The Project is consistent with this Policy. The Project supports regional policies and efforts that improve air quality to protect human and environmental health by incorporating objectives that reflect a commitment to decreasing harmful impacts from emissions and protecting the community from environmental hazards, including a commitment to no net increase in criteria air pollutants, greenhouse gas emissions, and public health risks from air pollution, replacement of the existing hydrogen production plant with a more energy	4.3 Air Quality 4.8 Greenhouse Gases 4.6 Energy

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
impacts of stationary and non-stationary sources of pollution such as industry, the Port, railroads, diesel trucks and busy roadways. Fully utilize Richmond's police power to regulate industrial and commercial emissions. Ensure that sensitive uses such as schools, childcare centers, parks and playgrounds, housing and community gathering places are protected from adverse impacts of emissions. Continue to work with stakeholders to reduce impacts associated with air quality on disadvantaged neighborhoods and continue to participate in regional planning efforts with nearby jurisdictions and the Bay Area Air Quality Management District (BAAQMD) to meet or exceed air quality standards. Support regional, state and federal efforts to enforce existing pollution control laws and strengthen regulations. See also: CN4; CN4.1; CN4.A; CN4.B; PR4.2; HW1.8; HW9.1; EC5.3; CF1.3.	efficient plant, and modernization and increased equipment reliability and integrity of the Facility by replacing older equipment with newer, cleaner, and inherently safer technology. These Project objectives are further described in <i>Sections 4.3 Air Quality, 4.6 Energy, and 4.8 Greenhouse Gases</i>. Throughout the environmental review process the City has actively worked with regulatory agencies such as BAAQMD and the County to ensure that the Project would protect air quality. The City has requested, and BAAQMD has agreed, to monitor Chevron's implementation of the Air Quality Project Design Features identified in this EIR, which would reduce emissions from Refinery Operations, construction, and shipping. Project Design Features that avoid or reduce environmental impacts are required to be implemented as mitigation measures, and implementation would be required as a condition of Project approval. For all Project Design Features except some tank domes, completion of Project Design Features would be required prior to commencing operation of the new hydrogen plant or modified sulfur recovery unit. Also, as a condition of Project approval, Chevron would be required to annually file with the City a letter attesting that the Facility constraints identified in the air quality analysis in this EIR (average annual production of naphtha and residuum, and average annual shipping) continue to be valid and were not exceeded for the prior calendar year. Through construction and after installation of the Project the Facility would continue to comply with all Conditional Use Permit conditions and with the Facility's air quality permits. As described in <i>Section 4.3, Air Quality</i>, the Project was evaluated based on the public health, economic, demographic, educational, and other factors considered in the California Environmental Protection Agency (Cal/EPA) CalEnviroScreen tool to determine whether Project-related emissions would cause any disparate impacts in disadvantaged neighborhoods based on these criteria. As discussed in <i>Section 4.3, Air Quality</i>, the zip codes surrounding the Refinery rank in the higher percentage level of Cal/EPA's EnviroScreen Tool. In	

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
	addition, the Project was evaluated in light of BAAQMD's study identifying communities that are disproportionately impacted from high concentrations of toxic air contaminants (i.e., "CARE" communities). The City of Richmond was designated as a CARE community, based on a combination of the toxic air contaminant emissions and concentrations data and locations of sensitive populations and income levels. As described in 4.3, <i>Air Quality</i>, the Modernization Project as proposed and mitigated would result in no net increase in criteria air pollutant emissions, and no net increase in public health risks from air pollution, including cancer risk and acute and chronic non-cancer health effects at sensitive receptor locations. Therefore, only de minimis health effects are anticipated. Because the Modernization Project would achieve its no net increase objective and would not increase health risks in an already impacted community, the Project is consistent with this Policy. In addition, after installation of the Project, emissions from the Facility would continue to be monitored through the Richmond Community Air Monitoring Program, which provides air monitor readings and educational tools to help the Richmond community understand air quality in their neighborhoods.	
4. Policy ED1.7: Richmond's Waterfront as a Community Amenity Continue to redevelop Richmond's waterfront as a publicly accessible amenity to attract new residential and commercial development and provide expanded recreational activities and open space. Waterfront sites with quality views can be leveraged for residential, commercial and recreational uses. The City's parks should also be maintained and enhanced to maximize their benefit	This Policy addresses the City's role in redeveloping Richmond's waterfront. While individual Project applicants have no jurisdiction in directly implementing such policies, the Modernization Project is consistent with this Policy. Because the Project would be constructed almost entirely on the Project site, away from the public shoreline of the Bay, and not within open space areas, the City's waterfront area would not be directly or indirectly affected. Additionally, the Project would not alter the San Francisco Bay Trail segments planned along the City's waterfront.	4.10 Land Use, Plans, and Policies

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
to the community and as an attraction for new businesses. See also: LU4.1; CN2; CN2.1; CN2.2; CN2.5		
5. Action ED1.G: Air Quality Monitoring and Reporting Program Work with the BAAQMD and other government agencies to establish and identify funding for a citywide air quality monitoring and reporting program. The air quality monitoring and reporting program would assess the cumulative impact of air pollution and toxins on human and environmental health and monitor exposure of sensitive uses such as schools, childcare centers, parks and playgrounds, housing and community gathering places. Collaborate with the County Health Services Department, the BAAQMD and state agencies to establish baseline exposures and document health effects associated with monitored baseline exposures and develop provisions to hold businesses and operations financially accountable for their impacts on the environment or community due to air pollution exceeding legal thresholds. See also: HW9.A; EC5.C; CN4.D	The Project is consistent with this Policy. This Policy relates to a citywide air quality monitoring and reporting program and establishment of a citywide air quality baseline. While individual Project applicants have no jurisdiction in directly implementing this Action, the Modernization Project is consistent with this Action. Specifically, as described in <i>Section 4.3, Air Quality</i>, and <i>4.8, Greenhouse Gases</i>, the City has requested and BAAQMD has agreed to monitor Chevron's implementation of the air quality and greenhouse gas project design features and mitigation measures identified in this EIR, implementation of which would be required as mitigation measures and as a condition of Project approval. Additionally, as described in <i>Section 4.3 Air Quality</i>, after installation of the Project, air quality in the vicinity of the Facility would continue to be monitored through the Richmond Community Air Monitoring Program, which provides air monitor readings and educational tools to help the Richmond community understand air quality in their neighborhoods.	4.3 Air Quality 4.8 Greenhouse Gases
6. Policy ED2.1: Local Employment Base Expand and diversify the local employment base to provide quality jobs for all Richmond residents, especially those that face barriers to employment	The Project is consistent with this Policy. As described in <i>Section 4.12, Employment, Population and Housing</i>, the Project would retain the existing workforce and result in new employment opportunities for local residents with	4.10 Land Use, Plans, and Policies 4.12 Employment,

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
such as youth, seniors, the formerly incarcerated, and residents with limited English proficiency. Richmond's economy should offer a broad range of quality employment opportunities for current and future residents with varying degrees of experience, education and training. By expanding and diversifying the local employment base, Richmond can establish itself as a major employment center in Contra Costa County and along the Interstate 80 and 580 corridors. Encourage businesses and industries that provide a safe work environment, living wages and benefits, and opportunities for skill development and advancement. Allow a range of industries and business types including a variety of small and large firms, established and up-and-coming industries, national and local establishments and employers across a variety of economic sectors including publicly owned and private port facilities. Support local businesses and entrepreneurs by providing a range of locations and flexible space opportunities including retail space along commercial corridors and office and light industrial space close to regional transportation infrastructure. Provide infrastructure improvements and incentives to support residents and businesses in establishing and expanding local enterprises in Richmond. Encourage local businesses to provide a range of quality jobs to residents, maximize and	a variety of experience, education and training. The manufacturing and industrial sector has historically been important to Richmond's economy. This is significant for Richmond residents as average wages for this sector are relatively high (\$64,000 in 2004), and this sector employs workers without higher levels of education. (See General Plan 2030, Economic Development Element, page 1.6.) The entire contractor construction workforce is expected to come from the construction labor pool available in the Bay Area, with many of the workers expected to come from within the City of Richmond and Contra Costa County. Additionally, the Community Greenhouse Gas Reduction Program would prioritize programs that employ local residents.	Population, and Housing

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
keep revenue in the City, and respond to community needs for key amenities and services. See also: HW6.1; LU3.2		
7. Policy ED2.2: Diverse and Expanded Tax Base Encourage a diverse and expanded tax base to protect the community from economic cycles. Draw from a broad set of revenues including sales and property taxes in order to remain fiscally healthy and provide the community with high-quality public services. Diverse land use policy, new and well-established employers who operate a variety of industries, and financially sound households will establish a solid tax base and help the City weather economic cycles.	This Goal addresses the City's role in encouraging a diverse and expanded tax base and in creating a diverse land use policy. While individual Project applicants have no jurisdiction in directly implementing such policies, the Modernization Project is consistent with this Policy. The Facility has been contributing to the City's tax base for over 100 years, and after the Project would continue to contribute revenue to the City's tax base and help the City weather economic cycles.	4.10 Land Use, Plans, and Policies
8. Policy ED2.4: Existing Employers Encourage established employers to remain and expand in Richmond in order to retain employers in key industries including green businesses, high-technology firms, food-related companies, port-related industries, medical services, manufacturing and distribution and retail/entertainment. Continuing to attract additional employers in sectors that are already established in Richmond will strengthen the local employment base. The City's central location, transit and freeway access are strengths that will be leveraged. These strengths particularly benefit companies that	This Policy addresses the City's role in encouraging established employers to remain in Richmond and attracting additional employers in established sectors. While individual Project applicants have no jurisdiction in directly implementing such policies, the Modernization Project is consistent with this Policy. The Facility is an established existing employer, providing approximately 1,200 jobs and an additional 400 contractor positions. The Project would provide Chevron more flexibility in its operations, thereby encouraging the Facility to remain in Richmond and continue to offer jobs across several sectors requiring a range of education and training, such as refining operations, research and development, and office administration. The Facility requires a mix of office and industrial space for manufacturing, research and development, and distribution.	4.10 Land Use, Plans, and Policies 4.12 Employment, Population, and Housing 4.8 Greenhouse Gases

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
require a mix of traditional office and industrial space for manufacturing, research and development, assembly, and distribution. The Port of Richmond with its bay access provides an advantage in attracting new firms.	With installation of the Project the Facility would continue to leverage the City's central location, transportation infrastructure, and water access through import and export of raw goods and products via ship over the Long Wharf as well as rail and truck. Additionally, the Community Greenhouse Gas Reduction Program proposed as part of the Project would generate jobs, including anticipated weatherization on existing residential and commercial structures, which would require some mix of traditional office space and industrial space for assembly and distribution. Thus the Project would contribute to retaining the Facility as an established employer.	
9. Policy ED2.6: Environmentally Progressive Businesses and Industries Encourage existing businesses and industries to become increasingly environmentally progressive and continue making positive contributions to the community. Encourage businesses and industries to hire locally and to demonstrate reasons for not hiring local employees. Seek reciprocity in the hiring of Richmond residents in Contra Costa County and other nearby jurisdictions with local hiring ordinances. Encourage businesses and industries to participate in civic life and play a positive role in the community. Together with regulatory agencies, actively work with local industries to ensure compliance with all applicable environmental regulations to limit pollution, decrease harmful impacts from emissions and protect the community from environmental hazards.	The Project is consistent with this Policy. The Project incorporates objectives that reflect a commitment to decreasing harmful impacts from emissions and to protecting the community from environmental hazards, including a commitment to no net increase in criteria air pollutants, greenhouse gas emissions, and public health risks from air pollution, replacement of the existing hydrogen production plant with a more energy efficient plant, and modernization and increased equipment reliability of the Facility by replacing older equipment with newer, cleaner, and inherently safer technology. The Project would implement environmentally progressive measures including electricity efficiency upgrades and fuel efficiency upgrades, as described in <i>Section 4.6, Energy</i>. The Project is also consistent with this Policy in that throughout the environmental review process the City has actively worked with regulatory agencies such as BAAQMD and the County to ensure compliance with all applicable environmental regulations. Through construction and after installation of the Project, the Facility would continue to comply with all Conditional Use Permit conditions and with the Facility's air quality permits. Additionally, as described in <i>Section 4.3, Air Quality</i>, after installation of the Project, air quality in the vicinity of the Facility would continue to be monitored through the Richmond Community Air Monitoring Program, which provides air	4.3 Air Quality 4.6 Energy 4.8 Greenhouse Gases 4.10 Land Use, Plans, and Policies 4.13 Public Safety

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
Promote and encourage new clean and green industries that provide well-paying jobs, revenue and other community and environmental benefits; support efforts to require existing industries to decrease harmful emissions and impacts; and promote a mix of uses and a range of activities on industrial land to create jobs and revenue while avoiding conflict between industrial and nonindustrial uses. See also: HW6.4; LU3.1; EC5.2	monitor readings and educational tools to help the Richmond community understand air quality in their neighborhoods. In addition, the proposed Community Greenhouse Gas Reduction Program is anticipated to create green jobs to be filled at least partially by local residents including in the weatherization of existing residential and commercial buildings, and would prioritize funding for programs that create local jobs and create community wealth. The Project could also implement the installation of a 2-MW solar cell facility as a mitigation menu option, as described in <i>Section 4.8, Greenhouse Gases</i>.	
10. Policy ED2.7: High Job Density Develop strategies to attract high-density employers and actively pursue employers that maximize the number of jobs located on a site. Consider using the number of “jobs added per acre” as an evaluative criterion for the review land use proposals.	The Project is consistent with this Policy because it increases the density of jobs located at the existing Facility. As of March 2013, the approximate workforce count (employees and contractors on a routine basis) at the Facility is 1,200 full-time employees and 400 contractors. (Chevron Data Transmittal #41, 2013) Therefore, the Facility currently provides 0.55 job per acre. The Project would retain the existing workforce and result in 29 additional new permanent full-time employees (Chevron Data Transmittal #5, 2014). With the additional new permanent jobs, the Facility would provide 0.56 job per acre.	4.10 Land Use, Plans, and Policies 4.12 Employment, Population, and Housing
11. Action ED2.F: Coordination with Major Employers Regularly meet with Richmond’s major employers to discuss opportunities for community development partnerships and joint planning efforts and facilitate ongoing communication among staff, elected officials and employers. Some of Richmond’s largest employers occupy large parcels of land and play vital roles in the economic well-being of the community. Ongoing	The Project is consistent with this Action. The Facility is a major employer that occupies a large parcel of land in the City of Richmond and that plays an important role in the economic well-being of the community. Throughout the environmental review process for the Project, the City, Chevron, and interested community groups have engaged in ongoing communication to ensure a productive working relationship, including several informational meetings before City Council and with members of the community. These communications have addressed technical topics to be included in the proposed Project EIR, the proposed Community Greenhouse Gas Reduction Program, and CEQA and BAAQMD guidelines. The Project would require	4.8 Greenhouse Gases 4.10 Land Use, Plans, and Policies 4.12 Employment, Population, and Housing

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
communication will ensure a positive working relationship among groups and signal commitment from the City to collaborate with its major employers on a variety of land use, programmatic or other economic development issues.	ongoing reporting and communication between the applicant and the City. See <i>Chapter 9, Mitigation Monitoring and Reporting Program</i> .	
12. Policy ED3.1: Public-Private Partnerships Encourage and support existing and potential employers to participate in local workforce development programs. Play a strong role in linking employers with educational institutions and service providers to train Richmond residents for well-paying jobs in their community.	The Project is consistent with this Policy. The Project proposal includes a Community Greenhouse Gas Reduction Program, which is anticipated to include Chevron funding for existing local workforce development programs. The Community Greenhouse Gas Reduction Program would also prioritize programs that create jobs for local Richmond residents, and is anticipated to include green jobs such as weatherization of existing residences and commercial properties.	4.10 Land Use, Plans, and Policies 4.12 Employment, Population, and Housing
13. Policy ED3.2: Workforce Training and Recruitment Support and enhance jobs-skills training and recruitment programs and services. Collaborate with educational institutions, employers, unions and the local workforce development programs to strengthen services for Richmond youth and adults. Support and enhance education, training and recruitment programs and services for local residents to increase job and employment opportunities and compete in the regional economy. See also: HW6.2	The Project is consistent with this Policy. The Project proposal includes a Community Greenhouse Gas Reduction Program, which would prioritize programs that create jobs for local Richmond residents, and is anticipated to include green jobs such as weatherization of existing residences and commercial properties. As described in <i>Section 4.12, Employment, Population, and Housing</i> , Chevron currently contributes to local training and job creation programs.	4.10 Land Use, Plans, and Policies 4.12 Employment, Population, and Housing
14. Policy ED 9.1: A Mix of Land Uses Promote a mix of uses to create a complete community in the San Pablo Peninsula area.	The Project is consistent with this Policy. As described in <i>Section 4.10, Land Use, Plans, and Policies</i> , because the Project would be constructed almost entirely on Project site, away from the public shoreline of the Bay, the shoreline	4.10 Land Use, Plans, and Policies 4.15 Parks and

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
Develop lodging and visitor-serving concessions (such as cafes, bike and kayak rental kiosks) to elevate the San Pablo Peninsula as a local and regional destination and complement its potential development as a resort and entertainment center. Residential uses should also be explored for the area to add to its 24-hour vitality and to capitalize on Bay views.	area and other public open space areas would not be directly or indirectly affected. The Project would not alter the San Francisco Bay Trail segments planned along the shoreline. For these reasons, the Project would not conflict with the promotion of mixed uses to create a complete community in the San Pablo Peninsula area.	Recreation
III. LAND USE ELEMENT		
15. GOAL LU3: Expanded Economic Opportunities Expand economic opportunities in existing commercial and industrial areas and develop new opportunities to diversify the local economy. Create an attractive and socially-responsible business environment that will support business recruitment, expansion and retention. Encourage innovative, high-growth and green business, and further support businesses and industries in providing a range of job and entrepreneurial opportunities while minimizing environmental and health impacts. In building a thriving local economy, develop a skilled and educated workforce that can strengthen existing businesses and emerging industries. Establish Richmond as a major employment center in Contra Costa County and along the Interstate 80 and 580 corridors by expanding and diversifying the local employment base.	The Project is consistent with this Goal. The Project expands economic opportunities in an existing industrial area by modernizing Facility equipment, providing the Facility more flexibility in meeting market demand while continuing to provide a diverse range of job opportunities to local and area residents. The Facility is one of Richmond's largest employers, employing a skilled workforce of approximately 1,600 workers (1,200 employees plus 400 contractors). The Project would allow the Facility to maintain its current job base as well as add 29 permanent jobs and up to 990 temporary jobs during the peak six-month period of construction. In addition, the proposed Community Greenhouse Gas Reduction Program is anticipated to create green jobs to be filled by local residents including in the weatherization of existing residential and commercial buildings. Finally, the proposed Community Greenhouse Gas Reduction Program would prioritize funding for programs that create local jobs and create community wealth. Thus the Project is consistent with this Policy in that would expand economic opportunities at the existing Facility. The Project would provide this economic expansion while minimizing environmental and health impacts. The Project includes a commitment to no net increase of public health risks from air pollution, and no net increase in	4.3 Air Quality 4.6 Energy 4.8 Greenhouse Gases 4.10 Land Use, Plans, and Policies

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
Capitalize on Richmond’s amenities and convenient location in order to attract new businesses to the Southern Shoreline, Hilltop, Downtown, the Port and surrounding industrial areas. Transform the Hilltop Area, the Southern Shoreline and the Richmond Parkway as mixed-use regional destinations and employment centers. Leverage Richmond’s rich cultural, historical and natural amenities to ignite a vibrant cultural-heritage and tourism industry.	criteria air pollutants and greenhouse gases above the Baseline level. As described in <i>Section 4.3, Air Quality</i>, the Project would achieve these objectives through a combination of Emission-Reduction Project Design Features, which would be required to be implemented as mitigation measures, including for example installation of new equipment such as tank domes to reduce volatile organic compound (VOC) emissions, and other specific, feasible mitigation measures to reduce emissions. In addition, through construction and after installation of the Project, the Facility would continue to comply with all Conditional Use Permit conditions and with the Facility's air quality permits, further ensuring that any environmental or health impacts would be minimized. With installation of the Project, the Facility would continue to leverage the City's transportation infrastructure and water access. The Project would be constructed almost entirely within the existing Facility and would not affect Richmond's cultural, historical, or natural amenities.	
16. GOAL LU4: Enhanced Environmental Quality Protect and preserve natural resources to nurture environmental and human health. Work with local and regional regulating bodies to protect water quality in creeks and bays, and to reduce or mitigate air, water and soil pollution and contamination. Encourages the sensitive integration of built and natural environments to develop a high-quality urban experience. See also: HW9; CN3; EC4.4	The Project is consistent with this Goal. The Project includes a commitment to no net increase in criteria air pollutants and greenhouse gases, and no net increase in public health risks from air pollution. As described in <i>Section 4.3, Air Quality</i>, and <i>4.4, Greenhouse Gases</i>, the Project would achieve these objectives through a combination of Emission-Reduction Project Design Features, including for example installation of new equipment such as tank domes to reduce VOC emissions, and specific, feasible mitigation measures to reduce emissions. Project Design Features that avoid or reduce environmental impacts are required to be implemented as mitigation measures. In addition, through construction and after installation of the Project, the Facility would continue to comply with all Conditional Use Permit conditions and with the Facility's air quality permits. The Project would avoid sensitive environmental land and features because the Project is located almost entirely on Facility property in areas that have been	4.3 Air Quality 4.4 Biological Resources 4.6 Energy 4.7 Geology, Soils, and Seismicity 4.8 Greenhouse Gas 4.9 Hydrology and Water Quality 4.10 Land Use, Plans, and Policies

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
17. GOAL LU5: Balanced and Compatible Uses Achieve a mix of land uses that is ecologically,	previously disturbed, and the areas where the Project would be constructed and operated do not include wetlands, marshlands, and creeks. As described in <i>Section 4.9, Hydrology and Water Quality</i>, the Facility is served by its own wastewater system and there would be no net increase in wastewater. The process wastewater streams at the Facility are treated by its wastewater treatment plant prior to discharge, and would continue to be required to comply with National Pollutant Discharge Elimination System (NPDES) discharge limitations after installation of the Project. Most of the construction and ground disturbance activities for the Project have already been completed, and significant new excavation activities would not be undertaken in areas of the Facility that are not already developed. Any leaching of contaminants that might occur from soil stockpiles would be conveyed to the Facility's wastewater treatment system through stormwater systems. Since construction of most of the Project would occur in the Refinery Process Area of the site, erosion impacts would not be anticipated. Water and soil quality would be protected during dismantling of the existing hydrogen plant. Steel and metal would be recycled, and non-recyclable materials properly disposed of at approved disposal sites. Applicable Storm Water Pollution Prevention Plan requirements would be implemented during dismantling activities. Excavation work would be minimized and include dust control measures. The Project is also consistent with this Policy in that throughout the environmental review process, the City has worked closely with regulatory agencies such as BAAQMD and Contra Costa County to ensure protection of water quality, and to avoid, reduce or mitigate air, water and soil pollution and contamination.	4.10 Land Use, Plans, and Policies

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
economically and socially equitable and sustainable. Encourages a mix of uses in major activity centers, community nodes and gateways, in neighborhood nodes and along key corridors as well as in some industrial areas. Using this pattern and range of land uses, activate focal areas of the City throughout the day and evening, and provide convenient access to goods, services and community amenities.	and operated almost entirely within the existing Facility.	
18. Policy LU3.7: Retention and Modernization of Heavy Industrial Uses Retain and support the modernization of Richmond’s existing heavy industrial uses and support their continued transition to cleaner and more energy-efficient operations in order to reduce impacts to human and environmental health. See also: LU 3.I	The Project is consistent with this Policy, as the objective of the Project is to modernize certain equipment, including the installation of Emission-Reduction Project Design Features, and support the Facility’s transition to less emitting and more energy efficient operations in order to reduce impacts to human and environmental health. Specifically, an objective of the Project is modernize, and increase equipment reliability and integrity of, the Facility by replacing older equipment with newer, cleaner, and inherently safer technology. The Project would achieve this objective by, for example, the installation of a more modern hydrogen plant, which would be more energy efficient, resulting in reduced fuel usage per hydrogen product, and subsequently less air pollutant emissions, compared to the existing plant, as described in <i>Section 4.3, Air Quality</i>. The Project would also include installation of low-NO_x burners on several furnaces and at the sulfur recovery units. The Project would also include new treatment of refinery fuel gas to remove sulfur emissions, as well as installation of tank domes to reduce fugitive VOC emissions, and upgrading of approximately 6,000 lighting fixtures in the process plant areas of the Facility with light emitting diode (LED) lighting. (See <i>Chapter 3, Project Description, Sections 3.3, and 4.3, Air Quality</i>, for further discussion.) Because the Project would allow the Facility to install more modern equipment, it is consistent with the Policy of retaining and modernizing an existing heavy	4.3 Air Quality 4.6 Energy 4.8 Greenhouse Gases 4.10 Land Use, Plans, and Policies

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
	industrial use.	
19. Action LU3.H: Industrial Lands Retention and Consolidation Ensure that industrial uses are consolidated around rail and port facilities and work with existing industrial operators, economists and commercial brokers to remain informed about the future demand for industrial land.	The Project is consistent with this Action. The existing Facility is consolidated around rail facilities and the Long Wharf, and the Project would be constructed almost entirely within the Project site boundary.	4.10 Land Use, Plans, and Policies
20. Policy LU4.4: Toxic and Contaminated Sites Continue to work with the appropriate local, state, and federal agencies to promote the clean-up and reuse of contaminated sites to protect human and environmental health. Work with property owners and regional agencies to prevent, reduce or eliminate soil and water contamination from industrial operations, the Port and other activities that use, produce or dispose of hazardous or toxic substances. Implement appropriate mitigation measures and clean-up of sites that are known to contain toxic materials as a condition of reuse. Support the remediation and reuse of large, disturbed sites, such as the Winehaven complex at Point Molate and the Terminal 4 site at Point San Pablo, into mixed-use centers that provide the maximum benefit to the community without compromising the integrity of the surrounding natural areas. See also: CN6.1; ED1.3; HW9.2.	The Project is consistent with this Policy. The Project would protect human and environmental health by following BAAQMD and the California Occupational Safety and Health Administration (Cal/OSHA) and any other applicable federal, state, and local regulations for the proper closure of the existing hydrogen plant to ensure no hazardous or toxic substances are left behind. Any excavated soil would be tested for hydrocarbons and managed in conformance with the Facility's RQWCB-approved Soil Management Program for handling and disposition. Also as required, excavated soil that is contaminated would be managed in accordance with BAAQMD Regulation 8 (Organic Compounds), Rule 40 (Contaminated Soil). After the new hydrogen plant is constructed and fully operational, the existing hydrogen plant would be shut down, decommissioned, and dismantled, BAAQMD and Cal/OSHA would be notified as required and appropriate measures taken to ensure that all applicable regulatory requirements for asbestos abatement are met. In addition, building permits would be obtained as required from the City of Richmond. As discussed in <i>Section 4.9, Hydrology and Water Quality</i>, most of the ground disturbing activities for the Project are already completed. All remaining proposed excavation related to the Project would be conducted entirely within the Refinery Process Area. Stormwater runoff from within the Refinery Process	4.3 Air Quality 4.7 Geology, Soils, and Seismicity 4.9 Hydrology 4.13 Public Safety

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
	Area is collected in the stormwater conveyance system and treated by the on-site wastewater treatment facility. Any sediment and/or residual contaminants in the runoff would be treated prior to discharge under the facility's NPDES Permit.	
21. Policy LU5.3: Land Use Compatibility Minimize conflicts between land uses to protect wetlands, marshlands, and creeks, human and environmental health and safety, preserve community character and retain job generating activities that have long-term viability. Types, intensities and ranges of use and development should be compatible with existing uses and should minimize or eliminate conflicts that adversely impact wetlands, marshlands, creeks, mudflats, public safety, human or environmental health or generate nuisances. All new development must avoid or mitigate to the greatest extent feasible potential negative impacts such as noise, odors, and pollution. Consistent with the City's Industrial Buffer Zone Ordinance, prohibit the location of residential uses in the area between Harbour Way South and Marina Way South and between Interstate 580 and Hall Avenue. Encourage existing larger industries that have surplus land to develop modern industrial parks that could attract new and existing industries and facilitate a reduction of existing and future land use	The Project is consistent with this Policy. The Project is located almost entirely on Project site, and the areas where most of the Project would be constructed and operated do not include wetlands, marshlands, and creeks. As described in <i>Section 4.9, Hydrology and Water Quality</i>, the Facility is served by its own wastewater system and there would be no net increase in wastewater. The waste streams at the Facility are treated by the Facility's wastewater treatment plant prior to discharge, and would continue to be required to comply with NPDES discharge limitations after installation of the Project. In addition, the Project includes a commitment to no net increase of criteria air pollutants, greenhouse gases, and public health risks from air pollution. . As described in <i>Section 4.3, Air Quality</i>, the Project would achieve these objectives through a combination of Emission-Reduction Project Design Features, which are required to be implemented as mitigation measures, and other specific, feasible mitigation measures to reduce emissions. In addition, through construction and after installation of the Project, the Facility would continue to comply with all Conditional Use Permit conditions and with the Facility's air quality and water quality permits, further ensuring that the Project would not result in land uses conflicts that adversely impact human or environmental health. In addition, as discussed in <i>Section 4.11, Noise</i>, and <i>4.3, Air Quality</i>, the Project would include mitigation measures to address any potential increase in noise or odors, would continue to comply with City and BAAQMD regulations, and would not result in any adverse noise or odor impacts. The Project would have no adverse impact on the character and scale of existing neighborhoods or landscapes because the Project is located almost	4.1 Aesthetics, Visual Quality, Light, and Glare 4.3 Air Quality 4.4 Biological Resources 4.5 Cultural Resources 4.10 Land Use, Plans, and Policies 4.11 Noise

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
conflicts. New development should complement the character and scale of existing neighborhoods, cultural resources, historic structures and landscapes. In particular, existing industrial and residential uses can successfully coexist through well-conceived circulation and urban design strategies including buffers (which may be in the form of sound walls and/or enclosed buildings and appropriate transitional habitat zones between wetlands, marshlands, creeks, and mudflats) and transitional uses, rerouting of truck traffic and design components that mark transitions in land use. Similar to other cities that host mixed uses, consider requiring land use covenants for new development in areas where new uses may generate a perception of conflict with existing uses. Require sufficient visual open space and/or landscaped screening between industrial operations and adjacent residential or recreational activities in order to create adequate buffers. See also: ED7.2; ED8.2; SN4.2	entirely on Facility property that has been previously disturbed. Finally, the Project would modernize the Facility and provide Chevron more flexibility in its Refinery Operations to meet market demands, thereby retaining job generating activities at one of Richmond's largest employers.	
22. Action LU5.C: Industrial Use Buffers – Expanded Definition New industrial uses established adjacent to existing residential or commercial uses shall incorporate measures to minimize impacts to residential uses such as enclosure of industrial activities in buildings, use of screening for visually unattractive	The Project is consistent with this Action. The Project would install equipment within the existing Facility and does not establish any new residential or commercial uses. The closest distance between the Project and a residential neighborhood is 0.2 mile (Hydrogen Plant Construction Equipment Storage and Staging Area to Point Richmond Neighborhood.) The Hydrogen Plant Construction Equipment Storage and Staging Area is buffered from the Point Richmond Residential Neighborhood by existing offices and parking areas	4.10 Land Use, Plans, and Policies

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
uses, site design, soundproofing and landscaping. New residential and commercial uses established adjacent to existing industrial uses shall incorporate measures to minimize impacts to residents from noise, exposure to toxic substance emissions, vibration, odors and truck traffic. Industrial sites may incorporate supporting office and commercial space if protected to commercial standards. See also: ED7.B	along the Facility’s perimeter and by I-580. The Project also would not include any construction within the vacant land areas near the Facility’s southern and eastern perimeter, which serve as an “internal refinery buffer area.” As described in <i>Section 4.11, Noise</i>, the Project construction and operation would not result in any perceptible increase in noise in the nearest receiving residential areas, and would comply with all applicable noise standards. The Project would also not result in any odor or truck traffic impacts to neighboring residences.	
IV. CIRCULATION ELEMENT		
23. GOAL CR3 A Safe and Well-Maintained Circulation System In order to create a safe and efficient circulation system, emphasize on-going street maintenance and safety improvements that consider all modes of transportation including walking, bicycling and public transit. Require new facilities and infrastructure as development occurs in order to meet the needs of all users while enhancing mobility and connectivity.	The Project is consistent with this Goal. As described in <i>Section 4.16, Transportation and Traffic</i>, the Project as mitigated would not result in any adverse traffic impacts and would not create any need for new transportation infrastructure. As a greenhouse gas mitigation measure, the Project includes funding for the Proposed Community Greenhouse Gas Reduction Program, which is anticipated to include funding for programs to improve bicycle and pedestrian access within the City of Richmond.	
24. Policy CR 1.D Bicycle, Pedestrian and Trail Include requirements for adequate, safe and accessible bicycle parking, drinking fountains, public restrooms, benches, landscaping and lighting. Require new development and redevelopment projects to be pedestrian and bicycle-friendly, and to provide adequate	The Project is consistent with this Policy. As described in <i>Section 4.16, Transportation and Traffic</i>, the Project as mitigated would not result in any adverse traffic impacts and would not create any need for new transportation infrastructure. As a greenhouse gas mitigation measure, the Project includes funding for the Proposed Community Greenhouse Gas Reduction Program, which is anticipated to include funding for programs to improve bicycle and pedestrian access within the City of Richmond.	4.8 Greenhouse Gases 4.10 Land Use, Plans, and Policies 4.16 Transportation and Traffic

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
connections to the existing and proposed bicycle and pedestrian network. Require all new commercial, industrial and residential development to provide access for construction and operation of a trail where a local or regional trail is designated or planned. Include provisions that require owners of property along the shoreline to provide maximum feasible public access to the shoreline and to complete the Bay Trail as part of any project approval process.	Additionally, because the Project would be constructed almost entirely on the Project site, away from the public shoreline of the Bay, the shoreline area would not be directly or indirectly affected. The Project would not alter the San Francisco Bay Trail segments planned along the shoreline. Thus, the Project does not interfere with access for construction and operation of the Bay Trail or any other planned or designated public trail.	
25. Policy CR 3.3 Concurrent Infrastructure Development Require concurrent infrastructure development for new and redevelopment projects that may have a significant adverse impact on the existing circulation system including streets, trails, sidewalks, bicycle paths and public transit.	The Project is consistent with this Policy. As described in <i>Section 4.16, Transportation and Traffic</i> , the Project as mitigated would not result in any adverse traffic impacts and would not create any need for new transportation infrastructure. As a greenhouse gas mitigation measure, the Project includes the Proposed Community Greenhouse Gas Reduction Program, which is anticipated to include funding for programs to improve bicycle and pedestrian access within the City of Richmond.	4.16 Transportation and Traffic
V. HOUSING ELEMENT		
26. Policy H-1.2: Adequate Supply of Housing Sites Ensure an adequate supply of housing sites to achieve the City's Regional Housing Needs Allocation numbers for the 2007-2014 planning period.	The Project is consistent with this Policy because the City's existing housing supply would be adequate to meet any increase in housing demand due to new temporary or full-time employees associated with the Project, as described in <i>Section 4.12, Employment, Population, and Housing</i> .	4.12 Employment, Population, and Housing
VI. COMMUNITY FACILITIES ELEMENT		
27. Policy CF1.4 Concurrent Infrastructure Development Require new development to provide proportionate	The Project is consistent with this Policy. As described in the relevant EIR sections relating to each resource (<i>Section 4.17, Utilities and Service Systems, 4.15, Parks and Recreation, and 4.16, Transportation and Traffic</i>) the Project	4.17 Utilities and Service Systems 4.15 Parks and

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
facilities and infrastructure improvements as it occurs. New developments must mitigate impacts or contribute adequate infrastructure to meet additional demand for roads, parks, schools and utilities.	would not result in any additional demand for roads, parks, schools or utilities.	Recreation 4.16 Transportation and Traffic
VII. CONSERVATION, NATURAL RESOURCES, AND OPEN SPACE ELEMENT		
28. GOAL CN1: Preserved and Restored Natural Habitat and Biodiversity Continue to preserve and restore natural habitat and associated plants and wildlife including wetlands, baylands, riparian areas, oak woodlands and other sensitive biological resources. Take restoration efforts such as controlling invasive species, re-establishing natives, daylighting creeks and reclaiming priority conservation areas in order to maintaining critical habitat and biodiversity. Carefully balance natural lands, habitat and protection of multiple species with the need to accommodate development.	The Project is consistent with this Policy. The Project would be constructed almost entirely within the previously-developed Refinery Process Area, which does not provide potential habitat for special status species. Placement and construction of Project components would have no significant adverse impact on biological resources. Continued compliance with the Facility's NPDES permit would protect against any impact to any biological resources from wastewater discharges, and the Project as proposed would not result in any net increase in wastewater.	4.4 Biological Resources 4.9 Hydrology
29. GOAL CN5: Environmental Sustainability Reduce the City's carbon footprint and manage resources wisely to meet the needs of a growing population and economy. Base community planning decisions on sustainable practices that reduce environmental pollutants, conserve resources, and minimize waste. Lead the Bay Area in reducing dependence on fossil fuels by encouraging design of energy efficient buildings, using renewable	The Project is consistent with this Goal. Although the Facility produces fossil fuel products, the proposed Project would not increase the Facility's capacity and would modernize the Facility's existing equipment. A core Project objective is to replace some existing equipment and install new equipment with Project Components that are more energy efficient and therefore produce fewer greenhouse gas emissions. As described in 3.0, <i>Project Description</i> , as part of the Project, heat exchangers and other equipment used to transfer heat energy at the fluidized catalytic cracker feed hydrotreater (FCC FHT) unit would be modified to improve energy efficiency, allowing for additional throughput without requiring additional permitted heat input at the unit's furnaces. A new	3.0 Project Description 4.3 Air Quality 4.4 Biological Resources 4.7 Geology, Soils, and Seismicity 4.9 Hydrology and

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
energy and promoting alternative methods of transportation. See also: LU4.2; EC2.1; EC3.2; EC3.B; EC 3.3; CN5.2; CN5.1, CN5.A; HW9.6; HW10.5; HW10.D	power recovery turbine would also be installed at the FCC FHT unit, which would use changes in operating pressures within the unit to produce electricity, offsetting electricity demand. Also, the new hydrogen plant would be equipped with newer technology including pressure swing absorption that is less fuel intensive and results in reduced fuel usage per hydrogen product, as well as a new steam turbine generator, which would offset electricity and fuel demand throughout the Facility. The new hydrogen plant would also allow for collection and reuse of refinery fuel gas in lieu of imported natural gas. Additionally, the Project would upgrade motors which drive the cooling fans in the Fluid Catalytic Cracker cooling water tower to adjustable speed direct drive motors which are more energy efficient. The Project would also upgrade approximately 6,000 lighting fixtures in the process plant areas of the Facility with LED lighting, reducing the Facility's energy demand for lighting. In addition to these energy efficiency measures at the Facility, the Project would also include off-site Project Design Features that would create energy efficiency and reduce greenhouse gas emissions within the community, including Chevron's participation in Marin Clean Energy for some Chevron facilities, and the funding of the proposed Community Greenhouse Gas Reduction Program, which is anticipated to include weatherization of existing residential and commercial buildings, a proposed utility-scale solar installation, and funding for existing programs supporting installation of solar energy on residential and commercial buildings. The Community Greenhouse Gas Reduction Program is also anticipated to include funding for programs to improve bicycle and pedestrian infrastructure within the City of Richmond. The Project is also consistent with this policy in that it is designed to reduce pollutants by committing to no net increase of criteria air pollutants and greenhouse gases, and no net increase in public health risks from air pollution. As described in <i>Section 4.3, Air Quality</i>, and <i>4.8, Greenhouse Gases</i>, the Project would achieve these objectives through a combination of Emission-	Water Quality 4.10 Land Use, Plans, and Policies

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
30. Policy CN2.4 Agricultural Lands Preserve agricultural lands for sustained crop production, grazing and farming. Encourage local organic food production such as microfarming in community gardens and private yards. Protect viable topsoils to ensure working landscapes. See also: PR4.1; HW1.7	Reducing Project Design Features, which would be implemented as mitigation measures, and other specific, feasible mitigation measures to reduce emissions. In addition, through construction and after installation of the Project, the Facility would continue to comply with all Conditional Use Permit conditions and with the Facility's air quality permits, further ensuring that any environmental or health impacts would be minimized. Also, as discussed in <i>Section 4.17, Utilities, and Section 4.9, Hydrology and Water Quality</i>, the Project would result in no increase in solid waste, and no increase in discharges of pollution to water. The Project is consistent with this Policy. The Project would be constructed almost entirely within the Facility where there are no agricultural or grazing lands. Because the Project would result in no net increase in emissions from criteria pollutants and greenhouse gases, and no net increase in public health risks from air pollution, the Project would not result in any net increase in air deposition of pollutants on any locally-grown produce, including backyard and community gardens.	4.3 Air Quality 4.8 Greenhouse Gases 4.10 Land Use, Plans, and Policies
31. Policy CN2.6 Protect Soil and Reduce Erosion Minimize soil depletion and erosion. Prevent erosion caused by construction activities. Retain natural vegetation and topography and minimize grading of hillsides.	The Project is consistent with this Policy. Most of the construction for the Project is already complete. During the remaining Project construction, significant new excavation activities would not be undertaken in areas of the Facility that are not already developed. Since construction of most of the Project would occur in the previously-developed Refinery Process Area of the site, erosion impacts would not be anticipated.	4.7 Geology, Soils, Seismicity, and Mineral Resources
32. Policy CN2.7 Parkland Preservation Maintain high quality parklands and play areas to serve current and future residents. Require new development and redevelopment projects to provide additional parkland or funding to purchase and maintain parklands.	The Project is consistent with this Policy. As discussed in <i>Section 4.15, Parks and Recreation</i>, the Project does not include parks or recreational facilities nor would the Project require the expansion or construction of any recreational facility based on any temporary or permanent increase in population associated with the Project.	4.15 Parks and Recreation

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
33. Policy CN2.8 Mineral Resources Preserve mineral resources in undeveloped areas that have been classified by the State Mining and Geology Board as having statewide or regional significance for possible future extraction. Avoid nuisances, hazards or adverse environmental, public health and safety impacts associated with mineral extraction by employing methods such as development setbacks, buffers, screening and other appropriate measures. In locations where mineral extraction is no longer a viable practice, provide environmentally sensitive remediation and reuse.	The Project is consistent with this Policy. The Facility, which is considered a heavy industrial use, has operated on this site for over 100 years. Despite some potential for mineral resources to be present beneath the site, the existing Facility processing units and operations preclude access to any potential resources. The Project components would be located primarily within the previously developed Refinery Process and Tank Farm areas, that is, on land where access to mineral resources is already precluded.	4.7 Geology, Soils, Seismicity, and Mineral Resources
34. Policy CN3.1 Stormwater Management Develop strategies to promote stormwater management techniques that minimize surface water runoff in public and private developments. Utilize low-impact development techniques to best manage stormwater through conservation, on-site filtration and water recycling. See also: CN3.2, HW9.3	The Project is consistent with this Policy. While some of the Project components would include new impervious surfaces, the existing surface soils are highly compacted and frequently underlain by shallow bedrock, so that existing infiltration rates are already limited. Therefore, the proposed new impervious cover is not expected to cause a substantial increase in surface water runoff rates or volumes. None of Project components or facilities would substantially alter drainage patterns (e.g., redirect stormwater runoff from one sub-basin to another). All proposed excavation related to the Project would be conducted entirely within the Refinery Process Area. Stormwater runoff from within the Refinery Process Area is collected in the stormwater conveyance system and treated by the Facility's wastewater treatment facility. Any sediment and/or residual contaminants in the runoff would be treated prior to discharge under the facility's NPDES permit.	4.9 Hydrology and Water Quality
35. Policy CN3.3 Flood Management Minimize the flood hazard risks to people, property and the environment. Address potential damage from a 100-year flood, tsunami, sea level rise and	The Project is consistent with this Policy. The Project is located on a hilly peninsula that extends into the Bay; the Federal Emergency Management Agency flood zones (Zone VE) mapped around most of the perimeter of the peninsula are related to coastal flooding hazards (e.g., high tides and storm	4.9 Hydrology and Water Quality

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
seiche, and implement and maintain flood management measures in all creeks and in all watersheds. See also: SN1.2	surges) (FEMA, 2009). Placement of structures within coastal flooding zones would not adversely impede or redirect flood flows toward some other vulnerable area because the structures would not affect the water levels in the Bay or the energy of surges or waves elsewhere. The Modernization Project includes ongoing use of Facility equipment in areas subject to coastal flooding, including tsunami wave runup and sea level rise. A tsunami in San Francisco Bay is a low probability event, and Chevron has a plan in place for addressing this and other flood-related risks, and as mitigation the Project would require Chevron to develop a contingency plan that addresses sea level rise. The Modernization Project does not result in any incremental increase in these flood-related Facility risks.	
36. Policy CN3.4 Water Conservation Promote water conservation. Encourage residents, public facilities, businesses and industry to conserve water especially during drought years. Work with East Bay Municipal Utility District to advance water recycling programs including using treated wastewater to irrigate parks, golf courses and roadway landscaping and by encouraging rainwater catchment and graywater usage techniques in buildings. See also: EC3.4; EC4.3	The Project is consistent with this Policy. The Modernization Project includes as a Project Design Feature Facility water reuse projects to reduce EBMUD water consumption and wastewater discharge. These projects would be included in a mitigation monitoring and reporting program. The Project would be served by reclaimed water produced by an existing EBMUD facility which has the capacity to do so, and the Project's water demands are included in the approved EBMUD Urban Water Management Plan which confirms the availability of adequate water supplies for the Facility, as discussed further in <i>Section 4.17, Utilities</i>.	4.9 Hydrology and Water Quality 4.17 Utilities and Service Systems
37. Action CN4.C Climate-Friendly Fuel Using Vehicles Support the use of highly efficient climate-friendly fuel using vehicles, adequate alternative refueling stations and the use of waste for producing fuel where feasible or rational.	The Project is consistent with this Action. The Project would include the proposed Community Greenhouse Gas Reduction Program, which is anticipated to include funding for electric vehicle purchase rebates and charging stations within the City. Also, the Project would enable the Facility to continue manufacturing fuel products that meet California's stringent fuel regulations.	4.8 Greenhouse Gases

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
See also: EC2.A; CR5.C		
38. Action CN6.B Hazardous Substance Management Implement standards dealing with the safe management of hazardous substances in close coordination with the City Fire Department and the Department of Toxic Substance Control. The standards should require soil testing at development sites where contamination is suspected, address safe household hazardous and universal waste disposal and ensure compliance with hazardous substance regulations and safe transport of hazardous materials. Use of the latest technologies available should be considered when conducting remediation in order to expedite the cleansing process and do the least harm to the environment. See also: HW9.K	The Project is consistent with this Action. Petroleum refining operations inherently involve the routine use, transport, and disposal of hazardous materials. Wastes generated are subject to extensive applicable regulations regarding storage and disposal, as described in <i>Section 4.13, Public Safety</i>. Because the Project would involve mainly replacement units using identical or similar technologies, the waste streams generated from the new units would be very similar to those currently generated. Thus, there would be no new categories of hazardous wastes generated. While the quantities of some hazardous materials would change, as described in <i>Section 4.13, Public Safety</i>, quantities of stored hazardous materials specific to the Modernization Project would be less than maximum quantities currently stored at the Facility. After installation of the Project, the Facility would continue to send most of the material off-site for reclamation of precious metals, while the remainder would be transported to a secure landfill that is licensed to accept these wastes. In addition, the type of waste that would be increased (solid spent catalyst) would be much less hazardous than the waste being eliminated (liquid spent monoethanolamine (MEA)); therefore, the consequences of an accidental spill of solid waste during transport would be less after the Project compared to the Facility today. The Modernization Project would require mitigation measures including updates of Chevron's Risk Management Plan, Safety Plan, Hazardous Materials Business Plan, SPCC Plan and Facility Response Plan, prior to the operation of the Project, and the reclamation or proper disposal of spent catalyst associated with the Project. Most of the construction for the Project, including excavation activities, is already complete. During the remaining Project construction, it is estimated that approximately 500 tons of potentially hazardous soil would be excavated prior to and during the construction of elements of the Project. Any soil	4.13 Public Safety

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
	determined to be hazardous would be handled and stored as hazardous waste until it is disposed of at hazardous waste disposal facilities. Non-hazardous soil would be reused on site or would be sent off-site as a designated waste, as required by regulations. As described in <i>Section 4.13, Public Safety</i> , the Project would include additional measures to ensure that impacts to the public and environment from the use, storage, transport or disposal of hazardous materials during construction would be minimized, including: mitigations requiring construction materials storage only in authorized locations; measures requiring transportation of these wastes off-site within the specified timeframes and in compliance with existing regulations; and measures requiring implementation of enhanced refinery and contract worker safety procedures for construction activities, as part of Chevron's enhanced safety program developed following the August 2012 fire.	
VIII. ENERGY AND CLIMATE CHANGE ELEMENT		
39. Action EC2.K Engine Replacement and Retrofitting: Work with the Bay Area Air Quality Management District to develop a program to fund diesel engine retrofitting or replacement in existing automobiles, trucks, rail, ships and equipment. Regularly identify feasible technologies that can be applied for retrofitting polluting vehicles. Collaborate with key stakeholders to develop and implement the program.	The Project is consistent with this Policy. As described in <i>Section 4.3, Air Quality</i> , the Project would upgrade main ship diesel engines to meet Tier 3 standards and upgrade auxiliary engines with turbochargers.	4.3 Air Quality
40. Policy EC3.1 Renewable Energy: Promote the generation, transmission and use of a range of renewable energy sources such as solar, wind power and	The Project is consistent with this Policy. As described in <i>Section 4.8, Greenhouse Gases</i> , the Project may include a 2-megawatt solar facility as a mitigation menu option which would offset approximately 643 MT CO ₂ e. In addition, as a project design feature, the Project would participate in MCE for	4.8 Greenhouse Gases

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
waste energy to meet current and future demand and encourage new development and redevelopment projects to generate a portion of their energy needs through renewable sources.	its commercial and industrial electricity accounts. MCE sources its electricity from a higher percentage of renewable sources compared to PG&E.	
41. Policy EC2.2: Climate-Friendly Fuel Support production and distribution of climate-friendlier fuels (when and if any are identified) and identify appropriate locations for fuel storage and distribution.	The Project is consistent with this Policy. The Project would enable the Facility to continue manufacturing fuel products that meet California's stringent fuel regulations. The Facility currently includes an extensive research and development operation, including a 1.2-million-square-foot research campus where employees research fuel-efficient transportation products and explore renewable and alternative energies including biofuels, solar and geothermal power. The Project, while not directly involving or expanding the research and development operation, would support continuation of this research at the Facility by allowing the Facility more flexibility in its operations to meet market demand.	4.6 Energy 4.8 Greenhouse Gases 4.9 Hydrology and Water Quality
42. Policy EC2.7 Climate-Friendly Goods Movement: Promote the safe and efficient movement of goods by truck, rail and ship to support port operations and industrial uses.	The Project is consistent with this Policy. As a mitigation measure, the Facility would increase the average "parcel size" - the average ship cargo volume that is delivered or picked up from the Richmond Long Wharf - to reduce the number of ship calls, and thereby reduce NOx emissions and greenhouse gas emissions related to shipping.	4.3 Air Quality
43. Policy EC6.3: Adapting to Climate Change Prepare for and adapt to future impacts of changing weather patterns and sea level fluctuations. Protect neighborhoods, infrastructure and facilities, the shoreline and natural resources from the impacts of climate change. Require new developments to include an evaluation of climate change impacts in the project review process. Shoreline and public	The Project is consistent with this Policy. The Project would be built almost entirely within the Refinery Process Area, and does not involve any development at the shoreline. The Modernization Project includes ongoing use of Facility equipment in areas subject to coastal flooding, including tsunami wave runup and sea level rise. A tsunami in San Francisco Bay is a low probability event, and Chevron has a plan in place for addressing this and other flood-related risks, and as a mitigation measure, the Project would require Chevron to develop a contingency plan that addresses sea level rise.	4.8 Greenhouse Gases 4.9 Hydrology and Water Quality

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
access improvements shall be designed to allow future increases in elevation along the shoreline edge to keep up with higher sea level values, when they occur. Design elements shall include providing adequate setbacks to allow for future elevation increases of at least 3 feet from the existing elevation along the shoreline.	The Modernization Project does not result in any incremental increase in these flood-related Facility risks.	
44. Action EC6.F: Disaster Preparedness and Recovery Plan Require that all development and redevelopment projects comply with the City's Disaster Preparedness and Recovery Plan. Regularly review and update the plan and expand public training and information. See also: SN3.A; HW3.D; CF2.D	The Project is consistent with this Action. The City of Richmond has a Community Guide to Emergency Preparedness (Guide), which was published by the Richmond Fire Department Office of Emergency Services in May 2011 (FRD OES, 2011). The Guide contains information such as locations and contact information for local hospitals, transportation services, utilities, and petrochemical plants. The Facility has in place numerous existing emergency preparedness and response procedures and plans, and these would be required to be revised prior to commencement of Project operations to incorporate changes associated with the Modernization Project. The Facility would be required to mitigate potential impacts by revising its emergency response plan, and developing Emergency Operating Procedures, for new and modified Project equipment. The revised Safety Plan would be submitted to CCHS for approval prior to Project operations.	4.13 Public Safety
IX. GROWTH MANAGEMENT ELEMENT		
45. GOAL GM2 Improved Infrastructure and Facilities Improve public services and infrastructure to meet the demands of new development.	The Project is consistent with this Goal. As described in <i>Section 4.16, Transportation and Traffic</i> , the Project as mitigated would not result in any adverse traffic impacts and would not create any need for new transportation infrastructure. As a greenhouse gas mitigation measure, the Project includes the Proposed Community Greenhouse Gas Reduction Program, which is anticipated to include funding for programs to improve bicycle and pedestrian access within the City of Richmond. Also, the Project would not create new demand for public services such as parks and recreation, schools, emergency	4.6 Transportation 4.14 Public Services 4.15 Parks and Recreation 4.17 Utilities and Service Systems

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
	services, or additional public utilities.	
46. Policy GM2.2 Community Amenities for New Development Require new development to pay costs attributable to that development including impacts on: local streets; local and regional transportation systems; and public facilities such as parks and recreation, schools and emergency services.	The Project is consistent with this Policy. The Project is subject to applicable impact fees for industrial projects.	
XI. HEALTH AND WELLNESS ELEMENT		
47. Policy HW3.3: Emergency and Disaster Preparedness Maintain staff and facilities that will continue to support a coordinated and effective response to emergencies and natural disasters throughout the City. Coordinate with neighboring jurisdictions, local employers and industries to make sure that emergency preparedness and disaster response programs equitably serve all parts of the City. Continue to maintain adequate police and fire staffing, facilities, equipment and maintenance in order to protect the community. See also SN3.1; SN3.E	The Project is consistent with this Policy. The Facility has in place numerous existing emergency preparedness and response procedures and plans, and these would be required to be revised prior to commencement of Project operations to incorporate changes associated with the Modernization Project. Revisions to the Risk Management Plan and the site Safety Plan to reflect the Project's modified and new equipment are required by CalARP and the RISO. The Facility would also update its Hazardous Materials Business Plan to reflect Project-related information for emergency response planning purposes. The Facility would also submit a revised Spill Prevention Control and Countermeasure plan and a revised Facility Response Plan to reflect modified and new Project equipment. The Project as proposed includes requirements for additional Richmond and Chevron Fire Department training that Chevron will fund and coordinate with the Richmond Fire Department prior to commencement of Project operations, and will occur annually throughout Project operations. The Project would require that Facility personnel and contractors are trained on the revised emergency procedures, and that annual refresher training is provided. In addition, as a requirement of the Facility's plea agreement with the State of California entered into on August 5, 2013, the Facility is developing and implementing additional emergency response	4.13 Public Safety 4.14 Public Services

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
48. Policy HW8.3: Property Maintenance Encourage private landowners to maintain and upgrade their property in neighborhoods, commercial corridors and industrial areas. Protect viable neighborhoods and commercial areas from adverse impacts of vacant and underutilized sites and blighted buildings and structures.	training for incident commanders, first responders, and operations management and employees to include training on leak response protocol and shutdown decisions, setting up incident commence structures and establishing boundary limits, and evaluating "hot zones." As a mitigation measure, the Facility would update these training programs prior to commencement of Project operations to incorporate Project equipment and conditions. The Chevron Fire Department would continue to support the Contra Costa County Hazardous Materials Area Plan with equipment and trained personnel. As discussed in <i>Section 4.17, Utilities</i> , the Project would not result in the need for additional emergency response facilities.	4.10 Land Use, Plans, and Policies
XII. PUBLIC SAFETY AND NOISE ELEMENT		
49. Goal SN1: Risk Management of Natural and Human-Caused Disasters Minimize the risk of injury, loss of life, property damage and environmental degradation from	The Project is consistent with this Goal of minimizing the risk from natural and human-caused disasters. Specifically, with respect to the risk of injury, loss of life, property damage and environmental degradation from fire and handling and transport of hazardous materials, as described in <i>Section 4.13, Public Safety</i> , the Project would include enhanced safety measures at the Facility in	4.7 Geology 4.9 Hydrology and Water Quality 4.13 Public Safety

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
seismic activity, geologic hazards, flooding and fire and the storage, use and transport of hazardous materials and operations. Promote a sustainable approach to reduce impacts of natural disasters such as flooding and fire.	addition to continued compliance with all regulatory requirements. Specifically, the Facility would continue to comply with extensive federal, state, and local regulations on safety, disaster preparedness, and emergency planning, preparedness and response, including: ▪ RMP requirements under California Accidental Release Program regulating hazard assessment, release prevention, and emergency response planning. The Facility's RMP was updated Feb 2013 in response to the August 2012 fire, and would be updated again prior to commencing operation of the Project to incorporate changes associated with the Project; ▪ City/County Industrial Safety Ordinances, as amended in response to recommendations made by the Chemical Safety Board in response to the August 2012 fire; ▪ Process Safety Management requirements under Cal/OSHA requiring process hazard analyses for all process units; and ▪ State hazardous materials inventory/business plan regulations, implemented by Contra Costa Health Services. In addition, changes to Facility processes are being made based on U.S. Chemical Safety and Hazard Investigation Board (CSB) recommendations and other investigations following the August 2012 fire, including the terms of a probation agreement. As described in <i>Section 4.13, Public Safety</i>, these changes include implementing a new regime of pipe thickness and corrosion risk inspections, damage mechanisms reviews, process hazard analyses, enhanced emergency response training, record-keeping, and reporting requirements. The proposed Project includes implementation of a new Modernization Reliability Program designed to further enhance safety and reliability of Facility equipment and Refinery Operations. The Modernization Reliability Program commits Chevron to replacing numerous piping circuits, installing additional	

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
	monitoring devices on certain carbon steel piping circuits, implementing new inspection, sampling, and monitoring regimes, and a system of verifying post-Project operating conditions when the sulfur content of crude oil being processed at the Facility reach specified levels. The Modernization Reliability Program also requires that process hazard assessments be conducted or revalidated prior to construction and again after construction prior to commencement of Project operations, and that these process hazard assessments include inherently safety systems analysis, layers of protection analysis, and damage mechanism evaluations. The Modernization Reliability Program requires Chevron to convene annual town hall meetings to brief the community on safety improvements, and requires Chevron to submit annual reports to the City on the status and progress of Reliability Program requirements. The Modernization Reliability Program is included in its entirety in <i>Section 4.13 Appendix 4.13-REL</i>. All safety and reliability measures are described in <i>Section 4.13, Public Safety</i>. In addition, the Project would include implementation of an open space fire protection plan to reduce fuel loading in vegetated open space areas adjacent to the Refinery Process Area, and to minimize risks of fire occurrence and fire size, as described in <i>4.13, Public Safety</i>. With implementation of these mitigation measures, the Project would be consistent with this Goal of minimizing risk from fires. With respect to risks from use and transport of hazardous materials, with the Project there would be no new categories of hazardous wastes generated. While the quantities of some hazardous materials would change, as described in <i>Section 4.13, Public Safety</i>, quantities of stored hazardous materials specific to the Modernization Project would be less than maximum quantities currently stored at the Facility. The Facility would continue to send most of the material off-site for reclamation of precious metals, while the remainder would be transported to a secure landfill that is licensed to accept these wastes. The	

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
	type of waste that would be increased (solid spent catalyst) would be much less hazardous than the waste being eliminated (liquid spent MEA); therefore, the consequences of an accidental spill of solid waste during transport would be less after the Project compared to the Facility today. In addition, during Project construction the Project would continue to comply with all applicable regulations, and would include additional mitigation measures to ensure that impacts to the public and environment from the use, storage, transport or disposal of hazardous materials during construction would be minimized, as described in detail in <i>Section 4.13, Public Safety</i>. Because the Project would be built almost entirely within the previously-developed Refinery Process Area, the Project would not result in any increased risk from seismic activity, geologic hazards, or flooding, as described in <i>Sections 4.7, Geology, Soils, Seismicity, and Mineral Resources</i>, and <i>4.9, Hydrology and Water Quality</i>.	
50. Goal SN2: High Levels of Police and Fire Service Provide a high level of security in the community to prevent and reduce crime, and minimize risks to people, property and the environment from fire. See also: SN2.2	The Project is consistent with this Policy. The Chevron Fire Department would continue to work closely with the Richmond Fire Department to prepare for and respond to emergencies at the Facility. The Facility would be required to update its emergency response plans and procedures to reflect Project equipment and operating conditions, and provide training to the Richmond Fire Department prior to commencement of Project operations. As discussed in <i>4.13 Public Safety</i> and <i>4.14 Public Services</i>, any increased demand for police or fire services associated with construction or operation of the Project would not exceed the capacity of existing fire and police services, as provided by the Chevron Fire Department, and the Richmond Police and Fire Departments. In addition, on December 19, 2013, Chevron and the City entered into a 5-year Agreement for Fire Prevention Services under the terms of which Chevron will fund a full-time Fire Inspector II position to be embedded at the Facility. This Fire Inspector will review, analyze, issue, inspect, extend, and close all Fire Construction Permits, and maintain and renew as appropriate the Annual	4.13 Public Safety; 4.14 Public Services

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
51. Goal SN3: Emergency Preparedness Develop effective mechanisms for a coordinated response to emergencies and natural disasters to best protect residents, businesses and the environment.	Operating Permit issued pursuant to the California Fire Code. The funding under the agreement compensates the City of Richmond for all personnel costs associated with the Fire Inspector II position as well as all permit fees (Judd, 2013). Chevron also has an ongoing contract with the City of Richmond for the services of one full-time on-site code enforcement officer for building and construction (Ayers, 2013). Additionally, the Project would include an enhanced emergency response training program, as described in <i>Section 4.13, Public Safety</i>, as well as an open space fire protection plan to reduce fuel loading in vegetated open space areas adjacent to the Refinery Process Area, and to minimize risks of fire occurrence and fire size. The Project is consistent with this Goal. The Chevron Fire Department would continue to work closely with the Richmond Fire Department to prepare for and respond to emergencies at the Facility. The Facility would be required to update its emergency response plans and procedures to reflect Project equipment and operating conditions, and provide training to the Richmond Fire Department prior to commencement of Project operations. The Facility has an emergency notification system with requirements for notifying off-site emergency responders, government agencies, the community, and local hospitals in the event of a release. The Facility participated in the development of the community warning system and the telephone emergency notification system, and has its own notification systems through sirens, radios, emergency alert receivers, and the media. As part of the Project, Chevron would also make small radio devices available to the community and schools as a notification method for emergencies. Chevron would mitigate risks by coordinating with local area schools to ensure that the Facility's emergency response procedures and plans are adequate to minimize risk to school children, including updating plans/procedures, providing emergency response equipment, and providing training to school	4.13 Public Safety

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
52. Goal SN4: Acceptable Noise Levels Achieve noise levels consistent with acceptable standards and reduce or eliminate objectionable noise sources. Prevent where possible, or mitigate noise impacts from industries, roadways, railroads and businesses in residential areas and sensitive uses in the community. In addition, apply new technology, buffers and other solutions to reduce excessive noise. See also: SN4.1	staff. Chevron will report all spills and releases of hazardous materials or hazardous waste to the environment, including those from the transportation of these materials, within 48 hours to the City and to the appropriate regulatory agency. With the Project, Chevron would prepare and implement an open space fire protection plan that would include provisions for emergency response coordination, including enhanced mutual aid, protocols to assure adequate firefighter responses to open space area fires as well as Refinery area. The Project is consistent with this Goal. As described in <i>Section 4.11, Noise</i>, modeled levels of concurrent operation of all construction equipment would comply with Richmond Noise Ordinance. The increase over existing daytime ambient sound levels would be 1 to 2 A-weighted decibels (dBA), a less-than-perceptible change. In addition, modeling of noise associated with Refinery Operations after installation of the Project showed that the Project would not result in any increase in noise at the nearest residential receptors.	4.11 Noise
53. Policy SN1.3: Hazardous Materials Operations Require safe production, transportation, handling, use and disposal of hazardous materials that may cause air, water or soil contamination. Encourage best practices in hazardous waste management and ensure consistency with City, West Contra Costa County and Cal/OSHA guidelines, standards and requirements. Protect Richmond's shoreline and other natural resources from accidental occurrences by controlling the location of new hazardous waste facilities and by limiting the expansion of existing	The Project is consistent with this Policy. Petroleum refining operations inherently involve the routine use, transport, and disposal of hazardous materials. Wastes generated are subject to extensive applicable regulations regarding storage and disposal, as described in <i>Section 4.13, Public Safety</i>. Because the Project would involve mainly replacement units using identical or similar technologies, the waste streams generated from the new units would be very similar to those currently generated. Thus, there would be no new categories of hazardous wastes generated. However, the quantities of some hazardous materials would change, as described in <i>Section 4.13, Public Safety</i>. After installation of Project, the Facility would continue to send most of the material off-site for reclamation of precious metals, while the remainder would	4.13 Public Safety

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
hazardous waste facilities adjacent to the shoreline and along streams or creeks. Coordinate with federal, state and local agencies and law enforcement to prevent the illegal transportation and disposal of hazardous waste.	be transported to a secure landfill that is licensed to accept these wastes. The type of waste that would be increased (solid spent catalyst) would be much less hazardous than the waste being eliminated (liquid spent MEA); therefore, the consequences of an accidental spill of solid waste during transport would be less after the Project compared to the Facility today. During Project construction, it is estimated that approximately 500 tons of potentially hazardous soil would be excavated prior to and during the construction of elements of the Project. Any soil determined to be hazardous would be handled and stored as hazardous waste until it is disposed of at hazardous waste disposal facilities. Non-hazardous soil would be reused on site or would be sent off-site as a designated waste, as required by regulations. As described in <i>Section 4.3, Public Safety</i>, the Project would include additional measures to ensure that impacts to the public and environment from the use, storage, transport or disposal of hazardous materials during construction would be minimized, including mitigations requiring construction materials storage only in authorized locations, measures requiring transportation of these wastes off-site within the specified timeframes and in compliance with existing regulations, and measures requiring implementation of enhanced refinery and contract worker safety procedures for construction activities, as part of Chevron's enhanced safety program developed following the August 2012 fire.	4.13 Public Safety 4.14 Public Services
54. Policy SN2.3: Fire Safety Regularly update policies that will protect the community and its urban and natural areas from fire hazards. Emphasize prevention and awareness of fire safety guidelines to minimize risk and potential damage to life, property and the environment. In areas designated by the Richmond	The Project is consistent with this Policy. The Facility has a dedicated Chevron Fire Department, and as discussed in <i>4.14 Public Services</i>, any increased demand for police or fire services associated with construction or operation of the Project would not exceed the capacity of existing fire and police services, as provided by the Chevron Fire Department, and the Richmond Police and Fire Departments. As discussed in <i>4.13 Public Safety</i>, the Facility would be required to update its emergency response plans and procedures to reflect Project equipment and operating conditions, and provide training to the Richmond	

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
Fire Department as having a high fire hazard, ensure adequate fire equipment, personnel, firebreaks, facilities, water and access for a quick and efficient response in any area.	Fire Department prior to commencement of Project operations. The Chevron Fire Department responsibilities include inspections of fire-related equipment, permit authorization for hot work and confined space entry, security, and a variety of other tasks related to fire prevention and emergency response. The Chevron Fire Department trains its personnel to handle any emergency that might occur. These emergencies involve all aspects of fire-fighting, including fires in process plants, building fires, storage tank fires, wild land fires, or fires related to transportation modes, including ships, barges, tank cars, and rail cars. Chevron Fire Department personnel are trained in confined space, high angle, and heavy rescue procedures. In addition, all of the full-time members are certified Hazardous Material Technicians, and are qualified to deal with any hazardous material incident including any oil spills at the ship and barge loading facilities. The Chevron Fire Department also responds to medical emergencies. A variety of emergency response equipment exists at the Facility and includes 25 emergency response vehicles (including fire trucks), 2,500 fire extinguishers, water deluge systems, in-plant stationary fire monitors, fixed foam systems, and a water fog system. The liquefied petroleum gas storage vessels and anhydrous ammonia storage vessels are equipped with firewater deluge systems, which have the ability to cool the vessels and disperse vapor clouds to prevent failure in case of a fire. All of this equipment is required to be maintained, inspected, and tested as outlined in the Chevron Fire Department Procedures and Policies. As part of the Emergency Response Program, the Chevron Facility works with local emergency responders in preparing for and responding to emergencies. The Facility also works closely with the CCHMP for any necessary response to hazardous material releases (such as downwind air monitoring) and to alert the public in case of accidental releases, fires, or explosions in accordance with CCHMP's Emergency Response Area Plan. Likewise, the Chevron Fire Department supports the Contra Costa County Hazardous Materials Area Plan	

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
	with equipment and trained personnel. The Facility worked with CCHMP to establish the Community Warning System and the Telephone Emergency Notification System zones, which provide incident notification to the community. The Chevron Fire Department also provides mutual aid to the City of Richmond Fire Department and responds outside of the Facility within the City of Richmond whenever asked to do so by the city fire department. The Chevron Fire Department also belongs to an industrial mutual aid organization, PMAO, and has responded to other oil companies and chemical plants during emergencies. Likewise, the emergency response resources of the other companies in PMAO are available for an emergency at the Chevron Facility if needed. The Project would include an enhanced emergency response training program, as described in <i>Section 4.13, Public Safety</i>, as well as an open space fire protection plan to reduce fuel loading in vegetated open space areas adjacent to the Refinery Process Area, and to minimize risks of fire occurrence and fire size.	
55. Action SN2.C Regional Emergency Coordination Plan Collaborate with regional agencies and neighboring jurisdictions to develop and implement a regional emergency coordination plan and agreement for police, fire and emergency medical services.	The Project is consistent with this Action. After the Project, as part of the Emergency Response Program, the Facility would continue to work closely with the Richmond Fire Department and the Contra Costa County Hazardous Materials Program to coordinate emergency preparedness and response to coordinate emergency preparedness and response. Emergency response drills are conducted annually with the Richmond Fire Department and/or the CCHMP. The Facility also works closely with the CCHMP for any necessary response to hazardous materials releases and to alert the public in case of accidental releases, fires, or explosions. The Chevron Fire Department also provides mutual aid to the City of Richmond Fire Department and responds outside of the Facility within the City of	4.13 Public Safety

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
56. Action SN2.D Fire Prone Area Designation Designate areas in Richmond that are particularly prone to fire hazards and make this information available to the community. Consider adopting wildfire development guidelines for development adjacent to fire prone areas.	Richmond whenever asked to do so by the Richmond Fire department. The Chevron Fire Department also belongs to an industrial mutual aid organization, the Petrochemical Mutual Aid Organization, through which Chevron and other oil companies and chemical plants in the area are available to respond to emergencies at each other's facilities when needed. The Facility would be required to revise its emergency response plan and procedures to incorporate Project-related new and modified equipment and operating conditions prior to commencement of Project operations, and all regionally coordinated emergency response efforts would then be based on the Facility's updated emergency response plan and procedures. The Project is consistent with this Policy. The major components of the Project would be constructed entirely within the existing processing areas of the Facility, many of which are located in barren or paved areas. However, Figure 4.13-5 also shows large areas of vegetated open space near the processing areas of the Facility, including the ridge of hills that extends approximately four kilometers from the tank farms at the southeast part of the Facility to the northwest tip of the peninsula and the flat open space to the northwest of the Low Sulfur Fuel Oil flare. During the dry season, from approximately April through October, these open space areas are susceptible to fires. According to Chevron, the growth of vegetation in these areas is controlled to limit fire potential. In addition, the Facility has its own fire protection measures, including buffers between the Refinery Process Area and fence lines. As described in <i>Section 4.14, Public Services</i>, the Facility supports its own Fire Department that is staffed with full-time and volunteer personnel trained to handle all types of emergencies, including wildland fires. The Facility is also served by the Richmond Fire Department, as noted in <i>Section 4.14, Public Services</i>. As part of the Project, Chevron would prepare and implement an open space fire protection plan to reduce fuel loading in vegetated open space areas	4.13 Public Safety

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
	adjacent to the Refinery Process Area, and to minimize risks of fire occurrence and fire size, as described in <i>Section 4.13, Public Safety</i> .	
57. Action SN3.C: Emergency Preparedness Exercises Continue to hold joint fire, hazardous materials incidents, disaster drills and earthquake response exercises with adjacent communities, utility companies, larger businesses and industry, the East Bay Regional Park District and the State Office of Emergency Services in order to test and improve preparedness capabilities.	The Project is consistent with this Policy. The Facility would be required to mitigate potential impacts by revising its emergency response plan, and developing Emergency Operating Procedures, for new and modified Project equipment. The revised Safety Plan would be submitted to CCHS for approval prior to Project operations. The Facility conducts annual emergency response drills in which off-site responding agencies such as the Richmond Fire Department and/or the CCHMP, the Chevron Fire Department, and non-responding employees work together to resolve a given scenario. This pre-planning activity is intended to ensure that the members of the responding agencies are familiar with the Facility, the hazards of the regulated substances, the resources available at the Facility, and the locations of these resources. After the commencement of Project operations, these drills would enable responding agencies to become familiar with Project equipment and operations to be better prepared to respond to an emergency involving Project facilities.	4.13 Public Safety
58. Action SN3.E: Corporation, Industry and Utility Emergency Plans Regularly meet with large employers to develop and maintain up-to-date emergency plans for use in the event of a catastrophic event.	The Project is consistent with this Action. The Project would be located within the existing Facility and would not introduce any hazardous substances not currently used and stored in larger quantities at the Facility so would not interfere with existing emergency plans for areas located outside of the Facility. The Project would be integrated into the Facility's emergency plan, described in <i>Section 4.13, Public Safety</i> . Therefore, there is nothing to suggest that the Project would in any way impair or interfere with this or other emergency plans; however, the Facility's emergency plan would be updated, as necessary, as part of revisions to its RMP and Safety Plan required by Contra Costa Health Services (CCHS). This update would mitigate any potential impact if done prior to operational commencement of the Project elements; therefore the Project is consistent with this Action.	4.13 Public Safety

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
59. Action SN4.A: Noise Study Report Requirement Require proposed commercial and industrial uses with potential noise and vibration-producing activities or new noise-sensitive uses that locate in an area with day-night average sound level of 55 or greater to provide noise study reports. The report should identify noise mitigation measures that limit noise to an acceptable level compared to existing conditions.	The Project is consistent with this Action. As described in <i>Section 4.11, Noise</i> , potential noise associated with the Project was studied to determine that modeled levels of concurrent operation of all construction equipment would comply with the strictest applicable noise standard identified in the Richmond Noise Ordinance. The Project also includes mitigation measures to ensure that any nighttime construction, should it occur, would comply with all applicable noise standards. In addition, modeling of noise associated with Refinery Operations after installation of the Project showed that the Project would not result in any increase in noise at the nearest residential receivers. Thus the Project is consistent with this Action.	4.11 Noise
XIV. HISTORIC RESOURCES ELEMENT		
60. GOAL HR1: Historic Resource Preservation Richmond has a rich history that is woven throughout the fabric of the community. Preserve historic resources and leverage them to enhance and build upon Richmond's historic character.	The Project is consistent with this Goal. There are no historic resources located within the Refinery Process and Tank Farm areas of the Facility, which have been developed for decades for Facility uses, nor would any historic resources be impacted by the Project or any Project Design Feature. As discussed in <i>Section 4.5, Cultural Resources</i> , there is one resource (P-07-3119) within the Facility, the Facility administration building that could qualify as an historic resource. At the time of this document's preparation, the City of Richmond was processing documentation to designate the Chevron administration building for local listing as a City of Richmond historic resource. If the structure is locally designated, the building would qualify as a historical resource under CEQA Guidelines Section 15064.5(a)(2). However, the building would not be impacted by the proposed Project as it is located outside the Refinery Process and Tank Farm areas and no construction is proposed in its vicinity. Most of the construction for the Project is already complete. The remaining construction would occur entirely within the previously disturbed Refinery Process Area Tank Farm areas of the Facility. These areas are highly industrialized and thus retain no architectural distinction, nor do the physical structures of the Facility appear to be associated with significant events or	4.5 Cultural Resources

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
	persons in California's history. Therefore, the construction of the proposed facilities would not directly or indirectly result in a change to any historic resources. Construction and operation of the Project would not require the removal of historical structures or related demolition activities. As a result, the Project is consistent with this Policy of preserving historic resources.	
61. Policy HR1.1 Preservation of Diverse Resources Protect, preserve and enhance the diverse range of historic, cultural and archaeological sites and resources in the City for the benefit of current and future residents and visitors.	The Project is consistent with this Policy. There are no known unique or significant archeological resources at the Facility, nor were any discovered during the Project excavation and construction activities completed following issuance of the writ. The Project would not adversely change the significance of any unique archaeological resource. There are no subsurface construction activities associated with any Project Design Features, so Project Design Features would not cause any adverse change to the significance of any unique archeological resource. As a result, there would be no impacts to archeological resources due to the Project While the Facility is largely modified and disturbed, the vast majority of Project-related excavation and subsurface work has already been completed, remaining excavation work would occur only within previously-developed portions of the Facility, and there is no subsurface construction activity included in any Project Design Feature, the general Project vicinity has a considerable level of previously identified prehistoric sites, especially along the margins of the San Pablo Bay. Previously unknown archaeological sites, e.g., shell midden soils, lithic artifacts, historic trash scatters, may occur deeply buried within the Project site. Damage to significant buried archaeological deposits would be a significant adverse impact. The Project would implement Mitigation Measure 4.5-1, as described in <i>Section 4.5, Cultural Resources</i>, to ensure appropriate treatment of any prehistoric or historic subsurface cultural resources discovered during Project construction. As part of the Mitigation Monitoring and Reporting Program for the EIR, Chevron shall have environmental monitors on-site during construction of the	4.5 Cultural Resources

TABLE A4.10-1 CONSISTENCY EVALUATION OF RELEVANT GENERAL PLAN GOALS, POLICIES, AND ACTIONS

Richmond General Plan 2030 Goals, Policies, and Actions	Project Consistency Evaluation	EIR Organizational Note: Corresponding EIR Section Addressing Goal, Policy, Action
	Project. The construction workers shall be trained by the monitors on environmental sensitivity and the identification of prehistoric or historic subsurface cultural resources.	

APPENDIX 4.13

Public Safety

APPENDIX 4.13-DET

Public Safety Detailed Background

APPENDIX 4.13-DET

PUBLIC SAFETY DETAILED BACKGROUND

This appendix provides more detailed background information regarding current and emerging regulatory programs that serve to protect public safety, additional information about Chevron's current public safety programs, and Facility accident history, including agency findings regarding the August 6, 2012 fire.

1.1 REGULATORY SETTING

Petroleum refineries are subject to complex and often overlapping regulatory requirements regarding industrial safety under federal, State, and local laws. As discussed in *Section 4.13, Public Safety*, the regulations share common themes for prevention of, and appropriate response to, industrial process accidents, including: the protection of worker health and safety; reporting and disclosure; performance specifications; maintenance and inspections; and other related requirements.

Some regulatory programs based in air quality and public health also indirectly serve to protect public safety. Additional information on such programs, including current regulations and emerging regulatory initiatives, is provided below.

1.1.1 Current Regulations

1.1.1.1 Federal Requirements

1.1.1.1.1 *EPA National Emission Standards for Hazardous Air Pollutants Regulations (40 CFR Parts 61 and 63)*

As further discussed in *Appendix 4.3-REG* of this EIR, National Emission Standards for Hazardous Air Pollutants (NESHAPs) are stationary source requirements for hazardous air pollutants. Part 61 NESHAPs regulate seven hazardous air pollutants: asbestos; beryllium; mercury; vinyl chloride; benzene; arsenic; and radon/radionuclides. Part 63 NESHAPs were promulgated after the 1990 Clean Air Act Amendments, and require application of technology based emissions standards referred to as Maximum Achievable Control Technology (MACT). Consequently, these post-1990 NESHAPs are also referred to as MACT standards. The NESHAPs are delegated to the States, but both U.S. Environmental Protection Agency (EPA) and the States implement and enforce the NESHAP standards. The NESHAP program includes compliance monitoring of facilities subject to the regulations, which entails reviewing reports and records,

interviewing facility personnel knowledgeable of the facility, inspecting the processes with emissions points subject to standard sampling wastewater discharges if applicable, inspecting against design and work practice standards, and reviewing leak detection and repair methods. Additionally, sources subject to NESHAP regulations must perform an initial performance test to demonstrate compliance, and are normally required to demonstrate continued compliance. Local NESHAP requirements that apply to the Facility are established in Bay Area Air Quality Management District (BAAQMD) Regulation 11 (BAAQMD, 2014).

1.1.1.1.2 U.S. Department of Transportation Oil Spill Prevention and Response Plans (49 CFR Chapter I, Subchapter B, Part 130)

The Oil Transportation Regulations prescribe prevention, containment, and response planning requirements of the U.S. Department of Transportation (DOT) applicable to transportation of oil by motor vehicles and rolling stock (49 CFR Section 130.1). The requirements apply to any liquid petroleum oil in packaging having a capacity of 3,500 gallons or more, or any liquid petroleum or non-petroleum oil in a quantity greater than 42,000 gallons per packaging, subject to certain exceptions (49 CFR Section 130.2(a)). The requirements do not affect the DOT Hazardous Materials Regulations (40 CFR Subchapter C) (see below). The Oil Transportation Regulations include communication requirements (49 CFR Section 130.11), packaging requirements (49 CFR Section 130.21), and written response plan requirements (49 CFR Section 130.31).

1.1.1.1.3 DOT and Pipeline and Hazardous Materials Administration (PHMSA) - Hazardous Materials Regulations (HMR) (49 CFR Chapter I, Subchapter C, Part 171 et seq.)

The Hazardous Materials Transportation Act (HMTA), as amended (49 USC 5101 et seq.) authorizes the Secretary of the DOT to regulate the transportation of hazardous materials. The Secretary is authorized to issue regulations to implement statutory requirements. The Pipeline and Hazardous Materials Safety Administration (PHMSA) was delegated the responsibility to write the hazardous materials regulations (HMRs), which are contained in 49 CFR Chapter I, Subchapter C. 49 CFR Section 172.101 contains the list of hazardous materials regulated by DOT (referred to as the "Hazardous Materials Table", DOT PHMSA, 2013).

The HMRs are applicable to the transportation of hazardous materials in commerce and their offering to:

- Interstate, intrastate, and foreign carriers by rail car (49 CFR Part 174), aircraft (49 CFR Part 175), vessel (49 CFR Part 176), and public highway/motor vehicle (49 CFR Part 177).

- The representation that a hazardous material is present in a package, container, rail car, aircraft, motor vehicle or vessel.
- The manufacture, fabrication, marking, maintenance, reconditioning, repairing or testing of a package or container which is represented, marked, certified or sold for use in the transportation of hazardous materials (49 CFR 171.1(a)).

The HMRs include requirements for registration, carrier responsibility, incident reporting, communications, labeling, hazardous materials training, recordkeeping, security plans, packaging, and compatibility (DOT FMCSA, 2014).

1.1.1.1.4 DOT and PHMSA Pipeline Safety Regulations - Gas and Liquid Integrity Management Rules

The PHMSA, Office of Pipeline Safety (OPS) issues and enforces the Pipeline Safety Regulations (49 CFR Parts 190-199), implementing the Federal Pipeline Safety Law (49 USC Section 60101 et seq.), to ensure the safety of interstate and intrastate pipelines transporting hazardous liquids, natural gas, and other flammable, corrosive and toxic gases. States may enforce safety standards on intrastate pipelines if the State has been certified by PHMSA under 49 USC Section 60105.

- **Gas IM Rule (49 CFR Part 192) (Gas Transmission Integrity Management Program or "Gas IM Rule"):** Part 192 of the Pipeline Safety Regulations regulates the in-pipeline transportation of natural gas and other gases, including hydrogen, which is transported as a compressed flammable gas. In addition to regulating gathering and transmission, PHMSA regulates the distribution and storage of hydrogen gas by pipeline (49 CFR Section 192.3). The Gas IM Rule specifies how pipeline operators must identify, prioritize, assess, evaluate, repair, and validate the integrity of gas transmission pipelines that could, in the event of a leak or failure, affect High Consequence Areas (HCAs) (generally, areas with a certain number of buildings or occupied by a certain number of people for a minimum number of days per year) within the United States (49 CFR Section 192.903)(DOT PHMSA, 2014a).
- **Liquid IM Rule (40 CFR Part 195) (Liquid Pipeline Integrity Management Program or "Liquid IM Rule"):** The Liquid IM Rule specifies how pipeline operators must identify, assess, evaluate, repair, and validate the integrity of hazardous liquid pipelines that could, in the event of a leak or failure, affect High Consequence Areas (HCAs), which include: commercially navigable waterways; high population or urbanized areas with at least 50,000 or more people and a population density of at least 1,000 people per square mile; a populated area that contains a concentrated population such as an

incorporated or unincorporated city, town, village, or other designated residential or commercial area; or an unusually sensitive area (drinking water or ecological resource area that is unusually sensitive to environmental damage from a hazardous liquid pipeline release) (49 CFR Section 195.450) (DOT PHMSA, 2014b).

1.1.1.1.5 Marine Protection, Research and Sanctuaries Act of 1972 (16 USC Section 1431 and 33 USC Section 1401) (MPRSA)

The Marine Protection, Research, and Sanctuaries Act (MPRSA) (also referred to as the Ocean Dumping Act) implements the London Convention, an international treaty that governs ocean dumping. The MPRSA prohibits dumping material into the ocean that would unreasonably degrade or endanger human health or the marine environment. Specifically, the MPRSA generally prohibits (1) transportation of material from the United States for the purpose of ocean dumping; (2) transportation of material from anywhere for the purpose of ocean dumping by U.S. agencies or U.S.-flagged vessels; (3) dumping of material transported from outside the United States into the U.S. territorial sea. A permit is required to deviate from these prohibitions. The standard for permit issuance is whether the dumping will "unreasonably degrade or endanger" human health, welfare, or the marine environment. Criteria and procedures for ocean dumping permits are established in EPA's ocean dumping regulations (40 CFR Parts 220-229).

1.1.1.1.6 Facility Security Rule (33 CFR Part 105)

The U.S. Coast Guard oversees development and implementation of security measures at marine oil terminals, and on oil tankers. Vessels and facilities must conduct security assessments, and must submit a Vessel Security Plan (VSP) or Facility Security Plan (FSP) to the Coast Guard for approval.

1.1.1.1.7 Chemical Facilities Anti-Terrorism Standards (CFATS) Regulation (6 CFR Part 27)

The U.S. Department of Homeland Security promulgated the Chemical Facilities Anti-Terrorism Standards (CFATS) regulations as a comprehensive federal security program for high-risk chemical facilities. The rule establishes risk-based performance standards, requiring covered facilities to prepare Security Vulnerability Assessments and to develop and implement Site Security Plans. Facilities are assigned to one of four risk tiers, based on potential consequences and likelihood of an attack on the facility. Based on the risk tier classification, facilities are subject to varying performance and planning requirements.

1.1.1.2 State Requirements

1.1.1.2.1 *California Aboveground Petroleum Storage Act (APSA) (Cal. H&S Code Sections 25270 et seq.)*

The California Aboveground Petroleum Storage Act (APSA) regulates above-ground storage of petroleum and petroleum products. A tank facility¹ is subject to the APSA if: (1) the tank facility is subject to the federal oil pollution prevention regulations (40 CCR Part 112); or (2) the tank facility has a storage capacity of 1,320 gallons or more of petroleum (Cal. H&S Code Section 25270.3).

The owner of a facility subject to the APSA must prepare a Spill Prevention Control and Countermeasure (SPCC) plan in accordance with the federal oil pollution prevention program (40 CCR Part 112), and must conduct period inspections to assure compliance with Section 112, subject to certain exceptions (Cal. H&S Code Section 25270.4.5).

The Certified Unified Program Agency (CUPA) implements the APSA (Cal. H&S Code Section 25270.4). At least once every three years, the CUPA conducts inspections of each storage tank or a representative sampling of storage tanks at each tank facility with aggregate storage capacity of 10,000 gallons or more of petroleum. The purpose of the inspection is to determine whether the owner or operator is in compliance with the spill prevention control and countermeasure plan requirements of the APSA (Cal. H&S Code Section 25270.5(a)).

1.1.1.2.2 *California Underground Storage Tank Program (Cal. H&S Code Sections 25280 et seq.; 23 CCR Division 3, Chapter 16)*

The Underground Storage Tank (UST) Program is intended to protect public health and safety and the environment from releases of petroleum and other hazardous substances from USTs.² There are four program elements: (1) leak prevention; (2) cleanup; (3) enforcement; and (4) tank tester licensing. The CUPA

¹ "Tank facility" means one or more aboveground storage tanks, including any piping that is integral to the tanks, that contain petroleum and that are used by an owner or operator at a single location or site. For purposes of this section, a pipe is integrally related to an aboveground storage tank if the pipe is connected to the tank and meets any of the following: (1) the pipe is within the dike or containment area, (2) the pipe is between the containment area and the first flange or valve outside the containment area, (3) the pipe is connected to the first flange or valve on the exterior of the tank, if state or federal law does not require a containment area, and (4) the pipe is connected to a tank in an underground area (Cal. H&S Code Section 25270.2(n)).

² "Underground storage tank" is defined as any one or combination of tanks, including pipes connected thereto, that is used for the storage of hazardous substances and that is substantially or totally beneath the surface of the ground (Cal. H&S Code Section 25281(y)(1)).

is the implementing agency for the leak prevention program element (Cal. H&S Code Section 25283(a))(SWRB, 2013).

1.1.1.2.3 California Highway Patrol Hazardous Materials Transportation (13 CCR., Div 2, Chapter 6)

The California Highway Patrol (CHP) has adopted regulations governing the transportation of hazardous materials on California roads and highways (13 CCR Division 2 Chapter 6) (see also federal hazardous materials safety regulations at 49 CFR Parts 171-180). These regulations apply to shipments of hazardous materials to and from the Facility and conform with federal DOT requirements. These regulations contain extensive requirements regarding packaging, labeling, placarding, record-keeping, release reporting and insurance.

1.1.1.2.4 California Pipeline Safety Act (GOV Code Sections 51010 et seq.) (24 CCR Part 9 Section 1.11.1 et seq.)

The State Fire Marshal (SFM) has exclusive safety, regulatory, and enforcement authority over interstate hazardous liquid pipelines, and may act as agent for the U.S. Secretary of Transportation to implement the federal Hazardous Liquid Pipeline Safety Act (49 USC Sections 2001 et seq.) and federal pipeline safety regulations as to those portions of interstate pipelines located within the state, as necessary to obtain annual federal certification (GOV Code Section 51010). Certain pipelines at the Facility are regulated under this program. Key elements to pipeline safety include routine maintenance, pigging (line clearing), line inspections, written procedures, and regular training. Covered pipelines must undergo periodic integrity testing using procedures approved by the SFM staff. In addition, all regulated pipelines are subject to inspection and testing by the SFM staff, with attention to corrosion, maintenance of proper operating pressures and electrical isolation. All spills, ruptures, fires and similar incidents must be reported and investigated for cause.

1.1.1.2.5 Porter-Cologne Water Quality Control Act Section 13272

Any person who, without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the state, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the state, shall as soon as (1) that person has knowledge of the discharge, (2) notification is possible, and (3) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the California Emergency Management Agency of the discharge in accordance with the spill reporting provision of the California oil spill contingency plan (California Water Code Section 13272(a)). The reportable quantity for oil or petroleum products shall be one barrel (42 gallons) or more, by direct discharge to the receiving waters, unless a more restrictive reporting

standard for a particular body of water is adopted (California Water Code Section 13272(f)). The State Water Resources Control Board and Regional Water Quality Control Board (RWQCB) manage this and other statutory programs designed to prevent and minimize potentially harmful discharges of hazardous materials into surface waters and groundwater. These agencies, and these water quality protection mandates, are discussed in greater detail in *Section 4.9, Hydrology and Water Quality*.

1.1.1.2.6 Lempert-Keene-Seastrand Oil Spill Prevention and Response Act of 1990 (GOV Code Section 8670.1 et seq.)

The statute requires the Governor to appoint an administrator for oil response, who must be a deputy director of the California Department of Fish and Wildlife (CDFW) (GOV Code Section 8670.4). The administrator, subject to the Governor, has the primary authority to direct prevention, removal, abatement, response, containment, and cleanup efforts with regard to all aspects of any oil spill in the marine waters of the state, in accordance with any applicable marine facility or vessel contingency plan and the California oil spill contingency plan. The administrator shall cooperate with any federal on-scene coordinator, as specified in the National Contingency Plan (GOV Code Section 8670.7(a)). The administrator has additional duties related to oil spill clean-up and response (GOV Code Sections 8670.6 - 8670.14).

The statute establishes requirements for oil spill response, including the duty to clean up and remove the oil and to comply with the applicable oil spill contingency plan, and to immediately report the discharge to the California Emergency Management Agency (GOV Code Sections 8670.25 - 8670.27).

The statute also establishes requirements for oil spill contingency planning, including preparation of administrator-approved contingency plans for marine facilities and vessels, and screening and comprehensive risk-based monitoring for inspecting vessels at anchor and alongside docks (GOV Code Sections 8670.28 - 8670.37.5).

1.1.1.2.7 California Department of Fish and Wildlife Office of Spill Prevention and Response (OSPR) Oil Spill Investigation

The Office of Spill Prevention and Response (OSPR) mission is to provide best achievable protection of California's natural resources by preventing, preparing for, and responding to spills of oil and other deleterious materials, and through restoring and enhancing affected resources. OSPR and the U.S. Coast Guard jointly prepared oil spill contingency plans for California port areas, including the Port of San Francisco. The San Francisco Oil Spill Contingency Plan (CDFW, 2013b) is available online. The Lempert-Keene-Seastrand Oil Spill Prevention and

Response Act of 1990 (SB 2040) details the role of the OSPR in spill investigations. OSPR is the lead investigative unit for state and local governments. As the lead agency, OSPR will coordinate the investigative efforts for these government agencies (Contingency Plan, Section 1000) (CDFW, 2013a).

1.1.1.2.8 California State Lands Commission, Marine Facilities Division Marine Oil Terminal Engineering and Maintenance Standards

The Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS) were approved by the California Building Standards Commission (BSC) on January 19, 2005, and codified as the 2001 Title 24, California Code of Regulations, Part 2, California Building Code, Chapter 31F - Marine Oil Terminals. These standards apply to all existing and new marine oil terminals in California, and include criteria for inspection, structural analysis and design, mooring and berthing, geotechnical considerations, fire, piping, mechanical and electrical systems.

1.1.1.3 Regional and Local Requirements

1.1.1.3.1 BAAQMD Regulations and Permit Requirements

Appendix 4.3-REG of this EIR describes BAAQMD regulations and permit requirements applicable to the Facility. These regulations establish comprehensive permitting programs for new and modified sources, as well as substantive standards that apply to many aspects of refining operations, e.g., leak detection and repair, storage of organic compounds, flaring, emissions of organic compounds, and control of hazardous air pollutants. Repair/replacement of emitting equipment at the Facility must be evaluated for consistency with BAAQMD permit requirements. Breakdowns and other incidents resulting in violation of applicable regulations must be promptly reported. Flaring events must be reported and investigated, and a report on the primary cause of the flaring event must be submitted to BAAQMD. Several BAAQMD regulations of particular relevance to public safety are as follows:

- **Regulation 1 (General Provisions):** Regulation 1, Section 301 establishes BAAQMD's standard for public nuisance. This rule prohibits discharges of air contaminants which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public, or which endangers the comfort, repose, health or safety of any such persons or the public, or which may cause injury or damage to business or property (BAAQMD, 2011).
- **Regulation 2-5 (New Source Review):** Regulation 2-5 applies preconstruction permit review to new and modified sources of toxic air contaminants, and it contains project health risk limits and requirements for Toxics Best Available Control Technology (BAAQMD, 2010).

- **Regulation 8-40 (Aeration of Contaminated Soil and Removal of Underground Storage Tanks):** Regulation 8-40 limits the emission of organic compounds from soil that has been contaminated by organic chemical or petroleum chemical leaks or spills (BAAQMD, 2005).
- **Regulation 11 (Hazardous Pollutants):** sets emissions and/or performance standards for certain hazardous pollutants including asbestos containing materials (ACM), lead, and benzene (BAAQMD, 2014).
- **Regulation 12, Rule 11 (Flare Monitoring at Petroleum Refineries):** requires monitoring and recording of emission data for flares at petroleum refineries. It requires operators of flares at petroleum refineries to monitor the gases directed to the flare and submit a monthly report containing:
 - The total daily and monthly volumetric flow of the vent, pilot, and purge gas;
 - The hourly average molecular weight of the vent gas;
 - Composition of vent gas from required sampling;
 - Calculated daily and monthly methane, non-methane and SO₂ emissions; and
 - Archive images of the flare (BAAQMD, 2003).
- **Regulation 12, Rule 12 (Flares at Petroleum Refineries)** is intended to reduce emissions from flares at petroleum refineries by minimizing the frequency and magnitude of flaring. Flaring is prohibited unless consistent with an approved Flare Minimization Plan (Flare MP) that includes: (1) a detailed description and technical information for each flare; (2) a description of the equipment or procedures implemented within the last five years or planned to reduce flaring; and (3) a description of prevention measures needed to perform certain refinery activities without flaring. Each refinery must submit a Flare MP Annual Update no more than 12 months following approval of the initial Flare MP, and annually thereafter. Each refinery's Flare MP Annual Update must include any new prevention measures identified as a result of an investigation into the cause of flaring events that have occurred since the previous Flare MP approval. The plan updates (with the exception of confidential information) are required to be made available to the public during a 30-day public review and comment period. A Flare MP Annual Update will be approved only after consideration of public comments, and if the District determines that all feasible prevention measures have been incorporated and, if not already undertaken, scheduled for expeditious implementation (BAAQMD, 2006).

1.1.1.3.2 *City of Richmond Zoning Ordinance*

The Richmond Zoning Ordinance is contained in Chapter 15.04 of the Richmond Municipal Code. The Zoning Ordinance contains three types of zoning regulations that control the use and development of property: (1) land use regulations that specify land uses permitted or conditionally permitted in each zoning district, and include special requirements, if any, applicable to specific uses; (2) development regulations that control the height, bulk, location, and appearance of structures on development sites; and (3) administrative regulations that contain detailed procedures for the administration of zoning regulations (Richmond Municipal Code (RMC) Section 15.04.010(B)). The Planning Director and/or the Assistant City Engineer, building regulations division have a duty to enforce the Zoning Ordinance (RMC Section 15.04.950.030).

Zoning Ordinance provisions designed to promote the public health, safety, and welfare include the following:

- **M-3 Zoning District; Conditional Use Approval:** The Modernization Project is located in the M-3 Zoning District. Petroleum refining and related industries are a conditional use within the M-3 Zoning District. Therefore, the Modernization Project may be permitted by conditional use permit and then must comply with the terms and conditions of the permit (RMC Section 15.04.330.040). The Planning Commission has authority to impose reasonable conditions on the conditional use application to protect the public health, safety, and welfare of the citizens of the City of Richmond and to ensure that the operation and maintenance of the conditional use will be compatible with the neighborhood where it will be located (RMC Section 15.04.910.050(B)).
- **Design Review Approval:** The Modernization Project requires design review approval. The Design Review Board (DRB) reviews the design of exterior construction or modifications for which discretionary planning approval is required (RMC Section 15.04.930.020(A)). Applications requiring both Planning Commission and DRB approval are reviewed by the DRB for recommendation to the Planning Commission (*Id*). The DRB has authority to impose reasonable conditions in order to promote the public health, safety, and welfare of the citizens of the City of Richmond, and to that the design of the Modernization Project will be compatible with the area surrounding where it will be located (RMC Section 15.04.930.110(B)).
- **Hazardous Materials Ordinance:** Additionally, the Zoning Ordinance includes hazardous materials provisions (RMC Section 15.04.820.020) that govern all projects and activities which involve hazardous waste or hazardous materials (RMC Section 15.04.820.021). The purpose of the Hazardous

Materials Ordinance is to establish a basis for the issuance of conditional use permits for projects and activities that could significantly and/or adversely affect public health or the environment, and that generate, store, transport, treat, or dispose of significant amounts of hazardous materials. Further, the intent is to encourage reductions in the amounts of hazardous wastes or materials managed for the benefit of the health, safety, and general welfare of the residents and persons within the City of Richmond. Conditional use applications subject to the Hazardous Materials Ordinance must include certain information and require specific findings for approval (RMC Section 15.04.820.024(A) - (B)).

1.1.1.4 Industry Standards and Best Management Practices

In addition to the California Building Code (CBC) and incorporated standards, the Facility is also subject to the State Safety Orders (California Code of Regulations, Title 8), which in some cases incorporates industry standards for operation and maintenance of refineries, including inspections. For example, the CBC (24 CCR Part 2) adopts as standard reference documents certain codes, standards, and publications adopted and set forth in the code (CBC, Section 1.1.5; Chapter 34 (Referenced Standards)). The California Fire Code (CFC) (24 CCR Part 9) similarly provides that the codes and standards referenced in the CFC are considered part of the requirements of the CFC, to the extent prescribed by each reference (CFC, Section 1.1.5, 102.7, 105.2.4; Chapter 47 (Referenced Standards)). The discussion below provides a brief description of the most relevant industry standards routinely used at the Facility and some relevant industrial references used to assess process safety and impact from industrial releases.

1.1.1.4.1 *American Petroleum Institute Standards*

The American Petroleum Institute (API) promulgates standards for use throughout various sectors of the petroleum industry. The API's Standards Committees consist of subcommittees and task groups made up of industry experts who develop API standards. These groups identify the need for standards, then develop, approve, and revise those standards and other technical publications. The standards-writing subcommittees and task groups are open to representatives of groups that are materially affected by the standards. These include oil and gas companies, manufacturers and suppliers, contractors and consultants, and representatives of government agencies and academia.

The API Committee on Facility Equipment works to promulgate safe and proven engineering practices for the design, fabrication, installation, inspection, and use of materials and equipment in refineries and related processing facilities. These practices are produced in accordance with the API Procedures for Standards

Development and published as API Standards, Specifications and Recommended Practices. Below is a list of the subcommittees and the areas they work with:

- Subcommittee on Corrosion & Materials
- Subcommittee on Electrical Equipment
- Subcommittee on Heat Transfer Equipment
- Subcommittee on Inspection
- Subcommittee on Instruments & Control Systems
- Subcommittee on Mechanical Equipment
- Subcommittee on Piping & Valves
- Subcommittee on Pressure-Relieving Systems
- Subcommittee on Aboveground Storage Tanks

An illustrative listing and description of API Standards applicable to refining can be found online (API, 2014). While many of these standards are unique to certain types of operations or conditions, not all of which are applicable to the Facility, certain standards are applied regularly, including numerous standards that have been adopted as part of the State’s Occupational Safety and Health Administration (Cal/OSHA) Process Safety management (PSM) regulations and compliance with which is a function of Cal/OSHA’s regulatory oversight of the Facility, as indicated in Table A4.13-DET-1.

TABLE A4.13-DET-1 API STANDARDS ADOPTED BY CAL/OSHA

API Standard	Description	Adopted as Regulation	Associated Regulation
API- 510	Pressure Vessel Inspection Code	Yes	State of California State Safety Orders Title 8: Article 18 Subchapter 15. Petroleum Safety Orders--Refining, Transportation and Handling Article 18. Unfired Pressure Vessels, Boilers, and Fired Pressure Vessels and Pressure Relief Valves §6857. Vessels, Boilers and Pressure Relief Devices.
API-570	Piping Inspection Code	Yes	State of California State Safety Orders Title 8: Article 146 Subchapter 15. Petroleum Safety Orders--Refining, Transportation and Handling Article 16. Pumps, Pipe Lines and Valves §6845. Piping, Fittings, and Valves

API Standard	Description	Adopted as Regulation	Associated Regulation
API-579	Fitness-for-Service	Yes	State of California State Safety Orders Title 8: Article 18 Subchapter 15. Petroleum Safety Orders--Refining, Transportation and Handling Article 18. Unfired Pressure Vessels, Boilers, and Fired Pressure Vessels and Pressure Relief Valves §6857. Vessels, Boilers and Pressure Relief Devices.

Other API standards that are regularly applied at the Facility are shown in Table A4.13-DET-2.

TABLE A4.13-DET-2 API STANDARDS REGULARLY APPLIED AT THE FACILITY

API Standard	Description
API-500	Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division 1 and Division 2
API-520	Sizing, Selection and Installation of Pressure-Refining Devices in Refineries, Part I - Sizing and Selection, 7 th ed. 2000
API-521	Guide for Pressure-Relieving and Depressuring Systems, 2 nd ed. 1982 - 4 th ed. 1997
API-571	Damage Mechanisms Affecting Equipment in Refining Industry
API-572	Inspection of Pressure Vessels
API-573	Inspection of Fired Heater and Boilers
API-574	Inspection Practices for Piping System Components
API-578	Positive Material Identification
API-580	Risk-based Inspection
API-653	Tank Inspection, Repair, Alteration and Reconstruction
API-RP 752	Management of Hazards Associated with Location of Process Plant Buildings 3 rd ed. 2009
API-RP 753	Management of Hazards Associated with Location of Process Plant Portable Buildings 1 st ed. 2007
API-RP 754	Process Safety Performance Indicators for the Refining and Petrochemical Industries 1 st ed. 2010
API-RP 755	Fatigue Prevention Guidelines for the Refining and Petrochemical Industries
API-932B	Design, Materials, Fabrication, Operation, And Inspection

API Standard	Description
	Guidelines For Corrosion Control In Hydroprocessing Reactor Effluent Air Cooler (reac) Systems
API-939-c	Guidelines for Avoiding Sulfidation (Sulfidic) Corrosion Failures in Oil Refineries
API-941	High Temperature Hydrogen Attack
API-945	Avoiding Amine Stress Corrosion Cracking

Source: Chevron Data Transmittal #91, 2014.

In addition, Chevron Corporation, through its Energy Technology Company (ETC), specifically the Technical Codes & Standards (TC&S) group, develops, maintains, and publishes for proprietary use the Chevron Engineering Standards (CES). CES serve as the structured corporate library of engineering specifications, drawings, data sheets, and guidelines that constitute the company's repository of Chevron's collective knowledge for engineering facilities. The TC&S team is charged with CES's organization, accessibility, renewal, and optimization procedures. The CES are developed by Technology Subject Matter Experts (SMEs) using official codes, as well as industry, association, and Chevron-specific guidelines/recommendations which, in some cases, are more stringent than generally accepted ones. These codes and standards are for new facility design, construction, commissioning, start-up, operations, maintenance, and decommissioning. Further, as part of their process safety management system, existing facilities undertake a fitness-for-service analysis using their Integrity/Reliability and Health, Environment, and Safety (HES) Risk Management processes to identify the technical codes and standards that were applied during the design and construction of existing equipment, and determine and document any modifications that may be necessary for the equipment to be determined fit-for-service.

1.1.1.4.2 *National Fire Prevention Association (NFPA)*

The National Fire Prevention Association (NFPA) is an international nonprofit organization that works to reduce the burden of fire and other hazards on the quality of life by providing and advocating consensus codes and standards, research, training, and education. NFPA develops, publishes, and disseminates more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks, such as NFPA 30 Flammable and Combustible Liquids Code.

1.1.1.4.3 *American Institute of Chemical Engineers*

American Institute of Chemical Engineers (AIChE) is a nonprofit organization for the chemical engineering profession representing 45,000 members in industry,

academia, and government, which provides support and technical information to members. The Center for Chemical Process Safety (CCPS), a not-for-profit, corporate membership organization within the AIChE, has published numerous illustrative process safety reference materials useful for assessing potential accidents and their impacts (written by technical committees of experts in process safety that are peer reviewed) regarding refining and other high-hazard industries, including the following:

- Guidelines for Developing Quantitative Safety Risk Criteria (CCPS, 2009a)
- Guidelines for Process Safety Metrics (CCPS, 2009b)
- Guidelines for Enabling Conditions and Conditional Modifiers in Layers of Protection Analysis (LOPA) (CCPS, 2013)
- Guidelines for Evaluating the Characteristics of Vapor Cloud Explosions, Flash Fires, and Boiling Liquid Vapor Cloud Explosions (BLEVEs; CCPS, 2010)
- Guidelines for Hazard Evaluation Procedures (CCPS, 2008a)
- Guidelines for the Management of Change for Process Safety (CCPS, 2008b)
- Human Factors Methods for Improving Performance in the Process Industries (CCPS, 2006)
- Guidelines for Hazard Evaluation Procedures (CCPS, 2008a)
- Guidelines for Risk Based Process Safety (CCPS, 2007)
- Guidelines for Integrating Process Safety into Engineering Projects (CCPS, 2014)

1.1.1.4.4 *American Industrial Hygiene Association (AIHA)*

The American Industrial Hygiene Association (AIHA) is a nonprofit organization with approximately 10,000 members that serves the needs of occupational and environmental health and safety professionals practicing industrial hygiene in industry, government, labor, academic institutions, and independent organizations. AIHA promotes certification of industrial hygienists, administers comprehensive education programs, and operates several laboratory accreditation programs.

- **Emergency Response Planning Guidelines (ERPGs):** AIHA's Emergency Response Planning Committee developed the ERPGs for responding to potential releases of airborne substances for use in community emergency planning. The Valero Improvement Modernization Project DEIR states that ERPGs are generally the most applicable standards on toxic gas exposure and effects (ESA, 2002). ERPGs are intended to provide estimates of threshold

concentration of acutely hazardous substances where a range of adverse effects might occur depending on the severity of the effect, and for use as tools to assess the adequacy of accident prevention and emergency response plans (ERPs), including transportation emergency planning, community ERPs, and incident prevention and mitigation (ESA, 2002).

1.1.2 Emerging Policy Initiatives

1.1.2.1 CARB Initiatives

The California Air Resources Board (CARB) and the California Air Pollution Control Officers Association (CAPCOA) released a plan on July 19, 2013 entitled *Air Monitoring for Accidental Refinery Releases: Assessment of Capabilities and Potential Improvements Project Plan* in support of the mission of the Governor's Interagency Working Group on Refinery Safety (CARB and CAPCOA, 2013). The plan lays out the process and timeline for assessing and improving California's current refinery air monitoring and emergency response system. The 15-month project will be conducted collaboratively with local air monitoring agencies, and will evaluate and make recommendations on the potential need for additional resources, including equipment, services, staffing, and training to support local air emergency response programs.

CARB is building a new publicly accessible website as a state clearinghouse for refinery air monitoring data and real-time information. The website will include air quality monitoring data from local air districts' current air monitors, and includes new monitors recently installed near the Facility (CARB, 2014; COR, 2013).

1.1.2.2 BAAQMD

BAAQMD is developing a new rule to expand refinery monitoring and emissions tracking. Draft Proposed Regulation 12, Rule 15 (Petroleum Refining Emissions Tracking) would require refineries to prepare refinery-wide emissions inventories on an annual basis, and develop and implement an emissions reduction plan if emissions exceed specified trigger-levels compared to the Facility's baseline inventory (BAAQMD, 2013). If an emissions reduction plan fails to identify measures that can reduce emissions to a level that is lower than the trigger levels, then an emissions reduction audit is required. In addition, each refinery will be required to prepare and submit an air monitoring plan detailing fence line and community air monitoring systems, and to operate and maintain these systems. BAAQMD anticipates the final rule will be adopted in the first half of 2014.

1.1.2.3 Other Stakeholders

Other stakeholders have also reviewed and recommended changes to the existing regulatory programs and industry standards and practices governing refinery safety that were consulted in the public safety analysis presented in this chapter, including:

- The federal Chemical Safety Board (CSB) has been asked by its staff to consider recommending a new regulatory paradigm for managing safety risks. The CSB has identified weaknesses in both federal and California safety regulatory regimes, and has been asked by staff to evaluate whether a regulatory regime similar to the European "safety case" framework would be more effective at ensuring safety at high hazard facilities such as petroleum refineries (CSB, 2013b). CSB issued a draft report in December 2013 (CSB, 2013a) elaborating on the safety case regulatory regime. The CSB Board has not approved the report, and has directed further staff investigation on the safety case framework. CSB staff recommendations have included:
 - Enhancing Occupational Safety and Health Administration (OSHA) and Cal/OSHA PSM regulations to require periodic corrosion reviews and effective risk reduction;
 - Establish effective mechanisms for regulators to require improvements to recognized industry standards so that they establish needed process safety or integrity requirements, compared to the present system under which regulations recognize industry standards that contain "should" and "consider" statements instead of mandatory requirements;
 - Revise State and local process safety regulations regarding incident investigation to require rigorous post-incident hazard reviews or mandate inherently safer technology, such as corrosion resistant piping materials. Currently, both inherently safer technology and as low as reasonably possible (ALARP) principles remain voluntary instead of mandatory;
 - Revise state and local process safety regulations to mandate "effective" management of change (MOC) reviews, rather than merely conducting them and implementing agreed upon actions that may not effectively reduce risks;
 - Revise process safety regulations to require facilities to report to OSHA/Cal/OSHA when their use of highly hazardous chemicals in large quantities meets the standards' provisions for coverage;
 - Revise process safety regulations to expand coverage to chemicals that can undergo a catastrophic runaway reaction, rather than the the currently limited coverage to flammable, explosive, and toxic chemicals;

- Revise process safety regulations to incorporate leading and lagging process safety metrics, and to incorporate safe siting guidelines;
- Cal/OSHA should increase process safety staffing with expanded technical qualifications; and
- Cal/OSHA should conduct frequent audits of major hazard facilities and use company-reported leading and lagging process safety indicators to focus the audits.

Some parties, including the former chair of CSB and other safety professionals, have objected to the adoption of the new "safety case" regulatory paradigm. This recommendation remains pending with CSB.

- University of California School of Public Health's Labor Occupational Health Program (LOHP) (operating under the aegis of the Center for Occupational and Environmental Health), recently completed a Summary Report to Governor Brown's Interagency Task Force on Refinery Safety, which included recommendations for safety program reforms compiled by representatives from labor and community groups, as well as fire protection agencies (Wilson, 2013). The LOHP Report identified 19 specific changes that should be made to the existing regulatory framework for refinery safety. The response of the Governor's Interagency Task Force to the LOHP Report has not yet been issued but the LOHP Report was summarized in the California Environmental Protection Agency (Cal/EPA) Interagency Refinery Task Force's February 2014 report (Cal/EPA, 2014) discussed in *Section 4.13.2.3.5.2, California Interagency Working Group on Refinery Safety and Interagency Refinery Task Force*.
- The RAND Corporation, a nonprofit institution focused on improving policy and decision making through research and analysis, was asked by the Governor's Interagency Task Force on Refinery Safety to investigate several issues to inform the Task Force's discussions. In response to this request, RAND published a memorandum, *Refinery Process Safety Performance and Models of Government-Industry Relations* (RAND, 2013) which:
(1) summarizes information about different regulatory models and provides some recommendations about how to proceed in adopting new models; (2) summarizes suggestions about the role "leading indicators" can play in future regulation; and (3) reviews what existing measures indicate about changes over time and comparisons across continents. Accordingly, the RAND Corporation recommended that: (1) more responsibility be placed on refineries to lay out how they will ensure safety, and have regulators audit

their performance; and (2) an incremental approach for making a transition from the current enforcement program to the one recommended be adopted.

- The United Steelworkers (USW), the largest labor organization representing refinery workers, developed a Triangle of Prevention (TOP) safety program that increases the role of workers in preventing, reporting, and responding to accidents and "near miss" situations (McQuiston et al., 2012).
- The USW issued a report with recommendations for improving refinery safety in connection with the BP Texas City catastrophe in 2005. The report "*Beyond Texas City: The State of Process Safety in the Unionized U.S. Oil Refining Industry*" (USW, 2007), calls on the refining industry to initiate ten essential actions.
- Following the BP Texas City fire in 2005, and based on the recommendation of the CSB, an independent panel of experts led by former U.S. Secretary of State, James Baker, conducted a comprehensive review of BPs safety practices and published a report with ten detailed recommendations that may serve as a best-practice reference guide for any refinery seeking to strengthen its safety programs (Baker et al., 2007).

While several of the recommendations identified in the proposed California legislation, regulatory agency initiatives, proposed changes to industry standards and recommended practices, recommendations included in the CSB report and the UC Report, and the components of the USW TOP program go beyond California Environmental Quality Act (CEQA) mitigation for impacts relating to potential public safety risks from the sulfur-related components of the Modernization Project or the increased Facility utilization, collectively these proposals were considered in this public safety impact analysis.

1.1.3 Community Health and Safety, including Environmental Justice Considerations

As discussed and analyzed in greater detail in *Section 4.3, Air Quality*, federal, State, and local law and policy in recent years have sought to address "environmental justice" – the fair treatment of people of all races, income levels, and cultures with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (GOV, Section 65040.12(c)).

A 1994 federal Executive Order directed federal agencies to identify and address areas with disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations (FR, 1994). The California Attorney General has indicated that

“identifying [disadvantaged and minority] communities is an essential part of describing the relevant CEQA setting.”

BAAQMD has established the Community Air Risk Evaluation (CARE) program to evaluate and reduce health risks associated with exposures to outdoor toxic air contaminants (TACs) in the Bay Area. As part of the CARE program, BAAQMD developed a methodology for identifying communities within the San Francisco Bay Area that are likely to face the highest health risks from TACs, based on identifying areas that (1) are close to or within areas of high TAC emissions; (2) have sensitive populations, defined as youth and seniors, with significant TAC exposures; and (3) have significant poverty. BAAQMD included the City of Richmond as one of six high priority communities, based on its analysis of conditions. Additional information on the CARE program is provided in *Appendix 4.3-PHYS*.

1.2 CHEVRON SAFETY PROGRAM

The text in this section was provided by Chevron, and provides more detailed information on Chevron's existing safety programs, including details on the Facility's process safety management program. Review of these Chevron programs, scores of hours of meetings and document review, and Facility visits were all integral parts of the review and EIR preparation process completed by the City's independent safety experts.

1.2.1 Process Safety Management

While the statutory basis and general purpose of the Cal/OSHA requirements (the State has delegated authority from Federal OSHA [29 USC Section 667]) are discussed in *Section 4.13 Public Safety*, these detailed requirements serve a significant purpose and warrant more detailed discussion in this appendix. The requirements of the PSM rules are directed primarily at protecting workers within the Facility, and particularly in the context of preventing and mitigating the consequences of accidental releases of hazardous substances used in a process.³ Given that workers are the first to be exposed to a hazard, standards that minimize risks to workers often serve to indirectly minimize risks to the public as well.

³ A “process” is defined as: “any activity involving a highly hazardous chemical including any use, storage, manufacturing, handling, or the on-site movement of such chemicals, or combination of these activities. For purposes of this definition, any group of vessels which are interconnected and separate vessels which are located such that a highly hazardous chemical could be involved in a potential release shall be considered a single process” (29 C.F.R. 1910.119(b)).

The PSM standard applies to facilities with processes involving any of more than 130 listed hazardous chemicals at or above specified threshold quantities, including four chemicals that are present at the Facility at or above the PSM threshold quantities (Chevron Data Transmittal #87, 2014). The PSM standard establishes a comprehensive management program, integrating technologies, procedures, and management practices. The PSM standard consists of provisions addressing process safety information (PSI), process hazard analysis (PHA), operating procedures, training, contractors, pre-startup safety review (PSSR), mechanical integrity, hot work permits, MOC, incident investigations, emergency planning and response, employee participation, and compliance safety audits. The following summarizes the implementation of the Facility's PSM Program with reference to elements that also satisfy California Accidental Release Prevention (Cal/ARP) Program requirements.

1.2.1.1 Process Safety Information

The PSM standard requires that an employer compile PSI before conducting PHA, to enable persons involved in the process to identify and understand the hazards posed by those processes. PSI includes information pertaining to the hazards of the highly hazardous chemicals used or produced by the process, information pertaining to the technology of the process, and information pertaining to the equipment in the process. The development, dissemination, and use of PSI are vital to the effective operation of the Chevron Richmond Facility. Personnel use information regarding chemical hazards, equipment specifications, and operating limits in daily operation and strategic decision making. The Facility's PSI program is also designed to satisfy the requirements of Section 2760.1 of the Cal/ARP regulations.

The Facility compiles PSI during the design and construction of a process. The PSI is updated as needed when any changes or additions are made, and it is retained for the life of the process or equipment plus 30 years.

Established procedures, documented in Refinery Instruction RI-362 "Process Safety Information" (Chevron, 2013g), require that PSI be up-to-date and accurate, and be readily available to employees participating in PHA. The Facility keeps PSI current by following established MOC and PSSR programs, discussed further below. Personnel have access to either the hard copies or electronic copies of PSI on a 24-hour basis, which enables personnel affected by the process the ability to identify and understand the hazards posed by each process. The following PSI is particularly important to the Facility's prevention program:

- Information pertaining to the materials in the process:

- Material safety data sheets (MSDS) are maintained for each regulated substance, and include the following information: toxicity information, permissible exposure limits, physical data, reactivity data, corrosivity data, and thermal and chemical stability data.
- Maximum Intended Inventory calculations/worksheets.
- Information pertaining to the technology of the process:
 - Process flow diagram (PFD) for each process (and process flow and control diagrams).
 - Process chemistry (included in Operating Manuals).
 - Safe upper and lower operating limits and an evaluation of the consequences of deviations from those limits (included in Operating Manuals and Safety Instruction Sheets).
- Information pertaining to the equipment in the process:
 - Materials of construction.
 - Electrical area classification.
 - Relief system design and design basis.
 - Piping and instrumentation diagrams (P&IDs).
 - Ventilation system design.
 - Design codes employed.
 - Material and energy balances.
 - Safety systems.
 - Electrical supply and distribution systems.
 - Equipment specification documentation.

The Facility's PSM program requires that personnel from the Facility verify that the equipment complies with recognized and generally accepted good engineering practices (RAGAGEP). Personnel are also required to verify that all equipment is designed, maintained, inspected, tested, and operated in a safe manner. Under Chevron's PSM program, all new designs must also follow the CES, unless an exception is made through a documented waiver process that includes reviews and approvals. Other methods to ensure compliance with CES include Lead Engineer approval of all engineering work orders and a Quality Management process to reinforce craft quality.

1.2.1.2 Process Hazard Analysis

In accordance with RI-363, “Process Hazard Analysis” (Chevron [n.d.6]), Chevron conducts a PHA on each process unit at the Facility to systematically assess and reduce risks associated with loss of containment of hazardous substances. The RI-363 is also designed to satisfy the requirements of Section 2760.2 of the Cal/ARP regulations (Chevron, 2013h). Initial PHAs have been completed on all existing process units and are performed for new processes or major modifications to existing processes. Chevron revalidates PHAs every five years to ensure the analysis is current and accurate.

PHAs are performed with the following objectives:

- To identify the hazards of the substances and of the process;
- To identify external events (including seismic events) that could lead to a release;
- To identify possible equipment failures or human errors that could lead to a release;
- To evaluate the potential consequences of an accidental release;
- To evaluate the safeguards used to prevent or mitigate an accidental release;
- To evaluate the likelihood of an accidental release; and
- To propose recommendations that would reduce the risks.

Additionally, human factors and facility siting issues are addressed in conjunction with each PHA and inherently safer systems reviews are conducted to identify and implement the most feasible inherently safer risk reduction strategies.

Each PHA is conducted by a multi-disciplinary team. The PHA team is generally composed of a trained PHA facilitator, a process engineer, a design engineer, an operations representative, and other specialists when needed (i.e., plant protection personnel, mechanics, inspectors, equipment reliability specialists, environmental specialists, safety engineers, etc.). The team considers the possible causes and potential consequences of deviations to identify hazardous conditions, analyze existing safeguards, and make recommendations for changes where appropriate. The PHA team uses a qualitative evaluation tool, the Chevron Integrated Risk Prioritization Matrix, to assess the severity, likelihood, and relative risk of each cause-consequence scenario. The PHA documentation is retained for the life of the process plus 30 years.

The Facility uses the hazards and operability (HAZOP) study and "What-if/Checklist" methodologies to conduct PHAs, selecting the appropriate methodology based on the complexity of the process.⁴ Most continuous processing/circulating systems are analyzed using the HAZOP methodology. Certain support systems such as chemical injection facilities, utility systems, truck and railcar loading, or flare systems are usually analyzed using the "What-if" methodology. The "Checklist" methodology is used to address Human Factors and Facility siting issues.

PHA recommendations not requiring a process unit shutdown are required by the RISO to be completed within one year. RI-363 provides that recommendations requiring a process unit shutdown must be completed during the first regularly scheduled turnaround of the process. Some recommendations may require consideration of temporary measures to mitigate the risk until the final solution can be completed. The business unit manager for the process unit that is the subject of the corrective action recommendation works in consultation with the technical, maintenance, and reliability departments to determine whether the proposed corrective action can be safely implemented during the next scheduled turnaround. In making this determination, the business unit manager considers, among other things, the scheduled scope of work and whether the corrective action can be accomplished within that scope, the impacts on other units, and whether the impacts associated with delay is greater than the potential impact associated with implementing the corrective action during the scheduled turnaround.

Engineered leak repairs are widely used in the refining industry for various purposes, and not all are related to hydrocarbon or chemical leaks. Generally, leak repairs can be divided into three categories: repairs to utility systems such as steam and water, minor emission reduction measures, and repairs to hydrocarbon/chemical systems. Engineered leak repairs for piping in hydrocarbon/chemical systems are covered by *American Petroleum Institute (API) 570 - Piping Inspection Code: In-service Inspection, Rating, Repair, and Alteration of Piping Systems* (API 570, 2009), whereas leak repairs for utilities and minor emission reductions are not. Leak repair solutions for utilities systems and

⁴ HAZOP and What-If/Checklist are two methods for conducting a Process Hazard Analysis (PHA). A HAZOP study systematically evaluates a planned or existing process for potential failures or problems. A HAZOP is performed by a team of experts from multiple disciplines in a creative brainstorming, systematic approach to identify potential failures or problems that could lead to undesirable consequences. The What-If/Checklist method combines a creative, brainstorming team approach with set of standard written lists that identify hazards, design deficiencies, and potential problems associated with common equipment or operations (CCPS, 2008a).

regulatory-driven emissions reductions often become permanent, for instance injection of packing material into a valve packing gland to meet strict volatile organic compound (VOC) standards applicable in the Bay Area. Additionally, not all leak repairs in hydrocarbon service are driven by a physical leak; many are implemented as preventative purposes based on inspection data.

The Facility has various “Refinery Instructions” (RI), which are work practices and operating procedures, and standards that address the appropriate time frame for removal of a leak repair, including RI-621, “On-line Leak Repair/Leak Seal” (Chevron, 2012c) and RI-370, “Management of Change” (Chevron, 2013b). Generally, RI-621 provides that the “expiration date” of an engineered leak repair should be established and tracked in the leak repair database, and should be based on available maintenance opportunities and established criticality. Replacement of an engineered leak repair with permanent repair materials is made at the appropriate maintenance opportunity, and for purposes of tracking and closure, the expiration date generally corresponds to the next planned turnaround based on a technical review. On the initial expiration date, the change is reviewed to determine whether to extend or remove the change, and a decision to extend a temporary change must be approved consistent with the process set forth in RI-621 and RI-370. Both Cal/OSHA and the County (acting pursuant to the Richmond Industrial Safety Ordinance (RISO)) have authority to review the Facility's leak repair database at any time.

Those engineered leak seals cited by Cal/OSHA following the August 6, 2012 incident that relate to mechanical integrity have been replaced with permanent repairs. The engineered leak seals in hydrocarbon service in the crude unit, none of which were the subject of Cal/OSHA citations following the August 6, 2012 incident, were also replaced before the crude unit restarted in April 2013.

Resolutions of PHA recommendations are tracked and managed in the PHA Database. The database is the permanent record for each recommendation. The database includes the original team findings, the plan to resolve the potential hazard, when the action is to be completed, and the work performed to resolve the recommendation. The database also records the person and department responsible for completing the recommendation.

1.2.1.3 Operating Procedures

Clearly written safe work practices and operating procedures, especially for high-risk critical tasks, are important for the safe operation of the Facility and reduce the likelihood of a release of hazardous chemicals or energy that could impact employees, the community, or the environment. The Facility's RI-102, “Procedures for Instructions and Standards” (Chevron, 2009b), the Electronic

Operating Manual (EOM) Guidebook (Chevron, 2011d), and RI-374, “Safe Work Practices” (Chevron, 2012d), articulate the Facility's requirements designed to ensure that operating procedures and safe work practices are consistent and accurate.

Safe work practices include, but are not limited to:

- Respiratory Protective Equipment and Ventilation (RI-338; Chevron, 2014a);
- Hot Work and General Work Permits (RI-341; Chevron, 2013a);
- Control of Entry Into Process Areas (RI-375; Chevron, 2013k);
- Electrical Safe Work Practices (RI-389; Chevron, 2013m);
- Safe Firing of Furnaces and Boilers (RI-9025; Chevron, 2012e);
- Control of Hazardous Energy (RI-9900; Chevron, 2013n) (includes lockout and tagout and lines and equipment opening); and
- General Procedures for Entering and Working in Confined Spaces (RI-9920; Chevron, 2013p).

The operating manuals include the following sections and appendices:

- Process description;
- Normal operations, including startup and shutdown;
- Emergency procedures, including shutdown;
- Routine duties;
- A Consequences of Deviation (COD) table which identifies safe operating limits and the consequences of operating outside those limits. The COD tables explain the steps to correct or avoid the consequences of deviating outside the identified operating limits, including initiation of emergency shutdown;
- A safety section which provides a brief description of the chemicals and the associated hazards (including special or unique hazards) and engineering and administrative safeguards (i.e., ventilation, personal protective equipment (PPE) used to prevent exposures, etc.); and
- A description of all safety systems (i.e., alarms, interlocks, shutdowns), their functions, and their set points.

The Facility's Electronic Manual Management System (EMMS) provides that operations and maintenance (O&M) procedures and manuals are kept both

current and accurate. The EMMS database provides employees a method to review and update documents according to a regular schedule. Operations procedures and manuals are reviewed at least every three years. Maintenance procedures are reviewed every five years.

The MOC process, described further below, is required for all non-cosmetic changes to procedures and manuals. Any revised documents are routed through the area business unit (ABU) for review and approval.

In addition, at the end of each calendar year, each ABU Manager is required to certify that the operating procedures for their area are current and accurate as part of the Facility's annual compliance certification process.

These procedures are also intended to satisfy the requirements of Section 2760.3 of the Cal/ARP regulation, Operating Procedures. This section covers the steps for each operating phase, operating limits, safety and health considerations, and safety systems and functions.

Following the August 6, 2012 fire, the Facility has developed and deployed a new Leak Response Protocol (Chevron Data Transmittal #87, 2014) for evaluating leaks and shutting down equipment. This new protocol has been shared with Contra Costa Health Services (CCHS), Cal/OSHA, and the CSB, as well as other refineries and industrial facilities in Contra Costa County. To ensure competency in the new protocol, new training has been developed for impacted employees, and implementation of this training is being monitored by Cal/OSHA consistent with the terms of the August 5, 2013 terms of probation. The Facility has also modified its pre-incident scenarios to provide guidance concerning equipment positioning, and is in the process of reviewing its design and fire-prevention standards for large fractioning towers, with proposed enhancements scheduled to be approved in 2014.

1.2.1.4 Training

The Facility training program is intended to provide employees with the necessary skills and knowledge in order to perform their jobs in an incident-free manner, and to satisfy the requirements of applicable laws and regulations.

One of the purposes of the written training plan for the Facility is to provide affected personnel with an understanding of the types and causes of potential incidents or deviations within the process, and the hazards associated with the process.

The operator training plan is outlined in an Operations Training Process Manual (Chevron, 2009a). Maintenance personnel training is described in RI-368, “Mechanical Integrity” (Chevron, 2013j), and contractor training is addressed in RI-366, “Contractors” (Chevron, 2013i). The training program is also intended to satisfy the requirements of Section 2670.4 of the Cal/ARP regulation and is comprised of the following:

- Fundamentals training;
- Plant or equipment specific formal training;
- Training provided as a result of a MOC, which includes training on updated or new procedures;
- Refresher training; and
- Training documentation.

The training program requires that all Facility operators (i.e., qualified people that control the functioning of a machine or process) receive training in safe work practices and basic operating principles prior to assignment. The operators must receive training specific to the operations of each process once they are assigned to a process unit. The training criteria are documented in job description documents that list the knowledge required (i.e., safe operating limits, safety system setpoints) and skills to demonstrate (i.e., emergency shutdown, lockout/tagout procedures). Various means are used to verify competency, including written and oral examinations, demonstrations, and on-the-job training. Documentation of the training is forwarded to the Chevron Development Department for filing and tracking.

Refresher training on specific operating procedures (i.e., normal operations, startup, shutdown); critical, seldom-done tasks; emergency procedures; MOC reviews; safe work practices (i.e., in plant hot work, lockout/tagout); and company-wide practices is provided. Examples of the types of training and refresher training an operator will need to remain qualified for their position include:

- Computer based training on job specific PSM requirements.
- Simulator or oral discussion/demonstration when applicable.
- Computer based training on safe work practices.
- Just in time training on startup, shutdown, and related procedures before turnarounds.

In addition, general training includes monthly “hypotheticals” or table top drills and quarterly discussion of process safety topics (Chevron, 2009a).

The training schedule was developed with employee consultation and requires refresher training to be conducted, typically every three years. Training documentation is tracked in the training database or crew turnover logs.

Training may also be required as a result of the MOC process. The Facility requires in RI-370, “Management of Change” (Chevron, 2013b) that the necessary training is conducted prior to implementation of the change to satisfy the MOC requirements of Section 2760.6 of the Cal/ARP regulation.

Since the August 6, 2012 fire, Chevron has been working to enhance the requirements for training and competency for leadership, inspections, and technical assessments. The essential inspector competencies have been identified and individual evaluations and training plans are being developed to ensure inspectors meet the identified competency requirements. Additionally, training for determining minimum thickness and fitness for service of individual piping components has been enhanced. This training program is being implemented consistent with the terms of probation agreed to on August 5, 2013, as monitored by Cal/OSHA.

1.2.1.5 Mechanical Integrity Program

Proper design and maintenance of equipment and safety systems is essential to prevent releases of hazardous materials. The Facility has developed a mechanical integrity program to also satisfy the requirements of Section 2760.5 of the Cal/ARP regulation. Mechanical integrity requirements of the PSM standard include establishing written procedures to maintain ongoing integrity of process equipment, training for workers involved in maintaining integrity of process equipment, and inspections and testing of the mechanical integrity of process equipment.

The Facility's mechanical integrity program applies to fixed and rotating equipment, instrumentation, and electrical systems. This includes pressure vessels, storage tanks, piping systems (including piping components such as valves), compressors, pumps, pressure relief devices, and vent systems, all of which the Facility requires to be inspected following API guidelines. The mechanical integrity program also applies to emergency shutdown systems and process controls, including monitoring devices, sensors, alarms, and interlocks.

RI-368, “Mechanical Integrity” (Chevron, 2013j), describes the Facility’s policy and standards for the mechanical integrity program, which consists of the policies and procedures described below.

- **Quality assurance procedures** – Members of the engineering, maintenance, inspection and purchasing departments each have specified roles in assuring mechanical integrity, and receive necessary training to fulfill those roles. These personnel are required to review all new equipment against the purchasing documents (which include, for example, equipment specifications and fabrication requirements) to ensure that the equipment is fabricated in accordance with the specifications which are typically those provided by the American Society of Mechanical Engineers (ASME), American Welding Society (AWS), and the National Board Inspection Code (NBIC). They also conduct checks and inspections to ensure that the equipment is installed properly and is consistent with the design specifications and the manufacturer’s instructions. The preceding elements of the quality assurance program are often performed in conjunction with the MOC and PSSR programs. The Purchasing and Materials Management Department, in conjunction with engineering, reliability and maintenance personnel, develops and maintains purchasing documents for spare parts. This is intended to ensure that all maintenance materials and spare parts are suitable for the process application.
- **Written maintenance procedures for process equipment** – Written procedures (including step-by-step instructions and required personal protective equipment) are developed for maintaining process equipment. The regularly scheduled maintenance (preventive maintenance) requests are automatically generated by a computer-based maintenance work management system. Non-preventive maintenance activities are also performed through the work management system (i.e., operators and engineers submit work requests to be scheduled by the Maintenance Planner/Scheduler). The maintenance employee completes the work order documentation and the maintenance history records are updated in the work management system. The Facility’s EMMS is designed to keep maintenance procedures and manuals both current and accurate. The EMMS database provides employees a method to review and update documents according to a regular schedule. Maintenance procedures are reviewed every five years.
- **Maintenance employee training** – The Facility carefully assesses each applicant for employment as maintenance personnel for skills and knowledge pertinent to their required job tasks. Additional skills training is provided on an as-needed basis or when required by applicable codes and standards. The

Facility's Development Department maintains documentation of skills training (i.e., union training program, community college training, specialty equipment training) and compliance training for maintenance employees. During initial employee training and refresher training, maintenance employees are provided with an overview of the process, the hazards associated with the process, and safe work practices. The Development Department maintains initial and refresher training records including content of training, instructor, and means used to verify competency. All welding related work and records are required to be monitored and controlled through the Facility Inspection Department in accordance with ASME, AWS, and NBIC requirements.

- **Inspection and testing procedures for critical equipment** – Inspection and testing procedures and frequency of testing for each piece of critical equipment are developed and documented by the Equipment Reliability group. The procedures and frequency are based upon jurisdictional requirements, manufacturer's recommendations, good engineering practice, operating history, and failure prediction and prevention analysis. Completed inspection and test documents (which include the inspector's name; date of the inspection or test; identification of the equipment, inspection and test procedures; and the results of the inspection or test) are retained by the maintenance and reliability department. Equipment Inspectors or Reliability Analysts review the results of each inspection or test to ascertain whether the equipment is within the acceptable limits and to determine if the frequency of the inspections should be adjusted. Procedures require that equipment outside of the acceptable limits is removed, repaired, or replaced, unless temporary protective measures can be put in place until the deficiencies are corrected. Inspection and test results are required to be maintained for the life of the equipment. Some examples of inspections and tests include internal and external inspections, thickness monitoring, ultrasonic/radiography inspection, hydrotesting, and infra-red scans. Instrumentation and control systems are also tested to ensure they will function as intended.

Following the August 6, 2012 fire, the Facility has taken steps to enhance its mechanical integrity program to ensure the Facility properly identifies and monitors piping circuits for appropriate damage mechanisms. As a first step, the Facility added a Fixed Equipment Integrity Manager to oversee development of the program enhancements and implement the enhancement on a go-forward basis, among other things.

The Facility has also developed a new process to review all damage mechanisms that may affect a given plant at the process level. This new process, which also responds to a CSB urgent recommendation, requires a team of subject matter experts to review, analyze, and make recommendations concerning damage mechanisms and how to mitigate their effect on each process unit. This review of damage mechanisms is assisted by the Facility's Fixed Equipment Integrity Group and the results are then provided to the PHA team for their consideration and review as that team formulates its recommendations. This new process, called the Damage Mechanism Review process, was piloted at the Facility in 2013 and has now been made a required element in the Process Safety Management process at the Facility.

In addition, the Fixed Equipment Integrity Group will be developing asset integrity plans that address damage mechanisms and recommendations for mitigation of risks for each process unit at the piping circuit level. Eventually, Chevron plans to integrate these circuit specific asset plans with the separate damage mechanism review process. A pilot of the asset integrity planning process has been performed for the crude unit.

Chevron has also developed and implemented processes for additional oversight of mechanical integrity-related recommendations from the Facility's Fixed Equipment Integrity Group, Chevron's ETC, and other subject matter experts, as well as from general industry alerts. A review of mechanical-integrity standards has been undertaken and these standards will be compared to existing Chevron standards to identify any discrepancies and establish a plan to reconcile those discrepancies on a go-forward basis.

In addition, the Fixed Equipment Integrity Group at the Facility has developed an Integrity Threat Process, which has been deployed at the Facility and which establishes a regular process for review of potential mechanical integrity threats and development of action plans to address such threats. Finally, the Facility has modified its Reliability Opportunity Identification/Intensive Process Review process and its PHA procedure, to incorporate consideration of damage mechanisms. Considering damage mechanisms when conducting PHAs was an element of the CSB's recommendations to Chevron and is included in Chevron's probation terms.

1.2.1.6 Management of Change

Changes within a refinery are sometimes necessary to address safety, environmental, and operational concerns. A change made in one part of the process or other processes may have unintended effects on other parts of the process because the Facility is an integrated system. These changes must

therefore be scrutinized in advance to avoid adverse effects to worker and public safety and to the environment. The Facility has a written MOC procedure, documented in RI-370, “Management of Change” (Chevron, 2013b). This procedure is intended to also satisfy the requirements of Section 2760.6 of the Cal/ARP regulation. The MOC procedure addresses management of the following types of changes:

- Process chemicals (i.e., raw materials, intermediate products, solvents);
- Technology (i.e., operating parameters, catalysts, rates);
- Equipment (i.e., materials of construction, equipment specifications); and
- Procedures (i.e., emergency response, maintenance, operating)

RI-370 establishes a hierarchy for MOC documents. The Facility’s MOC process, as described in RI-370, does not apply to “replacement in kind,” which is defined as a replacement that satisfies the design specifications. The design specifications are established by various standards organizations, including ASME, NFPA, American National Standards Institute (ANSI), as incorporated by California’s building and fire codes.

The Facility classifies changes as permanent, temporary, or emergency. Emergency changes are allowed during off-hours and holidays; however, at a minimum, the MOC process requires that the impact of the change on health and safety has been assessed, communication and training requirements have been met, and when required, a PSSR is to be completed prior to start-up. Temporary changes require the identification of a maximum allowable time frame for the change. All temporary MOCs will be given an initial maximum expiration date of one year. They can be extended an additional one year at a time following the health, safety, and environmental (HSE) process with management approval. Changes to Facility equipment or processes are implemented as a result of the Facility’s business and safety decision-making process. An MOC (i.e., the overall process for managing changes as well as the individual analysis of changes undertaken using the process, such as a change in metallurgy or a change in operating temperature) is typically initiated by the individual who has been assigned the task to carry out a proposal as part of the routine work process.

The MOC procedure requires Facility personnel to assess the potential impact of the change on safety and health through a Health and Safety Evaluation procedure for most changes. A HAZOP study or “What-if/Checklist” is conducted for additions and major changes that require a more structured evaluation. The following steps are required by the MOC procedure:

- Equipment must be fabricated and installed in accordance with the design specifications;
- Employees whose job tasks are affected by the change must be trained prior to the startup of the process;
- PSI must be updated as necessary; and
- Operating procedures must be updated as necessary in accordance with the change being made, and reviewed by a subject matter expert (Chevron, 2011d).

Simple changes require only communication of the change taking place. Persons affected by a change will be sent a notification of the change prior to being affected by that change. For more complex changes, a training package is developed, typically by the area trainer, and delivered to the affected employees, either on shift for minor changes, or in a classroom setting for major changes.

The person that authorizes the start-up of a change is responsible for the determination that the assigned individuals have completed all required tasks and reviews identified on the MOC form.

If it is considered necessary to use marked-up copies of P&IDs temporarily to expedite start-up, the MOC tracking system is used to verify completion of the update process. The individual that authorizes the start-up of any change is responsible for ensuring that all PSI, including P&IDs, are updated prior to start-up of the change. The P&ID update process is described in RI-362, "Process Safety Information" (Chevron, 2013g).

The MOC records are tracked according to assigned tracking numbers. The MOC records and documentation of completion of the tasks and reviews are maintained for the life of the process plus 30 years.

1.2.1.7 Pre-Startup Safety Review

The Facility has a written PSSR procedure and checklist, which is documented in RI-367, "Pre-Startup Safety Review" (Chevron, 2011c). This procedure is intended to also satisfy the requirements of Section 2760.7 of the Cal/ARP regulation. The Facility's PSSR procedure is designed to provide for a system of checks and verifications to ensure that equipment is suitable for service and meets required specifications prior to startup in order to prevent the accidental release of hazardous materials. In addition, PSSRs require that necessary operating, maintenance, and emergency procedures have been written and that employees have been trained to safely operate the equipment.

The PSSR process takes place prior to start-up of a new unit or the startup of an existing unit after a shutdown/turnaround. Changes requiring an MOC may also trigger a PSSR. The Facility PSSR program does not require PSSRs for MOCs initiated only for a change to PSI as such changes do not require the startup/shutdown of a process unit or equipment.

The PSSR Facilitator convenes a team with knowledge of the process and expertise in their field. Team members can include representatives from the business unit, maintenance group, engineering groups, and others depending on the nature of the change. Team members are responsible for verifying that the following actions have been taken prior to the introduction of regulated substances:

- Construction and equipment are determined to be in accordance with design specifications;
- Safety, operating, maintenance, and emergency procedures are in place and are adequate;
- For new facilities, a PHA has been performed and recommendations have been resolved or implemented before startup;
- PSI, including P&IDs, has been generated or updated, as appropriate;
- Communication to and/or training of each employee involved in operating the process has been completed, and
- Quality assurance goals of mechanical integrity have been met.

Verification of these steps is to be performed by the appropriate personnel from the team, and requires sign-off in the MOC and/or PSSR database.

All required signatures must be obtained and any exceptions documented prior to startup. PSSR exceptions are outstanding items that may or may not be required for safe startup. The PSSR facilitator and the appropriate Refinery Business Manager or delegate must review and agree on exceptions prior to start-up of the unit or equipment. Exceptions will be tracked to completion in the MOC or PSSR database. Each exception must be specific, assigned to an individual, have a due date, and be identified if it must be completed prior to start up. Authorization for startup requires completion of Appendix I, II, or III of RI-367 (Chevron, 2011c).

As part of the repair of the crude unit in response to the August 6, 2012 fire, the Facility replaced all fire-damaged piping in the crude unit subject to high-temperature sulfidation conditions with 9 Chrome alloy pipe. The piping

upgrades and other repairs to the crude unit were completed and the crude unit restarted in April 2013, following a rigorous and extensive PSSR process to ensure a careful and safe restart of the Unit. This PSSR process was reviewed in advance by Cal/OSHA and the EPA, and Cal/OSHA conducted a 4-day on-site audit of the PSSR process in early-April. Following completion of its audit, on April 5, 2013 Cal/OSHA lifted the Orders Prohibiting Use that had been in place since immediately following the August 6, 2012 fire.

1.2.1.8 Compliance Audits

The Facility's Compliance Audit Program, documented in RI-373, "Compliance Audit Policy" (Chevron, 2009c), is intended to also satisfy the requirements of Section 2760.8 of the Cal/ARP regulation. Audits help verify compliance with established standards/regulations and ensure that process safety systems are implemented as designed. Under the Facility's Compliance Audit Program, trained personnel must perform internal PSM compliance audits at least every three years to review and evaluate the written documentation/records, and implement the PSM Program and Cal/ARP prevention program. Compliance audits can cover the entire Safety Program, or can focus on individual elements of it, subject to the discretion of the auditor.

The Chevron Corporate Operational Excellence Audit Group assigns an Audit Team Lead. This person is responsible for leading the audit team and ensuring all of the goals and objectives of the audit are fulfilled. The balance of the audit team is to be comprised of qualified personnel knowledgeable in the process. The PSM Audit Team Lead fulfills the role of Audit Liaison and is responsible for making notifications, interview schedules, and determining meeting locations. The Operations Excellence/Process Safety Management (OE/PSM) Manager is to assist in the removal of barriers which may impede the team's ability to succeed and must work with the other resource owners (i.e., managers of the different work groups assigned to assisting in closing audit findings) to ensure that findings requiring mitigation have adequate resources committed to implement the mitigation measures in a timely fashion.

The Compliance Audit Program provides that the audit team shall utilize a field assessment and audit checklist to perform:

- An assessment of the adequacy of documented safety program requirements, including operating procedures such as RIs;
- A review of records (i.e., completed hot work permits, MOC documents, incident investigations, equipment records) to assess implementation of the documented procedures;

- Interviews with employees to assess their understanding of applicable programs (for example, whether personnel have a basic understanding of the mechanical integrity program); and
- Interviews with key personnel (those with primary responsibility for each element within the Safety Program).

The Compliance Audit Program requires that team members formulate findings for improvement. The results of the compliance audit are to be communicated to members of management during a closing meeting and in an audit report. The appropriate PSM element owners are responsible for reviewing the findings, determining appropriate resolutions, assigning responsibility for each resolution, and compiling status reports of progress made in implementing the resolutions. The periodic status updates are maintained in an audit database. The Facility retains the two most recent compliance audit reports. The audit program requires that the Facility track to final disposition the resolutions formulated during all compliance audits.

1.2.1.9 Incident Investigations

The Facility's incident investigation procedure, documented in RI-371, "Near Loss, Event Reporting, and Incident Investigation" (Chevron, 2014b), is intended to satisfy the requirements of the PSM standard as well as of Section 2760.9 of the Cal/ARP regulation. RI-371 establishes procedures for investigating each incident that results in, or could reasonably have resulted in, an accidental release of a regulated substance causing injuries or property damage. Incident investigations provide Chevron with the means to identify root causes or systemic factors and implement solutions to prevent future incidents.

RI-371 requires that personnel must promptly report any abnormal event or near miss, including those with the potential for catastrophic release. All events are to be reported into the Facility's incident database. Personnel trained in the methodology to be used are assigned as investigation team leader and/or investigation team facilitator. The experience and number of the other team members are dependent upon the nature of the incident. Typically, the incident investigation teams are comprised of a management sponsor, team leader, and other employees (including contract employees) knowledgeable in the operation, design, and maintenance of the process.

Incidents are classified as Level 1, 2, or 3 based on a variety of impacts or potential impacts, including but not limited to personal injuries, severity of environmental impacts, and degree of damage resulting from a fire or explosion. Level 1 is the least severe, with Level 3 being the most severe. Significant

incidents (Level 3 severity classification) require the use of the TapRoot® methodology for root cause analysis, which incorporates human factors in the investigation process. TapRoot® is a systematic process, software, and training for finding the root causes of problems; it is used to investigate and fix the root causes of major accidents, everyday incidents, minor near misses, quality issues, human errors, maintenance problems, medical mistakes, productivity issues, manufacturing mistakes, and environmental releases.

The incident investigation team leader is responsible for initiating the investigation as soon as possible, and no later than within 48 hours of the time of the incident or near miss. The team lead selects team members for Level 1 and 2 investigations, and coordinates and supervises investigation team activities. Team members, with team leader/facilitator guidance, collect and analyze facts; identify root causes; develop appropriate solutions in order to avoid a repeat occurrence; and prepare the initial investigation report. The management sponsor has overall accountability for the investigation and its documentation, confirms team leader and members, assigns team members for Level 3 investigations, ensures needed resources are available, and reviews and approves the final investigation report.

The incident investigation program requires that report findings and recommendations are promptly addressed and resolved in a timely manner. The functional work group manager is responsible to ensure the corrective actions are completed in accordance with RI-371 (Chevron, 2014b).

The investigation report must be entered into the Facility's computerized incident database, along with lessons learned and recommendations to prevent future occurrences. Recommendations must be tracked until completion. The Facility regularly reviews metrics to prevent corrective actions from becoming overdue and also tracks the status of investigations so they are completed in a timely fashion, in accordance with RI-371. An Operational Excellence Reliability Intelligence (OERI) database shows when corrective actions are overdue. For every Major Chemical Accidental Release investigation, corrective actions must be completed within a year of the investigation close-out meeting unless requiring a shutdown. Every corrective action has a verification and validation process. Copies of the investigation reports are retained for a minimum of five years.

Investigation results are reviewed with employees (including contract employees) whose job tasks are relevant to the findings in regular safety meetings, in other acceptable forums, or through incident bulletins. The management team discusses incidents that resulted in significant consequences as part of the daily

safety discussions. Alerts and Bulletins distributed from other Chevron facilities are reviewed during monthly safety meetings.

Initial reporting of any incident to CCHS is done in accordance with the CCHS “Hazardous Materials Incident Notification Policy.” This includes 72-hour and 30-day follow-up reporting and establishes minimum requirements for final reporting. The final incident report includes at a minimum: date of incident, date investigation began, a description of the incident, the factors that contributed to the incident, and recommendations resulting from the investigation. The incident investigation report shall be made available to CCHS or other applicable agencies as appropriate. These requirements are detailed in RI-371 (Chevron, 2014b).

1.2.1.10 Employee Participation

The Facility relies on the expertise of employees and contractors at all levels and disciplines to optimize operations and safety. This is achieved by consulting with employees to ensure consideration of their knowledge and experience in all applicable areas of the prevention program. The Facility has developed a written plan of action regarding employee participation in all aspects of the prevention program. The written program, which is intended to also satisfy the requirements of Section 2760.1 of the Cal/ARP regulation, is documented in RI-361, “Employee Participation Plan” (Chevron, 2013f). The Facility's employee participation program fosters ongoing engagement between management and employees and encourages active participation in the design, development, implementation and continual improvement of process safety activities, and systems.

The written employee participation plan (RI-361) and other Facility policies—including Process Hazards Analysis (RI-363; Chevron, 2013h); Operator Work Instructions (RI-124; Chevron, 2013e); Incident Investigations (RI-371); Management of Change (RI-370; Chevron, 2013b); Pre-Startup Safety Review (RI-367; Chevron, 2011c); and the Operations Training Process Manual—provide that:

- Employees and their representatives are consulted on the conduct and development of PHAs conducted to comply with Section 2760.2 of the Cal/ARP regulation. The Facility requires participation by plant operations and engineering personnel as members of the analysis team. Other employees with responsibilities relating to specific processes are consulted prior to and during the PHA. Employee involvement is documented in PHA reports.

- Employees and their representatives are consulted on the development of all elements of the prevention program and the emergency response program. Examples of participation include:
 - O&M employees are involved in the development and review of procedures, and their participation is documented in the EMMS;
 - O&M employees are members of the required incident investigation teams, and their participation is documented in the incident report;
 - O&M employees are consulted regarding the appropriate type and frequency of training;
 - O&M employees participate in various safety activities: Incident and Injury Free Committee, Joint Health and Safety Meetings, PSM Steering Committee, and their participation is documented in meeting minutes; and
 - O&M employees participate in MOC activities such as Health and Safety Evaluations and PSSRs, which are documented in the MOC database.

1.2.1.11 Hot Work Permit

Controlling ignition sources is vital to the Facility's PSM program and risk management plan. The Facility has a hot work permit program to prevent inadvertent ignition of flammables or combustibles when performing jobs such as welding, and to ensure that any fires which may occur can be readily suppressed and extinguished. The Facility's hot work permit program is documented in RI-341, "Hot Work and General Work Permits" (Chevron, 2013a) and is also intended to satisfy the requirements of Section 2760.11 of the Cal/ARP regulation. The hot work permit program requires that employees complete permit requirements certifying that the applicable portions of the fire prevention and protection requirements are implemented prior to beginning hot work operations. Management personnel must authorize any hot work (e.g., cutting, grinding, burning, welding, brazing) to be performed in a unit and ensure appropriate safety precautions are taken prior to initiation of the work.

The fire prevention procedure, covered in RI-341, restricts hot work in certain areas. When grinding, burning, welding, or brazing work is needed in these areas, an ignition source permit must be initiated by the Maintenance supervisor and approved by the local Operations supervisor and under certain circumstances additional approvals are required. The permit is terminated when continued use of the ignition source is hazardous, when conditions of its issuance change, or when the permitted hot work has been inactive for more than two hours (unless tests show that conditions are still non-hazardous).

The Facility maintains three copies of the ignition source permit. The first is required to be posted at the physical location of the hot work for the duration of the work. The second is to be provided to the control room file. The third must be provided to the Facility's internal emergency services department (ESD), where it is kept on file for at least 12 months after the date of issue. The permit shall contain the following information:

- The effective date and time;
- The place of use;
- The hours during which the source of ignition may be used;
- The specific location or piece of equipment where the source of ignition will be used;
- The nature of the source of ignition; and
- Any special precautions or limitations to be observed before, during, or after the use of the source of ignition, including the need for a fire watch and fire hoses or extinguishers. The criteria for needing a fire watch are identified in RI-341. The responsibilities and authority of the fire watch are to continuously monitor assigned job(s), extinguish incipient stage fires, sound fire alarm when necessary, and to use Stop Work Authority if they think that work being performed is unsafe.

Trained personnel from the Facility's Emergency Services, Operations, and Maintenance departments are required to perform an inspection of the area to ensure the following prior to authorization of hot work:

- The source of ignition may be safely used. RI-341 requires that only approved apparatus be used and that personnel performing the hot work (including contractors) be informed of the hazards and are properly trained. Also, the flammable gas or vapor content in the air must be less than 10% of the lowest content that is flammable or explosive.
- Combustible materials in areas that will be exposed during hot work are protected or relocated.
- Proper fire extinguishing equipment is available to employees performing hot work.

Personnel in the control room must be notified prior to initiation of the hot work to make them aware of the ignition source. This awareness allows personnel in the control room to promptly contact the fire watch and personnel performing hot work if continued use of the source of ignition becomes hazardous.

No specific changes have been made to the hot work permit program as a result of the August 6, 2012 fire.

1.2.1.12 Contractors

The Facility's contractor program is documented in RI-366, "Contractors" (Chevron, 2013i), which is intended to satisfy the PSM requirements as well as Section 2760.12 of the Cal/ARP regulations. The contractor program requires that safety issues are addressed during contractor selection and that Chevron and the contract company share responsibility for the safety of all employees. The Facility and all contract companies are jointly responsible for safety and must ensure that contractor's employees are trained in and understand the following:

- Work practices necessary to perform the job;
- Hazards associated with a process;
- Applicable sections of the emergency response procedure. RI-400, "Emergency Response Plan" (Chevron, 2013c), which is incorporated into the training required by RI-366, "Contractors," provides the overall framework for the Facility emergency response plan (Chevron Data Transmittal #87, 2014). In addition to RI-400, the Facility has specific emergency plans for different areas, risks, or types of incidents. These include but are not limited to:
 - RI-406, "Fire Emergency Response" (Chevron, 2010a)
 - RI-410, "Marine Oil Spill" (Chevron, 2012a)
 - RI-414, "Off-site Material or Waste Spill Response" (Chevron, 2010b)
 - RI-417, "Liquid Petroleum Gas (LPG) Release Emergency Response" (Chevron, 2010c)
 - RI-422, "Hazardous Waste Treatment Center and Storage Facility Contingency Plan" (Chevron, 2013d)
 - RI-423, "Hazardous Waste Generator Contingency Plan" (Chevron, 2012b)
 - RI-440, "Emergency Plans for Total Power Outage" (Chevron, 2011a)
 - RI-480, "Emergency Action Plans" (Chevron, 2009d)
 - RI-481, "Employee Initial Emergency Response Test" (Chevron, 2011b); and
- Applicable safe work practices.

Chevron's Contractor Safety Management Program employs a system of controls which requires contractors to meet Chevron's standards and expectations for

supporting safe Facility operations to protect contractors, employees, the community, and the environment. The Facility requires that potential contract companies complete and return a pre-qualification questionnaire regarding their safety programs to the Facility's Contracts Administration group for review against established criteria. The questionnaire includes confirmation that the contracting company has an established written safety program, job qualification employee requirements, a program for random drug and alcohol testing, initial and refresher training programs, a behavior-based safety process, and a short service employee program. The contractor program also requires that metrics, such as Total Recordable Incident Rate, are also considered when selecting contract companies. The Facility's Contracts Administration group may also request that the contract owner submit additional documentation, such as safety training records/logs. The contractor office audit process also includes verification of appropriate skills and certification required to perform the job. Contract companies found to be acceptable against the established criteria are then logged into a "Preferred Contractors" list. The Facility's Contractor Health Environmental Safety Management (CHESM) database maintains files of the completed questionnaires and any additional information requested.

All contractor employees employed by the Facility are required to receive training required by RI-366 (Chevron, 2013i) before being allowed on-site at the Facility. Each contractor employee must complete a course in general Facility safety conducted by the Bay Area Training Corporation (BATC)/DISA Global Solutions or Occupational Safety Councils of America (OSCA), which offer DISA Safety Orientation Program (DSOP) and Nor-Cal/LA Refinery Safety Orientation (NCRSO/LARSO). In addition, the Safety Management Contractor Program requires that each contractor employee must complete a course in Incident and Injury Free Orientation (IIFO), emergency procedures and Facility-wide work practices specific to the Facility. Training is also given on process-specific hazards related to the area in which the contractor employee will be working. Contractors and all employees other than operators assigned to the specific process unit must sign in at the Facility's control room for the unit, review the ERP for the area before entering the unit, and sign out when leaving.

The Maintenance Department and Health, Environmental, and Safety Department periodically audit contractor companies. The frequency of the audits is adjusted according to safety performance history and the type of service being provided. The contract owner/CHESM administrator is responsible for ensuring that each contractor provides proper training and maintains documentation for each contract employee. The contract owner/CHESM administrator also monitors contractor performance (i.e., compliance with stationary source safe work practices, knowledge of types of work, and the hazards involved).

Documentation of the audits and on-site evaluations is maintained for a minimum of five years within the CHESM database.

It is also critical for contractors and Facility personnel to be aware of any unique hazards that may occur prior to performing their work. A Joint Job Safety Visit is performed by the local operators and the maintenance contractor prior to the commencement of work. Additionally, communication of hazards when changes take place is accomplished via RI-370, “Management of Change” (Chevron, 2013b); RI-9900, “Control of Hazardous Energy including Lock-out/Tag-out” (Chevron, 2013n); and/or RI-375, “Control of Entry into Process Areas” (Chevron, 2013k) processes.

No specific changes have been made to the contractor program as a result of the August 6, 2012 fire.

1.2.2 Accident History

The following accidents meet the definition of an accidental release according to CalARP Section 2750.9, were reported in previous Risk Management Plan (RMP) submissions, or were included in the 2008 EIR and retained here for continuity:

- **On June 19, 2012**, during maintenance of a pipe elbow, approximately one pint of a hydrocarbon oil mixture was released to the San Francisco Bay at the Long Wharf. A Community Warning System (CWS) Level 1 was issued and the material was contained with booms and pads.
- **On November 14, 2011**, hydrocarbons (vacuum residuum) were released during a filter change on the vacuum residuum pumps in the crude unit’s residuum filters (K1165). The released heavy hydrocarbons subsequently ignited. The crude unit was shut down and CWS Level 1 was activated. Thick black smoke was visible off-site; however, air sampling conducted by Chevron indicated that no hazardous or toxic substances were detected above Cal/OSHA Permissible Exposure Limits (PELs) or California Office of Environmental Health Hazard Assessment/Air Resources Board (OEHHA/ARB), Reference Exposure Level (RELs). One employee sustained minor burns to the face due to radiant heat exposure. The emergency shutdown resulted in flaring. According to Chevron, up to 35,000 pounds (lbs) of heavy hydrocarbons (vacuum residuum) may have been released. Additionally, 384 lbs of sulfur dioxide (SO₂) and 1.3 lbs of hydrogen sulfide (H₂S) were also calculated by Chevron to have been released.
- **On September 26, 2011**, tetramer product leaked from a cargo hose from Berth 2 of the Long Wharf. A total of approximately five gallons (or less) were released to the San Francisco Bay, which spread to an area of approximately

18 feet by 12 feet. According to the Emergency Release Follow-Up Notice Reporting Form filled out by Chevron, the leak was secured and both internal and external spill response personnel were notified and called in to the site. The release was contained with booms around the berthed vessel. The deployed boom was then replaced by a permanent fence boom, which provided full containment of the spill until a vacuum truck and weir type skimmer were able to recover the material. Workboats also swept the area with absorbent pads and booms. According to the report form, the oil sheen was no longer present on the surface of the water after cleanup and no sensitive areas were affected. Several agencies were on-site during these activities, including the U.S. Coast Guard, the CDFW, and the California State Lands Commission.

- **On March 23, 2011**, according to the Emergency Release Follow-Up Notice Reporting Form filled out by Chevron, during a routine pump procedure, a bleeder valve was left open which allowed a mixture of vacuum gas oil and aviation turbine gas jet fuel to release into a drip pan. The drip pan had small leaks, which resulted in the oil mixture to be released to the San Francisco Bay at the end of the Long Wharf causeway nearest to Berth 7. Approximately 200 square feet of surface water was affected due to the 24 gallons of oil that were released. The bleeder valve was closed upon discovery of the release, and the Chevron spill response team was called onto the site. A boom present under the Long Wharf for precautionary purposes contained the spill initially, and the response team further contained the spill with a second absorbent boom. Boat crews swept the area with absorbent material and vacuum trucks also collected oil, until oil was no longer visible. Chevron indicated that all Long Wharf drip pans were to be inspected and repaired if necessary, and that all drip pans would be replaced during the upcoming dry season.
- **On November 2, 2009**, a small amount of recovered oil containing light hydrocarbons (approximately one gallon) was released into the San Francisco Bay, resulting in a light surface sheen on the water which covered an area of approximately 45 square feet. The release was determined to be due to a pipe leak at the Long Wharf. The State Office of Emergency Services, the U.S. Coast Guard, CCHS, and the San Francisco RWQCB were notified of the release verbally. The leak was secured with two clamps, and the surface sheen was reported by Chevron to have immediately dissipated.
- **On June 21, 2009**, a sump overflow at the Long Wharf resulted in the release of approximately two gallons of a recovered oil and water mixture to the San Francisco Bay. An estimated 200 square feet were affected. The sump valves were immediately closed and the spilled oil mixture was secured with booms

and absorbents within approximately 25 minutes. The absorbent boom was removed from the area the following day. According to the Emergency Release Follow-Up Notice Reporting Form filled out by Chevron, the high level alarm on the sump was to be repaired and additional training to operations personnel was to be administered as corrective actions resulting from the incident.

- **On January 15, 2007, at 5:18 a.m.,** a fire occurred at the crude unit number four when a sulfidation corrosion thinned carbon steel section of the 4-inch-diameter wash-oil swing-out spool failed, releasing a mixture of wash-oil, vacuum gas oil and vacuum residual. A CWS Level 2 alert was issued by the Richmond at 5:22 a.m., followed by a CWS Level 3 siren at 5:30 a.m. In order to not accumulate larger quantities of unburned fuel, several small fires continued in a controlled manner until 2:14 p.m. One employee was treated for minor burns by the Chevron Fire Department and by an outside hospital. That employee was released and returned to work the same day. Another employee received on-site treatment and returned to work the same day. Monitoring conducted by the Facility in the neighboring community showed no evidence of adverse air quality levels. Subsequent corrective action included upgrading the metallurgy of the swing-out spool and replacing a gate valve. In addition, other similar gate valves in crude unit number four were replaced with more modern technology.
- **On August 17, 2006,** a nitrogen truck contractor was sent to the hospital for exposure to aqueous ammonia and H_2S from an unspecified unit. Approximately five to ten gallons of the substances were released due to an unreported cause. No additional information was provided on the CCHS Hazardous Materials Program Incident, Notification, and Complaint Report Form.
- **On October 21, 2003, at 12:40 a.m.,** while disconnecting a railcar, a momentary release of ammonia occurred at the Isomax ABU, spraying onto an employee. This resulted in burns to the employee's face and neck. The release did not result in any off-site consequences.
- **On September 4, 2003,** as the Poly Plant pump P-651A was being prepared for hot alignment and re-start, less than one barrel of Whole Polymer was released from an open 0.75-inch bleeder valve on the pump discharge pipe as the pump suction valve was being opened. The operator closed the suction valve to isolate the leak and the hot stock auto-ignited, resulting in a small fire with visible smoke. Plant operators isolated the leak and extinguished the fire within approximately three minutes. Concurrently, an approximate 4.0 (Richter scale) earthquake occurred in the vicinity of the plant resulting in a large "boom" sound. The Refinery Shift Coordinator,

unaware of the earthquake and assuming the sound was related to the fire in the plant, activated the CWS Level 3 alarm. An “all-clear” was issued less than an hour later when the CCHS and shift coordinator determined that the incidents were unrelated.

- **On August 9, 2003**, TP-603A, the main lube oil pump, shut down unexpectedly and would not restart due to a seized bushing on the shaft; the backup lube oil pump, TP-603B was out of service due to a routine check. This resulted in the shutdown of the K-600 Isomax recycle compressor due to low lube oil pressure at 1:52pm. Burners were shut off on furnaces F-610 and F-620 and operators began de-pressurizing the reactors per emergency procedures in order to decrease reactor bed temperatures. The feed was also pulled and the system depressurized. TP-603A was handed over to maintenance for repairs. At 6:10pm, K-600 restarted. Later, an increase in reactor bed temperatures was observed in R-610 and R-620. Operators then shut down K-600 due to inability to maintain seal oil flow. Operators de-pressurized the system to reduce reactor bed temperatures but bed temperatures remained high. Operators opened the emergency de-pressure valves and North Isomax was taken off of Flare Gas Recovery. Flaring was initially unstable with incomplete combustion, but stabilized after 10 minutes. CWS Level 1 was first activated just before 8:00 p.m. and at 9:19 p.m., CWS Level 3 was activated as a result of multiple agencies receiving odor complaints. All clear⁵ was issued at 11:09 p.m. Approximately 790 lbs of SO₂ was released from flaring due to the incident. Multiple hand-held analyzer samples were taken and results were found to be below detection level. One bag sample (of seven) showed a positive result for H₂S (0.1 ppm). According to a Chevron investigation of the incident, the root causes were determined to be: (1) a seized bushing on the shaft of TP-603A (equipment difficulty, unexpected failure) resulted in the inability to pump lube oil for K-600. Bushing failure/seizure is noted as an uncommon occurrence; (2) emergency procedures were unclear regarding when to discontinue effort to restart the compressor and fully de-pressure the unit (K-600) (human performance difficulty, management system); and, (3) flare was unstable with incomplete combustion due to design difficulty. In addition, Chevron identified the following corrective actions: (1) repair TP-603A bushing on shaft; (2) establish guidelines for what reactor temperature and pressures must be before attempting to restart the recycle compressor.

⁵ The term “all clear” is not a written finding resulting from the investigation; instead it is a term of art used by community warning system (CWS) operators and confirmed by Contra Costa County Health to indicate via phones, text messages, emails, social media (currently Facebook and Twitter), and the CWS public website that the hazard of concern no longer exists (Chevron Data Transmittal #87, 2014).

Review revised procedures with operating crew; (3) consider creating a simulator scenario for restarting the plant after an emergency loss of K-600 recycle compressor; and, (4) upgrade flare instrumentation to include relief gas flow indicators.

- **March 5, 2003:** The Head Operator of one of the pilot plants burned his hand while attempting to unclog a pipe in a pilot unit at the Chevron Research facility. The employee was transported to the Chevron on-site clinic and later transferred to Brookside Hospital due to nausea. CWS Level 1 was issued. No additional details about the incident were recorded on the CCHS Hazardous Materials Program Incident, Notification, and Complaint Report Form.
- **On October 21, 2002, at 6:00 a.m.,** three 115 kilovolt (kV) flashovers (an unintended electrical arc “flashes over” from one exposed live conductor to another or to the ground, producing intense heat and light) occurred at the Standard Oils Switching Station (SOSS) Bus No. 2. The flashovers caused an upset condition in the high voltage electrical system. Following that, at 7:10 a.m., a single flashover occurred on Bus No. 2 at the SOSS. Six circuit breakers opened and electrical power was lost at both Cogeneration (Cogen) units, as well as power to Substations 1 and 2. Both Cogen units tripped on “flame out” causing a high pressure steam shortage throughout the Facility, and the fluid catalytic cracker shut down. During this event, Substations 2 and 4 continued to supply power to a portion of the Facility. There was no release of hazardous substances to off-site receptors.
- **On January 31, 2002, at 12: 07 p.m.,** a release of H_2S occurred when a process upset occurred at the No. 4 sour gas plant in the Isomax ABU, causing the No. 3 sulfur recovery unit in the Cracking ABU to shut down. These occurrences caused the process gases to be routed to the sulfur recovery unit stack and safety flare in the Isomax and Distillation and Reforming units. Two plant operators in the sulfur recovery unit were exposed to H_2S and natural gas during the restart of No. 3 sulfur recovery unit. The Emergency Management Team responded to the incident and determined that the workers were not harmed and could return to work immediately and that no off-site consequences occurred due to the small size of the release.

1.3 REFERENCES

- American Petroleum Institute (API). 2009. API 570 - Piping Inspection Code: In-service Inspection, Rating, Repair, and Alteration of Piping Systems. 3rd Ed. November. http://www.api.org/standards/new/upload/570_e3_pa.pdf.
- American Petroleum Institute (API). [no date]. *Catalog: Refining*. Accessed February 16, 2014. http://www.api.org/~media/Files/Publications/Catalog/11_Refining.pdf.
- Bay Area Air Quality Management District (BAAQMD). 2003. Regulation 12, Rule 11. June 4. http://www.baaqmd.gov/?sc_itemid=D39A3015-453E-4A0D-9C76-6F7F4DA5AED5.
- Bay Area Air Quality Management District (BAAQMD). 2005. Regulation 8, Rule 40. June 15. http://www.baaqmd.gov/?sc_itemid=D39A3015-453E-4A0D-9C76-6F7F4DA5AED5.
- Bay Area Air Quality Management District (BAAQMD). 2006. Regulation 12, Rule 12. April 5. http://www.baaqmd.gov/?sc_itemid=D39A3015-453E-4A0D-9C76-6F7F4DA5AED5.
- Bay Area Air Quality Management District (BAAQMD). 2010. Regulation 2, Rule 5. January 6. http://www.baaqmd.gov/?sc_itemid=D39A3015-453E-4A0D-9C76-6F7F4DA5AED5.
- Bay Area Air Quality Management District (BAAQMD). 2011. Regulation 1, Section 301. May 4. http://www.baaqmd.gov/?sc_itemid=D39A3015-453E-4A0D-9C76-6F7F4DA5AED5.
- Bay Area Air Quality Management District (BAAQMD). 2013. *Draft Petroleum Refining Emissions Tracking Rule*. March. http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Rules%20and%20Regs/Workshops/2013/1215_faq_032113.ashx?la=en
- Bay Area Air Quality Management District (BAAQMD). 2014. Regulation 11. http://www.baaqmd.gov/?sc_itemid=D39A3015-453E-4A0D-9C76-6F7F4DA5AED5.
- Baker, James A., et al. BP U.S. Refineries Independent Safety Review Panel. 2007. *The Report of the BP U.S. Refineries Independent Safety Review Panel*. January 18.

California Environmental Protection Agency (Cal/EPA). 2014. *Improving Public and Worker Safety at Oil Refineries* (Final Report of the Interagency Working Group on Refinery Safety). February.
<http://www.calepa.ca.gov/publications/Reports/2014/RefineryRpt.pdf>.

California Air Resources Board (CARB) and California Air Pollution Control Officers Association (CAPCOA). 2013. *Air Monitoring for Accidental Refinery Releases: Assessment of Capabilities and Potential Improvements - Project Plan*. July.
<http://www.arb.ca.gov/fuels/carefinery/crseam/finalrpp.pdf>.

California Air Resources Board (CARB). 2014. Refinery Air Monitoring. Accessed February 16, 2014.
<http://www.arb.ca.gov/fuels/carefinery/crseam/crseam.htm>.

California Code of Regulations (CCR), Title 13, Division 2, Chapter 6.

California Code of Regulations (CCR), Title 19, Division 2, Chapter 4.5, Section 2760.3.

California Code of Regulations (CCR), Title 23, Division 3, Chapter 16.

California Code of Regulations (CCR), Title 24, Part 2, Chapter 31F.

California Code of Regulations (CCR), Title 24, Part 9. California Building Code (CBC), Sections 1.1.5, 102.7, 105.2.4.

California Code of Regulations (CCR). Title 24, Part 9. California Fire Code (CFC). 2013.

California Code of Regulations (CCR), Title 24, Part 9, Section 1.11.1 et seq.

California Code of Regulations (CCR), Title 40, Part 112.

California Department of Fish and Wildlife (CDFW). 2013a. *History*.
<http://www.dfg.ca.gov/ospr/about/history.aspx>.

California Department of Fish and Wildlife (CDFW). 2013b. *The San Francisco Oil Spill Contingency Plan*.
http://www.dfg.ca.gov/ospr/san_francisco_plan.aspx.

California Government Code (GOV), Chapter 5.5., Sections 51010 et seq.

California Government Code (GOV), Section 65040.12(c).

California Government Code (GOV), Sections 8670.1 *et seq.*

California Health and Safety Code (Cal H&S Code), Sections 25270 *et seq.*

California Health and Safety Code (Cal H&S Code), Sections 25820 *et seq.*

Center for Chemical Process Safety (CCPS). 2006. *Human Factors Methods for Improving Performance in the Process Industries*. January.
<http://www.aiche.org/ccps/publications/books/human-factors-methods-improving-performance-process-industries>.

Center for Chemical Process Safety (CCPS). 2007. *Guidelines for Risk Based Process Safety*. March.
<https://www.aiche.org/ccps/resources/publications/books/guidelines-risk-based-process-safety>.

Center for Chemical Process Safety (CCPS). 2008a. *Guidelines for Hazard Evaluation Procedures*, 3rd Edition. April.
<http://www.aiche.org/ccps/publications/books/guidelines-hazard-evaluation-procedures-3rd-edition>.

Center for Chemical Process Safety (CCPS). 2008b. *Guidelines for the Management of Change for Process Safety*. April.
<http://www.aiche.org/ccps/publications/books/guidelines-management-change-process-safety>.

Center for Chemical Process Safety (CCPS). 2009a. *Guidelines for Developing Quantitative Safety Risk Criteria*. August.
<http://www.aiche.org/ccps/publications/books/guidelines-developing-quantitative-safety-risk-criteria>.

Center for Chemical Process Safety (CCPS). 2009b. *Guidelines for Process Safety Metrics*. November.
<http://www.aiche.org/ccps/publications/books/guidelines-process-safety-metrics>.

Center for Chemical Process Safety (CCPS). 2010. *Guidelines for Vapor Cloud Explosions, Pressure Vessel Burst, BLEVE and Flash Fire Hazards*, 2nd Edition. July. <http://www.aiche.org/ccps/publications/books/guidelines-vapor-cloud-explosion-pressure-vessel-burst-bleve-and-flash-fire>

Center for Chemical Process Safety (CCPS). 2013. *Guidelines for Enabling Conditions and Conditional Modifiers in Layers of Protection Analysis*.

October.

<http://www.aiche.org/ccps/resources/publications/books/guidelines-enabling-conditions-and-conditional-modifiers-layers-protection-analysis>.

Center for Chemical Process Safety (CCPS). 2014. Integrating Process Safety into Engineering Projects. July.

<http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118795075.html>.

Chevron Data Transmittal #87: Other Public Safety Information, 2014.

Chevron Data Transmittal #91: API Standards at Richmond Refinery, 2014.

City of Richmond, 2013. *Richmond Community Air Monitoring Program*.

www.fenceline.org/richmond/data.php, accessed February 16, 2014.

Code of Federal Regulations (CFR). Title 6, Part 27

Code of Federal Regulations (CFR). Title 29, Section 1910.119(b)

Code of Federal Regulations (CFR). Title 33, Part 105

Code of Federal Regulations (CFR). Title 40, Part 195

Code of Federal Regulations (CFR). Title 40, Parts 220-229

Code of Federal Regulations (CFR). Title 40, Parts 61 and 63

Code of Federal Regulations (CFR). Title 49, Chapter I, Subchapter B, Part 130

Code of Federal Regulations (CFR). Title 49, Chapter I, Subchapter C, Part 171 et seq.

Code of Federal Regulations (CFR). Title 49, Part 192

Code of Federal Regulations (CFR). Title 49, Parts 190-199

Environmental Science Associates (ESA). 2002. *Valero Refining Company's Land Use Application for the Valero Improvement Project, Environmental Impact Report*, DRAFT. Prepared for City of Benicia, Community Development Department. October.

<http://www.ci.benicia.ca.us/vertical/sites/%7B3436CBED-6A58-4FEF-BFDF-5F9331215932%7D/uploads/%7B529090B4-087B-435C-9799-5C137730DD7F%7D.PDF>.

Federal Register (FR). 1994. *Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Vol. 59, No. 32, February.

McQuiston, T., S. Cable, L. Cook, K. Drewry, G. Erwin, J. Frederick. 2012. Triangle of Prevention: A Union's Experience Promoting a Systems-of-Safety Health and Safety Program, in *New Solutions*. Vol. 22(3) 343-363.

Porter-Cologne Water Quality Control Act. 2014. California Water Code, Division 7, Section 13272.

RAND Corporation (RAND). 2013. *Refinery Process Safety Performance and Models of Government-Industry Relations*. June.
http://www.rand.org/content/dam/rand/pubs/testimonies/CT300/CT392/RAND_CT392.pdf.

Richmond Community Air Monitoring Program. 2013. December 20.
www.fenceline.org/richmond/data.php.

Richmond Municipal Code, Chapter 15.04

State Water Resources Board (SWRB). 2013. *Division of Water Quality – Underground Storage Tank Program*. <http://www.swrcb.ca.gov/ust/>

U.S. Code (USC). Title 16, Section 1431.

U.S. Code (USC). Title 29, Section 667.

U.S. Code (USC). Title 33, Section 1401.

U.S. Code (USC). Title 49, Sections 2001 *et seq.*

U.S. Code (USC). Title 49, Sections 60101 *et seq.*

U.S. Chemical Safety (CSB). 2013a. *Regulatory Report - Chevron Richmond Refinery Pipe Rupture and Fire*.
http://www.csb.gov/assets/1/19/Chevron_Regulatory_Report_Draft_for_Public_Comment_12162013.pdf

U.S. Chemical Safety Board (CSB). 2013b. *Testimony of Don Holmstrom and Dan Tillema, P.E. before the California East Bay Legislators' Public Inquiry into Chevron refinery Fire of August 2012*. April 5.
http://www.csb.gov/assets/1/16/CA_Field_Hearing_Speech_4-5-13_Final.pdf.

- U.S. Department of Transportation (DOT), Federal Motor Carrier Safety Administration (FMCSA). 2014. *How to Comply with Federal Hazardous Materials Regulations*. Accessed February 17, 2014.
<http://www.fmcsa.dot.gov/safety-security/hazmat/complyhmregs.htm>.
- U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA). 2013. *Hazardous Materials Table (HMT)*. Title 49 CFR 172.101 Table (List of Hazardous Materials). February 20.
<http://www.phmsa.dot.gov/portal/site/PHMSA/menuitem.ebdc7a8a7e39f2e55cf2031050248a0c/?vgnextoid=d84ddf479bd7d110VgnVCM1000009ed07898RCRD&vgnnextchannel=4f347fd9b896b110VgnVCM1000009ed07898RCRD>.
- U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA). 2014a. *Gas Transmission Integrity Management*. Accessed February 17, 2014.
<http://primis.phmsa.dot.gov/gasimp/index.htm>.
- U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA). 2014b. *Hazardous Liquid Integrity Management*. Accessed February 17, 2014. <http://primis.phmsa.dot.gov/iim/index.htm>.
- United Steelworkers (USW). 2007. *Beyond Texas City: The State of Process Safety in the Unionized U.S. Oil Refining Industry*. October.
- Wilson, M. 2013. *Refinery Safety in California: Labor, Community and Fire Agency Views*. UC Berkeley Center for Occupational and Environmental Health, Labor Occupational Health Program. June 4.
- Chevron provided the City's technical experts with access to the following documents, which Chevron asserts are confidential business information:***
- Chevron U.S.A. Inc. 2009a. Operations Training Process Manual. December. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2009b. RI-102 – Procedures for Instructions and Standards. December. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2009c. RI-373 – Compliance Audit Policy. November. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2009d. RI-480 – Emergency Action Plans. December. *Confidential Business Information*, reviewed by ENVIRON, 2014.

- Chevron U.S.A. Inc. 2010a. RI-406 – Fire Emergency Response. December. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2010b. RI-414 – Off-site Material or Waste Spills Response. December. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2010c. RI-417 – Liquid Petroleum Gas (LPG) Release Emergency Response. December. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2011a. RI-440 – Emergency Plans for Total Power Outage. December. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2011b. RI-481 – Employee Initial Emergency Response Test. December. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2011c. RI-367 – Pre-Startup Safety Review. December. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2011d. Electronic Operating Manual (EOM) Guidebook, Manuals & Procedures, Rev. 0. February 14. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2012a. RI-410 – Marine Oil Spill Emergency Response. June. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2012b. RI-423 – Hazardous Waste Generator Contingency Plan. August. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2012c. RI-621 – On-line Leak Repair/Leak Seal. February. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2012d. RI-374 – Safe Work Practices. February. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2012e. RI-9025 – Safe Firing of Furnaces and Boilers. October. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013a. RI-341 – Hot Work and General Work Permits. September 24. *Confidential Business Information*, reviewed by ENVIRON, 2014.

- Chevron U.S.A. Inc. 2013b. RI-370 – Management of Change. November.
Confidential Business Information, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013c. RI-400 – Emergency Plans and Procedures. September 7.
Confidential Business Information, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013d. RI-422 – Hazardous Waste Treatment Center and Storage Facility Contingency Plan. March 19. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013e. RI-124 – Requirements for Operations Work Instructions. October 24. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013f. RI-361 – Employee Participation Plan. March 1.
Confidential Business Information, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013g. RI-362 – Process Safety Information. September 12.
Confidential Business Information, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013h. RI-363 – Process Hazards Analysis. April 11.
Confidential Business Information, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013i. RI-366 – Contractors. March 7. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013j. RI-368 – Mechanical Integrity. October 29.
Confidential Business Information, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013k. RI-375 – Control of Entry into Process Areas. February 4. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013m. RI-389 – Electrical Safe Work Practices - ESWP. November 27. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013n. RI-9900 – Control of Hazardous Energy. December 18. *Confidential Business Information*, reviewed by ENVIRON, 2014.
- Chevron U.S.A. Inc. 2013p. RI-9920 – General Procedure for Entering and Working in Confined Spaces. November 20. *Confidential Business Information*, reviewed by ENVIRON, 2014.

Chevron U.S.A. Inc. 2014a. RI-338 – Respiratory Protective Equipment and Ventilation. January 31. *Confidential Business Information*, reviewed by ENVIRON, 2014.

Chevron U.S.A. Inc. 2014b. RI-371 – Near Loss, Event Reporting, and Incident Investigation. February. *Confidential Business Information*, reviewed by ENVIRON, 2014.

APPENDIX 4.13-OCA

Off-Site Consequence Analysis Modeling Parameters and Results Summary

Appendix 4.13-OCA
Project RMP*Comp Inputs and Outputs for Worst Case Scenarios
Chevron Modernization Project
Richmond, CA

Chemical	Ammonia (anhydrous) ^a	Hydrogen	Hydrogen sulfide
CAS #	7664-41-7	1333-74-0	7783-06-4
Category	Toxic	Flammable	Toxic
Scenario	Failure of largest containment of liquid ammonia storage	Failure of Praxair hydrogen plant (total inventory)	Failure of largest H ₂ S gas containment
Method	RMP Guidance, Table 7	RMP*Comp ^{c, d}	RMP*Comp ^{b, d}
Quantity Released (lb)	900	40,000	370
Release Duration (min)	10	Instantaneous	10
Release Rate (lb/min)	90	N/A	37
Mitigation Measures	None	None	None
Topography	Urban	N/A	Urban
Endpoint	150 ppm	1 psi	30 ppm
Basis	ERPG-2	CalARP	ERPG-2
Estimated Distance to Toxic/Flammable Endpoint (mi)	0.9	0.4	0.9
Estimated Distance to Toxic/Flammable Endpoint (km)	1.4	0.6	1.4

Notes:

- a. The ERPG-2 value for Ammonia (anhydrous) was recently updated; this analysis uses the updated value of 150 ppm. The CalARP guidance has not yet been updated to reflect this change.
- b. For Hydrogen Sulfide RMP*Comp runs, ENVIRON used a physical state of liquified under pressure.
- c. For Hydrogen RMP*Comp runs, ENVIRON used a physical state of gas.
- d. Default values in RMP*Comp were used for meteorological data inputs.

Abbreviations:

CalARP - California Accidental Release Prevention Program
 ERPG-2 - Emergency Response Planning Guideline 2
 lb - pound
 km - kilometers
 mg/L - milligrams per Liter
 mi - miles
 min - minute
 psi - pounds per square inch
 EPA - United States Environmental Protection Agency

Sources:

American Industrial Hygiene Association (AIHA) Guideline Foundation. 2013. Current ERPG Values (2013). <https://www.aiha.org/get-involved/AIHAGuidelineFoundation/EmergencyResponsePlanningGuidelines/Documents/2013ERPGValues.pdf>

California Accidental Release Prevention Program (CalARP) Guidance Document. 1998. Chapter 4: Offsite Consequence Analysis. July 1. http://cchealth.org/hazmat/pdf/calarp/chapter_4.pdf

RMP*Comp (Version 1.07). USEPA. Available at: http://www.epa.gov/oem/content/rmp/rmp_comp.htm

United States Environmental Protection Agency (EPA). 2009. Risk Management Program (RMP) Guidance for Offsite Consequence Analysis. March. <http://www.epa.gov/oem/docs/chem/oca-chps.pdf>

APPENDIX 4.13-PROG

Modernization Project Reliability Program



Modernization Project Reliability Program

Richmond Refinery

2014 Revision

MODERNIZATION PROJECT RELIABILITY PROGRAM

I. INTRODUCTION

Chevron U.S.A. Inc. (“Chevron”) has proposed this Reliability Program (“Program”) to mitigate potentially significant effects to public safety that might arise from implementation of the Modernization Project at Chevron’s Richmond Refinery. Among other things, the Modernization Project would increase the Facility’s sulfur removal capacity from 600 to 900 long tons per day (LT/d), which has the potential to increase the sulfur level of crude oil blends and gas oils processed by the Refinery. Sulfur is a naturally occurring element in crude and must be removed to produce the end-products processed at the Refinery. The processing of sulfur can lead to corrosion (“sulfidation corrosion”) of piping and equipment, and must be effectively monitored and managed. Sulfidation corrosion is identified as a damage mechanism by *American Petroleum Institute (API) Recommended Practice 571 – Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*.

The Project would increase the sulfur content of crude oil blends and gas oils processed at the Refinery. Therefore, the City of Richmond, with technical support from an independent expert retained by the City and Chevron, undertook a Reliability Analysis to assess the potential for increased risk of damage occurring from the physical, operational, and feedstock changes proposed as part of the Project, including from sulfidation corrosion, and makes recommendations on steps to be taken to mitigate the risks from these changes. The results of this Reliability Analysis are presented in the Modernization Project Environmental Impact Report (EIR), *Appendix 4.13 – Reliability Analysis of Modernization Project Changes* (Reliability Analysis).

The Reliability Analysis makes several general observations and recommendations concerning the Refinery’s overall mechanical integrity program, as well as specific recommendations to monitor and address the potential effects of the Project. Section II of this Program generally describes the actions the Refinery is in the process of implementing to enhance its mechanical-integrity program and overall Refinery safety, which Chevron believes address the general recommendations from the Reliability Analysis.¹ Section III of this Program sets forth the Project-specific recommendations that will be implemented as a result of the Reliability Analysis. Section IV of the Program describes the ongoing regulatory review and reporting obligations committed to in this Program that will ensure that the actions identified in this Program is implemented.

II. GENERAL RECOMMENDATIONS AND REFINERY ACTIONS TO ADDRESS

The Reliability Analysis includes the following five general recommendations (*Appendix 4.13, pp. 123-124*):

¹ While these actions are being developed and implemented throughout Chevron U.S.A. Inc.’s refining system, the discussion focuses primarily on development and implementation at the Richmond refinery.

- **Recommendation:** Chevron should ensure that its organizational communication procedures and work processes incorporate mechanisms by which risk concerns, corrective actions, and recommendations that are identified (e.g., during inspections, turnarounds, audits, PHAs, etc.) by personnel (or contractors) are addressed, reviewed and authorized by management as appropriate, tracked, and closed out, and that the rationale for any decision not to implement a recommendation or corrective action, or otherwise address a risk concern, are clearly documented.
- **Recommendation:** Chevron should further clarify and incorporate into their mechanical integrity program and program documents periodic reviews of work processes, procedures, inspection strategies, etc. to account for physical, operational and organizational changes over time that could affect the assumptions that went into the original decisions. Examples that illustrate this include: (1) periodic reviews of inspection CML densities and placements to ensure that unpredictable damage mechanisms can be detected and (2) reviews of wet H₂S damage risk, based on crude feed constituent changes. Chevron reports that it is developing "asset strategy plans" for each process unit, and that the development of the asset strategy plans will address this recommendation by including review of inspection procedures, working documents, CMLs, and damage mechanisms, and that the asset strategy plans will identify and implement changes needed to each as a result of the review. Whether called an "asset strategy plan" or otherwise included in another safety program (e.g., included as part of the Richmond Industrial Safety Ordinance documentation), Chevron should clarify its implementation tracking process for changes needed as a result of these periodic reviews.
- **Recommendation:** Chevron should leverage its existing infrastructure and technology to lessen the reliance on human interaction in responding to potential risks, including for example Chevron's current pilot project to implement Integrity Operating Windows per the guidelines of the draft API 584 Recommended Practice for the crude unit. Chevron should extend the pilot project to the remaining operating units.
- **Recommendation:** Chevron should review their Positive Material Identification (PMI) Procedure for compliance with API 578, *Material Verification Program for New and Existing Alloy Piping Systems*, based on PMI inspection of equipment and piping during shutdown/ dismantling/disassembly, and make revisions, as warranted, to ensure that Chevron's PMI Procedure conforms to API 578.
- **Recommendation:** Chevron should review and modify their Piping Inspection Procedure to incorporate an engineering review of thickness inspection data with near term "Flag" dates for high risk equipment/piping to assure that the actual minimum thickness associated with the Flag date has either been verified through inspection or, alternatively, the inspection data analyzed with techniques such as a statistical analysis (95% CL or extreme value analysis) to evaluate what risk is involved if the actual minimum thickness was not measured.

Regarding the general recommendations, the Refinery is already implementing numerous actions to enhance safety, resulting in new or improved process safety work processes. Changes have

also been made in the reliability organization to provide more mechanical integrity oversight. Chevron believes these and other actions, described in detail in the EIR, *Chapter 4.13 – Public Safety*, § 4.13.2.4.3.2.2², generally address these recommendations.

For example, the first recommendation calls for Chevron to ensure its organizational communication procedures and work processes adequately identify, track, and close out concerns and recommendations regarding risk. The Refinery is already taking the following actions to enhance organizational communication and competency concerning general and specific mechanical-integrity related recommendations:

- Developing and implementing a new process for additional oversight of general mechanical-integrity related recommendations from industry, Chevron’s Energy Technology Company, and other subject matter experts.
- Development and deployment of an Integrity Threat Process to address inspection recommendations for equipment and piping that could significantly impact safety, or environmental or plant operations, including tracking recommendations by target completion date using the refinery’s MERIDIUM and OERI databases until it is resolved.
- Updating its internal work instructions in 2013 to address inspection results that indicate that equipment or piping will reach “flag” or “alert” thickness prior to the next scheduled turnaround and to include immediate notification of any field measures that indicate a remaining life of one year or less. This update also addresses the last general recommendation above to review and modify the piping inspection procedures.
- Enhancing the requirements for training and competency for leadership, inspections, and technical assessments, including specifically training for determining minimum thickness and fitness for service of individual piping components.
- With regard to turnaround planning, tracking and documenting any decision to defer or not to implement a fixed equipment inspection recommendation to approval by the Refinery Business Manager for the process unit for which the recommendation was made.

Further, the second and third general recommendations provide that Chevron should clarify and modify its mechanical integrity program to, among other things, consider physical, operational and organizational changes over time, and to leverage its existing infrastructure and technology to lessen the reliance on human interaction in responding to potential risks. The Refinery is already implementing enhancements to its mechanical-integrity program. For example:

- The Refinery has added a Fixed Equipment Integrity Manager, who is responsible for developing, implementing, and stewarding the refinery’s Fixed Equipment Integrity program with a goal of achieving zero process safety incidents and improving mechanical availability.
- The Refinery has developed and piloted in its crude unit a Damage Mechanism Review (DMR) process that is consistent with *API 571* and which requires a team of subject

² While these actions are being developed and implemented throughout Chevron U.S.A. Inc.’s refining system, the discussion focuses primarily on development and implementation at the Richmond refinery.

matter experts to review, analyze, and make recommendations concerning damage mechanisms and how to mitigate the effects of damage mechanisms on each process unit. This process has now been made a required element in the Process Safety Management (PSM) process at the refinery for identified process units, and is being undertaken on an ongoing basis.

- The Refinery has piloted in its crude unit a process to create and utilize asset strategy plans for each process unit at the piping circuit level, which will be integrated into the DMR process and will include, among other things, integrity operating windows consistent with draft *API 584 – Integrity Operating Windows* and consideration of process conditions, inspections techniques and frequency, mixing and injection points, and corrosion monitoring locations (CML). These asset strategy plans will be implemented for all processing units on an ongoing basis.

The Refinery reports the status of the above-identified actions to CalOSHA as part of the August 5, 2013 terms of probation described in *Chapter 4.13 – Public Safety* of the environmental impact report, and has also committed to providing quarterly updates to the City pursuant to Mitigation Measure 4.13-CUM-1d. As part of this process, Chevron will work with the County, the City, and its consultants, to ensure that the above-stated general recommendations from the Reliability Analysis have been addressed.

In addition, Chevron will undertake a review of its Positive Material Identification (PMI) Procedure for compliance with API 578, *Material Verification Program for New and Existing Alloy Piping Systems*, based on PMI inspection of equipment and piping during shutdown/dismantling/disassembly, and make revisions, as warranted, to ensure that Chevron's PMI Procedure conforms to API 578.

III. PROJECT RECOMMENDATIONS

The enhanced safety measures described above will provide the foundation for the management of damage mechanisms in the refinery, including sulfidation corrosion, on a go-forward basis. In particular, the damage mechanism review process, the updated PHA process, and development and deployment the asset strategy plans, including integrity operating windows, will be used post-Project for all refinery units to manage risks from all damage mechanisms. In addition to this process, which provides for ongoing evaluation of risks and resulting recommendations, the Reliability Analysis has identified numerous Project-specific recommendations, which Chevron is committing to implement as part of this Reliability Program.

In order to identify Project-related recommendations, the Reliability Analysis assumed certain post-Project operating conditions. The assumptions and analytical method are described more fully in the EIR, Appendix 4.13-REL. The recommendations below, including piping circuit upgrades and installation of additional corrosion monitoring equipment, are tiered to this analysis, meaning that these measures will be implemented well before they would be triggered by actual projected post-Project operations.

A. Schedule and Report on Upgrades to Identified Piping Circuits

The Reliability Analysis for the Modernization Project has identified seventeen (17) piping circuits in the Crude Unit that warrant replacement based on the Reliability Analysis. The Refinery has committed to accelerating the replacement of these circuits during the next scheduled turnaround for the Crude Unit, no later than end-of-year (EOY) 2017, as follows:

Equipment number	Equipment description	Existing Metallurgy	New Material	Replacement Date
0955-002-008	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-014	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-015	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-016	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-017	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-018	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-030	Desalted Crude From E-1165A To F-1100A/B	CS	9 Chrome	EOY 2017
0955-002-031	Desalted Crude From E-1165B To F-1100A/B	CS	9 Chrome	EOY 2017
0955-002-032	Desalted Crude From E-1116's to E-1165C	CS	9 Chrome	EOY 2017
0955-007-009	#4 Sidecut Circ Reflux	CS	9 Chrome	EOY 2017
0955-007-017	#4 Sidecut Circ Reflux	CS	9 Chrome	EOY 2017
0955-009-003	C-1100 Bottoms to F-1160	5Cr	9 Chrome	EOY 2017
0955-012-001	C-1160 Outlet #7 Sidecut	CS	9 Chrome	EOY 2017
0955-012-002	#7 Sidecut	CS	9 Chrome	EOY 2017
0955-013-007	C-1160 OUTLET: #8 Sidecut to E-1188	CS	9 Chrome	EOY 2017
0955-013-008	C-1160 Outlet: #8 Sidecut to C-1160	CS	9 Chrome	EOY 2017
0955-013-009	C-1160 Outlet: #8 Sidecut to E-1114	CS	9 Chrome	EOY 2017

The Reliability Analysis for the Modernization Project has also identified four partial piping and valve replacements in the Crude Unit that warrant replacement based on reasonably foreseeable post-Project operating conditions. The Refinery has committed to accelerating the replacement of these partial components during the next scheduled turnaround for the Crude Unit, no later than end-of-year (EOY) 2017, as follows:

Equipment number	Equipment description	Existing Metallurgy	New Material	Replacement Date
0955-015-002	C-1160 OUTLET to E-1165 A/B/C	9Cr/5Cr/ (2) 10" spool piece and drain valves CS	Replace 5Cr and CS with 9CR; existing 9Cr remains in place	EOY 2017
0955-015-017	K-1165A/B Pump Out	9Cr/5Cr/CS	Replace short 5Cr deadleg immediately off filters with 9 Cr. CS is either free-draining, isolated, or cool wash oil service, so no need to replace because do not see regular service	EOY 2017
0955-019-034	P-1165/A Case Vents to C-1160	SS/CS	CS is downstream of single SS block valve. Upgrade the 3/4" CS pump case vents with SS to double block and bleed design.	EOY 2017
0955-019-017	Pump Vents	9Cr/5Cr/CS	Replace 5Cr with 9Cr and add a second block valve and bleeder. CS component is downstream of 5Cr single block valve; no project impact on CS portion downstream of the valve.	EOY 2017

Chevron shall obtain all required permits for replacement of these piping circuits pursuant to the California Building Standards Code, inclusive of the California Fire Code, and, once the piping circuits are replaced, shall submit copies of closed permits to the Planning Department to demonstrate compliance with this commitment.

B. Installation and Monitoring of Additional Permasense® Monitors on Identified Circuits

Since the beginning of 2013, the Refinery has installed a total of 117 Permasense® probes in the Crude Unit on six piping systems consisting of carbon steel, 5 Chrome, and 9 Chrome materials. Permasense® is the trade name of a type of high-temperature ultrasonic device that is mounted on a pipe or vessel, and penetrates through insulation. It has wireless sensors that provide periodic equipment thickness readings (at variable intervals, but currently set to collect thickness data twice a day) to monitor a system. Due to noise and sensitivity, the technology is limited to longer-term trending (days and months vs. hours) which is appropriate for piping subject to sulfidation conditions with its predictable rates.

The six piping circuits on which the sensors were installed were chosen based on past and anticipated projected future operating conditions. The wireless probes collect pipe wall thickness data while the plant is operating, and are used to monitor corrosion rates. This long-term online monitoring program will be part of the reliability program to ensure safe operation of equipment after the Modernization Project commences operations. Thirteen of these piping circuits with Permasense® monitors installed have been identified for replacement and will be upgraded to 9 Chrome pursuant to the piping circuit upgrades planned as a part of this Reliability Program and the Permasense® monitors will not be reinstalled on these circuits. In addition, as part of the Project, the Refinery will install at least 25 additional Permasense® monitors on carbon steel circuits in the Solvent De-Asphalter (SDA). These sensors are being installed to confirm the predictive model results that there will be little-to-no sulfidation corrosion in the SDA post-Project.

Data from the Permasense® monitors will be utilized in the reporting obligations set forth in section IV below.

C. Crude Unit Recommendations

The operational and feedstock changes contemplated by the Modernization Project, specifically increases in sulfur content of feedstocks, increased hydrogen purity produced by the new hydrogen plant, increased H₂S partial pressures in hydroprocessing plants recycle streams, or potentially higher temperatures in the crude unit based on API gravity ratings, could all contribute to increased damage mechanism activity post-Modernization Project, thereby warranting the implementation of the following preventive measures.

1. Based on the marginal results from the F-1100 radiant tube sulfidation analysis, Chevron should monitor the post-Modernization Project sulfur content being fed to the crude unit and use a 2.0 wt.% sulfur content of feed as a trigger to conduct a review of the F-1100 crude charge furnace to study whether the 5 Chrome radiant tubes are safe to operate until the 2017 shutdown.

2. Chevron's analysis of the atmospheric column furnace F-1100 does not include conclusive evidence as to the present creep/stress-rupture condition of the tubes. Therefore, it is believed that some additional actions are required in order to lower the risk of a creep/stress-rupture or sulfidation failure in a F-1100 tube under post-Modernization Project operating conditions. Acceptable options to lower the risk of heater tube failures include:
 - Furnace F-1100: Option 1, complete all of the following actions:
 - Complete a full internal tube inspection for F-1100 during the 4th quarter 2017 crude unit turnaround using intelligent pigs.
 - Conduct testing on the two currently available, radiant section tubes from the F-1100 Furnace to verify their existing metallurgical, physical and mechanical properties, plus remaining creep life using accelerated Omega creep testing as an input to decide whether the F-1100 furnace should be retubed during the 2017 shutdown.
 - Conduct additional metallurgical, physical, mechanical and Omega creep testing on radiant furnace tube samples to be removed during the 2017 shutdown, depending on the results of the Omega testing planned for the 2012 furnace tube samples.
 - In 2017, replace tubes as needed in F-1100, per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.
 - Install at least three Permasense® continuous monitoring ultrasonic thickness gauge monitors in each of the furnace outlet systems. If the monitors indicate an increase in corrosion rates greater than 5 mpy, review the need for additional mitigation actions.
 - Furnace F-1100: Option 2:
 - Retube the F-1100A/B furnace during the 2017 turnaround with 9Cr or higher alloy tubes.
3. The vacuum column furnace, F-1160, is constructed of 5Cr radiant furnace tubes. The recommended actions for this furnace are as follows:
 - Complete a full internal tube inspection for F-1160 during the 2017 crude unit turnaround using intelligent pigs.
 - In 2017, replace tubes as needed in F-1160 per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.
4. Conduct laboratory analyses to more accurately determine crude and crude blend sulfur speciation and H₂S evolution, which could be used to predict likely crude corrosion rates. Timing: 4Q2015

5. Develop integrity operating windows (IOWs) for critical crude unit operating parameters per the guidelines in the draft version of API 584. 3Q2014
6. The Crude Splitter software is used to predict the distribution of the sulfur in the atmospheric tower sidecut and bottom streams. Verify the Crude Splitter predicted sulfur results with post-Modernization data on the sulfur containing streams within the first year of operation following the implementation of the Modernization project if the trigger points (2.25 wt.% sulfur and 2.75 wt. % sulfur) noted in § IV.A below are reached.
7. Revise the asset integrity plans for the Crude Unit Atmospheric Column Reflux Drum, V-1100, the Stabilizer Column Reflux Drum, V-1190, and the Vacuum Column Overhead Seal Drum, V-1160, to include inspection for Wet H₂S damage. An external Automatic Ultrasonic Testing inspection of representative sections of the "water wet" portions of V-1100, V-1160 and V-1190 vessels should be conducted as a baseline before the start of post-Modernization conditions, then checked externally again approximately one year after the start of the Modernization conditions. In addition, a one-time internal inspection should be conducted of these vessels during the scheduled maintenance turnaround after the start of Modernization conditions, using eddy current or other approved internal inspection techniques per the Chevron Wet H₂S program.
8. Develop a process monitoring plan for the crude unit overhead to confirm any impacts of the increased sulfur levels. The monitoring plan should be implemented post-Modernization and should include:
 - Process sampling of the accumulator for pH, chlorides, iron and H₂S content. Compare to established integrity operating windows (IOWs);
 - Monitor Desalter pH;
 - Analyze the atmospheric tower post-Modernization to quantify if, and how much, increased H₂S is in the overhead system resulting from the increased sulfur feed to the unit;
 - Higher mercaptan crudes could lead to increased sulfidation corrosion rates in the jet or kerosene cuts. Modify asset integrity plans to monitor for potential increased corrosion if higher mercaptan crudes are run compared with current and historical crude and crude blends; and
 - Review the asset integrity plan to ensure that the Permasense continuous ultrasonic monitoring locations are properly placed to ensure early detection should corrosion rates increase significantly beyond expectations per the McConomy curve predicted rates.
9. Develop and implement physical or administrative controls to assure that carbon steel piping components downstream of high sulfur streams operating > 500F are not inadvertently placed into continuous (e.g., placement of a warning tag, locked valve, double-block-and-bleed valves or other measures). This should be completed prior to the commencement of Modernization Project operations.
10. Higher mercaptan crudes could lead to increased sulfidation corrosion rates in the jet or kerosene cuts. Conduct a historical review of purchased crudes and processed crude blends for the 90% confidence level of highest mercaptans processed and use

this statistical number to set a review flag in the crude and gas oil acceptance procedure. If higher mercaptans crudes are run at the Richmond Refinery, review the Permasense® corrosion rate data from this time period as part of the crude management of change lookback. This should be completed prior to the commencement of Modernization Project operations.

11. Add corrosion monitoring locations (CMLs) to the crude unit atmospheric column overhead piping (circuit 0955-003-001) at the termination of the Hastelloy internal overlay. This should include the termination of cladding in the vertical section of piping, as well as the termination point at the inlet to the E- 1101's. Review other, similar locations in the crude unit for missing dissimilar metal interface thickness monitoring locations (TMLs). This should be completed prior to the commencement of Modernization Project operations.

D. Hydroprocessing Recommendations

1. At the 2.25% wt. % sulfur in crude feed trigger point, evaluate and modify as warranted, based on any increased sulfur in this section of the unit, inspection plans (what, where and how often) for the distillation section of the hydroprocessing units where sulfidation corrosion rates have been “erratic” and uncertain, per API 939-C.
2. Report on the progress of the project to compare the HP-002 Best Practice Guideline regarding water wash to API 932-B recommendations to ensure that the HP-002 document is consistent with 932-B guidelines. This report should be submitted prior to the commencement of Modernization Project operations.
3. Conduct process monitoring and sampling for post-Modernization Project operations for all hydroprocessing units, to develop process data to confirm assumptions made during the damage mechanism review regarding amounts of H₂S and ammonium bisulfide in the overhead systems. This shall be completed after commencement of Modernization Project operations.
4. Develop integrity operating windows (IOWs) for the hydroprocessing units to incorporate existing critical reliability variables such as the wash water rate for Nh₄HS corrosion control. The IOWs shall be established prior to the startup of Modernization Project operations.
5. If the REAC Corrosion Control Project (TKN) is not completed pre-Modernization Project, conduct a review of current operations to ensure that corrosion rates will remain under REAC best practice guidelines with any increase in sulfur to the unit. This shall be completed prior to the startup of Modernization Project operations.

E. SDA Recommendations

1. Verify post-Modernization Project conditions regarding H₂S content in the SDA overheads and target one or more “water wet” vessels for inspection using internal eddy current, external automatic ultrasonics (AUT) or other non-destructive evaluation (NDE) techniques appropriate for wet H₂S cracking detection within one year of operation under post-Modernization Project conditions.
2. Conduct water boot analysis for corrosive constituents similar to that conducted in the crude unit on the unit overhead accumulator drums, including cyanides. This should

be conducted at the 2.25 wt.% and 2.75 wt. % sulfur trigger points identified in § IV.A below.

3. When the sulfur wt.% of crude oil processed at the Facility reaches 2.25 wt.% sulfur on an annual average, and the again when it reaches 2.75 wt.% sulfur annual average, the Facility shall trigger the same responses for the SDA plant as described in the recommendation section for the crude unit.
4. Conduct a follow-up smart pig inspection of F-100 and F-120 furnace tubes during the first planned maintenance after the unit has seen at least 1 year of post-Modernization Project operating conditions.
5. Install at least 25 additional Permasense® monitors on carbon steel circuits in the Solvent De-Asphalter (SDA) including sulfidation “dead legs,” based on a critical review of historical corrosion rates. These sensors will confirm the predictive model results that there will be little-to-no increase in sulfidation corrosion in the SDA post-Modernization Project. These installations should be completed prior to the commencement of Modernization Project operations.
6. Develop integrity operating windows (IOWs) per draft API RP-584 for identified damage mechanisms in the SDA unit. The IOWs should be established prior to the commencement of Modernization Project operations.
7. Develop process monitoring and sampling plans for post-Modernization Project operating conditions to confirm assumptions made during the damage mechanism review project. The monitoring and sampling plans should be developed prior to the commencement of Modernization Project operations, and should be implemented after commencement of Project operations following an increase in sulfur content to the SDA unit.

F. Amine Systems Recommendations.

It is recommended that Chevron review ongoing sampling results (per Best Practice timing plus vendor sampling and reports) to determine if post-Modernization Project amine loading and heat stable amine salts (HSAS) are impacted by any increase in H₂S to the TKC Unit. This should be done prior to the commencement of Modernization Project operations.

G. Sulfur Recovery Unit Recommendations

Associated with the new liquid oxygen piping, the Facility shall typically design and build new construction in conformance with the special design and installation precautions associated with oxygen piping systems, i.e., design and installation best practice details common in industry for oxygen piping systems, including pre-commissioning cleaning of the piping interior to remove harmful materials such as dirt, debris, iron, grease and other contaminants known to cause ignition of pure liquid and gaseous oxygen.

H. Sour Gas System Recommendations

Based on the potential risk of ammonium bisulfide corrosion in carbon steel due to the possibility of the sour gas condensing at locally cool portions of piping, Chevron should develop and implement a mitigation plan for this eventuality. The mitigation plan is to

include reviewing sour gas P&IDs and isometric drawings to locate low points where water could accumulate, locate dead legs and establish inspection/monitoring plans for verifying if and where water is condensing out of the vapor phase. This should be conducted within 1 year of commencement of Modernization Project start-up.

1. Chevron should conduct a review to confirm their post-Modernization assumptions made during this review regarding ammonium bisulfide concentrations, dew points and potential for salt condensation in the sour gas piping, at the 2.25 wt. % and 2.75 wt. % average annual sulfur content trigger points.
2. Develop integrity operating windows (IOWs) per draft API RP-584 for identified damage mechanisms for the sour gas system. These IOWs should be established prior to the commencement of Modernization Project operations.

I. Sour Water System Recommendations

1. The block diagrams shown in Figure A4.13-REL-16 and Figure A4.13-REL-17 do not include detailed information at the “P&ID” level. Also, information is lacking on the sour gas streams in the overhead of the H₂S and NH₃ strippers in the SWS unit. (However, for purposes of the review the overhead systems of the WWT plants were deemed to be out of scope.) The impact of post-Modernization Project corrosion from sour water corrosion should be minimal, based on the Reviewer’s analysis of the sour water streams. However, based on a lack of detail at the P&ID level Chevron should conduct a review of their sour water piping inspection programs at the P&ID/Inspection Isometric level (including to ensure that low points, galvanic metal couple locations and CMLs are properly captured) to ensure that their program is sufficient to detect any ammonium bisulfide corrosion in the system. This should be completed prior to the commencement of Modernization Project operations.
2. Chevron should be monitoring and sampling to confirm their assumptions regarding the ammonium bisulfide concentrations and velocities in the sour water piping and H₂S concentrations in the H₂S Stripper and NH₃ Stripper overhead systems. This review should be conducted when average annual sulfur content levels reach 2.25 wt. % and again at 2.75 wt. %.
3. The H₂S stripper, NH₃ stripper, ammonia stripper overhead condenser, and ammonia stripper reflux drum are all Category 2 Wet H₂S vessels and therefore are included in Chevron’s wet H₂S program. If a post-Modernization Project review of the assumptions regarding the severity of wet H₂S damage in the overhead systems warrants a change in the categorization of the overhead wet H₂S vessels, then a wet H₂S cracking inspection should be conducted. This should be conducted within one year after the commencement of Modernization Project operations.
4. Continue as with the existing condition inspection, the X-ray and/or close-grid UT inspection techniques for all of the overhead piping from the NH₃ stripper to the reflux drum regardless of metallurgy.
5. Develop integrity operating windows (IOWs) per draft API RP-584 for identified damage mechanisms for the sour water system. The IOWs should be established prior to the commencement of Modernization Project operations.

J. Recovered Oil Recommendations

If not already present, add CML locations to the C-710 injection nozzle and adjacent C-710 tower shell so that the assumptions regarding post-Modernization Project corrosion rates not increasing in severity can be verified. Implement prior to the operational startup of the Modernization Project.

IV. ONGOING REGULATORY REVIEW AND REPORTING

In order to demonstrate compliance with the recommendation above, as well as to provide the City regular update concerning the implementation of the corrective actions described in § II above, the Refinery will undertake the following reporting obligations.

A. Re-evaluate and Report on Post-Project Operating Assumptions from Reliability Review

The Reliability Analysis for the Modernization Project assumed certain operating conditions once the Project is implemented, including projected temperatures, sulfur levels, and corrosion rates for various process units and individual piping circuits. These assumptions were based on a conservative 3.3 wt% sulfur case. In order to verify that the assumptions made during the reliability review were accurate, the Refinery will undertake the following actions:

- When the sulfur weight percent of crude oil processed at the Refinery reaches 2.25 wt% sulfur on an annual average, and the again when it reaches 2.75 wt% sulfur annual average, the Refinery shall:
 - Assemble a reliability review team that will be made up of appropriate subject matter experts (SMEs), including a Senior Process Engineer, Senior ETC Materials and Corrosion Engineer, Refinery Materials Engineer and Process Operator.
 - For all damage mechanisms identified as being affected by the Project, and using then-current inspection and/or monitoring data, the reliability review team shall review, analyze, and, as necessary, update, the data and conclusions prepared during the reliability review for the Modernization Project to determine whether the assumptions made and conclusions reached during the reliability review accurately reflect actual post-Project operating conditions.
 - Use the data from the laboratory tests described above to consider any potential post-Project impacts from sulfur speciation.
 - Review any operational or process changes that have occurred post-Project.
 - Make recommendations concerning material upgrades and /or enhanced inspection opportunities as necessary based on the re-evaluation.
 - Report on the results of the this re-evaluation and any resulting recommendation to Contra Costa Health Services, the expert agency charged with implementing the Richmond Industrial Safety Ordinance, as well as one or more Refinery workforce representatives from any process units impacted by the re-evaluation and recommendations and who shall have the necessary subject matter expertise to engage in a Project-level reliability review.

B. Report Inspection Results for Identified Circuits in Service Susceptible to High-Temperature Sulfidation Corrosion and other Damage Mechanisms Effected by the Project

All piping circuits in the Refinery, including the new 9 Chrome circuits being installed pursuant to § III.A of this Reliability Program, are regularly monitored and inspected. Beginning one year from commencement of Project operations, and annually thereafter, the Refinery will provide reports to the City summarizing the monitoring and inspection results for the identified circuits. These reports shall at a minimum include the following information:

- A list of all piping circuits identified as potentially susceptible to sulfidation corrosion, including specifically piping circuits identified during the reliability review for the Modernization Project as being susceptible to sulfidation corrosion and subject to potential process changes.
- A list of components identified through the 100% component inspection conducted following the August 6, 2012 incident pursuant to the methodologies set forth in the API 939-C - Guidelines for Avoiding Sulfidation (Sulfidic) Corrosion Failures in Oil Refineries and Updated Inspection Strategies for Preventing Sulfidation Corrosion Failures in Chevron Refineries (Sept. 30, 2009) that may lack sufficient thickness to remain in service until the next scheduled turnaround.
- A description of the solutions implemented with respect to components of insufficient thickness identified above.
- A description of the current fixed inspection frequency for carbon steel piping circuits identified as potentially susceptible to sulfidation corrosion.
- A description of any findings from inspection and monitoring of the piping circuits identified during the reliability review for the Modernization Project as being susceptible to sulfidation corrosion and subject to potential process changes that indicate that any of these circuits lack sufficient thickness to remain in service until the next turnaround and a description of the solution to be implemented with respect to these circuits.
- Chevron shall obtain all required permits for replacement of these piping circuits pursuant to the California Building Standards Code, inclusive of the California Fire Code, and, once the piping circuits are replaced, shall submit copies of closed permits to the Planning Department to demonstrate compliance with this commitment.

C. Process Hazard Analyses (PHA) Revalidation

Chevron shall work with Contra Costa Health Services (CCHS) to update and revalidate the process hazard analyses (PHA) prepared for the Project components consistent with the requirements of the Richmond Industrial Safety Ordinance (Richmond Municipal Code Ch. 6.43). This revalidation shall occur prior to commencement of Project construction, and again after construction but before startup of Project operations for any changes that may have arisen during construction that could affect the earlier PHA. The PHAs shall include inherently safer

systems analyses (ISSAs), damage mechanism reviews and evaluation of the consequences thereof resulting from the Project, and Layers of Protection Analyses (LOPA).

Chevron will notify CCHS and the City of the availability of these PHAs, and make these PHAs available for review by CCHS. The PHAs (initial and updates/revalidations, inherently safer systems analysis, damage mechanisms review, and LOPAs) shall be consistent with proposed amendments to the RISO. Chevron shall conduct the LOPAs and submit written LOPA reports, prepared in accordance with industry best practices (such as those issued by the Center for Chemical Process Safety (CCPS)) to CCHS for review prior to construction (and post-construction, for those LOPAs warranted based on changes that arise during construction).

D. Share Schedule for and Report Results of Process Hazard Analyses (PHAs) Considering Damage Mechanisms.

Chevron shall provide annual reports to the City summarizing the PHAs/revalidated PHAs completed during the preceding calendar year to account for consideration of damage mechanisms, and shall include a list of fixed equipment inspection recommendations submitted for each turnaround, indicating which recommendations were accepted, and for those that were not accepted, the reason the recommendation was rejected. All PHAs shall be available for agency review pursuant to the terms of the RISO.

E. Updated Safety Program List

Chevron shall maintain a list of programs, procedures, and/or other Refinery documentation that are updated to implement this Reliability Program or the corrective actions described in § II above. Chevron shall maintain this list at the Refinery and make it available to the County during audits, inspections, or upon request.

F. Other Reporting Obligations

1. Probation Terms Reporting

Prior to Project start-up, Chevron shall provide the City a status report on the refinery's compliance with the terms of probation entered into on August 5, 2013, and shall thereafter provide the City reports substantively similar to the reports filed with Cal/OSHA under the terms of probation once per year as necessary until such time as the terms of probation end, including a copy of any response documents provided by CalOSHA, or a detailed summary of any CalOSHA responses if CalOSHA does not approve sharing the response documents with the City. Chevron will work with CalOSHA to pursue their approval to share the Chevron CalOSHA response documents. The original reports and related documents shall be made available at the Refinery upon request by the City or County and during any audits or inspections conducted under the RISO.

2. RISO Audits

Following commencement of Project operations, Chevron shall provide the City an annual report informing the City of any agency-initiated audits performed pursuant to the Richmond Industrial Safety Ordinance during the previous calendar year, and shall update the City concerning the findings from and status of implementation of any recommendation that come out of such audits.

G. Community Engagement

On an annual basis following Project approval until such time as the City determines that such meetings are no longer required, Chevron shall hold town halls for its workforce and for the community to provide updates concerning:

1. The status of the enhanced safety measures being implemented by the Refinery following the August 6, 2012 fire, including actions taken to implement the recommendations made by public agencies that investigated the August 6 incident.
2. The status and/or results of the material upgrades, inspection and monitoring program, and ongoing compliance with the Richmond Industrial Safety Ordinance, including Project-related PHAs, DMRs, LOPAs, and ISSAs.
3. When triggered, the results of the reliability review revalidation and the status of any recommendations made as a result of this review.

H. Reporting Obligation

As part of its ongoing reporting obligation under the Mitigation Monitoring and Reporting Program adopted by the City, Chevron shall report on the status of all requirements of this Reliability Program on an annual basis in a form acceptable to the City. All reporting obligations herein shall be subject to the protection for trade secrets provided in Richmond Municipal Code § 6.43.110 and California Health and Safety Code section 25538 incorporated therein.

APPENDIX 4.13-REL

Reliability Analysis of Modernization Project Changes

March 7, 2014

ENVIRON International Corporation
201 California Street, Suite 1200
San Francisco, CA 94111

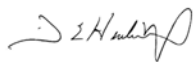
Attn: Dr. Douglas Daugherty
Re: Reliability Analysis

Dear Dr. Daugherty:

The Hendrix Group In. (Hendrix) was engaged by Environ, on behalf of the City of Richmond (City), to provide refinery technical expertise to the City of Richmond for the development of an environmental impact report (EIR) for the Chevron Richmond Revised Renewal Project (Modernization Project).

Hendrix was asked to conduct a Reliability Analysis to support the City's assessment of hazard risk potentially resulting from operational and feedstock changes associated with the Modernization Project for the Environmental Impact Report being prepared for this Project. The Reliability Analysis included a review of Chevron documentation (including confidential business information), as well as extensive interviews with Chevron personnel and subject matter experts.

The technical report describing our Reliability Analysis, including conclusions and recommendations, is attached to this letter.



Sincerely,
David Hendrix, Principal
The Hendrix Group, Inc.

APPENDIX 4.13-REL

RELIABILITY ANALYSIS OF MODERNIZATION PROJECT CHANGES

1.1 OVERVIEW

Refinery Operations include processing flammable crude and gas oils in various process units that involve heat, pressure, and chemical reactions. Refinery Operations also require storage and internalized pipeline transportation of petroleum and other hazardous materials. As discussed in the EIR, *Section 4.13, Public Safety*, in recent years two refinery fires at the Chevron Richmond Refinery (Facility) have resulted from pipeline corrosion, attributable at least in part, to processing higher concentrations of sulfur in high-temperature Refinery Operations—i.e., high-temperature sulfidation (HTS). This is one type of “damage mechanism” that is known to occur in refineries, based on their operations, but there are other known mechanisms that can also cause damage to refinery equipment. This technical appendix provides background on how damage can occur from the operation of a refinery, assesses the potential for increased risk of damage occurring from the physical, operational, and feedstock changes proposed as part of the Modernization Project, and makes recommendations on steps that can be taken to reduce the risks from these changes.

“Damage mechanisms” are those phenomena that cause the degradation of materials, based on exposure to their environment. For the purposes of this report, the damage mechanisms include those corrosion processes, cracking mechanisms, and mechanical and metallurgical changes to a material that result in a loss of function or a pressure boundary release to atmosphere.

1.2 SCOPE AND METHODOLOGY

The City of Richmond retained the author of this report—a refinery corrosion expert (Reviewer)—to conduct a reliability analysis (Reliability Analysis) to identify and evaluate the risks that may result from Modernization Project operational and feedstock changes.¹ The Reliability Analysis was not limited to the new and modified units associated with the Project. The Reliability Analysis considered all units, process, and ancillary equipment at the Facility that may be affected by Modernization Project operational and feedstock changes. Units and equipment that would not be affected physically, operationally, or from changing

¹ The potential risks associated with the physical changes of the Modernization Project are outside the scope of this Review and are analyzed in the EIR, *Section 4.13, Public Safety*.

characteristics of crude and gas oils associated with the Modernization Project were identified and eliminated from further reliability analysis.

The methodology for this Reliability Analysis was based on an approach whereby the Reviewer and City's technical consultants conducted interviews with and reviewed information provided by Facility and Chevron Technical Department subject matter experts (SMEs) from several technical disciplines including Process Engineering, Technical Department Materials and Equipment Engineering, and refinery Materials Engineering personnel, with support from other departments, as needed. Based on discussions and interviews with Chevron personnel and review of relevant documents, the methodology for conducting the Review for the Modernization Project included the following steps:

1. Determine the post-Modernization Project operating conditions;
2. Identify the potential damage mechanisms that would result from the Modernization Project operating conditions, and identify the units and equipment that potentially would be impacted by these damage mechanisms;
3. Evaluate the potential impact of the identified damage mechanisms on fixed equipment, piping, and piping components under post-Modernization Project operating conditions; and
4. Recommend measures to reduce the potential impacts of new or increased damage mechanism activity that could result from the Modernization Project.

The first step in the Reliability Analysis—identifying the post-Modernization Project operating conditions—was accomplished by conducting interviews with Chevron SMEs and collecting and reviewing relevant documentation containing information on process temperature and pressure changes, Modernization Project physical changes, changes in crude and gas oil sulfur content, increases in Hydrogen Sulfide (H_2S) and ammonium bisulfide in sour water and sour gas streams and process monitoring tools. The Reliability Analysis identified the following Modernization Project changes in operating parameters and feedstock characteristics relevant to the damage mechanism evaluation:

- Increased sulfur content (wt. %) in feedstocks (crude and gas oils);
- Increased hydrogen (H_2) purity (partial pressure) produced from a new hydrogen plant;
- Increased H_2S partial pressures in refinery processing units where the sulfur in the crude is either intentionally, or as a by-product of other reactions, converted to other sulfur containing compounds;

- Increase in nitrogen content based on a moderate to strong statistical relationship found between API gravity in the intermediate-light gravity range (between 28 and 40 API) and nitrogen content and a weak correlation between sulfur and nitrogen content as described in Appendix 4.3-MET; and
- Increased ammonium bisulfide content of high severity hydroprocessing/sour gas streams based on the sensitivity analysis for nitrogen at 1877 ppm.

Increased Facility operational utilization from 89% up to 93% and possibly to 100% of Title V permitted levels was also evaluated in the context of damage mechanism activity. However, because impacts from damage mechanisms are estimated based on “full utilization” (i.e., constant exposure to the environmental factor causing the degradation), changes in utilization were considered to be negligible for purposes of evaluating risk.

For purposes of analyzing the characteristics of different crude oil blends and gas oils that might be processed at the Facility in post-Modernization Project operating conditions, and the risks associated with those different feedstocks, the Review considered two theoretical crude oil blends. First, the Review identified a benchmark crude analytical case—referred to as the “P-50” case—representing a crude oil blend with approximately 2.38 wt. % sulfur and 32.3 API gravity.² In addition, this Review evaluated an analytical “P-90” case, representing a crude oil blend with approximately 3.28 wt. % sulfur and 28.4 API gravity.³

While the P-50 case is representative of reasonably foreseeable Modernization Project conditions, the P-90 case represents an extreme scenario that is not likely to materialize in post-Modernization Project operating conditions. The Reviewer was provided information indicating that the Facility would not likely be able to process a crude blend similar to the P-90 case due to other Facility constraints, such as the sulfur removal capacity limitation and permitted capacity of units such as the solvent de-asphalting unit (SDA unit). These constraints would likely require decreasing the Facility's utilization rate when the sulfur content of feedstocks increases.

Temperature was discussed and determined not to be a variable changing as a result of the Modernization Project. Therefore, it is not included in this Reliability Analysis, other than in the context of its ongoing role in damage mechanisms already present in baseline operating conditions such as high temperature sulfidation.

² This P-50 case roughly approximates the URM “project crude blend” of 31.6 API gravity and 2.5 wt. % sulfur identified in Appendix 4.3-URM for purposes of the air quality impacts analyzed by the EIR.

³ The characteristics of this P-90 case generally correspond to the “heaviest crude blend” and the “most sour crude blend” cases in Appendix 4.3-URM.

Finally, because the Modernization Project may result in a slight decrease in crude oil gravity post-Project, and because gravity and nitrogen have been found to correlate in Appendix 4.3-MET, this Reliability Analysis evaluated a conservative scenario of processing a crude oil blend with 1877 ppm nitrogen. Chevron was unable to identify a crude blend in the intermediate-light gravity range that approximated the 1877 ppm nitrogen number, so instead conservatively increased the 1596 ppm nitrogen level of a crude blend used in Appendix 4.3-URM with 30.3 API gravity and 2.35 wt% sulfur. Given the need to artificially increase the nitrogen level of the crude blend for analytical purposes, it is not reasonably foreseeable that such high-nitrogen blend would be processed post-Modernization Project due to design constraints that limit the Facility's ability to process crudes outside of the intermediate-light gravity range on a sustained basis.

The specific methods by which the Reviewer determined which process units and associated equipment and piping may be impacted by Modernization Project are discussed in detail in subsequent sections. The primary basis for the identification of damage mechanisms that might be implicated by the Modernization Project was consideration by the Reviewer of *API-571 - Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*. In addition, the Reviewer relied on his extensive experience in refinery damage mechanisms to identify additional damage mechanisms that are not listed in *API-571* for evaluation as a part of this Reliability Analysis. Additional details regarding the identification of damage mechanisms for purposes of this Reliability Analysis are included in subsequent sections of this Appendix.

1.3 BACKGROUND ON DAMAGE MECHANISMS IN REFINERY OPERATIONS

1.3.1 General Description of Hazards Associated with Refinery Operations

Crude oil is a complex mixture of thousands of different hydrocarbons and varying amounts of other compounds containing sulfur, nitrogen, and oxygen, as well as salts, trace metals, and water. Crude oils can vary from a clear liquid, similar to gasoline, to a thick, tar-like material needing to be heated to flow through a pipeline. A petroleum refinery's main function is to split crude oil into its many parts (or fractions) which are then reprocessed into useful products. The type, number, and size of process units required at a particular refinery depends on a variety of factors including the type of crude oil and the products required. The interconnected units making up a refinery are a maze of tanks, furnaces, distillation towers (fractionating columns), reactors, heat exchangers, pumps, pipes, fittings, and valves, as well as control systems, instrumentation, and safety equipment. Products of crude oil refineries include:

- Fuels such as gasoline, diesel fuel, heating oil, kerosene, jet fuel, bunker fuel oil, and liquefied petroleum gas;
- Petroleum solvents including benzene, toluene, xylene, hexane, and heptane, which are used in paint thinners, dry-cleaning solvents, degreasers, and pesticide solvents;
- Lubricating oils produced for a variety of purposes, and insulating, hydraulic, heat transfer and medicinal oils;
- Petroleum wax;
- Greases, which are primarily a mixture of various fillers; and
- Asphalt.

These products can be hazardous not only in their final state but also as they are being processed and refined.

1.3.2 Health and Safety Hazards

The plant and equipment of refineries are generally modern, and the processes are largely automated and totally enclosed. Routine operations of the refining processes generally present a low risk of exposure when adequate maintenance is carried out and proper industry standards for design, construction, and operation have been followed. The potential for hazardous exposures always exists, however.

1.3.3 Hazardous Chemicals

In a refinery, hazardous chemicals can come from many sources and in many forms. In crude oil, there are not only the components intended for processing, but impurities such as sulfur, chlorides, water, vanadium, and arsenic compounds. The oil is separated into many component streams that are further altered and refined to produce the final product range. Most, if not all, of these component stream chemicals are inherently hazardous to humans, as are the other chemicals added during processing. Hazards include fire, explosion, toxicity, corrosiveness, and asphyxiation.

1.3.4 Fire and Explosion

The principal hazards at refineries are fire and explosion. Refineries process a multitude of products with low flash points (i.e., the temperature at which there is sufficient vapor of a given chemical to ignite when an ignition source is present). Although systems and operating practices are designed to prevent such catastrophes, they can occur. Constant monitoring is therefore required.

Safeguards include warning systems, emergency procedures, and permit systems for any kind of hot or other potentially dangerous work.

1.3.5 Airborne Exposure

Airborne exposure can occur with a release of a substance from the Facility that is acutely hazardous, such as ammonia, H₂S, or any harmful byproducts which may occur from a fire. A release can be a threat if a harmful concentration of the gas reaches off-site receptors.

Table A4.13-REL-1 highlights major potential air contaminants which can escape from a typical refinery operation and their major sources. It does not attempt to identify all such possible hazards.

Table A4.13-REL-2 reviews common hazardous chemicals and chemical groups typically present and their most significant hazards to workers.

1.3.6 Major Shutdown and Maintenance

The principal exposures to hazardous substances occur during shutdown or maintenance work, since these are a deviation from routine operations. Facility turnarounds require careful planning, scheduling, and step-by-step procedures to make sure that unanticipated exposures do not occur.

1.3.7 General Description of How Refineries Manage Risks from these Hazards

1.3.7.1 Process Safety Programs

There are a host of procedural/prescriptive and performance based publications, guidelines, recommended practices and standards/laws on process safety promulgated by industry, standards writing organizations, industrial advocacy groups and governmental organizations on a federal, State and local level. Many, if not most of them, originate from the OSHA "Process Safety Management of Highly Hazardous Chemicals" regulations, which contain requirements for the management of hazards associated with processes using highly hazardous chemicals to help assure safe and healthful workplaces. The regulations include various performance based requirements related to process safety that the refining industry is obligated to meet and those specific requirements are listed elsewhere. Included in the requirements is a mechanical integrity section that stipulates the requirements for maintaining the mechanical integrity of process equipment.

The mechanical integrity requirements include the following elements:

- The employer must establish and implement written procedures to maintain the ongoing integrity of process equipment;

TABLE A4.13-REL-1 MAJOR POTENTIAL AIR CONTAMINANTS WHICH CAN ESCAPE FROM A TYPICAL REFINERY OPERATION AND THEIR MAJOR SOURCES

Air Contaminants	Major Sources
Hydrocarbon vapors – compounds of carbon (C) and hydrogen (H)	▪ transfer and loading operations ▪ storage tanks ▪ crude unit, atmospheric, and vacuum towers ▪ cracking units (“cat”, hydrocracking, coking-polynuclear aromatic hydrocarbons [PAHs] and high-boiling aromatic hydrocarbons [HBAHs] are of concern because of their carcinogenic potential) ▪ rearranging and combining processes such as reformers and alkylation units ▪ treating operations ▪ cracking unit regeneration ▪ heat exchangers ▪ boilers and heaters ▪ pumps, valves ▪ cooling towers
Sulfur dioxide (SO ₂)	▪ boilers ▪ cracking unit regeneration ▪ treating operations ▪ flares
Carbon monoxide (CO)	▪ rearranging and combining processes such as reformers and alkylation units ▪ catalyst regeneration ▪ flares ▪ boilers ▪ furnaces
Nitrogen dioxide (NO _x)	▪ flares ▪ boilers
Hydrogen sulfide (H ₂ S)	▪ sour crudes ▪ liquid wastes ▪ pumps ▪ crude tower ▪ cracking operations ▪ rearranging and combining processes such as reformers and alkylation units ▪ hydrogenation
Particulates	▪ catalyst dusts – cracking units, catalyst regeneration, and rearranging and combining processes such as reformers and alkylation units ▪ petroleum coke dust – cracking units
Chlorine (Cl or Cl ₂)	▪ caustic unit
Ammonia (NH ₃)	▪ compressors

**TABLE A4.13-REL-2 COMMON HAZARDOUS CHEMICALS AND CHEMICAL GROUPS
TYPICALLY PRESENT AND THEIR MOST SIGNIFICANT HAZARDS TO
WORKERS**

Material	Dominant Hazard
Additives	▪ usually skin irritants
Ammonia	▪ designated substance under construction regulations. See chapter on asbestos in this manual.
Asphalt	▪ dermatitis (can be photosensitizer)
Benzene	▪ designated substance under industrial regulations
Carbon monoxide	▪ toxic on inhalation
Caustic soda	▪ corrosive to skin and eyes
Chlorine	▪ corrosive to skin and tissue on contact or inhalation
HBAHs (high boiling aromatic hydrocarbons)	▪ potential carcinogens
Hydrofluoric acid	▪ corrosive to skin and tissue on contact or inhalation
Hydrogen sulphide	▪ toxic on inhalation
MEK (methyl ethyl ketone)	▪ corrosive to skin
Nitrogen	▪ asphyxiant
PAHs (polynuclear aromatic hydrocarbons)	▪ potential carcinogens
Phenol-acid	▪ corrosive to skin and tissue
Silica	▪ designated substance under industrial regulations
Sulphuric acid	▪ corrosive to skin and tissue on contact or inhalation
Sulphur dioxide	▪ toxic on inhalation

- Employees involved in maintaining the ongoing integrity of process equipment must be trained in an overview of that process and its hazards and trained in the procedures applicable to the employees' job tasks;
- Inspection and testing must be performed on process equipment, using procedures that follow recognized and generally accepted good engineering practices (RAGAGEP);
- The frequency of inspections and tests of process equipment must conform with manufacturers' recommendations and good engineering practices, or more frequently if determined to be necessary by prior operating experience;
- Equipment deficiencies outside the acceptable limits defined by the process safety information must be corrected before further use;

- In constructing new plants and equipment, the employer must ensure that equipment, as it is fabricated, is suitable for the process application for which it will be used. Appropriate checks and inspections must be performed to ensure that equipment is installed properly and is consistent with design specifications and the manufacturer's instructions;
- The employer also must ensure that maintenance materials, spare parts, and equipment are suitable for the process application for which they will be used.

It is the above mechanical integrity elements that go to the heart of minimizing the release of hazardous substances due to equipment failure from the various damage mechanisms discussed in this Appendix. Various industry organizations and standards writing organization have published various documents intended to define minimum requirements for the OSHA Mechanical Integrity performance base elements, primary among them The American Petroleum Institute (API). In turn, refining organizations have drafted internal mechanical integrity procedures and guidelines intended to satisfy the regulations within their specific organizational structure and experience.

1.3.7.2 Management of Change

Management of change (MOC) involves: (1) the recognition of change situations; (2) the evaluation of hazards; (3) the decision on whether to allow a change to be made; and, (4) necessary risk control and follow-up measures (CCPS, 2014). The MOC element helps ensure that changes to a process do not inadvertently introduce new hazards or unknowingly increase risk of existing hazards. The MOC element includes a review and authorization process for evaluating proposed adjustments to facility design, operations, organization, or activities prior to implementation to make certain that no unforeseen new hazards are introduced and that the risk of existing hazards to employees, the public, or the environment is not unknowingly increased. It also includes steps to help ensure that potentially affected personnel are notified of the change and that pertinent documents, such as procedures, process safety knowledge, and so forth, are kept up-to-date.

Organizations usually have written procedures detailing how MOC will be implemented. Such procedures apply to all work that is not determined to be Replacement in Kind (RIK). The results of the review process are typically documented on an MOC review form. Supplemental information provided by system designers to aid in the review process is often attached to the MOC review form. Once the change is approved, it can be implemented. Potentially affected personnel are either informed of the change or provided more detailed training, as necessary, prior to implementation of the change. Follow-on activities, such as updates to affected process safety information and to other

Risk Based Process Safety Management (RBPS) elements, are assessed to identify which are required before startup, and which may be deferred until after startup. All such activities are tracked until completed.

1.3.7.3 Inspections/Monitoring

Included in the mechanical integrity section of the OSHA Process Safety Management (PSM) regulations are requirements for inspecting processing equipment to verify its existing condition, based on damage mechanisms that could result in a release to the environment. The inspection and testing must be performed on process equipment using procedures that follow RAGAGEP and the frequency of inspections and tests of process equipment must conform with manufacturers' recommendations and good engineering practices, or based on prior operating experience. The inspections must satisfy the requirements of: (a) being able to identify and locate the damage mechanisms before they result in a release or otherwise compromise the integrity of the equipment and (b) accurately verify their severity. Again, there are many published guidelines, recommended practices and standards that are available to guide the development of an effective inspection program, including API-653,-570, -572, -574, -510 and -580, among others.

Process monitoring is another common tool used by industry to guard against equipment failure. Process monitoring as a mechanical integrity tool is being elevated by the impending issue of a new API document, RP 584. RP 584 is an API Recommended Practice pending publication that outlines the essential elements in defining, monitoring and maintaining integrity operating windows (IOWs) as a vital component of inspection planning, including Risk Based Inspection (RBI) planning. It is intended to address the issue that, however well founded and well managed, inspection and mechanical integrity systems alone cannot maintain the integrity of pressure equipment in and of themselves. API-584 IOWs are discussed further in *Section 1.3.7-5* below.

1.3.7.4 Materials Selection

Damage mechanisms are those phenomena that cause the degradation of materials, based on exposure to their environment. Damage mechanisms result from the natural consequence of exposing processing equipment to the process environment, including hazardous and corrosive chemicals that cause loss of thickness from corrosion, environmental cracking, metallurgical deterioration from exposure to elevated temperatures and mechanical damage. The first line of defense against the failure of equipment (based on a pressure boundary release) from these damage mechanisms is the proper selection of materials known to be resistant to damage mechanisms associated with the process. In the refining industry, there is an extensive body of knowledge regarding the damage mechanisms present in various refining processes and also what metals and/or alloys are known to be resistant to the damage mechanisms at hand. Typically,

this materials selection occurs during the detailed design phase of a new capital project or as a result of a non-capital project maintenance need. Most materials selections involve compromises with the selection decision based on imperfect information regarding the process and economic constraints. The selection also recognizes the issue of planned obsolescence based on an established design life for the project or equipment item. Materials selection can be made by people with various responsibilities and experience backgrounds, but ideally an experienced corrosion and materials engineer is involved in the selection process.

1.3.7.5 Integrity Operating Windows

In addition to the application of industry codes, standards and recommended practices, a number of other systems are vital to support a rigorous mechanical integrity program in order to predict/avoid/prevent pressure equipment damage/corrosion, leaks and failures and improve reliability. Three key elements of those systems as described in the draft API RP 584, Integrity Operating Windows, include:

1. The establishment, implementation and maintenance of IOWs;
2. An effective transfer of knowledge about unit specific IOWs to all affected personnel; and
3. An effective MOC program to identify any changes to the process or the physical hardware that might affect the integrity of pressure equipment.

Chevron has stated that it is currently in the process of establishing IOWs for the crude unit, per the draft API-584 Integrity Operating Windows, and is expected to complete implementation in the crude unit 3Q 2014. Some IOWs for the crude unit have already been determined through an SME review process. One example of an IOW would be the process temperature limit at the top of the atmospheric tower that Chevron attempts to control above the salt dew point temperature limit. Chevron's Best Practice (Crude Unit Overhead Corrosion Control Best Practices) calls for a minimum 25F margin between the atmospheric tower overhead process temperature and the temperature at which chloride salts form. A review of Chevron's IOWs that have been established shows that this particular IOW is included. In addition, Chevron has stated that the newly established IOWs per API-584 will be integrated with the existing refinery process monitoring (RPM) work process as discussed above. This will allow for:

- Integrating with an established work process
- Roles and responsibilities per API-584
- Notification process when IOWs are in deviation

Chevron is in the process of implementing a formal IOW program that meets the requirements of the draft API recommended practice. This will expand upon their existing critical reliability variables. For the third element Chevron has a mature MOC program. In order to operate any process unit, a set of operating ranges and limits needs to be established for key process variables, to achieve the desired results (i.e., product within specification, safe operation, reliability, etc.). These limits are generally called operating limits or operating envelopes. IOWs are a specific subset of these key operating limits that focus only on maintaining the integrity or reliability of process equipment. Typically IOWs address issues involving process variables that, when not adequately monitored or controlled, can impact the likelihood and rates of damage mechanisms, which could result in a loss of containment. IOWs are those preset limits on process variables that need to be established and implemented in order to prevent potential breaches of containment that might occur as a result of not controlling the process sufficiently to avoid unexpected or unplanned deterioration or damage to pressure equipment. Operation within the preset limits should result in predictable and reasonably low rates of degradation. Operation outside the IOW limits could result in unanticipated damage, accelerated damage and potential equipment failure from one or more damage mechanisms. A properly structured, efficient and effective inspection program depends on IOWs being established and implemented to improve inspection planning and to avoid unanticipated impacts on pressure equipment integrity. Inspection plans are typically based on historic damage mechanisms and trends and are not generally designed to look for unanticipated damage resulting from process variability and upsets. Inspection plans generally assume that the next inspection interval (calculated based on prior damage rates from past operating experience) are scheduled on the basis of what is already known and predictable about equipment degradation from previous inspections. Without a set of effective and complete IOWs and feedback loop into the inspection planning process, inspections might need to be scheduled on a more frequent time-based interval just to look for anything that might potentially occur from process variability.

Chevron currently has a work process called RPM that pre-dates API-584, Integrity Operating Windows, but has many of the elements of IOWs. SMEs were tasked with developing critical process variables (CPVs). CPVs are the dynamic system parameters that are essential for controlling a particular outcome in the following areas:

- Equipment reliability (critical reliability variables or CRVs), or
- Environmental compliance (critical environmental variables or CEVs), or
- Process optimization (critical optimization variables or COVs).

Control parameters for the CPVs were established within currently established Honeywell controls to allow for early detection of a process control trending toward an alarm state.

The definition of a CRV is similar to an IOW variable in that a CRV is defined as those variables that, when left in deviation, can lead to degradation of equipment. Some examples of CRVs are:

- Reactor and Furnace tube skin temperatures
- Boiler feed water and cooling water chemistry
- Wash water rates
- Rich and lean DEA loadings
- Piping velocities
- Column and vessel liquid levels

Chevron has reported that the CRVs, CEVs, and COVs have been incorporated into existing process monitoring work processes within Chevron. Roles and responsibilities were reportedly established and the training of key personnel was implemented (not independently verified). In addition, a monitoring tool for all CPVs was established to provide visibility and accountability. The on-line tool that was implemented is Operational Excellence and Reliability Intelligence (OERI). An example of a report from OERI is below (Figure A4.13-REL-1) and describes the monitoring of CRVs in the crude unit overhead reflux drum, V-1100. This report also allows the operators to look at the consequence of deviation (COD) for a particular CRV by clicking on an information icon (see Figure A4.13-REL-2 below).

1.3.7.6 Risk-Based Inspection Assessments

Risk is the combination of the probability of some event occurring during a time period of interest and the consequences, (generally negative) associated with the event. Risk Based Inspection, e.g., API-580, is a risk assessment and management tool that addresses an area not completely addressed in other organizational risk management efforts such as Process Hazards Analyses (PHA) or reliability centered maintenance (RCM). It complements these efforts to provide a more thorough assessment of the risks associated with equipment operations. RBI produces Inspection and Maintenance Plans for equipment that identify the actions that should be implemented to provide reliable and safe operation. The RBI effort can provide input into an organization's annual planning and funds required to maintain equipment operation at acceptable levels of performance and risk.

CRV Report from OERI

RELIABILITY

DR.EAST.CBO.CU	State Count	Total Duration	Pct	Current Value	Lo Lim	Hi Lim	While Active		
							Min	Max	Avg
4CU.V-1100									
11AC050 - DRE4CUV-1100 PH ANALYZ	0	0m	0%	7.084	6.5	8			PH ⓘ
11FI024 - RECYCLE H2O TO C1100 OH	0	0m	0%	245.319	190				GPM ⓘ
11QF_V1100OVH.P-NH3 - DRE4CUV-1100 NH3 CONC	0	0m	0%	0		350			MG/L ⓘ
11QM_V1100OVH.P-CHLOR - DRE4CUV-1100 H2O CHLRIDS	0	0m	0%	24	5	50			PPM ⓘ

02.20.2014 file path\ : U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL

Source: Chevron (T85)

Figure A4.13-REL-1
Chevron Refinery Modernization Project EIR
Screenshot of CRV Report from OERI

COD Report from OERI

Condition Information for: 11QF_V1100OVH.P-NH3 - DRE4CUV-1100 NH3 CONC

Consequence of DeviationHigh Limit:

1. Increased salt generation. See Nalco report for current ammonia balance on overhead system to determine ammonium chloride sublimation point or request info from PED. As ammonium chloride sublimes, it leaves salt deposits behind which can corrode the system. If greater than 25 F above C1100 O/H water dew point temperature it's OK.
2. High ammonia in effluent system if ammonia concentration gets too high.

1.3.8 Damage Mechanisms

API-571, “Damage Mechanisms Affecting Equipment in the Refining Industry” lists 66 of the most common damage mechanisms occurring in the refining, petrochemical, pulp and paper and fossil utility industries. API-571 categorizes those damage mechanisms as follows:

- A) Mechanical and metallurgical failure
- B) Uniform or localized loss of thickness
- C) High-temperature corrosion
- D) Environment-assisted cracking

A generally accepted definition of corrosion (a damage mechanism) is the “Naturally occurring phenomenon commonly defined as the deterioration of a substance (usually a metal) or its properties because of a reaction with its environment,” (Van Delinder, 1984). This definition encompasses all materials, both naturally occurring and man-made and includes plastics, ceramics, and metals. This section focuses on the corrosion of metals.

This definition of corrosion begs the question: why do metals corrode? A significant amount of energy is put into a metal when it is extracted from its ores, placing it in a high-energy state. These ores are typically oxides of the metal such as hematite (Fe_2O_3) for steel. A guiding principle of thermodynamics is that a material always seeks the lowest energy state. In other words, most metals are thermodynamically unstable and will tend to seek a lower energy state, which is an oxide or some other compound. The process by which metals convert to the lower-energy oxides is called corrosion.

The corrosion of most common engineering materials at near-ambient temperatures occurs in aqueous (water-containing) environments and is an electrochemical process. The aqueous environment is also referred to as the electrolyte and almost always involves liquid water. The corrosion process involves the removal of electrons (oxidation) of the metal and the consumption of those electrons by a reduction reaction, such as the reduction of dissolved oxygen or water molecules. The oxidation reaction is commonly called the anodic reaction and the reduction reaction is called the cathodic reaction. Both electrochemical reactions are necessary for corrosion to occur. The oxidation reaction causes the actual metal loss but the reduction reaction must be present to consume the electrons liberated by the oxidation reaction, maintaining charge neutrality. Otherwise, a large negative charge would rapidly develop between the metal and the electrolyte and the corrosion process would cease. The oxidation and reduction reactions are sometimes referred to as half-cell reactions (Peabody, 2010).

1.3.9 Eight Forms of Corrosion

The idea of describing the various ways corrosion can damage metals by the appearance of the corrosion has become common place. It is convenient to classify corrosion by the forms in which it manifests itself, the basis for this classification being the appearance of the corroded metal. The eight forms are: (1) uniform, or general attack; (2) galvanic, or two-metal corrosion; (3) crevice corrosion; (4) pitting; (5) intergranular corrosion; (6) selective leaching, or parting; (7) erosion-corrosion; and (8) stress corrosion cracking. This listing is arbitrary but covers practically all corrosion failures and problems. Below, the eight forms of corrosion are discussed in terms of their characteristics, mechanisms, and preventive measures.

1.3.9.1 Uniform Attack

Uniform attack is the most common form of corrosion. It is normally characterized by a chemical or electrochemical reaction which proceeds uniformly over the entire exposed surface or over a large area. The metal becomes thinner and eventually fails. For example, a piece of steel or zinc immersed in dilute sulfuric acid will normally dissolve at a uniform rate over its entire surface. A sheet iron roof will show essentially the same degree of rusting over its entire outside surface.

Uniform attack, or general overall corrosion, represents the greatest destruction of metal on a tonnage basis. This form of corrosion, however, is not of too great concern from the technical standpoint, because the life of equipment can be accurately estimated on the basis of comparatively simple tests. Uniform attack can be prevented or reduced by: (1) proper materials, including coatings; (2) inhibitors; or (3) cathodic protection.

1.3.9.2 Galvanic or Two-Metal Corrosion

A potential difference usually exists between two dissimilar metals when they are immersed in a corrosive or conductive solution. If these metals are placed in contact (or otherwise electrically connected), this potential difference produces electron flow between them. Corrosion of the less corrosion-resistant metal is usually increased and attack of the more resistant material is decreased, as compared with the behavior of these metals when they are not in contact. The less resistant metal becomes anodic and the more resistant metal cathodic. Usually the cathode or cathodic metal corrodes very little or not at all in this type of couple. Because of the electric currents and dissimilar metals involved, this form of corrosion is called galvanic, or two-metal, corrosion. It is electrochemical corrosion, but we shall restrict the term galvanic to dissimilar-metal effects for purposes of clarity.

1.3.9.3 Crevice Corrosion

Intense localized corrosion frequently occurs within crevices and other shielded areas on metal surfaces exposed to corrosives. This type of attack is usually associated with small volumes of stagnant solution caused by holes, gasket surfaces, lap joints, surface deposits, and crevices under bolt and rivet heads. As a result, this form of corrosion is called crevice corrosion.

1.3.9.4 Pitting

Pitting is a form of localized attack that results in localized holes in the metal. The holes may be small or large in diameter, but in most cases they are relatively small. Pits are sometimes isolated or so close together that they look like a rough surface. Generally a pit may be described as a cavity or hole with the surface diameter about the same as or less as the depth.

Pitting is one of the most destructive and most difficult to detect forms of corrosion. It causes equipment to fail because of perforation with only a small percent weight loss of the entire structure. It is often difficult to detect pits because of their small size and because the pits are often covered with corrosion products. In addition, it is difficult to measure quantitatively and compare the extent of pitting because of the varying depths and numbers of pits that may occur under identical conditions. Pitting is also difficult to predict by laboratory tests. Sometimes the pits require a long time, several months or a year to show up in actual service. Pitting is of particular concern because it is a localized and intense form of corrosion, and failures often occur with suddenness.

1.3.9.5 Intergranular Corrosion

Grain boundary impacts are of little or no consequence in most applications or uses of metals. If a metal corrodes, uniform attack normally results as grain boundaries are usually only slightly more reactive than the matrix. However, under certain conditions, grain interfaces are very reactive and intergranular corrosion results. Localized attack at, and adjacent to, grain boundaries, with relatively little metal loss at the grains, is intergranular corrosion. The alloy disintegrates (grains fall out) and/or loses its strength.

Intergranular corrosion can be caused by impurities at the grain boundaries, enrichment of one of the alloying elements, or depletion of one of these elements in the grain-boundary areas. A well-documented form of intergranular corrosion is the depletion of chromium in the grain-boundary regions results in intergranular corrosion (sensitization) of stainless steels.

1.3.9.6 Selective Leaching

Selective leaching is the removal of one element from a solid alloy by corrosion processes. The most common example is the selective removal of zinc in brass

alloys (dezincification). Similar processes occur in other alloy systems in which aluminum; iron, cobalt, chromium, and other elements are removed. Selective leaching is the general term to describe these processes, and its use precludes the creation of terms such as de aluminification, de cobaltification, etc.

1.3.9.7 Erosion-Corrosion

Erosion-corrosion is the acceleration or increase in rate of deterioration or attack on a metal because of relative movement between a corrosive fluid and the metal surface. Generally, this movement is quite rapid, and mechanical wear effects or abrasion are involved. Metal is removed from the surface as dissolved ions, or it forms solid corrosion products which are mechanically swept from the metal surface.

Erosion-corrosion is characterized in appearance by grooves, gullies, waves, rounded holes, and valleys and usually exhibits a directional pattern. In many cases, failures because of erosion corrosion occur in a relatively short time, and they are unexpected largely because evaluation corrosion tests were run under static conditions or because the erosion effects were not considered.

1.3.9.8 Stress Corrosion Cracking (SCC)

Stress-corrosion cracking refers to cracking caused by the simultaneous presence of tensile stress and a specific corrosive medium. During stress-corrosion cracking, the metal or alloy is virtually unattacked over most of its surface, while fine cracks progress through it. This cracking phenomenon has serious consequences since it can occur at stresses within the range of typical design stresses.

Two classic cases of stress-corrosion cracking are “season cracking” of brass, and the “caustic embrittlement” of steel. Both of these terms describe the environmental conditions present which led to stress-corrosion cracking. Season cracking refers to the stress-corrosion cracking failure of brass cartridge cases. During periods of heavy rainfall, especially in the tropics, cracks were observed in the brass cartridge cases at the point where the case was crimped to the bullet. It was later found that the important environmental component in season cracking was ammonia resulting from the decomposition of organic matter.

Many explosions of riveted boilers occurred in early steam-driven locomotives. Examination of these failures showed cracks or brittle failures at the rivet holes. These areas were cold-worked during riveting operations, and analysis of the whitish deposits found in these areas showed caustic, or sodium hydroxide, to be the major component. Hence, brittle fracture in the presence of caustic resulted in the term caustic embrittlement. While stress alone will react in ways well known in mechanical metallurgy (i.e., creep, fatigue, tensile failure) and

corrosion alone will react to produce characteristic dissolution reactions, the simultaneous action of both sometimes produces the disastrous results.

1.3.10 Damage Mechanisms Found in Refineries

All refining corrosion mechanisms can be categorized as a subset of the general eight forms of corrosion summarized above. A listing and description of the most common refining damage mechanisms is found in the API document, *API-571, Damage Mechanisms Affecting Fixed Equipment in the Refining Industry* (API-571, 2011). API-571 has become a Recognized and Generally Accepted Good Engineering Practice (RAGAGEP) regarding damage mechanisms in the refining industry. The starting point for the damage mechanism assessment review was Table 5-4 in API-571. The table is not meant to be an exhaustive list of all damage mechanisms, but to serve as a useful starting point reference. In conducting the Modernization Project damage mechanism review, the API-571 damage mechanism list and other relevant damage mechanisms were considered. A list of the damage mechanisms from API-571 is provided below in Table A4.13-REL-3. For the purposes of the Reliability Analysis, the considered damage mechanisms can be divided into three broad categories: (1) damage mechanisms relevant to a process unit and also impacted by the Modernization Project, (2) damage mechanisms relevant to a process unit, but not impacted by the Modernization Project, and (3) all other damage mechanisms.

An independent analysis of relevant damage mechanisms resulting from anticipated post-Modernization Project operating conditions was conducted, considering the potential feedstock change of increased sulfur, and the conservative possibility of increased nitrogen based on the finding in Appendix 4.3-MET that it is likely that the crude oils processed by the Facility, if the Modernization Project is implemented, would have the potential to contain higher nitrogen levels. The increased sulfur and nitrogen is considered to influence all damage mechanisms identified in Table A4.13-REL-4, except for high-temperature hydrogen attack (HTHA), which is a function of the higher purity hydrogen from the new hydrogen plant, creep/stress rupture, which is a function of temperature, time and stress and oxygen-enhanced ignition and combustion, which results from the new oxygen injection line to the sulfur recovery unit (SRU). The review was conducted considering the extensive body of knowledge regarding the damage mechanisms that result from sulfur and nitrogen compounds in crude oils, depending on the refining units they are routed through, reviewing documents submitted by Chevron regarding their specific crude and product slate processing scheme at the Facility, plus the years of experience of the Reviewer in corrosion processes and identification of damage mechanisms in chemical and refining processes. The independent damage mechanism review did not identify any additional damage mechanisms other than the ones in Table A4.13-REL-4.

TABLE A4.13-REL-3 API-571 LISTING OF DAMAGE MECHANISMS

DM#	Damage Mechanisms	DM#	Damage Mechanisms
1	Sulfidation	33	885°F (475°C) Embrittlement
2	Wet H ₂ S Damage (Blistering/HIC/SOHIC/SSC)	34	Softening (Spheroidization)
3	Creep / Stress Rupture	35	Reheat Cracking
4	High temp H ₂ -H ₂ S Corrosion	36	Sulfuric Acid Corrosion
5	Polythionic Acid Cracking	37	Hydrofluoric Acid Corrosion
6	Naphthenic Acid Corrosion	38	Flue Gas Dew Point Corrosion
7	Ammonium Bisulfide Corrosion	39	Dissimilar Metal Weld (DMW) Cracking
8	Ammonium Chloride Corrosion	40	Hydrogen Stress Cracking in HF
9	HCl Corrosion	41	Dealloying (Dezincification/ Denickelification)
10	High Temperature Hydrogen Attack	42	CO ₂ Corrosion
11	Oxidation	43	Corrosion Fatigue
12	Thermal Fatigue	44	Fuel Ash Corrosion
13	Sour Water Corrosion (acidic)	45	Amine Corrosion
14	Refractory Degradation	46	Corrosion Under Insulation (CUI)
15	Graphitization	47	Atmospheric Corrosion
16	Temper Embrittlement	48	Ammonia Stress Corrosion Cracking
17	Decarburization	49	Cooling Water Corrosion
18	Caustic Cracking	50	Boiler Water / Condensate Corrosion
19	Caustic Corrosion	51	Microbiologically Induced Corrosion (MIC)
20	Erosion / Erosion-Corrosion	52	Liquid Metal Embrittlement
21	Carbonate SCC	53	Galvanic Corrosion
22	Amine Cracking	54	Mechanical Fatigue
23	Chloride Stress Corrosion Cracking	55	Nitriding
24	Carburization	56	Vibration-Induced Fatigue
25	Hydrogen Embrittlement	57	Titanium Hydriding
27	Thermal Shock	58	Soil Corrosion
28	Cavitation	59	Metal Dusting
29	Graphitic Corrosion (see	60	Strain Aging

DM#	Damage Mechanisms	DM#	Damage Mechanisms
	Dealloying)		
30	Short term Overheating - Stress Rupture	61	Steam Blanketing
31	Brittle Fracture	62	Phosphoric Acid Corrosion
32	Sigma Phase/ Chi Embrittlement	63	Phenol (carbolic acid) Corrosion
33	885°F (475°C) Embrittlement	64	Ethanol Stress Corrosion Cracking
65	Oxygen Enhanced Ignition and Combustion	66	Organic Acid Corrosion of Distillation Tower Overhead Systems

1.4 MODERNIZATION PROJECT CHANGES WITH POTENTIAL TO INCREASE RISKS FROM DAMAGE MECHANISMS AT REFINERIES

Chevron owns and operates the Facility, which processes crude oil blends, externally-sourced gas oils, and natural gas into a number of products, including motor gasoline, jet fuel, diesel fuel, and lubricant base oils, as well as fuel oil, liquefied petroleum gas and sulfur.

In 2011, Chevron submitted an application to the City for the Modernization Project that includes a new hydrogen plant and hydrogen purity improvements (sulfur removal improvements). The objectives of the Modernization Project relevant to this Reliability Analysis include:

- Enhance the Facility's flexibility to process crude oil blends and externally sourced gas oils with higher sulfur content; and
- Replace the existing hydrogen production plant with a larger, more modern plant that is more energy-efficient, produces higher purity hydrogen, and has sufficient capacity to meet the Facility's hydrogen needs.

As indicated above, the Modernization Project is designed to improve the Facility's flexibility to process higher sulfur crudes. The Facility currently has the capacity to process crude oil blends with gravity at the lighter end of the intermediate range (intermediate-light), and will remain configured in the same manner to process such crude oil blends after the Modernization Project is implemented. However, the Facility's ability to process more sulfur would allow it to accept more sour crude oil blends at either the higher or lower end of the intermediate-light gravity range. Therefore it is reasonably foreseeable that after

TABLE A4.13-REL-4 FACILITY UNITS AND IDENTIFIED PROJECT-RELATED DAMAGE MECHANISMS IDENTIFIED FOR FURTHER REVIEW

	API-571 Damage Mechanisms	Crude Unit	Hydro-treating	SDA Unit	SRU	Sour Gas (Off plot)	Sour Water Plants (WWT) and Sour Water (off plot)	Recovered Oil
1	Sulfidation	X	X	X				X
2	Wet H ₂ S Damage (Blistering/HIC/SOHIC/SSC)	X	X	X		X	X	
3	Creep / Stress Rupture	X						
4	High temp H ₂ -H ₂ S Corrosion		X					
7	Ammonium Bisulfide Corrosion	X	X			X	X	
8	Ammonium Chloride Corrosion	X						
10	High Temperature Hydrogen Attack		X					
13	Sour Water Corrosion (acidic)	X						
65	Oxygen-Enhanced Ignition and Combustion				X			

Note: HIC = hydrogen-induced cracking; SOHIC = stress-oriented hydrogen-induced cracking; SSC = sulfide stress cracking; SDA unit = solvent de-asphalting unit

the Project, the Facility could accept higher quantities of sour crudes that fall in the lower end of the intermediate-light range, resulting in an overall lower average API gravity compared to the average crude gravity run during the baseline period of 2008 to 2010.

Chevron has applied to the City for a conditional use permit (“CUP”) for the Modernization Project. The CUP process for the Modernization Project requires preparation of a revised environmental impact report (“EIR”), which must include analysis of the Modernization Project’s potentially significant impacts on public safety. Specifically, the EIR analyzes whether the Modernization Project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Given the objective of the Modernization Project to allow the Facility to process crude oils and externally-sourced gas oils containing higher levels of sulfur than currently being processed, the Modernization Project includes various components that will enable the Facility to process and remove this additional sulfur, and includes an amendment to the Facility’s Title V permit to increase the sulfur removal limit from 600 to 900 long tons per day (lt/d). The 900 lt/d limits equates to an approximate capacity of 3 wt. % sulfur in crude oil blends.

The Modernization Project has physical, operational, and feedstock changes from current existing operations, as described in greater detail in the EIR, *Chapter 3, Project Description*. The Modernization Project changes relevant for this Reliability Analysis are described in further detail in the following sections.

1.4.1 Description of Modernization Project Changes

As discussed above and in *Section 1.2, Scope and Methodology*, the Modernization Project involves several operational and feedstock changes that could have a bearing on the activity of damage mechanisms at the Facility. Each of these operational and feedstock changes is discussed below.

1.4.1.1 Risk Impacts of the Increase in Facility Operational Utilization up to 100% Relative to Baseline Period

Chevron anticipates increasing the refinery operational utilization from 89% up to 93%, and considers the possibility of reaching 100% of its Title V maximum permitted capacity levels. Here, utilization is defined as the average annual operational rate relative to the maximum permitted capacity. For purposes of this Reliability Analysis, utilization is considered to determine the extent to which a planned increase in Facility utilization will materially impact baseline damage mechanism activity.

To respond to the issue of whether an increase in Facility utilization rates have the potential to impact existing equipment/piping damage mechanisms or initiate new ones, one must consider what environmental parameters influence the severity of damage mechanisms. Damage mechanisms resulting from environmental exposure to refinery processes can be broadly categorized into several damage type categories: (a) thinning, (b) cracking, (c) mechanical/metallurgical, and (d) high temperature. An example of a thinning damage mechanism is ammonium bisulfide corrosion. A cracking mechanism would include wet H₂S cracking. A mechanical/metallurgical damage mechanism would include temper embrittlement or brittle fracture. Thinning (corrosion) mechanisms are typically expressed in units of mass loss, or more traditionally, in units of thickness loss per unit of time. The most common unit that thinning is expressed in when studying or reporting on corrosion rates is thousands of an inch per year, or mils per year (mpy). Cracking is more complicated, but cracking can be expressed as time to cracking or whether a material cracks or not in a specific environment (pass-fail).

With that background, Facility utilization doesn't normally materially impact an assessment of the relative risk of thinning mechanisms, as the reported metal loss is typically ratioed over a full year of exposure, regardless of the actual exposure time and it is this "full year" rate which drives risk and decisions on mitigating risk. The risk of damage from cracking is also driven considering "full utilization" exposure time. In fact, common practice is to not consider refinery utilization as a risk parameter nor is a reduced utilization time considered as a risk reduction measure. There are damage mechanisms that can increase in severity based on downtime. Therefore, based on the above rationale, the Project's contemplated increase in Facility utilization would not have a bearing on damage mechanism activity and does not warrant further analysis in this Reliability Analysis as full time exposures were conservatively considered.

1.4.1.2 Impact of Project Operational and Feedstock Changes on Risk

This section discusses the methodology and rationale used to define what operating units (processing equipment and components) at the Facility would be potentially impacted by the Modernization Project, based on damage mechanisms affected by the operational and feedstock changes of the Project. It also describes which operating units (processing equipment and components) were determined not to be affected by the Modernization Project.

Chevron's Modernization Project goal of increasing its flexibility to refine higher sulfur crude and gas oils and to refine more crude oil at the lower end of the intermediate gravity range will result in the acceptance of higher sulfur crude oil blends and gas oils and has the potential to result in the processing of crude oil blends in a lower gravity range than was processed during the baseline period.

The Project's operational and feedstock changes could result in the following changes in parameters relevant to the reliability and damage mechanism review and which were further evaluated:

- Increased wt. % sulfur in feedstocks (crude and gas oils);
- Increased hydrogen (H_2) purity (partial pressure) produced from a new hydrogen plant;
- Increased H_2S partial pressures in refinery processing units where the sulfur in the crude is either intentionally, or as a by-product of other reactions, converted to other sulfur containing compounds;
- Increase in nitrogen content based on a moderate to strong statistical relationship found between API gravity in the intermediate-light gravity range (between 28 and 40 API) and nitrogen content and a weak correlation between sulfur and nitrogen content as described in Appendix 4.3-MET; and
- Increased ammonium bisulfide content of many process streams due to increased nitrogen in the feedstocks.

The primary driving force for additional damage mechanisms and/or the increased severity of existing damage mechanisms is the planned increase in total sulfur content of purchased crude and supplemental gas oil feed to the Facility associated with the Project. The current baseline sulfur content of blended crude feed is approximately 1.58 wt.% on an annual-average basis. Two crude blend cases considered in this reliability and damage mechanism analysis were a 2.38 wt.% sulfur (P-50 case) and a sulfur content of 3.28 wt.% sulfur (the P-90 case). The P-50 case is the most likely future high sulfur case, considering other Facility operating constraints, with 2.38 wt.% sulfur content and 32.3 API gravity, approximating the URM project crude blend of 2.5 wt. % sulfur and 31.6 API gravity (Appendix 4.3-URM). Chevron identified a "P-90" analytical case of 3.28 wt. % sulfur and API gravity of 28.4, which approximates the "heaviest crude blend" and the "most sour crude blend" scenarios from the URM. The P-90 case was selected to represent an extremely conservative scenario because the 3.28 wt.% level is much higher than the reasonably foreseeable and planned annual average sulfur content post-Modernization Project, and would also result in much lower overall Facility utilization per the sulfur recovery unit constraint, as noted in the Unit Rate Model included as Appendix 4.3-URM.

Other changes include the new hydrogen plant, which could potentially add additional damage mechanisms and/or an increased severity of existing damage mechanisms by increasing the purity of hydrogen feed to several refinery units that use hydrogen to process and reduce sulfur in sulfur containing hydrocarbons (e.g., HP units). In addition, various physical changes/additions to accommodate the increased H_2S and ammonium bisulfide content in sour gas

streams occurring in sulfur conversion (hydroprocessing) units could potentially add additional damage mechanisms and/or the increased severity of existing damage mechanisms. The potential impacts of the Modernization Project's physical changes are discussed in *Section 4.13, Public Safety* of the EIR.

The increased sulfur content in purchased crude and gas oils is anticipated to be the primary reason for an increased severity of damage mechanisms associated with the Modernization Project. The identified increased damage mechanisms resulting from the higher sulfur crude include high-temperature sulfidation, high-temperature H_2 - H_2S corrosion, wet H_2S damage (SSC/hydrogen-induced cracking [HIC] / SOHIC), acidic sour water corrosion, ammonium bisulfide corrosion (sour water corrosion) and ammonium chloride corrosion. The extent of the damage caused by sulfur and the units and equipment it impacts is based on the amount of sulfur, the processing conditions the sulfur is exposed to and the materials of construction of the equipment exposed to the sulfur compounds.

The Reliability Analysis methodology approach was based on a combination of: (1) the Reviewer's personal experience; (2) interviews/information provided by a panel of Facility and Technical Department SMEs from several technical disciplines, including Process Engineering, Technical Department Materials and Equipment Engineering, and refinery Materials Engineering personnel, with support from other departments as needed; (3) a review of Chevron provided and requested documents; and, (4) a review of available published papers and industry standards and recommended practices.

1.5 UNITS IMPACTED BY THE MODERNIZATION PROJECT BASED ON OPERATIONAL AND FEEDSTOCK CHANGES

The general process to determine which Facility units would, and would not, be impacted by the Modernization Project included the following steps:

1. Conduct a sulfur mass balance to determine the estimated sulfur in the various crude unit product streams and the related sulfur-levels of the feed to downstream units.
2. Conduct a nitrogen mass balance to determine the routing and amount of nitrogen going to the different processing units.
3. Review which units would be impacted by hydrogen introduced to the unit from the new hydrogen plant.
4. Review all Project physical changes.
5. Using API-571, *Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*, 2011, as a reference, plus the Reviewer's experience and

the wealth of industry and technical associated published literature regarding damage mechanisms in refineries, determine the reliability impacts that could arise from the reasonably foreseeable changes to current process conditions that would result from construction and operation of the Modernization Project.

6. Determine any reliability impacts based on other available sources, including standards, guidelines or lessons learned.

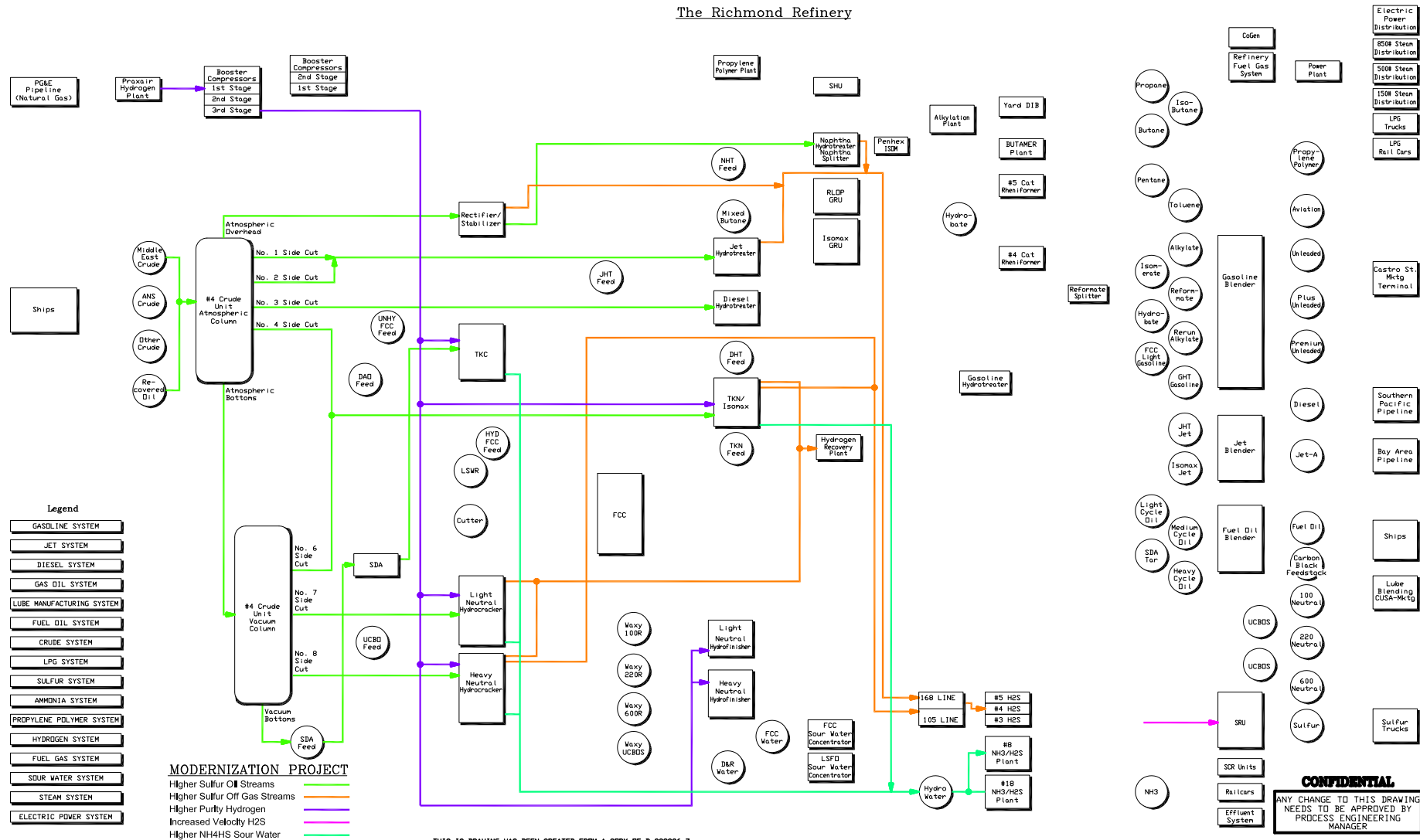
To determine which processing units would be affected by an increase in sulfur content of crude and/or imported gas oil, the sulfur containing streams were traced from where the crude first entered the refinery at the crude unit through downstream processing units in the refinery to a point where: (1) the sulfur became extinct (i.e., removed); (2) the sulfur levels returned to baseline levels; or (3) sulfur in the crude, where converted to other, lighter sulfur compounds through contact with heat, pressure or catalysts, was at the original baseline level. A similar approach was used to evaluate changes in nitrogen, hydrogen purity and H_2S . Figure A4.13-REL-3 provides a summary of the impacted and non-impacted units resulting from the review.

Table A4.13-REL-4 details the processing units and their associated Modernization Project relevant damage mechanisms that were considered to apply to post-Modernization Project operating conditions based on the review steps described above. The damage mechanisms themselves are discussed subsequently.

1.6 UNITS NOT IMPACTED BY THE MODERNIZATION PROJECT BASED ON OPERATIONAL AND FEEDSTOCK CHANGES

Several units were determined not to be affected by operational and feedstock changes of the Modernization Project, as listed below. A review of post-modernization physical changes was not considered to be in the scope of this review, with the exception of the new amine equipment. Based on the intended service of the new amine equipment it was not considered to be impacted by post-Modernization Project operational or feedstock changes; therefore, was not included in Table A4.13-REL-4 as an impacted unit. However, it was decided to discuss the unit in the impacted unit section to provide an explanation for why the risk for damage mechanisms normally associated with amine unit would not increase with the Project.

The Richmond Refinery



02.20.2014 file path: U:\Chevron Renewal\ENVIRON\Files\Report\Figures\DEIR Figures\REL

Source: Chevron (T85)

Figure A4.13-REL-3
Chevron Refinery Modernization Project EIR
Facility Streams Impacted by Modernization Project

1.6.1 Fluid Catalytic Cracker Unit

Feeds are TKC desulfurized gas oil and purchased gas oil. Feed does not change to this unit with the Modernization Project and hydrogen is not used at this unit. The fluid catalytic cracker unit does not remove sulfur, and the fluid catalytic cracker unit makes gasoline as its primary product. California limits the sulfur content of gasoline (and diesel), so the sulfur level of gas oil feedstocks to the fluid catalytic cracker unit could not change enough to exceed the sulfur content requirements in the sulfur levels set by California.

1.6.2 Isomerization/Penhex

Feed does not change to this unit with the Modernization Project. The feed to this unit is desulfurized and denitrified at the Naphtha Hydrotreater (NHT) to an existing specification sampled weekly, as specified in Electronic Operating Manual for the NHT, since sulfur and nitrogen are poisons to the Penhex catalyst. The existing feed sulfur level specification will not change with the Project (Chevron, [n.d.1]). If the current specification or actual operational data changes in the future from the existing conditions, then Chevron should evaluate the change using the reliability and damage mechanism review approach outlined in this Appendix. Chevron should then submit a report on the change and the findings of the reliability review to the City.

Make-up hydrogen used in this unit comes from the Rheniformer units and not from the new hydrogen plant so purity of hydrogen will not change to this unit as a result of the Modernization Project.

1.6.3 Alkylation

Feed does not change to this unit with the Project nor is hydrogen used at this unit. Feed is from the fluid catalytic cracker unit, which does not change from existing conditions with the Modernization Project, as described above.

1.6.4 No. 4 and 5 Rheniformers

Feed does not change to these units with the Modernization Project. Pre-treated gasoline and naphtha from the Isomax and NHT are the feeds to this unit and existing specifications for sulfur to this unit, reviewed by the Reviewer as a part of the Reliability Analysis, will not change as a result of the Modernization Project. If the current specification or actual operational data changes in the future from the existing conditions, then Chevron should evaluate the change using the reliability and damage mechanism review approach outlined in this Appendix. Chevron should then submit a report on the change and the findings of the reliability review to the City.

Hydrogen is produced in these units and used in other units at the refinery. No hydrogen from the new hydrogen plant will be used here.

1.6.5 Yard Deisobutanizer (YDIB)

This unit recovers isobutane at units (yard LPG, Butamer, RLOP and Isomax gas recovery units) downstream of the sulfur removal processes at the Facility; therefore its input and output streams will not change from existing conditions as a result of the Modernization Project.

1.6.6 Naphtha/Reformatte Splitter

Feed does not change to this unit with the Project. The naphtha splitter feed is from the NHT and has an existing specification for sulfur and nitrogen which will not change with the Modernization Project. If the current specification or actual operational data changes in the future from the existing conditions, then Chevron should evaluate the change using the reliability and damage mechanism review approach outlined in this Appendix. Chevron should then submit a report on the change and the findings of the reliability review to the City.

The reformatte splitter feed is from the Rheniformers which will not change from existing conditions.

1.6.7 Butamer

The feed to this unit is from the YDIB and Alkylation units, both of which do not change with the Modernization Project.

1.6.8 LNF/HNF

Feed to the Light and Heavy Neutral Finishers will not change post-Modernization Project since the upstream units, the LNC and HNC, desulfurize and denitrify to the same level as current specifications.

1.6.9 ISOMAX Reactors

The feed to the ISO Reactors will not change post-Modernization Project since the feed is pretreated in the upstream TKN unit, which desulfurizes and denitrifies to the same level as current specification.

1.6.10 Propoly Plant/Selective Hydrogenation Unit (SHU)

The feed to the Propoly plant and the SHU will not change post-Modernization Project since both units process LPG from the fluid catalytic cracker. Since fluid catalytic cracker feed quality does not change with the Modernization Project, the feed to the Propoly and SHU does not change.

1.6.11 Gasoline Hydrotreater (GHT)

The feed to the GHT will not change post-Modernization Project since the GHT desulfurizes a fluid catalytic cracker gasoline stream and the fluid catalytic cracker feed will not change.

1.7 DAMAGE MECHANISMS ACTIVE IN THE FACILITY AND IMPACTED BY THE MODERNIZATION PROJECT'S OPERATIONAL AND FEEDSTOCK CHANGES

The following guidelines were used to determine if any of the damage mechanisms applied to a particular plant or process system:

1. Determine which operating plants and systems were going to change as a result of the Modernization Project, based on:
 1. Operational changes
 2. Sulfur wt. % change
 3. Increase in hydrogen purity
 4. A sensitivity analysis regarding a potentially higher nitrogen crude case
 5. Introduction of, or increase in corrosive constituents resulting from a change in sulfur, nitrogen or hydrogen purity
 6. Process monitoring tools such as process monitoring and optimization (PMO) and INDX
2. Determine the particular sections of the operating plants or systems that might be affected. Tools used to help with this analysis included:
 - Piping Isometrics
 - Piping and Instrumentation Diagrams
 - Process Flow Diagrams
 - Metallurgy of piping and equipment
 - Chevron Best Practice Documents
 - Industry published papers and guidelines, recommended practices, etc.
 - Process Descriptions

3. Use industry and Chevron standards to assist in evaluating whether the damage mechanism may have an effect on the particular unit, based on a review of critical factors. The below is a representative sampling of documents reviewed:

- High-temperature sulfidation corrosion– API-939-C, *Guidelines for Avoiding Sulfidation Failures in Refineries* (API-939-C, 2009), and Chevron’s guidelines on inspection on deadlegs (Chevron [n.d.5]) and sulfidation service (Chevron, 2009).
- High-temperature H_2 - H_2S corrosion – Couper-Gorman curves.
- Ammonium Bisulfide – Chevron Hydroprocessing Best Practice, HP-002 (Chevron [n.d.3]).
- API-932-B, *Design, Materials, Fabrication, Operation, and Inspection Guidelines for Corrosion Control in Hydroprocessing Reactor Effluent Air Cooler (REAC) Systems* (API-932-B, 2012).
- API-571, *Damage Mechanisms Affecting Fixed Equipment in the Refining Industry* (API-571, 2011).
- API-581, *Risk Based Inspection Technology* (API-581, 2008).

Each of the Modernization Project-impacted units identified in Table A4.13-REL-4 underwent more detailed analysis for the damage mechanisms identified as being impacted by post-Modernization Project conditions for that unit.

1.7.1 High-Temperature Sulfidation

Crude and gas oils are processed into final products through a series of separation steps that include heating of the oils for distillation (i.e., separation of liquids based on boiling points). When heated to high temperatures (i.e., above 500°F), sulfur-containing crude oil blends and gas oils (or fractions of these oils) can thin the metal at the inside surface of a pipe or piece of equipment through a corrosion process called high temperature sulfidation (HTS). HTS results from a chemical reaction of the reactive sulfur in the crude or gas oil with the metal surface of the piping or equipment to form an iron sulfide scale. Over time, this results in reduced metal thickness and ultimately can result in failure (i.e., a leak) of pressure containing equipment. Thinning of metal from sulfidation corrosion almost always occurs as uniform metal loss; that is, the wall thickness of the pipe or equipment decreases evenly along the length of the wall over time. The metal loss due to sulfidation is uniform because it results from the diffusion (i.e., movement) of sulfur species from the process environment (i.e., the crude oil) through the sulfide scale that forms on the inside surface of the pipe or equipment to the metal surface where it reacts with the metal. This action of the

sulfur occurs over the entire surface covered with the sulfide scale; thus resulting in a characteristic uniform loss. As a result of the uniform metal loss, sulfidation corrosion failure of a pipe or equipment typically causes a large rupture.

1.7.1.1 Critical Factors

There are several factors that may affect the rate of high-temperature sulfidation:

1.7.1.1.1 Temperature

Temperature is the most important parameter that influences sulfidation corrosion rates. For example, a 10% change in temperature is more significant than a 10% change in the other factors, such as sulfur content. 500°F is considered to be the threshold temperature where sulfidation of carbon steel becomes a significant. Below 450°F (230°C), the corrosion rate is essentially nil. The corrosion rate increases with temperature from approximately 450°F (230°C) to about 800°F.

1.7.1.1.2 Amount of Sulfur

All other conditions (i.e., temperature, hydrogen level, sulfur species and steel type) being equal, increasing the sulfur level can increase the sulfidation corrosion rate.

1.7.1.1.3 Type(s) of Sulfur Species Present:

Different sulfur species in a crude oil have different levels of reactivity and can influence the rate of high-temperature sulfidation corrosion differently. Most crude oils contain a range of sulfur species including H_2S , mercaptans, elemental sulfur, polysulfides, thiophenes, aliphatic sulfides and aliphatic disulfides and each has a different reactivity or effect on corrosion rate. Sulfur compounds tend to concentrate in heavier liquid fractions, but given the same sulfur content and temperature, light gaseous hydrocarbons appear to be more aggressive.

1.7.1.1.4 Presence of Hydrogen

A fundamental difference of H_2 - H_2S corrosion vs H_2 -free corrosion is that low-alloy steels up through 12Cr are less effective in avoiding H_2 - H_2S corrosion than in H_2 -free streams, depending on the severity of the service. The 18Cr-8Ni stainless steels are most commonly used to obtain acceptable corrosion resistance.

1.7.1.1.5 Alloy

The sulfidation resistance generally increases with the amount of chromium in the alloy. For example, in sulfidation service the McConomy curves show increasing resistance with increasing amounts of chromium, i.e., 9Cr will corrode less than 5Cr, which corrodes less than carbon steel. The exact reason for the beneficial effect of Cr is not clear, but it is believed to be related to the stability and protective nature of the iron-chromium-sulfide scales formed.

1.7.1.1.6 Si Content

Carbon steels with low-silicon (< 0.10 %) content can corrode at an accelerated rate when exposed to H₂-free sulfidation corrosion conditions.

1.7.1.1.7 Other Parameters

Coking can reduce the corrosion rate in non-fired equipment such as pressure vessels and piping due to the presence of a protective coke layer that prevents contact with the metal substrate with the corrosive sulfur compounds.

1.7.1.2 Where Does Sulfidation Corrosion Occur?

Sulfidation can occur in refinery process units where equipment and piping are exposed to temperatures above 500°F with sulfur compounds present. Below are examples of refining units where sulfidation is known to occur, depending on specific processing conditions.

Crude unit – Sulfidation in a crude unit can occur in the hotter portions of the unit (>~500°F) in streams containing sulfur compounds. Sulfidation corrosion can first be an issue in the crude preheat train, including the crude charge furnace, where the crude is heated before going to the atmospheric tower. The atmospheric tower distills the crude into boiling point fractions, typically into broad categories of overhead products, side draw products and bottoms resid (vacuum residue). Sulfidation corrosion can occur in the atmospheric tower from the mid-section down to the bottom section where temperatures are greater than the abovementioned 500°F. Sulfidation corrosion is typically an issue starting in the 3rd side cut through the bottom of the atmospheric tower where temperatures are greater than 500°F. Sulfidation corrosion is also a concern in the hotter sections of the vacuum system, including the charge heater, vacuum tower and piping.

Hydroprocessing Unit – Sulfidation corrosion can occur wherever sulfur compounds are present in a hydrocarbon stream and the temperature exceeds approximately 500°F. H₂S corrosion can also occur in the absence of hydrocarbons. In HP units there are two forms of sulfidation corrosion occurring, with and without, hydrogen. Areas of sulfidation corrosion in HP units without hydrogen typically occur in the feed preheat train up to the point where hydrogen is injected into the process. After the hydrogen injection, the H₂-H₂S form of sulfidation predominates until the hydrogen is removed in the high- and low-pressure separation drums.

A fundamental difference of H₂-H₂S corrosion vs H₂-free corrosion, which is common to HP units, is that low-alloy steels up through 12Cr are less effective in avoiding H₂-H₂S corrosion than in H₂-free streams. The 18Cr-8Ni stainless steels are most commonly used to obtain acceptable corrosion resistance when there are significant amounts of hydrogen.

Sulfur Recovery Unit - Sulfidation in a sulfur recovery unit typically is caused by H_2S . Since hydrogen is not present in significant quantities in a sulfur recovery unit, the McConey curves are used to predict corrosion rates.

Fluid Catalytic Cracker Units – Sulfidation in fluid catalytic cracker units normally occurs in the reactor effluent line, the hotter portions of the main fractionator and associated fractionator sidecut and bottoms piping. Although H_2S corrosion rates usually increase with temperature, fluid catalytic cracker experience deviates from this. H_2S corrosion in fluid catalytic cracker reactors occurs at far lower rates than one would expect. For example, some fluid catalytic cracker units use carbon steel cyclones in reactors which last for up to 10 years at operating temperatures of 900-960°F.

1.7.2 High-Temperature H_2 - H_2S Corrosion

Corrosion by H_2S in the presence of hydrogen occurs via the same mechanism as corrosion by sulfur-containing oils in the absence of hydrogen. However, presence of hydrogen tends to increase the rate of sulfidic corrosion by decreasing the protectiveness of the sulfide scale and by enhancing the liberation of H_2S from other sulfur species present. The “Couper-Gorman curves” provide industry-accepted estimates of the corrosion rates in H_2 - H_2S environments as a function of temperature and H_2S concentration. Two sets of curves are used for carbon steel and the Cr-Mo steels - one set for naphtha desulfurizers (typical for streams containing mostly vaporized hydrocarbon) and one set for gas oil desulfurizers (typical for streams containing a significant amount of liquid hydrocarbon). For 12Cr steel and 18-8 stainless steel, only one set of curves are provided to cover both environments.

1.7.2.1 Critical Factors

The major factors affecting high temperature sulfidation are the temperature, the presence of hydrogen, the concentration of H_2S and the alloy composition. When hydrogen is present in significant quantities, corrosion rates are higher than those associated with high temperature sulfidation in the absence of hydrogen. Sulfidation rates increase with increasing H_2S content and especially with increasing temperature. Susceptibility to sulfidation is determined by the chemical composition of the alloy. Increasing chromium content of the alloy improves resistance (API-571, Figure 5-4).

Carbon steel is resistant to corrosion by H_2 - H_2S at temperatures up to about 480°F. 5 Cr, 9 Cr and 12 Cr steels provide better resistance than carbon steel and the austenitic stainless steels (typically 18 Cr – 8 Ni) offer by far the greatest resistance because of their nickel content. The Couper-Gorman curves are used to select materials for equipment and piping that handle H_2 - H_2S environments. The Couper-Gorman curves are also used to obtain a conservative estimate of corrosion by gas phases containing H_2S in the absence of hydrogen.

1.7.2.2 Affected equipment and units

H₂-H₂S corrosion occurs in piping and equipment in units where high temperature H₂-H₂S streams are found, including all HP units such desulfurizers, hydrotreaters and hydrocracking units.

1.7.3 Wet Hydrogen Sulfide Damage (SSC/HIC/SOHIC)

1.7.3.1 Description of Mechanism

Wet H₂S damage is manifested as several different types of metal deterioration

Wet H₂S damage can occur in four ways:

1. Hydrogen Blistering. During the corrosion process, hydrogen atoms from corrosion at the corroding surface diffuse into the steel and gather at an inclusion, lamination, or other discontinuity. This hydrogen accumulation can cause the metal surface to bulge on the ID, the OD or within the wall thickness of a pipe or pressure vessel. When hydrogen molecules formed from the combination of the atoms become too large to diffuse out a local deformation from the pressure build-up forms a blister.
2. Hydrogen-Induced Cracking. Cracks can develop between hydrogen blisters, described above, located at different depths from the surface of the steel. The interconnecting cracks link adjacent or neighboring blisters, often in a stair or step pattern, which is sometimes referred to as “stepwise cracking.”
3. Stress-Oriented Hydrogen-Induced Cracking (SOHIC). When arrays of cracks from HIC form in a stacked pattern on top of one another, a crack perpendicular to the surface through the thickness of the metal can form from high levels of residual or applied stress. These cracks, which are potentially more damaging than HIC, typically form in the base metal adjacent to the weld heat affected zones from HIC, sulfide stress cracks, or other defects.
4. Sulfide Stress Cracking (SSC). The combination of tensile stress and corrosion in the presence of water and H₂S can cause cracking of metal. SSC occurs when hydrogen atoms produced from sulfide corrosion absorb into the metal. SSC can occur in highly localized zones of high hardness in the weld metal and heat affected zones.

1.7.3.2 Critical Factors

The four forms of wet H₂S damage are affected and differentiated by several critical factors, including environmental conditions (pH, H₂S level, contaminants, temperature), material properties (hardness, microstructure, strength) and tensile stress level (applied or residual). These damage mechanisms can occur throughout the refinery wherever a wet H₂S environment is present.

1.7.3.3 Where It Can Occur

Wet H_2S cracking occurs in carbon steel plates (e.g., the walls of pressure vessels) and larger-diameter carbon steel pipes.

1.7.4 Creep—Stress Rupture

1.7.4.1 Description of Mechanism

Creep occurs when metal components slowly and continuously deform under load below the yield stress at high temperatures. Damage can form from the deformation and could eventually lead to rupture. Creep affects all metals and alloys.

1.7.4.2 Critical Factors

The critical factors that determine the creep deformation rate are material, load (stress), and temperature. The rate at which damage occurs (strain rate) is determined by both load and temperature. A temperature threshold exists for each metal; when the metal temperature is above the threshold, creep damage can occur, depending on the stress.

1.7.4.3 Where It Can Occur

Examples of equipment that operate in or near the creep range temperatures in a refinery include: heater tubes in fire heaters, tube supports, hangers, other furnace internals, hot-wall catalytic reforming reactors and furnace tubes, hydrogen reforming furnace tubes, hot wall fluid catalytic cracker reactors, and fluid catalytic cracker main fractionator and regenerator internals. Additionally, creep can occur in vessels and piping near major structural discontinuities including pipe tee joints, nozzles, or welds at flaws. These areas typically have both high metal temperatures and a concentration of stress.

1.7.5 Ammonia Bisulfide Corrosion (Alkaline Sour Water)

1.7.5.1 Description of Mechanism

Hydroprocessing reactor effluent streams and units handling alkaline sour water are susceptible to aggressive localized corrosion. Below about 250°F, NH_4HS can precipitate out of the gas phase in the reactor effluent stream and can cause fouling and plugging. NH_4HS salt deposits lead to underdeposit corrosion and fouling. If the salts become hydrated, they can be very corrosive. Additionally, wash water containing oxygen and iron injected into the hydroprocessing reactor effluent can also increase corrosion and fouling. This corrosion has led to several major failures in hydroprocessing reactor effluent systems. Carbon steel is especially vulnerable to this type of corrosion. 300 Series stainless steels (SS), duplex SS, aluminum alloys, and nickel based alloys have more resistance to this corrosion, depending on the concentration of ammonium bisulfide (NH_4HS) and

the velocity. NH_4HS is formed in the hydroprocessing reactors, fluid catalytic cracker reactors, and coker furnaces from the conversion of Nitrogen into ammonia reacting with H_2S formed from sulfur conversion.

1.7.5.2 Critical Factors

The critical factors that influence alkaline sour water corrosion include NH_4HS concentration, H_2S partial pressure, velocity and/or localized turbulence, pH, temperature, alloy composition and flow distribution. Corrosion increases with increasing velocity and NH_4HS concentration (above about 2 wt.%).

1.7.5.3 Where It Can Occur

HP units, fluid catalytic cracker units, sour water strippers (SWS), amine units, and delayed cokers can be affected by this type of corrosion. Heat exchangers can become plugged and lose their functionality from fouling, and brass tubes and other copper alloys are vulnerable to rapid corrosion from NH_4HS .

1.7.6 Ammonium Chloride Corrosion

1.7.6.1 Description of Mechanism

Ammonium chloride corrosion can occur under ammonium chloride or amine salt deposits often in the absence of a free water phase. This type of corrosion can be general or localized and frequently occurs as pitting. Corrosion rates can be very high. According to the API-571, “all commonly used materials are susceptible.”

1.7.6.2 Critical Factors

The critical factors affecting the ammonium chloride corrosion and corrosion rate are the concentration of NH_3 and HCl , temperature, and water availability. Ammonium chloride salts can precipitate from the cooling of high-temperature streams. These can corrode piping and equipment at temperatures beginning at about 300°F. Ammonium chloride salts are able to absorb water and become corrosive to equipment and piping in the absence of a free liquid water phase.

1.7.6.3 Where It Can Occur

In general, crude tower overheads (tower top, overhead piping and exchangers, and top pump around streams) can become corroded by ammonia and/or amine/ammonium chloride salts. Reactor effluent streams in the hydroprocessing unit are vulnerable to ammonium chloride salt fouling and corrosion. Within the catalytic reforming process, reactor effluent streams are subject to ammonium chloride salting and corrosion. Additionally, the fluid catalytic cracker unit overheads and top pump arounds are also susceptible to these processes.

1.7.7 High-Temperature Hydrogen Attack

1.7.7.1 Description of Mechanism

High Temperature Hydrogen Attack (HTHA) damage is caused by a reaction between hydrogen gas that diffuses through steel and carbide particles in the steel to form methane gas (CH_4). The formation of methane gas in the steel causes internal voids, fissures and cracks that weaken the steel. Failure due to HTHA most frequently occurs as a comparatively small leak resulting from the internal fissures and cracks that progress through the entire thickness of a pressure containing component, such as a vessel or piping.

In the same way that the McConomy curves are used to assist in selection of appropriate materials when high temperature sulfidation (HTS) is a concern, the Nelson Curves in API-941, *Steels for Hydrogen Service at Elevated Temperatures and Pressures in Petroleum Refineries and Petrochemical Plants* (API 941, 2008), is used to help in selection of materials when HTHA is a concern. The Nelson Curves provide limits for steels as a function of temperature and hydrogen partial pressure.

1.7.7.2 Critical Factors

For a specific material, HTHA is dependent on temperature, hydrogen partial pressure, time and stress. The service exposure time is cumulative. HTHA is preceded by a period of time when no noticeable change in properties is detectable by normal inspection techniques. All carbon and low alloy steels are susceptible to HTHA embrittlement, depending on the specific operating conditions of hydrogen partial pressure and temperature, including in order of increasing resistance carbon steel, C-0.5Mo, Mn-0.5Mo, 1Cr-0.5Mo, 1.25Cr-0.5Mo, 2.25Cr-1Mo, 2.25Cr-1Mo-V, 3Cr-1Mo, 5Cr-0.5Mo, 9Cr-1Mo and similar steels with variations in chemistry. The austenitic stainless steels, 304SS/316SS are considered immune to HTHA under normal refining processing conditions.

Two types of deterioration of steel occur in hydrogen service at elevated temperatures: (1) surface decarburization and (2) internal decarburization/fissuring. Surface decarburization is the predominant mode of deterioration at low hydrogen partial pressures (below 100 psia) and high temperatures (above 900°F). Internal decarburization/fissuring is the predominant mode of deterioration at lower temperatures (between 430°F and 900°F) and at higher hydrogen partial pressures (above 100 psia).

1.7.7.3 Where it can occur

HTHA can occur in the following process units:

- Hydrotreating Units

- Hydrocracking Units
- Catalytic Reforming Units
- Hydrogen Plants Isomerization Units

The Chevron Modernization Project will install a new hydrogen manufacturing facility which will increase hydrogen purity and hydrogen partial pressure.

1.7.8 Acidic Sour Water Corrosion

1.7.8.1 Description of Mechanism

Another form of metal corrosion risk occurs when H_2S gas interacts with water and creates acidic sour water with a pH of 4.5 to 7.0. The sour water can contain highly soluble levels of ammonia, chlorides, cyanides that may affect the pH. Carbon steel is affected by this type of corrosion; stainless steels, copper alloys, and nickel base alloys are generally resistant.

1.7.8.2 Critical Factors

The primary factors that determine acidic sour water corrosion are H_2S content, pH, temperature, velocity, and oxygen concentration. The pH of a solution decreases as the concentration of H_2S increases. When the pH of a stream falls below 4.5, corrosion can become severe. HCl and CO_2 can also increase the acidity of the stream. In addition, the presence of air or oxidants increase corrosion rates and tend to produce pitting or underdeposit attack.

1.7.8.3 Where It Can Occur

Acidic sour water corrosion can be a concern in overhead systems of crude units, fluid catalytic cracker and coker gas fractionation plants with high H_2S levels and low NH_3 levels.

1.7.9 Oxygen-Enhanced Ignition and Combustion

1.7.9.1 Description of Mechanism

Even at low pressures, many metals that are non-flammable in air are flammable in oxygen and enriched air (>25%) services. If not properly designed, operated, or maintained, metallic and non-metallic components that spontaneously ignite or combust can turn into fires or explosions in the right oxygen-enriched gaseous environments. Once they ignite, metals and non-metals continue to burn aggressively with higher oxygen purity, temperature, and pressure. Materials affected, with varying degrees of resistance, include carbon steels and low alloy steels, austenitic stainless steels (300 Series), titanium alloys, aluminum, plastics, rubbers, and hydrocarbon lubricants. Copper alloys (with >55% copper) and nickel alloys (with >50% nickel) are very fire resistant.

1.7.9.2 Critical Factors

Several factors contribute to the combustion and ignition of materials, including the system pressure, oxygen concentration of the stream, line velocity, component thickness, design and piping configuration, cleanliness and temperature. As temperature increases, ignition and sustained combustion require a lower amount of added energy (ignition temperature). The entrainment of particles in flowing oxygen can strike impingement areas, such as sharp elbows, tees, and valves, and pose an increased risk for ignition during high velocity oxygen flow conditions. Additionally, contamination of a process with metallic fines or oils and greases during construction or maintenance activities can lead to fires during unit startup.

1.7.9.3 Where It Can Occur

All units that use oxygen or enriched air for combustion or processing are susceptible to this damage mechanism. In general, oxygen is sometimes used in the sulfur recovery unit, fluid catalytic cracker, gasification, and partial oxidation (POX) units. Especially vulnerable to this type of damage are oxygen piping systems, particularly valves, regulators, and other impingement areas.

1.8 DAMAGE MECHANISMS POTENTIALLY ACTIVE IN THE FACILITY IMPACTED UNITS BUT DETERMINED TO BE NOT AFFECTED BY THE MODERNIZATION PROJECT

Below are listed damage mechanisms that could be active in the Impacted Units of the Facility but were not considered to be affected by the Modernization Project. There are other damage mechanisms listed in API-571 Table 5-4 that aren't covered in this Appendix; however, they would be mechanisms that are associated with non-impacted units and therefore are not evaluated further as a part of this Reliability Analysis.

1.8.1 Polythionic Acid Cracking

Polythionic Acid Cracking is a form of stress corrosion cracking normally occurring during shutdowns, startups or during operation when air and moisture are present. Cracking is due to sulfur acids forming from sulfide scale, air and moisture acting on sensitized austenitic stainless steels.

There is no austenitic stainless steel fixed equipment or piping in the crude unit with pressure boundary containment so this damage mechanism does not apply in the existing setting nor post-Modernization Project.

1.8.2 Localized Flow Accelerated Corrosion (FAC)

Chevron has listed FAC as a potential damage mechanism for the crude unit overhead system in their Crude Unit Atmospheric Overhead Corrosion Control

Best Practice document (May 2005), but did not include this mechanism in their API-571 damage mechanism spreadsheet matrix for the crude unit. They have defined FAC as “a long term corrosion mechanism that causes gradually thinning at points of high velocity liquid impingement.” Based on discussions with Chevron corrosion and materials personnel, FAC was intended to describe accelerated thinning due to high liquid velocities and/or turbulence at unpredictable locations. The term FAC is not intended to refer to the specific corrosion mechanism sometimes associated with steam/boiler water systems, particularly documented in the power industry.

1.8.3 Naphthenic Acid Corrosion

Naphthenic acid corrosion (NAC) is a form of high-temperature corrosion that occurs primarily in crude and vacuum units, and downstream units that process certain fractions or cuts that contain naphthenic acids. NAC is a function of the naphthenic acid content (neutralization or TAN number), temperature, sulfur content, velocity and alloy composition.

NAC is not expected to be a viable damage mechanism in the No. 4 crude unit, based on the low naphthenic acid crudes that are expected to be processed based on the post-Modernization Project (Chevron has an existing flag on accepting crude blends with TAN numbers greater than 0.3 mg/kg which will continue post-Modernization Project to avoid NAC corrosion). Therefore, post-Modernization Project conditions are not expected to result in an increase in current naphthenic acid content of crudes.

1.8.4 HCl Corrosion

HCL corrosion is considered to be an active damage mechanism in the crude unit overhead system; however, since its formation primarily depends on the amount of hydrolysable chlorides going overhead in the atmospheric tower from chlorides in the crude and a correlation between post-Modernization Project crude blends and chlorides was not established (Appendix 4.3-MET), HCL corrosion is not considered a post-Modernization Project damage mechanism.

1.8.5 Oxidation

Oxidation is a damage mechanism whereby oxygen reacts with carbon steel and other alloys at high temperature converting the metal to oxide scale. It is most often present as oxygen in the surrounding air (approximately 20%) used for combustion in fired heaters and boilers.

Oxidation could conceivably be a viable damage mechanism in the atmospheric tower furnace; however, oxidation has no correlation with increased sulfur crude feeds to the unit; therefore, it is not considered to be included as a post-Modernization Project damage mechanism.

1.8.6 Caustic Cracking/Caustic Corrosion/Injection Point Corrosion

Caustic embrittlement is a form of stress corrosion cracking characterized by surface-initiated cracks that occur in piping and equipment exposed to caustic, primarily adjacent to non-post weld heat treated welds. Carbon steel, low alloy steels and 300 Series SS are susceptible. Susceptibility to caustic embrittlement in caustic soda (NaOH) and caustic potash (KOH) solutions is a function of caustic strength, metal temperature and stress levels. Chevron injects 5% caustic into the crude stream before the furnace to help manage HCL concentrations in the crude tower overhead system. There was no correlation established between post-modernization crudes, increased chlorides and whether the caustic injection would need to be modified. Normally, the desalter will desalt down to specification limits regardless of chlorides. Therefore, caustic cracking is not considered to be a post-Modernization Project damage mechanism.

1.8.7 Erosion / Erosion-Corrosion

Erosion is the accelerated mechanical removal of surface material as a result of relative movement between, or impact from solids, liquids, vapor or any combination thereof. In most cases, corrosion plays some role so that pure erosion (sometimes referred to as abrasive wear) is rare. It is critical to consider the role that corrosion contributes. For each environment-material combination, there is often a threshold velocity above which impacting objects may produce metal loss. Increasing velocities above this threshold results in an increase in metal loss rates.

In the Chevron Crude unit, erosion could be a damage mechanism factor post-Modernization Project if the throughput through the unit were to increase velocities in the high-temperature streams subject to sulfidation; however, Chevron has stated that crude velocities will not increase with the Modernization Project. Therefore, erosion should not be a post-Modernization Project issue in the crude unit.

1.8.8 Chloride Stress Corrosion Cracking

Chloride SCC cracks are surface initiated cracks caused by environmental cracking of 300 Series SS and some nickel base alloys under the combined action of tensile stress, temperature in an aqueous chloride environment. The presence of dissolved oxygen increases propensity for cracking. All 300 Series SS are highly susceptible, b) Duplex stainless steels are more resistant, c) nickel base alloys are highly resistant. Chloride content, pH, temperature, stress, presence of oxygen and alloy composition are critical factors.

Chevron states that there is no austenitic stainless steel fixed equipment or piping in the crude unit overhead system serving a pressure boundary function.

In addition, there is no post-Modernization Project chloride correlation, as described in *Appendix 4.3-MET*. Therefore this damage mechanism risk does not change with the post-Modernization Project conditions.

1.8.9 Short Term Overheating

Short term overheating is the permanent deformation occurring at relatively low stress levels as a result of localized overheating. This usually results in bulging and eventually failure. Affected materials include all fired heater tube materials and common materials of construction. Critical factors include temperature, time and stress. The damage usually is due to flame impingement or local overheating.

Like creep and oxidation, short term overheating is a damage mechanism that would be present only in the atmospheric tower charge furnace. Regardless of any potential increased duty on the charge furnace based on possible crude changes with the Modernization Project, tube skin temperature monitoring along with periodic infrared thermography scans ensures the furnaces will stay within existing tube metal design limits.

1.8.10 885°F Embrittlement

885°F embrittlement is a loss in toughness due to a metallurgical change that can occur in alloys containing a ferrite phase, as a result of exposure in the temperature range between 600°F to 1000°F. Affected materials include 400 Series SS (e.g., 405, 409, 410, 410S, 430, and 446). The alloy composition, particularly chromium content, amount of ferrite phase, and operating temperature are critical factors. Increasing amounts of ferrite phase increase susceptibility to damage when operating in the high-temperature range of concern. A dramatic increase in the ductile-to-brittle transition temperature will occur as a result of embrittlement. Damage is cumulative and results from the precipitation of an embrittling intermetallic phase that occurs most readily at approximately 885°F. The impact on toughness is not pronounced at the operating temperature, but is significant at lower temperatures experienced during plant shutdowns, startups or upsets. 885°F embrittlement can be found in any unit where susceptible alloys are exposed to the embrittling temperature range; therefore, most refining companies limit the use of ferritic stainless steels to non-pressure boundary applications because of this damage mechanism. Common examples include fractionator trays and internals in high-temperature vessels used in fluid catalytic cracker, crude, vacuum and coker units.

The type 410SS lining installed below tray 19 in the atmospheric tower and in the bottom of the vacuum tower is susceptible to 885°F embrittlement at normal operating temperatures. However, the susceptibility is based on the material of construction and the operating temperature of the tower, neither of which

should change resulting from Modernization Project conditions; therefore, 885°F embrittlement is not included as a post-Modernization Project damage mechanism.

1.8.11 Dissimilar Metal Weld (DMW) Cracking

Cracking of dissimilar metal welds occurs in the ferritic (carbon steel or low alloy steel) side of a weld between an austenitic (300 Series SS) and a ferritic material operating at high temperature. Affected materials include ferritic materials such as carbon steel and low alloy steels that are welded to the austenitic stainless steels, plus as any material combinations that have widely differing thermal expansion coefficients. Critical factors include the type of filler metal used to join the materials, heating and cooling rate, metal temperature, time at temperature, weld geometry and thermal cycling. Dissimilar metal welds have been used in piping in fired heater applications where the heater tube material changes from 5Cr or 9Cr to 300 Series SS.

As dissimilar weld cracking is strictly a function of material combination and high-temperature exposure, post-Modernization Project conditions should not influence this damage mechanism.

1.8.12 CO₂ Corrosion

Carbon dioxide (CO₂) corrosion results when CO₂ dissolves in water to form carbonic acid (H₂CO₃). The acid may lower the pH and sufficient quantities may promote general corrosion and/or pitting corrosion of carbon steel. Carbon and low alloy steels are affected. The partial pressure of CO₂, pH and temperature are critical factors.

CO₂ corrosion can occur in the overhead of the vacuum tower. Modernization Project conditions are not expected to increase any current levels of CO₂ in the overheads of the vacuum tower, based on increased sulfur in the crude feed.

1.8.13 Fuel Ash Corrosion

Fuel ash corrosion is accelerated high-temperature wastage of materials that occurs when contaminants in fuel form deposits and melt on the metal surfaces of fired heaters, boilers and gas turbines. Corrosion typically occurs with fuel oil or coal that is contaminated with a combination of sulfur, sodium, potassium and/or vanadium. The resulting molten salts (slags) dissolve the surface oxide and enhance the transport of oxygen to the surface to re-form the iron oxide at the expense of the tube wall or component. All conventional alloys used for process heater and boiler construction are susceptible. The concentration of molten salt forming contaminants, metal temperature and alloy composition are critical factors. The severity of damage depends on the type of fuel (i.e., the

concentrations of contaminants in the fuel), sulfur content and metal temperature.

Corrosion occurs by this mechanism only if the metal temperature is above the temperature of the liquid species formed and it is most severe where the temperatures are the highest.

Fuel ash corrosion is a damage mechanism that would affect the atmospheric and vacuum tower furnace tubes. However, it is a damage mechanism that originates in the fuel used to fire the furnace, not in the crude feed and Chevron has stated that they do not use any fuels containing these corrosive constituents; therefore, fuel ash corrosion is not considered to be a post-Modernization Project damage mechanism.

1.8.14 Ammonia Stress Corrosion Cracking

Aqueous streams containing ammonia may cause stress corrosion cracking (SCC) in some copper alloys. A water phase with ammonia or ammonia compounds must be present. Oxygen is necessary, but trace amounts are sufficient. Carbon steel is susceptible to SCC in anhydrous ammonia. Copper-zinc alloys (brasses), including admiralty brass and aluminum brasses, are susceptible. The 90-10CuNi and 70-30CuNi alloys are nearly immune.

Chevron has 70-30 Cu-Ni copper alloy exchanger tubes in the overhead of the atmospheric tower, however, this alloy is considered to be immune to ammonia stress corrosion cracking for all practical purposes. Therefore, any increase ammonia that is required post-Modernization Project to neutralize increase in crude tower overhead systems acids should not increase the susceptibility to ammonia SCC, particularly as there is already sufficient ammonia in the overhead to cause cracking of susceptible copper containing exchanger tubes and no failures due to the damage mechanism have been reported. Also, any failure of an exchanger tube in the crude tower overhead system would not result in failure of a pressure boundary component and release to atmosphere.

1.9 RISKS FROM RELEVANT DAMAGE MECHANISMS RELATED TO MODERNIZATION PROJECT OPERATIONAL CHANGES

1.9.1 General Methodology

This section discusses the methodology and rationale used to assess any newly created damage mechanisms in the crude unit resulting from the Modernization Project changes and/or damage mechanisms that would increase from previous baseline levels.

The first step in the damage mechanism review was to determine the post-Modernization Project operating conditions. This was done by: (1) conducting

interviews with Chevron Modernization Project personnel, technical department materials/corrosion and process personnel and personnel responsible for crude selection and purchases and (2) requesting and reviewing relevant documents needed for the assessment, including, (a) Chevron procedures and best practices, (b) industry standards, (c) process information and (d) crude selection, purchasing and blending procedures and practices, including representative assays of their intended post-Modernization Project crude blends.

The second step was to use the above information and data to independently assess the potential damage mechanisms resulting from the new, higher sulfur crude blends against the 66 damage mechanisms in API-571, *Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*, (API-571, 2011) and any others, based on the reviewer's approximately 36 years of experience with damage mechanisms and environmental degradation of fixed equipment and piping in the refining and chemical industries. In addition to the above Chevron documents, other private communications, industry documents and published papers were reviewed in the assessment (see *Section 1.11, References*).

The third step of the analysis was to evaluate the potential impact of the identified damage mechanisms on fixed equipment, piping and piping components. Only those damage mechanisms resulting from a change based on post-modernization conditions were considered, i.e., damage mechanisms for existing conditions that are not projected to change with the Project were not evaluated.

1.9.2 Crude Unit

Given the potential for damage mechanisms in the crude unit resulting from the Modernization Project, the Reliability Analysis included an extensive evaluation of the possible damage mechanisms that could impact the crude unit post-Modernization Project. To assess the potential impact of the post-Modernization Project crude unit damage mechanisms, each identified damage mechanism was evaluated as to its anticipated location(s) in the crude unit and the specific equipment and piping it would affect. Those equipment and piping items were then evaluated against Chevron's current programs and practices related to equipment and piping reliability, published industry best practice documents and this reviewer's personal experience against anticipated post-Modernization Project changes to their operations to see if their mitigation plans were sufficient to prevent failures in post-Modernization Project operation. The equipment and piping reliability review included interviews with Chevron personnel and review of their mechanical integrity documents including: (a) Mechanical Integrity program procedures and working documents, (b) inspection procedures, (c) results of crude unit inspections, (d) Chevron Best Practices and (e) corrosion monitoring programs. The above was the methodology to assess impacted

damage mechanisms in the other units in Table A4.13-REL-4, but with differences in detail specific to those units.

In summary, the crude unit damage mechanism methodology and review process included the following attributes:

1. Verify characteristics of new crude blends
2. Verify what additional or increased damage mechanisms (DM) are anticipated with new crudes
3. Verify where the DM are expected to occur in the unit
4. Verify current condition and inspection/monitoring methods (present risk)
5. Verify future risk through a gap analysis of current and post-Modernization Project intended practices
6. Identify and recommend measures that could reduce risks associated with increased DM activity that could result from the Modernization Project

The above steps are generally consistent with the methodology that Chevron followed in their internal reliability review, based on review of their document submittals.

1.9.2.1 Process Description

Crude units distill crude oil to produce up to nine distillate streams and vacuum residuum. The crude oil is heated, desalted and split into various product streams that are sent to intermediate tankage or to downstream processing units as feed.

Crude units consist of the following overall systems:

- Crude feed booster pumps
- Primary heat exchanger train
- Desalter
- Flash drum
- Secondary heat exchanger train
- Atmospheric furnace and column
- Naphtha stabilizer C-1190
- Vacuum furnace and column

- Vent gas recovery
- Sour water

The desalter removes water, salts and suspended solids from the crude oil prior to entering the flash drum. Chloride salts can decompose to form hydrogen chloride (HCl) in the atmospheric and vacuum furnaces. HCl forms hydrochloric acid in the presence of water. This acid can severely corrode atmospheric and vacuum column overhead systems. Salts and solids foul heat exchanger and furnace tube surfaces resulting in reduced heat transfer and higher-pressure drop in these units.

Crude oil contains as much as 2% water, which is usually carried in an emulsified form. Sources of water are formation water, water used in field recovery, seawater picked up during shipment, and water from tank bottoms. Salt content of crude can be as high as 10-40 pounds per thousand barrels (pptb). Periodically, it may contain as high as 200 pptb. Salts found in crude oil are primarily sodium chloride with smaller amounts of calcium, magnesium, iron, and aluminum chlorides, sulfates and bicarbonates. Suspended solids, sand, drilling mud, high melting point waxes, and corrosion products may also be in the crude. These contaminants are removed by desalting to the 0.5-1 pptb level.

Desalted crude oil normally contains about 0.1%-0.3% water. This water contains salt. The purpose of the flash drum is to vaporize (flash) the light ends and any remaining water in the desalted crude oil. This reduces fouling in the downstream exchangers since any residual salt in the flash bottoms will plate out on the downstream exchanger tubes. The secondary heat exchanger train further raises the temperature of the flashed crude from the flash drum to approximately 520-525°F before entering the atmospheric furnaces.

The atmospheric furnaces and column control the unit crude feed rate, control furnace firing and raises the temperature of the feed to approximately 700°F before entering the crude tower. The crude tower distills the product streams to meet product specifications and provides feed to the vacuum furnace. The primary purpose of the atmospheric furnace is to provide a controlled source of heat to the crude oil. The furnace heats the crude oil to about 675°F and vaporizes it. The mixture then flows to the flash zone of the column. Steam superheating, steam generation, and boiler feed water heating coils are provided in the furnace convection section above the crude oil coils. These coils provide additional heat recovery and improve overall efficiency of the furnaces.

The atmospheric column accepts crude in the flash zone from the crude furnace at a temperature of approximately 675°F. In the flash zone, the vapor and liquid separate. The vapor passes up through the wash oil section, above which column trays distill the fractions according to their boiling points. The liquid falls down

through the stripper section toward the bottom of the column for further processing in the vacuum column. The atmospheric column temperature decreases progressing up the column from the flash zone. Vapor advancing up the column contacts liquid coming down from the trays above. The liquid and vapor become richer in light components as they rise. Consequently, the liquid removed at the upper trays yields products with lighter boiling ranges.

The atmospheric column sidecut streams are:

- First Sidecut (jet)
- Second Sidecut (jet)
- Third Sidecut (diesel)
- Fourth Sidecut (light gas oil)

The four sidecuts are drawn from the atmospheric column. The first and second sidecuts go to the Jet Hydrotreater (JHT) as hot feed, the third sidecut goes to the Diesel Hydrotreater (DHT) as hot feed, and the fourth sidecut can go directly to the TKN Unit as a hot stream, or cooled and sent to TKN cold feed tankage.

The atmospheric overhead section cools and separates hydrocarbon and water vapors that were not condensed in the column. All of the stripping steam that was injected at the bottom of the column rises to the top and is condensed. Some of the hydrocarbon liquid is condensed and some remains in the gas phase. The hydrocarbons remaining in the gas phase are the lightest ends.

The bottom section of the atmospheric column collects the atmospheric residuum prior to further processing in the vacuum column. Residuum contains liquid that was not vaporized in the flash zone and excess wash oil. Liquid that was not vaporized in the flash zone flows through the stripper section to the bottom compartment.

The stabilizer column processes atmospheric column overhead (naphtha) from the atmospheric column reflux drum that is not required for atmospheric reflux. It removes butanes and lighter components from the naphtha.

The vacuum furnace and column system recovers vacuum gas oils from the atmospheric residuum. The primary purpose of the vacuum furnace is to provide a controlled source of heat to the atmospheric residuum. There, it is heated to approximately 775°F and flows to the flash zone of the column. The vacuum furnace vaporizes the residuum prior to its entry into the column. Vapor from the top of the vacuum column contains steam, light hydrocarbon, and H₂S.

Three sidecuts drawn from the vacuum column are:

- 6 Sidecut (light gas oil)
- 7 Sidecut (heavy gas oil)
- 8 Sidecut (heavy gas oil)

The vent gas recovery system compresses the overhead gas from the vacuum column and assists in maintaining the vacuum. It recovers low-pressure sour gas streams from the complex and provides additional flare gas recovery from relief line gases

The Sour Water system includes the following equipment:

- Sour Water Degasser
- Fin Fan Coolers
- Sour Water Pumps

The sour water degasser serves as the intermediate destination for all of the sour water produced in the LSFO complex. Sour water streams include those from the JHT, DHT, NHT units and V-3211, and V-1160 in the crude unit. The sour water degasser is also a separate system that can run with the crude unit shut down. The degasser allows light hydrocarbons and H_2S to flash off of the sour water streams at low pressure before being routed to sour water tankage and separates heavier hydrocarbons and water.

1.9.2.2 General Corrosive Constituents in Oil

The composition of crude oil is important to crude unit operations, but it cannot be changed. It is set by the oilfield it came from and the production operations used to gather the oil and make it suitable for shipment. Crude oil composition varies from tanker to tanker. For minimum refinery corrosion, the charge to the crude distillation unit should be dry (no liquid water) and contain minimum impurities. Some impurities, if present in the crude charge, can cause corrosion problems in other downstream units.

The constituents in oil that cause corrosion are sulfur compounds, salt water, inorganic and organic chlorides, inorganic and organic acids, and nitrogen (which forms cyanides and ammonia bisulfides).

Sulfur compounds are contained in crude oil as H_2S , mercaptans, and complex organic sulfur compounds generally present in the range of 0.1 to 5.0 wt. % sulfur. Salts, including sodium, calcium and magnesium chlorides in water, are dispersed in the crude oil. Naphthenic acids are mixed organic acids present in crude oil in the range of 0.03-0.40 wt.%. Organic chlorides are usually picked up in the field due to the use of chlorinated solvents for dewaxing producing wells

and pipelines. The sulfur compounds found in crude oil are shown in Figure A4.13-REL-4.

As can be seen in Figure A4.13-REL-4, a wide variety of sulfur compounds can be present in crude oil. The corrosivity of a specific crude oil, based on its total sulfur content, is difficult to predict due to variations in the degree of decomposition of sulfur compounds during processing. One approach to approximating the corrosiveness of a crude oil is to measure the amount of H_2S generated as a crude oil sample is heated to several temperature levels in the 400-800°F range. High sulfur crude oils, such as Kuwait and Merey, usually require materials resistant to sulfur only in high-temperature areas, such as heaters and the bottom of the crude distillation tower. The severity of corrosion often depends on the type of sulfur in the stream, the temperature level, and stream velocity. Carbon steel with a reasonable corrosion allowance is usually adequate to resist sulfur corrosion below 550°F. Chevron has adopted the API-RP-939C recommendation that carbon steel (fully killed⁴ with a silicon content greater than 0.1 wt.%) in new construction is a suitable material in sulfidation service up to 525°F.

Crude oil containing more than about 0.05 ft.³ dissolved H_2S per 100 gal of oil is called “sour”. However, crude 0.1 containing less than 0.5 ft.³ of H_2S per 100 gal of oil is not corrosive to steel in petroleum processing equipment (Bogaerts, 1998). The compounds shown in Figure PS-TR-2 decompose thermally, during processing, into constituents such as H_2S and mercaptans (organic sulfur compounds). In sufficient quantities (above ~0.2 wt.%), the compounds can be corrosive to carbon and low-alloy steels at temperatures above ~480°F to 550°F and up to 850°F. Above 850°F, corrosion rates decrease if the pipe inner diameter coke up; otherwise, the corrosion rates continue to increase.

Crude oils charged to a crude heater contain varying amounts of salts such as sodium, magnesium and calcium chlorides, along with basic sediment and water (BS&W). As the crude oil is heated, magnesium and calcium chlorides hydrolyze to hydrochloric acid (HCl) in the heater and tower. This causes no problem in the middle and lower sections of the tower since HCl is not corrosive at temperatures above the water acid dewpoint. Corrosion from HCl usually occurs in the upper tower and the tower overhead system where the temperature is below the water dew point of about 240-280°F. The water dew point can vary considerably from one crude unit to another depending on the water partial pressure and could possibly be as high as 300°F. Another factor involved when excessive amounts of HCl are generated in the crude tower is that HCl is continuously regenerated by H_2S unless neutralized by ammonia. Therefore, ferrous chloride formed by the reaction of iron and HCl in turn reacts with H_2S to form iron sulfide and HCl. The advantages of maintaining the lowest possible HCl level in the crude upper tower

⁴ “Steel that has been deoxidized sufficiently for it to lie perfectly quiet when poured into an ingot mold” (U.S. Steel Corporation, 1971).

Type	Formula	Found In		
		Crude Oil	Straight-Run Products	Cracked Products
Elemental sulfur	S	Yes	Yes	Yes
Hydrogen sulfide	H ₂ S	Yes	Yes	Yes
Mercaptans				
Aliphatic	RSH	Yes	Yes	Yes
Aromatic	RSH	Yes	Yes	Yes
Naphthenic	RSH	No	No	No
Sulfides				
Aliphatic	R - S - R	Yes	Yes	Yes
Aromatic	R - S - R	No	No	No
Cyclic		Yes	Yes	Possibly
Disulfides				
Aliphatic	R - S - S - H	Yes	Yes	No
Aromatic	R - S - S - H	?	No	Yes
Thiophene and homologues				
		Yes	Yes	Yes
Polysulfides	R - S _n - S - R	?	Yes	Yes

02.20.2014 file path: U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL

Source: Chevron (T85)

Figure A4.13-REL-4
Chevron Refinery Modernization Project EIR
Sulfur Compounds in Crude Oil

and overhead system is readily evident since even small amounts of HCl are regenerated in the presence of H_2S until the free HCl is neutralized by ammonia addition in the overhead line. The usual approach to controlling acid attack in the overhead system is the addition of neutralizing agents and corrosion inhibitors.

Laboratory studies show that there are widely different evolution levels of H_2S and HCl depending on the type of mercaptans in the crude, the salt level, and the composition of the salts. Some oils are much more susceptible to the evolution of hydrochloric acid than others having similar total chloride contents, which indicates that there are other factors besides the chloride concentration that affect the hydrolysis of these salts.

Hydrochloric acid evolved in distillation is formed principally as a result of the hydrolysis of magnesium chlorides. Calcium and sodium salts do not materially contribute to the formation of hydrochloric acid from hydrolysis of salts. Most of the magnesium chloride hydrolyzes in the temperature range of 400-600°F. At 600°F, calcium chloride, and to a lesser extent sodium chloride, also begin to hydrolyze. Various acidic materials in the crude oil such as naphthenic acids and phenols will promote the evolution of hydrochloric acid under distillation conditions. The undesirable impacts arising from the presence of salts and BS&W in crude oil charge stocks can be classified into five principal categories:

1. Salt deposits in exchangers and furnaces
2. Evolution of corrosive hydrochloric acid
3. Contamination of residual products.
4. Reduced capacity and/or fuel efficiency due to heating water
5. Erosion of equipment by sediment.

The hydrochloric acid generated in the crude is extremely corrosive and makes it necessary to inject ammonia into overhead lines to minimize corrosion damage. Ammonium chloride formed as a result of the neutralization reaction is itself corrosive however, and tends to plug up condensers and columns in the overhead system.

Assays of crude should be current. Recovering heavier oils from an oil field changes the sulfur and organic acid contents. Since total acid numbers and weak acid numbers do not differentiate between naturally occurring naphthenic acid and some acids caused by oxidation, it becomes difficult to determine whether or not naphthenic acid corrosion will be a problem. The increase in crude-specific gravity makes the determination of the total acid number more difficult and increases the probability of error.

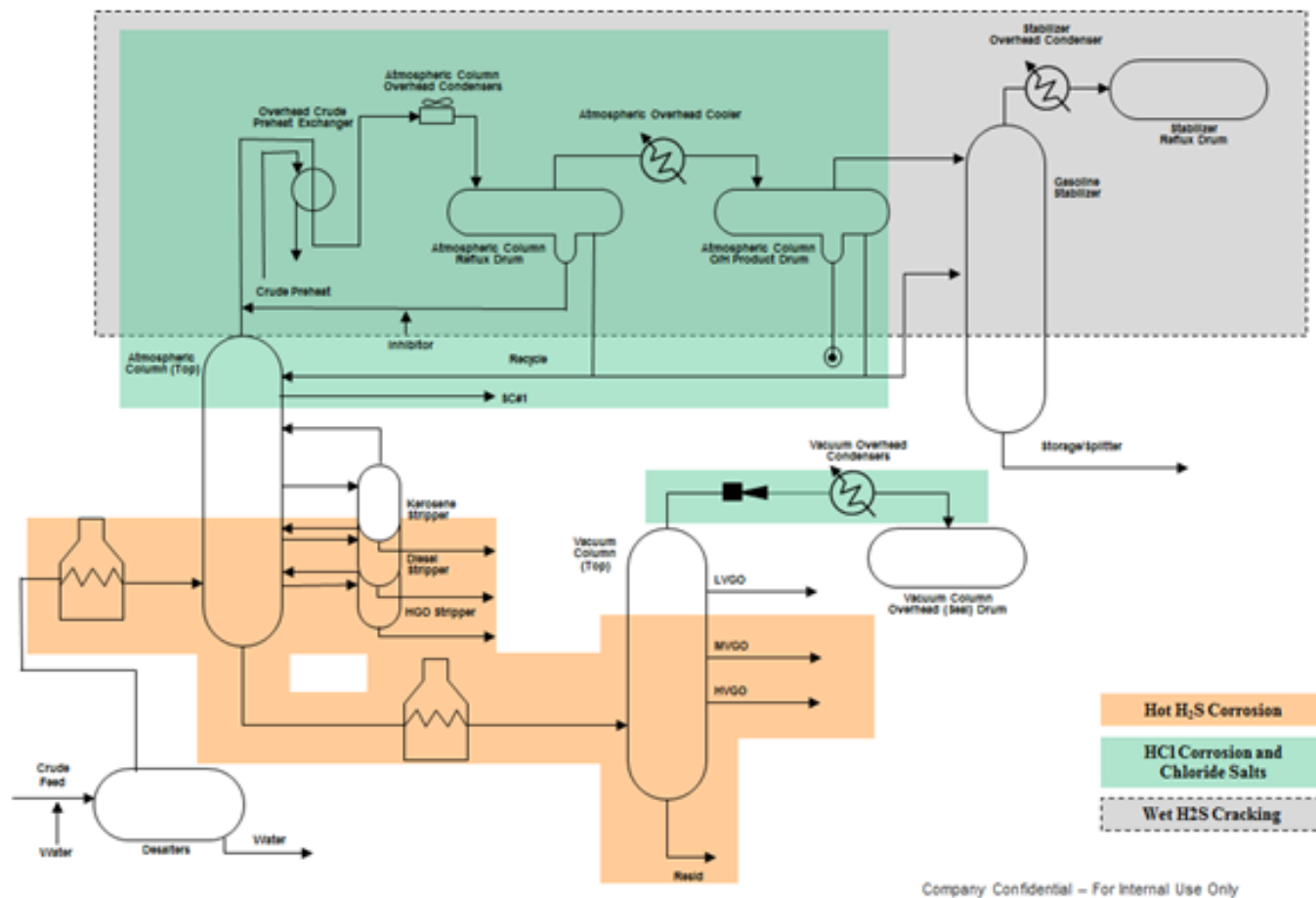
Organic acids (e.g., naphthenic acid) can cause severe corrosion above ~450°F (although attack has been seen as low as 340°F in turbulent areas) if the neutralization number exceeds 2.0 mg of potassium hydroxide per gram (mg KOH/g). The naphthenic acid content is generally determined by titration with KOH, as described in ASTM4 D974 or D664 for neutralization value. This value (called the neutralization number) is expressed in mg of KOH required to neutralize the acid constituents present in 1g of sample. Crudes with neutralization numbers in excess of 0.5 mg KOH/g can cause serious corrosion problems in the vacuum tower flash zone. When inorganic chlorides (e.g., ammonium chloride) and organic chlorides collect (usually in the tops of columns and equipment connected to the tops of columns), mild to severe corrosion can occur. When organic nitrogen compounds in the feed exceed 0.05 wt.% (500 ppm), cyanides and ammonia can form, depending on the temperature. These compounds collect in the aqueous phases and cause corrosion of certain materials.

1.9.2.3 Corrosion and Materials Selection (General)

Alloy selection in crude units is made to control and mitigate the expected damage mechanisms found in most crude units, including sour water corrosion, acidic sour water corrosion, HCl corrosion, ammonium chloride corrosion (sour water corrosion), wet H₂S damage as SSC, HIC, SOHIC and high-temperature sulfidation. Other crude unit HCl damage mechanisms specific to individual equipment include creep/stress-rupture/oxidation of furnace tubes in fired heaters, ammonia SCC in brass exchanger tubes, etc.

The crude unit damage mechanisms and the materials selected to resist those damage mechanisms can be divided into broad physical areas of: (1) wet H₂S cracking; (2) acidic/alkaline corrosion (including HCl corrosion, sour water corrosion, acidic sour water corrosion) and (3) high temperature sulfidation corrosion (Figure A4.13-REL-5).

In the feed preheat section of the unit, carbon steel is generally used up to approximately 500°F. At temperatures greater than about 500°F, hot H₂S corrosion (high-temperature sulfidation) becomes active and chromium-molybdenum alloys of increasing chromium are needed to resist the sulfidation corrosion. In increasing order of resistance to high-temperature sulfidation, based on temperature and the amount of sulfur, are carbon steel, 1-3Cr, 4-6Cr, 7-9Cr, 12Cr and 18-8 stainless steel. The 1-9 Cr alloys are usually used for piping. 12Cr is typically used as a cladding in the atmospheric and vacuum towers.



02.20.2014 file path: U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL

Source: Chevron (T85)

Figure A4.13-REL-5
Chevron Refinery Modernization Project EIR
Locations of Damage Mechanisms in Crude Units

In the overhead system of an atmospheric tower, where acidic and alkaline corrosion is active, carbon steel is the typical material of construction, except for thin-walled components such as exchanger tubes, injection point inserts, etc. Carbon steel would not be resistant to the overhead environment if operational/process means to protect it from corrosion were not also used, including water-washing to dilute acids and the use of corrosion inhibitors to minimize corrosion rates. Wet H₂S cracking is normally not an issue in crude unit overhead systems due to the low hardness of carbon steel equipment and piping and carbon steel usually provides satisfactory service if properly fabricated.

1.9.2.4 Crude Feed

The crude feed system from tankage to the desalter of the crude unit is typically carbon steel construction. The initial corrosion control device used in a crude unit is a desalter. The crude is first desalted to minimize acidic corrosion from hydrolyzed salts in condensed steam vapors that go overhead in the atmospheric fractionator column.

As the crude is heated above 500°F in the pre-heat exchangers and in the fired heater, corrosion can occur from sulfidation as a result of the breakdown of sulfur compounds, as described in earlier in *Section 1.7.1*. These higher temperatures may require the use of chrome-moly materials, based on predicted corrosion rates using the McConomy curves. Sulfidation can occur in the atmospheric column and vacuum column; it is typically most severe at the column “flash zone” (inlet from the fired heater) as a result of turbulence from high velocities and flashing. The increased potential for corrosion in these zones is mitigated by the use of resistant alloys such as 12 Cr or 300 SS as cladding material. Condensing water containing H₂S and salts can cause corrosion in the overhead system of the atmospheric and vacuum column; however carbon steels can be typically used with supplemental corrosion control methods such as aforementioned water wash and corrosion inhibitors.

Removal of salts from the crude is important to avoid corrosion and plugging of the overhead system. Any plugging is normally caused by ammonium chloride salts. Sodium chloride, which is quite soluble in hot water, is easily removed. Magnesium chloride, not as easily removed as sodium chloride, hydrolyzes to hydrochloric acid. Desalting to 1 ptb can keep tower overhead condensates under 50 ppm of hydrochloric acid; however, 50 ppm hydrochloric acid can still be quite corrosive to carbon steel. Therefore, additional corrosion control measures are used to mitigate the impacts of acidic chlorides, such as water washes and corrosion inhibitors. Another technique to reduce hydrolysable chlorides is to use caustic (sodium hydroxide) injection after the desalter. The sodium hydroxide converts corrosive magnesium chlorides to the more harmless sodium chloride. The injection amount is guided by the amount of salt in the overhead condensate.

1.9.2.5 Overhead Systems

The top of the tower is subjected to water condensation that contains hydrogen chloride, ammonia (if injected for corrosion control), and H_2S . Corrosion rates can be severe if the chloride content is high. For this reason, Monel 400 is often used as a tower lining and as a tray material. Monel 400 is resistant to these waters below 250°F; however, corrosion can occur if the ammonia exceeds 3 wt.%, or if the pH becomes too high.

Corrosion protection in the atmospheric tower overhead system is achieved by neutralizing the water condensate to a pH value of 6 to 6.5 and by using an inhibitor. Neutralizers include ammonia and neutralizing amines. There are pros and cons associated with each neutralizer. Control of pH with ammonia is difficult because of the strong impact that hydrogen chloride or ammonia has on condensate pH if too little or too much ammonia is used. Neutralizing amines buffer the water so that pH control is easier over a wide range of amine concentrations. Neutralizing amines are soluble in both water and hydrocarbon. If the amine chloride concentration in hydrocarbon is high, the amine chloride can return to the fractionator and cause chloride corrosion.

The neutralizers are typically injected in the fractionator overhead line in order to be present when the dew point of hydrochloric acid is reached. It is important to use a corrosion resistant quill to inject neutralizers or inhibitors because drip injection can cause dissolution of the protective scale on the inside of the pipe, which can result in corrosion and erosion in that area. For this reason, the pipe spool including the injection quill will often be manufactured from a corrosion resistant alloy (CRA) for a distance upstream and downstream of the water wash quill in case corrosive salts form at the injection point. Often however, neutralization is not accomplished, and severe corrosion from hydrochloric acid still occurs at the dew point. Hastelloy C-276 is a widely used alloy for aggressive, acidic chloride environments. Chevron Richmond has a C-276 weld overlay spool piece installed in the overhead piping to mitigate this localized corrosion at the water injection point.

Materials used in the overhead condensers vary with the source of the cooling water, the amount of chlorides, and the success of inhibitors, pH control, wash water, etc. For refineries with brackish or salt water cooling, the use of titanium tubes is economical since carbon steel cannot be used. Titanium is cost competitive with stainless steels (SS's), Monel 400, brasses, and copper-nickel alloys. If ammonium chloride forms and plugs the hot areas, pitting of copper base alloys can occur. Brasses such as admiralty brass have been used successfully where waterside velocities are controlled to less than 8 ft./s, and the ammonia content is not high enough to corrode or crack the brass (pH below 7.2). Copper-nickel alloys are much more resistant to ammonia but will corrode if the H_2S content is high. Duplex stainless steel alloys, as well as ferritic stainless

steels, have experienced under-deposit corrosion in overhead systems. Austenitic alloy 904SS has also performed well. Carbon steel is used only where there is very careful cooling water control.

H₂S damage as SSC, HIC and SOHIC are also potential damage mechanisms in atmospheric tower overhead systems. However, in the absence of cyanides, which are normally not present in crude units, damage from H₂S cracking is rare, based on the use of low strength (low hardness) carbon steels and the lack of HIC/SOHIC cracking in carbon steel piping materials. However, H₂S damage, while rare, can still occur and should be included in a refinery inspection program.

1.9.2.6 Crude Heater and Distillation Columns

After the crude passes through the desalter, it goes into the crude heater where the sulfur compounds are partially decomposed thermally. When the sulfur exceeds ~0.2 wt.%, corrosion of carbon steel can become excessive. The higher the chromium content in the alloy, the more resistant the alloy is to sulfidation. In general, furnace tubes and piping are manufactured from 5Cr-½Mo steel for sulfur-bearing crudes when the temperature exceeds ~550°F and 9Cr-1Mo when the temperature exceeds ~750°F.

The temperature at which excessive corrosion of carbon steel occurs is a function of the characteristics of the sulfur compounds in the crude. This temperature can be estimated by measuring the amount of H₂S evolved as a function of temperature. The amount of H₂S evolved vs. temperature varies widely, and there is no relationship to the wt.% sulfur. Since H₂S release data are rarely available, materials selection is usually based on wt.% sulfur, although the correlation with corrosion rates is only very general. Recent studies indicate that direct reaction of the organic sulfur compound with the metal surface is the predominant mechanism of high-temperature sulfidation. The McConomy curve is the most widely used tool used to predict corrosion rates and material selection to resist high-temperature sulfidation in the absence of hydrogen.

The 5Cr-½Mo alloy, commonly used in furnace tubes, corrodes at a measurable rate with a design life of typically at least 10 years or longer. Even though metal temperatures are higher than the process temperature in furnace tubes, corrosion rates are always reported as a function of the process temperature. Therefore, furnace tubes tend to corrode at higher rates than piping for the same process temperature.

Columns are usually clad with 12Cr above ~550°F (290°C). Some refiners use cladding above 450°F to minimize maintenance and to minimize fouling from corrosion products. The 12Cr cladding is essentially immune to high-temperature sulfidation attack and is used due to the long design life of

atmospheric columns of 20 years. Pressure-retaining parts of 12Cr are usually limited to 650°F to avoid problems resulting from 885°F embrittlement. The majority of attack occurs in the flash zone where the feed enters the column and partially flashes to vapor and this is where 12 cladding is typically installed.

When naphthenic acids are present in sufficient quantities, carbon steel and low Cr alloys up to 12% chromium can be severely attacked. The austenitic stainless steels such as Type 316/317 are normally resistant in the same service. The corrosion rate of naphthenic acid-containing oils shows an increase in corrosion rates as a function of temperature. The most severe corrosion occurs at ~550°F because the naphthenic acids concentrate in these streams at that temperature. Corrosion of type 316 SS has occurred in vacuum unit transfer lines containing a high naphthenic acid content with 15 to 40% vaporization. To minimize attack, both vaporization and velocity should be kept at a minimum. Type 316L (UNS S31603) SS, preferably with a minimum of 2.5% molybdenum, is usually used above 450°F for naphthenic acid service. Where neutralization numbers, vaporization, and velocities are high, high-molybdenum alloys such as type 317L (UNS S31703) SS may be required. Chevron Richmond does not process naphthenic acid crudes or crude blends.

In general, sidecut stripper columns corrode much less than the main fractionators for the same temperature. The corrosive sulfur compounds tend to move to the bottom of the main fractionator with the liquid, and the H₂S moves to the overhead of the main fractionator. Sidecut strippers are usually not clad until the process temperature exceeds 650°F. Sometimes, the heavy gas-oil sidecut contains naphthenic acid, which can cause enough corrosion that iron enters the fluid catalytic cracker unit feed.

Vacuum columns should be treated separately from atmospheric columns. The inlet line from the charge vacuum tower furnace and the inlet area of the tower usually corrode at the highest rate. The overhead vacuum system will corrode if chlorides are present. This corrosion is reduced if corrosion in the atmospheric tower overhead is reduced by desalting, caustic injection, or both.

Naphthenic acid corrosion can be quite severe in vacuum towers when high TAN crudes are processed. Crudes with total acid numbers (TAN) over 2.0 mg KOH/g have corroded type 316 SS in the inlet areas. At times, type 317 (UNS S31700) SS, 904L (UNS N08904), or other corrosion resistant alloys are needed.

Heat exchangers are treated in a manner similar to columns (i.e., 12Cr clad shells and channels and 5Cr-½Mo tubes are usually used above 550°F. When selecting materials for exchangers, one must take into account crevices, changes in direction, and actual tube metal temperatures (since the tubes are exposed to fluids of different temperatures).

1.9.2.7 Crude Selection, Purchasing and Blending

The first step (described above) in the damage mechanism review assessment was to understand Chevron's crude selection/purchasing process and how the post-Modernization Project crude characteristics would potentially change with respect to crude unit damage mechanisms.

The Facility purchases crude and gas oils in the global market place and transports these feed-stocks to the Facility for processing into transportation fuels and lubricant base oils. Generally, different crude oils are blended and then fed into the crude unit, where they are divided into fractions for processing into various product streams. Imported gas oils, as well as gas oils produced by the crude unit, are directly fed to various Facility units for conversion into end products. Additionally, the Facility typically imports small amounts of material known as blend stocks. These materials are not considered Facility feed stocks since they are not processed by the Facility; instead they are blended with other materials into finished products that leave the Facility.

The Modernization Project increases the Facility's ability to accept crude oil blends with higher sulfur content that it cannot currently process; however, the Modernization Project also provides the Facility with increased flexibility to process higher-sulfur crude oil blends which may fall at either the higher or lower end of the intermediate-light gravity range. The Modernization Project will enable the Facility to increase the sulfur removal limit from 600 to 900 long tons per day (lt/d). The 900 lt/d limits equates to an approximate 3 wt.% sulfur content in crude oil blends (Chevron, 2013b; Chevron, 2013a; Chevron [n.d.9])

It was necessary to understand the Modernization Project expected crude blends prior to conducting the reliability and damage mechanism review, plus the projected sulfur content and other potential feed constituents that can have an impact on damage mechanisms. The Chevron Oils Planning Department was interviewed, and Chevron's crude acceptance procedures were reviewed (Chevron [n.d.4]) to understand what typical crudes were planned and how blend decisions were to be made, based on post-Modernization Project conditions.

The result of this review showed that Chevron has a sophisticated quality assurance process for accepting new crude sources that include the effects of evaluating different blend ratios in arriving at an acceptable crude blend. The process is software driven and includes provisions that allow different refinery personnel with specific, relevant responsibilities to "fail" recommended crude blends, which then require further review. Chevron's metallurgical engineer is one such person who can "fail" a recommended crude or crude blend recommendation, based on metallurgical/corrosion concerns. Also, Chevron's Management of Change (MOC) procedure includes changes in crude chemistry as an initiator of a MOC review.

As previously stated, a P50 (benchmark) and a P90 crude oil blend, with higher-sulfur levels, were defined by Chevron for the post-Modernization Project conditions (Chevron [n.d.6]). This defined crude oil blend was used to determine the impacts of potential damage mechanisms in the crude unit. The two crude blend cases considered in this Reliability Analysis and damage mechanism analysis were a 2.38 wt. % sulfur P-50 case and a P-90 case, as described in earlier sections of this Appendix.

There are considerations regarding the potential impacts of various constituents in the crude blends in their influence on damage mechanism issues, for example, constituents in crude oils widely known to initiate or influence damage mechanisms include chlorides, sulfur, mercaptans and nitrogen. Their influence on damage mechanisms is described elsewhere.

The influences of other crude constituents on damage mechanisms, including metals, are not as well established as those above. Therefore, an analysis was conducted to determine if there was any correlation between crude sulfur wt. % and other potentially corrosive constituents such as nitrogen, chlorides, acids, reactive sulfur, metals, etc. (Appendix 4.3-MET). The analysis also investigated if there was a correlation between the same corrosive constituents and API gravity. The analysis was done by conducting a literature search to evaluate whether nitrogen, metals, “reactive sulfur species” (mercaptans), acid, and chlorides content would likely increase with increased crude oil sulfur content or with decreasing gravity. Public crude oil data was obtained from various agencies and institutions and statistically evaluated to investigate the potential relationship between the crude oil sulfur and API gravity vs. concentrations of nitrogen, metals, reactive sulfur species (mercaptans), acid, and chlorides.

The analysis for acids is discussed further below, for metals in Section 1.9.2.7.2, and for the other constituents evaluated, the conclusions are as follows:

- A weak statistical relationship was found between nitrogen content and sulfur content of crude oils. Thus, slight increases in nitrogen content of crude oils could be reasonably foreseeable with increasing sulfur content crude oils expected with the Modernization Project, given the weak correlation.
- A moderate to strong statistical relationship was found between API gravity in the intermediate range and nitrogen content of heavier crude oils (between 28 and 40 API). As the baseline average API was 33.7, the potential for processing lower API crude oils with the Modernization Project could result in reasonably likely increases in nitrogen content.
- No statistical relationship was found between mercaptan sulfur content and sulfur content. Thus, increases in mercaptan sulfur content of crude oils are

not reasonably likely to occur with higher sulfur content crude oils expected with the Modernization Project, given the lack of a strong correlation.

- No statistical relationship was found between mercaptan sulfur content and gravity. Thus, increases in mercaptan sulfur content of crude oils are not reasonably likely to occur with lower API crude oils expected with the Modernization Project, given the lack of a strong correlation.
- No statistical relationship was found between salt content and sulfur content. Thus, increases in salt content of crude oils are not reasonably likely to occur with higher sulfur content crude oils expected with the Modernization Project, given the lack of a strong correlation.
- No statistical relationship was found between salt content and gravity. Thus, increases in salt content of crude oils are not reasonably likely to occur with lower API gravity crude oils expected with the Modernization Project given the lack of a strong correlation.

1.9.2.7.1 Crude Acceptance Process

The Facility's Crude Acceptance Process helps reduce the potential for equipment damage. Before a crude is accepted for processing in the Facility, it is reviewed by a number of specialists with the aid of the protocol called for by the Crude Acceptance Process, the crude assay database, and by screening criteria (parameters) that is part of the process. At the Facility, a crude is screened with the expectation that it would not be the sole source of feed to the crude unit. Crude blends are assessed in the context that any particular crude is blended in with an ongoing, familiar crude blend.

The Facility states that typically each year, five to six new crude blends will be evaluated for the Facility; in some years, perhaps as many as ten blends will be evaluated. Specialists involved in assessing the crudes include planning experts, processing specialists, and metallurgy/reliability specialists. While some of the crude screening parameters are chosen based upon processing and economic considerations, some parameters are relevant to the damage mechanisms discussed in this report.

The most relevant parameter for the Modernization Project is the sulfur content. Currently, the HP units all have feed sulfur limits based on hydroprocessing Best Practice HP-002 (Chevron [n.d.3]), which controls the H₂S partial pressure in these units. This, in turn, may restrict the crude purchases or alter the crude blend. In the future, additional post-Modernization Project crude sulfur level screening will be done as per the Modernization Project Reliability Program. The Chevron Reliability Program specifies a trigger for a reliability review when the crude oil processed at the refinery reaches 2.25 wt. % sulfur on an annual average and again when it reaches 2.75 wt. %.

As described in Appendix 4.3-MET, no statistical relationship was found between acidity and sulfur content. Thus, increases in acidity of crude oils are not reasonably likely to occur with higher sulfur content crude oils expected with the Modernization Project, given the lack of a strong correlation. In contrast, a weak statistical relationship was found between API gravity in the intermediate-light gravity range (28 and 40 API) and acidity. Thus, it is reasonably foreseeable that slight increases in acidity of crude oils could occur with lower API crude oils expected with the Modernization Project given the weak correlation.

However, Chevron's crude screening criteria include TAN limits (whole crude = 0.3 and sidecut 1.5) which in effect allow very little, if any, acidic crudes to be processed; therefore damage mechanisms related to acidity would not be expected to increase with the Modernization Project given this existing limit.

Other parameters that are reviewed but are not necessarily considered constraints include nitrogen and certain metals.

1.9.2.7.2 Metals Analysis

The crude correlation analysis conducted (Appendix 4.3-MET) concluded that it is possible that the metal content of crude oils processed by the Facility could increase slightly for some metals if the Modernization Project is implemented.

Heavy metals are known to be constituents of crude oils and their influence on damage mechanisms was raised as a potential post-Modernization Project crude selection issue. Metals that are known to influence corrosion and materials degradation in refining and chemical industry settings include vanadium, cadmium, mercury, nickel, copper and zinc. Therefore, a correlation analysis was conducted to investigate whether or not a correlation existed between metals in crude and crude wt. % sulfur or API gravity. This analysis is presented in Appendix 4.3-MET. Public crude oil data obtained from various agencies and institutions was evaluated to investigate the potential relationship between the crude oil sulfur concentration and gravity to the concentration of barium, iron, magnesium, nickel, titanium, vanadium, and zinc. Little data on mercury, lead, copper, cadmium, and arsenic was available to construct meaningful analysis and therefore, the statistical relationship between these metals and sulfur or gravity was not evaluated. Appendix 4.3-MET concludes with the following related to metals:

- No statistical relationship was found for the dependence of barium, calcium, magnesium, titanium, and zinc on sulfur (i.e., concentrations of metals did not vary with sulfur concentrations).
- A weak statistical relationship was found for the dependence of iron, nickel and vanadium on sulfur concentration. Thus, it is reasonably foreseeable that slight increases in iron, nickel and vanadium content of crude oils could

occur with higher sulfur content crude oils expected with the Modernization Project, given the weak correlation.

- No statistical relationship was found for the dependence of barium, titanium, and zinc on gravity (API).
- A weak statistical relationship was found for the dependence of calcium, iron, magnesium, nickel, and vanadium on gravity (API). Thus, it is reasonably foreseeable that slight increases in calcium, iron, magnesium, nickel and vanadium could occur with lower API crude oils expected with the Modernization Project given the weak correlation.

Of the above listed metals that are known to influence corrosion and materials degradation in refining and chemical industry settings (vanadium, cadmium, mercury, nickel, copper and zinc), only the potential increases in nickel and vanadium were initially believed to potentially impact equipment degradation in either the existing setting or post-Modernization Project. Vanadium can result in rapid corrosion of metals and alloys in furnaces and heater through the condensation of vanadium pentaoxide salts, commonly referred to as low melting point salt corrosion. This damage mechanism typically occurs when using heavy, waste hydrocarbon products as fuels that contain vanadium, i.e., “bunker fuels.” Chevron has stated that they do not use these hydrocarbon sources as fuels; therefore, material degradation due to metal wastage from vanadium pentaoxide should not be a problem, either existing setting or post-Modernization Project.

Nickel is known to act as a catalyst in promoting coke formation in heater tubes in certain hydrocarbon cracking processes. However, nickel that catalyzes coke formation occurs as an alloying element of the cracking tubes themselves, as opposed to nickel in a hydrocarbon; therefore, material degradation in Chevron heaters due to coke formation from nickel is not expected either.

Therefore, based on the above technical analysis and the results of the metals vs. crude correlation (described above), it is not likely that the metal content of crude oils processed by the Facility would increase metal related damage mechanisms if the Project is implemented.

1.9.2.8 Impacted Damage Mechanism Discussion

1.9.2.8.1 Wet H₂S Damage

Chevron has stated that post-Modernization Project conditions likely will involve somewhat higher levels of H₂S in the overhead system of the atmospheric column (Chevron, 2014a). How much increased post-Modernization Project H₂S will be in the overhead was not quantified; however, Chevron based their wet H₂S impact analysis on an assumed H₂S change in overhead greater than a 10% threshold.

Based on Chevron's "Risk Management of Wet H₂S Cracking in Process Plants," (Chevron, 2005b), a 10% threshold increase in H₂S loading defines the criteria for a "significant" process change that would warrant an internal inspection. This is a conservative assumption requiring Chevron to conduct wet H₂S inspections following the introduction of post-Modernization Project crudes.

The impact of increasing H₂S, in the atmospheric tower overhead can be anticipated but its actual impact will need to be verified after post-Modernization Project operation. The impact of increased H₂S will be to directionally increase the amount of dissolved H₂S in the overhead system, particularly in the accumulator water drum. Increased H₂S can result in sour (NACE MR0175) conditions of an initially non-sour system. However, the crude atmospheric tower overhead system is currently sour, as defined by NACE as <0.05 psia H₂S partial pressure in the vapor phase or greater than 50 ppmw H₂S in a water phase.

H₂S is not corrosive at atmospheric tower overhead temperatures until it is contacted by liquid water. Therefore, an increase in H₂S in the overhead vapor will not impact equipment or piping until it reaches the overhead water injection point where it will tend to dissolve in the water phase. Any increase in the acidity (due to dissolved H₂S) of condensed water in the overhead system could potentially be negated by the present use of neutralizing chemicals (ammonia) to control overhead corrosion. Chevron's Atmospheric Overhead Corrosion Control Best Practice document (Chevron, 2005a) stipulates maintaining the overhead accumulator water in the 7.0-7.5 pH range using ammonia injection, with pH being controlled by use of an on-line pH analyzer, a board mounted controller for ammonia injection and a closed loop pH control system. Therefore, if properly maintained and controlled, any increase in H₂S in the overhead system should not increase the severity of wet H₂S damage as cracking (or sour water corrosion) in the overhead injection system should maintain the pH of the accumulator water at current control limits, unless other cracking species increase, such as cyanides, which are not anticipated

There are several other reasons why an increase in the H₂S content of the atmospheric overhead system should not impact H₂S-related, aqueous damage mechanisms including:

- In crude units, the conditions that cause large amounts of hydrogen charging into the metal are rarely present.
- Wet H₂S damage almost never occurs in piping because of how piping is made, and because it and its welds, are normally relatively soft (less than Rockwell C 22.)

Chevron's wet H₂S program records have documented cracking attributed to wet H₂S damage; however, this cracking has not resulted in any loss of containment

failures (Wet H₂S Cracking in Chevron Crude Units). The reason for the low risk of pressure containment failure is based on: (1) the generally small crack sizes in crude service and (2) the generally good toughness of pressure vessel and piping materials designed to ASME Section VIII and B31.3.

The Facility reportedly has never experienced wet H₂S cracking in the atmospheric overhead system. However, the crude tower overhead fixed equipment and piping is not post weld heat treated; therefore, based on API-581 guidelines, the overhead equipment theoretically is still at finite risk of experiencing wet H₂S cracking and therefore; appropriately, should be included in their wet H₂S inspection plan. According to Chevron's Risk Management of Wet H₂S Cracking in Process Plants document, it is quite possible for fixed equipment to contain wet H₂S cracks that do not penetrate through the wall. The overhead fixed equipment has been placed in a Category 3 in their Risk Management document (which does not require an internal or external inspection) except for the V-1190 Stabilizer Column Reflux Drum, which has been designated by Chevron as Category 2 conservatively. However, due to the inherent uncertainty in the potential for cracking under post-Modernization Project conditions, Chevron has recommended that an external automatic ultrasonic testing inspection of representative sections of the "wet water" portions of V-1100, V-1160 and V-1190 vessels be conducted as a baseline before the start of post-Modernization conditions, then checked externally again approximately one year after the start of Modernization Project conditions. In addition, they are recommending a one-time internal inspection of the these same vessels during the scheduled maintenance turnaround after the start of Modernization Project operations, using eddy current or other approved internal inspection techniques per the Chevron Wet H₂S program. The Reviewer agrees that this decision to conduct the above inspection is appropriate and should significantly decrease the risk of wet H₂S damage in the overhead equipment.

1.9.2.8.2 Ammonium Bisulfide

Ammonium bisulfide (NH₄HS) forms in an aqueous solution due to the presence of dissolved H₂S and ammonia from a vapor. The maximum amount of ammonium bisulfide that can form is based on stoichiometric conditions. As nitrogen in the crude feed does not convert to ammonia in the charge furnace before going overhead in the atmospheric tower, the only ammonia in the crude unit is ammonia that is injected into the atmospheric tower overhead ahead of the wash water to control corrosion from entrained chlorides and H₂S.

Streams and units handling alkaline sour water (aqueous ammonium bisulfide) are susceptible to aggressive localized corrosion. Below about 250°F, ammonium bisulfide (NH₄HS) can precipitate out of the vapor phase and can cause fouling and plugging. NH₄HS salt deposits can lead to underdeposit corrosion and fouling. If the salts become hydrated, they can be corrosive. Carbon steel is

especially vulnerable to this type of corrosion. 300 Series stainless steels (SS), duplex SS, aluminum alloys, and nickel based alloys have more resistance to the corrosion, depending on the concentration of ammonium bisulfide (NH_4HS) and velocity. NH_4HS is formed from the conversion of nitrogen into ammonia which then reacts with H_2S to form ammonium bisulfide. The critical factors that influence this corrosion include NH_4HS concentration, H_2S partial pressure, velocity and/or localized turbulence, pH, temperature, alloy composition and flow distribution. Corrosion increases with increasing velocity and NH_4HS concentration. A conventional rule of thumb that is widely cited, including in API-571 and API-581, is that ammonium bisulfide concentrations below about 2 wt. % can be safely handled in carbon steel piping and equipment at velocities below about 20 ft./sec. Ammonium bisulfide corrosion in the Chevron Richmond crude unit overhead system is not considered to be a concern under normal operation due to the low amounts of ammonium bisulfide (~0.3 wt. %) calculated to be in the overhead.

Chevron has conservatively estimated the increased post-Modernization Project amount of H_2S in the overhead as greater than a 10% threshold. To conduct post-Modernization Project ammonium bisulfide calculations, they conservatively assumed that the amount of H_2S in the overhead doubled from current conditions. They then used the doubled H_2S quantity to stoichiometrically calculate the amount of ammonia that would combine with the H_2S and then converted that quantity into a wt. % of ammonium bisulfide that would be present in the wash water, assuming that all of the bisulfide would dissolve in the water. Their calculated wt. % of ammonium bisulfide was 0.3 wt. %. This wt. % of ammonium bisulfide is significantly below the amount that industry experience and authoritative published literature states is an amount corrosive to carbon steel (~2 wt. %, based on API-932-B). Therefore, based on a review of Chevron's calculations, the post-Modernization Project increase in H_2S should not impact corrosion rates in the atmospheric tower overhead vs. present conditions. Also, based on their corrosion control/monitoring scheme for the accumulator drum water boot, any increased corrosivity in the overhead water should be able to be detected and mitigation measures taken, if necessary.

1.9.2.8.3 Sour Water Corrosion (Acidic)

As discussed previously, "acidic sour water" is water containing H_2S and with pH below neutral pH (7). As historically, the predominant corrosive species in the crude tower overhead system is alkaline sour water due to the injection of ammonia to neutralize acidic species. Acidic sour water corrosion should not increase post-Modernization Project.

1.9.2.8.4 Ammonium Chlorides

Chlorides were determined not to correlate with higher sulfur or lower API gravity crudes. However, because increased ammonia might be required to

control corrosion post-Modernization Project, ammonium chloride corrosion was considered as a post-Modernization Project damage mechanism.

Higher sulfur in the crude unit overhead systems has the potential to impact the corrosivity of the atmospheric column C-1100 overhead system through sour H₂O corrosion and conceivably through ammonium chloride corrosion. Chlorides can cause corrosion in the crude unit overhead by forming hydrochloric acid ("HCl"), or ammonia/amine chloride salts. HCl is formed in the crude unit by the hydrolysis of salts in the crude that do not get removed in the desalter or converted to harmless sodium chloride by contacting with sodium hydroxide via the caustic injection ahead of the flash drum. The HCl has a high vapor pressure and travels up the atmospheric column into the overhead system as a vapor.

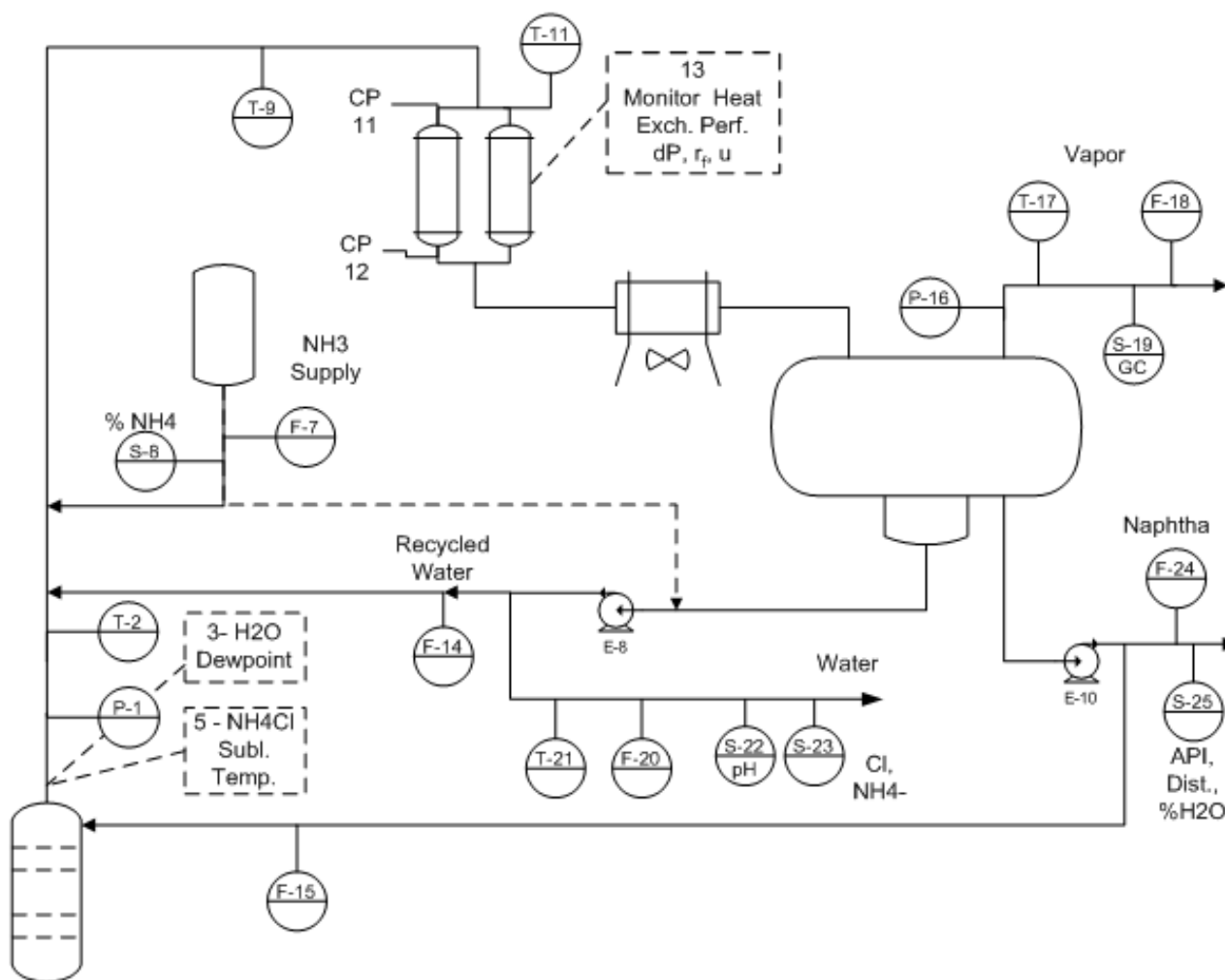
HCl in the vapor phase is not corrosive. It becomes corrosive when water vapor condenses and the HCl dissolves in the water to form hydrochloric acid (HCl). This reaction occurs in the atmospheric and vacuum overhead systems and can also occur in the top of the atmospheric column if the top tray temperature is low enough to permit water condensation.

Chevron uses ammonia in the crude tower overhead to neutralize the HCl along with a water wash to dilute any acidic material to non-corrosive levels. The ammonia can combine with the HCl vapor to form ammonia chloride deposits that can potentially deposit out before the water wash injection point. Chevron controls the potential for chloride salt deposits by ensuring that the process temperatures in the crude unit are well above the salt dewpoint. The Crude Unit Atmospheric Overhead Corrosion Control Best Practice document (Chevron, 2005a) calls for a minimum 25°F margin between the process temperature and the temperature at which the salts form. See Figure A4.13-REL-6 below. Therefore, as long as Chevron's dewpoint calculations are accurate and monitored and they can control the tower top temperatures above the dewpoint, corrosion, fouling and plugging from salt deposits should not occur. Any ammonium chloride salts in the vapor stream will be absorbed into the wash water at the wash water injection point, diluting the hydrochloric acid to non-corrosive, manageable levels. At this point, their pH control system used to maintain a narrow non-corrosive range of pH in the accumulator drum boot water is designed to minimize any corrosive impacts of HCl dissolved in the water.

1.9.2.8.5 High-Temperature (HT) Sulfidation

The below is presented as a logical methodology to review the potential impact of post-Modernization Project is higher sulfur crudes on the crude unit piping and fixed equipment, based on high-temperature sulfidation damage:

1. Identify and document all sulfur-containing piping circuits >450°F using most recent piping and instrumentation diagrams (P&IDs).



02.20.2014 file path: U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL

Source: Chevron (T85)

Figure A4.13-REL-6
Chevron Refinery Modernization Project EIR
Chevron Crude Unit Diagram Illustrating Process Monitoring Points

2. Conduct stream simulation analysis to predict the post-Modernization Project sulfur contents of sulfur-containing piping circuits >500°F, based on P90 feed.
3. Estimate pre- and post-Modernization Project corrosion rates using simulation results and recognized HT sulfidation rate corrosion prediction tools such as the McConomy curves, using existing process temperatures and P90 sulfur conditions. Take the difference in pre- and post-Modernization Project corrosion rates to predict any increase in post-Modernization Project corrosion rates.
4. Check identified sulfur-containing piping circuits against the inspection database to verify that previous inspection dates are not overdue.
5. Check post-Modernization Project corrosion rates against existing flags and establish new flags for new conditions, if required.
6. Develop inspection/mitigation/replacement recommendations for all piping with post-Modernization Project predicted thicknesses less than flag thicknesses⁵ before the next scheduled shutdown.
7. Inspect for and identify/locate low Si piping (through locating and inspecting all components to identify any individual components that were corroding at significantly higher rates than the rest of the adjacent piping).

High temperature sulfidation (HTS) is the damage mechanism that caused the August 2012 crude unit fire resulting from failure of the atmospheric tower No. 4 sidecut piping. That piping failed due to uniform thinning at the inner diameter (I.D.) from HTS corrosion and was a low silicon variety of carbon steel, which has been well documented (API-939-C, 2009) as having less resistance to HTS than the higher silicon versions of carbon steel. During the crude unit rebuild, Chevron replaced much of the No. 4 sidecut piping with 9 Cr-1 Mo piping, which should experience acceptably low and manageable corrosion rates (< 10 mpy at ~3.3 sulfur and 670F max.) in the conservative P-90 case used for this analysis. Chevron Richmond currently has carbon steel, 5Cr-1Mo and 9Cr-1Mo equipment and piping in >500°F sulfidation service in the crude unit, but upgrades are planned to replace all but one carbon steel circuit operating at >500°F. The one remaining carbon steel circuit operates at 502°F and exhibits very low corrosion rates.

⁵ Flag Thickness (Tflag): A wall thickness value used for triggering the need for quantitative minimum thickness (Tmin) and half-life assessment. "Flag Thickness" thickness is generally defined as follows:

- Flag Thickness for low pressure pipe 4.5 inches OD and below is 0.100 inches*.
- Flag Thickness for low pressure pipe over 4.5 inches OD is 0.140 inches*. (Upon technical review, it can be reset to 0.100 inches)

Chevron reported that each piping circuit in the crude unit operating under high-temperature sulfidation conditions (>500°F) and per API RP 939-C, Guidelines for Avoiding Sulfidation Corrosion Failures in Oil Refineries, was identified for further analysis. The analysis was done for current operating conditions and for post-modernization operating conditions using the 3.28 wt. % sulfur P90 crude blend case. The analysis results (Chevron, 2014b) detail pre- and post-Modernization Project predicted sulfidation rates, using the McConomy curves, projected new Flag dates based on McConomy curves and actual corrosion rates based on ultrasonic wall thickness measurements. Using the post-Modernization Project sulfur conditions and the McConomy Curves, sulfidation corrosion rates in carbon steel systems were calculated to increase by less than 5 mils (0.005") per year. This spreadsheet was used to evaluate and recommend the 17 piping circuit upgrades to 9Cr material. The spreadsheet analysis results also showed that: (1) many newly calculated Flag dates for carbon steel piping circuits were coming due for additional analysis in the near future and, (2) actual measured corrosion rates in some circuits were high.

Chevron has a best practice for managing sulfidation corrosion, *Inspection Strategies for Preventing Sulfidation Corrosion Failures in Chevron Refineries*, (Chevron, 2009). It is based on the guidelines in API-939-C, *Guidelines for Avoiding Sulfidation (Sulfidic) Corrosion in Oil Refineries* (API-939, 2009), supplemented by Chevron's personal experience with this damage mechanism. Therefore, based on several considerations, including the past sulfidation failure incidents and their sulfidation best practice, which stipulates specification of 9CR piping at sulfidation temperatures greater than 525°F, Chevron is planning on replacing 17 piping circuits currently either carbon steel or 5Cr-1Mo with 9Cr-1Mo at the next scheduled turnaround in 2017, plus four partial circuit replacements (Table A4.13-REL-5 and Table A4.13-REL-6). This Reviewer agrees that this decision is an appropriate one to mitigate risk uncertainty associated with future sulfidation failures.

With the recommended 17 piping circuit upgrades, plus the piping circuits replaced with 9Cr after the fire, that left only one main process circuit of carbon steel (0955-002-013) still remaining as carbon steel, and that piping was new in 2011. This carbon steel line operates at a low sulfidation temperature of 502°F and exhibits very low corrosion rates; therefore, its continued use is justified.

As part of their HTS impact review Chevron also conducted inspections to identify all low silicon piping. This was done by either removing insulation to visually locate pipe butt welds between pipe joints or by using profile radiography to locate individual pipe sections. All carbon steel piping components in crude unit sulfidation service were inspected for remaining wall thickness using their established piping inspection program procedures.

TABLE A4.13-REL-5 COMPLETE PIPING CIRCUITS SCHEDULED FOR UPGRADE TO 9Cr IN 2017

Equipment Number	Equipment Description	Existing Metallurgy	New Material	Replacement Date
0955-002-008	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-014	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-015	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-016	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-017	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-018	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-030	Desalted Crude From E-1165A To F-1100A/B	CS	9 Chrome	EOY 2017
0955-002-031	Desalted Crude From E-1165B To F-1100A/B	CS	9 Chrome	EOY 2017
0955-002-032	Desalted Crude From E-1116's to E-1165C	CS	9 Chrome	EOY 2017
0955-007-009	#4 Sidecut Circ Reflux	CS	9 Chrome	EOY 2017
0955-007-017	#4 Sidecut Circ Reflux	CS	9 Chrome	EOY 2017
0955-009-003	C-1100 Bottoms to F-1160	5Cr	9 Chrome	EOY 2017
0955-012-001	C-1160 Outlet #7 Sidecut	CS	9 Chrome	EOY 2017
0955-012-002	#7 Sidecut	CS	9 Chrome	EOY 2017
0955-013-007	C-1160 OUTLET: #8 Sidecut to E-1188	CS	9 Chrome	EOY 2017
0955-013-008	C-1160 Outlet: #8 Sidecut to C-1160	CS	9 Chrome	EOY 2017
0955-013-009	C-1160 Outlet: #8 Sidecut to E-1114	CS	9 Chrome	EOY 2017

The F-1100 Atmospheric Furnace and the F-1160 Vacuum Furnace present special challenges for assessing risk, based on creep/stress-rupture and sulfidation. Creep/stress-rupture is covered in *Section 1.9.2.8.6* of this Appendix.

Using conservative estimates, the F-1100 and F-1160 furnace tubes could possibly be exposed to post-Modernization Project increased sulfur content feed for as long as two years between January 2016 (the theoretical commencement of Modernization Project operations for purposes of the EIR) and fourth quarter 2017 - the next planned turnaround, when they are scheduled for a smart pig inspection. Therefore, an analysis was done to see if the two furnaces could be

TABLE A4.13-REL-6 PARTIAL PIPING CIRCUITS SCHEDULED FOR UPGRADE TO 9Cr IN 2017

Equipment Number	Equipment Description	Existing Metallurgy	New Material	Replacement Date
0955-015-002	C-1160 OUTLET to E-1165 A/B/C	9Cr/5Cr/ (2) 10" spool piece and drain valves CS	Replace 5Cr and CS with 9Cr; existing 9Cr remains in place.	EOY 2017
0955-015-017	K-1165A/B Pump Out	9Cr/5Cr/CS	Replace short 5Cr deadleg immediately off filters with 9 Cr. CS is either free-draining, isolated, or cool wash oil service, so no need to replace because do not see regular service	EOY 2017
0955-019-034	P-1165/A Case Vents to C-1160	SS/CS	CS is downstream of single SS block valve. Upgrade the 3/4" CS pump case vents with SS to double block and bleed design.	EOY 2017
0955-019-017	Pump Vents	9Cr/5Cr/CS	Replace 5Cr with 9Cr and add a second block valve and bleeder. CS component is downstream of 5Cr single block valve; no project impact on CS portion downstream of the valve.	EOY 2017

operated for that two-year period under post-Modernization Project sulfur conditions safely, based on thinning from sulfidation. Safe operation was defined as remaining tube wall thickness equal to or greater than the Flag thickness of 0.1". For the purposes of the analysis, the P-50 sulfur case (2.38 wt.%) was selected as the most realistic operating scenario. Recent smart pig inspection data was used to determine the existing tube thickness measured at that time and use the P-50 sulfur case and the McConomy curves to calculate predicted P-50 mils per year (mpy) corrosion rates. The analysis results were used to determine starting with the last smart pig inspection date, at what point in time would the tube sample thin to the 0.1" Flag thickness, based on using measured corrosion rates from the smart pig inspection date to 2016 and Modernization

Project high sulfur corrosion rates using the McConomy curves to predict those rates, based on the following formula:

$$[t_y - (Z_{\text{mpy}} \times (2016 - t_y))] - (X_{\text{mpy}} \times 2) \Rightarrow 0.1 \text{ [1]}$$

Where: t_y = min. measured tube thickness in year Y
 Z_{mpy} = historical measured corrosion rate
 X_{mpy} = McConomy C.R. based on P-50 sulfur case and max. TMT
0.1" = Chevron Piping Inspection Guide Flag thickness
2 = 2 year service time from Jan. 2016 to Dec. 2017

The analysis was considered very conservative, in that the thinnest measured wall tube was used and McConomy curve corrosion rates were used, which are documented as being conservative. The available Chevron corrosion rate data also supported the fact that McConomy curve corrosion rates under actual conditions of wt. % sulfur and temperature were much higher than that actually measured. Inspection data provided by Chevron (Chevron [n.d.11]), was the source of the data used for the analysis.

The results of the above analysis showed that:

- Based on a minimum measured wall thickness of 0.193" in 2012 for the F-1100 5Cr radiant tubes, maximum measured tube-metal temperatures (TMT) of 774°F, and existing setting maximum corrosion rates of 5 mpy, the selected F-1100 radiant tube is predicted to reach a 0.1" Flag thickness around October 2017. A full 2-year run is predicted at a sulfur content of 2 wt.%.
- Based on a minimum wall thickness of 0.207" for the carbon steel F-1100 convection section tubes, maximum TMT = 595°F and existing setting corrosion rates of <5 mpy, the convection section tubes should not reach Flag thickness before the 2017 shutdown.
- Based on a similar analysis for the F-1160 furnace, the risk of post-Modernization Project sulfidation damage before the next planned shutdown in 2017 from increased sulfur feeds is considered to be negligible, based on the very low corrosion rates documented in past inspections of the F-1160 furnace tubes (tube wall thicknesses at or above original nominal) and the fact that process and tube-metal temperatures are not expected to increase with post-Modernization Project conditions. Predicted post-Modernization Project corrosion rates under P-50 sulfur feed conditions, using the McConomy curves, while higher than average measured corrosion rates, are still acceptably low with predicted furnace tube Flag thickness above the 0.1" minimum allowable up to the 2017 shutdown where the furnace will be available for inspection.

- Based on the results from the F-1100 radiant tube sulfidation analysis, recommendations for further review after post-Modernization Project operating conditions are initiated are warranted.

1.9.2.8.5.1 Special Case of “Dead Leg” Sulfidation

A sub-category of high-temperature sulfidation that could also increase with increasing sulfur in the crude feed is sulfidation “dead leg” corrosion. Dead leg corrosion occurs when, due to occasional design features, portions of piping are stagnant with fluid still in them for substantial periods of time (typically years). In these dead legs, high-temperature sulfidation may cause gases to evolve and collect, especially at “high points” in the line.

Non-flowing branch lines and dead legs can have higher sulfidation corrosion rates than the primary flowing line because of H_2S evolved from sulfur compounds, which is then trapped at high points and increases the corrosivity of the system. Dead leg sulfidation corrosion is essentially the same basic mechanism as the high-temperature sulfidation discussed above, except that certain specifics of the environment tend to accelerate the sulfidation corrosion, including:

- Elevated temperatures can result in small amounts of corrosive H_2S being formed over time from the less-reactive species.
- The H_2S forms slowly and is slightly soluble in oil, so it is normally swept away by the flowing stream and does not build up.
- Oil in dead legs and non-flowing lines can be heated by heat tracing, thermosiphon from the flowing stream, etc., creating H_2S .
- H_2S can be trapped and build up in high points of dead legs and non-flowing lines, causing accelerated corrosion.

This damage mechanism could affect all systems where sulfidation corrosion could occur from carbon steel up to 9Cr. Chevron has a special “dead leg” sulfidation inspection strategy to monitor and mitigate dead leg sulfidation, recognizing its particular attributes.

Chevron has stated that they have walked down all sulfidation service piping in the units with sulfur streams greater than 500°F, not only in the crude unit, but throughout the refinery and have identified all of their dead legs. The risk of sulfidation corrosion at these locations will be mitigated by identifying and tracking each dead leg per API-570, *Piping Inspection Code, In-service Inspection, Rating, Repair, and Alteration of Piping Systems* (API-570, 2009). The dead legs will also be subject to increased frequency and extent of inspection over historical practices and which go beyond the industry API -574 *Inspection Practices for Piping System Components* (API-574, 2009). Their new dead leg

program is detailed in their Dead Leg Inspection Strategy (Chevron [n.d.5]). A review of their dead leg inspection strategy shows that they understand how to properly identify dead legs and have established inspection procedures adequate to monitor any accelerated corrosion rates in the dead legs.

1.9.2.8.6 Creep/Stress-Rupture

“Creep” is the damage mechanism where a metal subject to stress at high temperatures for long periods of time may slowly elongate and eventually fail. The only crude/vacuum equipment that could be potentially susceptible to creep damage are the F-1100 atmospheric charge furnace tubes and the F-1160 vacuum tower charge furnace tubes. The creep mechanism by itself does not involve corrosion.

Chevron has conducted calculations suggesting that, due to the low stresses in the F-1100 and F-1160 furnace tubes, creep is not a practical threat for the furnace tubes under normal operations, before or part Modernization Project conditions. However, if sulfidation corrosion causes the tubes to thin enough that the internal pressure stresses become high, then creep might increase the risk of failure by creep/sulfidation. Chevron has conducted a detailed analysis of the F-1100 and F-1160 furnace tubes and has concluded that both the convection section and radiant section tubes in F-1100 should be suitable well beyond 2017 during post-Modernization Project operating conditions. However, Chevron's analysis does not include sufficient data as to the present condition of the F-1100 radiant tubes, based on creep damage. Their analysis of the existing condition of the F-1160 furnace tubes is much more conclusive regarding the suitability for continued service under post-Modernization Project conditions. Therefore, based on some degree of unknown risk from failure of the F-1100 radiant tubes from creep/stress-rupture, recommendations to reduce the unknown degree of risk are warranted. The recommendations, as detailed below, involve the testing of selected 5Cr radiant section tubes for laboratory Omega testing to verify their condition based on creep.

1.9.2.9 Crude Unit Recommendations

The operational and feedstock changes contemplated by the Modernization Project have the potential to increase the risks of accidental releases of hazardous substances associated with increasing damage mechanism activity. Specifically, increased sulfur content of feedstocks, increased hydrogen purity produced by the new hydrogen plant, increased H_2S partial pressures in hydroprocessing plants recycle streams, or potentially higher temperatures in the crude unit based on API gravity ratings could all contribute to increased damage mechanism activity post-Modernization Project, thereby warranting the implementation of the following preventive measures:.

1. Based on the results from the F-1100 radiant tube sulfidation analysis, Chevron should monitor the post-Modernization Project sulfur content being fed to the crude unit and use a 2.0 wt.% sulfur content of feed as a trigger to conduct a review of the F-1100 crude charge furnace to study whether the 5Cr radiant tubes are safe to operate until the 2017 shutdown.
2. Chevron's analysis of the atmospheric column furnace F-1100 does not include conclusive evidence as to the present creep/stress-rupture condition of the tubes. Therefore, it is believed that some additional actions are required in order to lower the risk of a creep/stress-rupture or sulfidation failure in a F-1100 tube under post-Modernization Project operating conditions. Acceptable options to lower the risk of heater tube failures include:
 - Furnace F-1100: Option 1, complete all of the following actions:
 - Complete a full internal tube inspection for F-1100 during the 4th quarter 2017 crude unit turnaround using intelligent pigs.
 - Conduct testing on the two currently available, radiant section tubes from the F-1100 Furnace to verify their existing metallurgical, physical and mechanical properties, plus remaining creep life using accelerated Omega creep testing as an input to decide whether the F-1100 furnace should be retubed during the 2017 shutdown.
 - Conduct additional metallurgical, physical, mechanical and, Omega creep testing on radiant furnace tube samples to be removed during the 2017 shutdown, depending on the results of the Omega testing planned for the 2012 furnace tube samples.
 - In 2017, replace tubes as needed in F-1100 per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.
 - Install at least three Permasense® continuous monitoring ultrasonic thickness gauge monitors in each of the furnace outlet systems. If the monitors indicate an increase in corrosion rates greater than 5 mpy, review the need for additional mitigation actions.
 - Furnace F-1100: Option 2:
 - Retube the F-1100A/B furnace during the 2017 turnaround with 9Cr or higher alloy tubes.

3. The vacuum column furnace, F-1160, is constructed of 5Cr radiant tubes. The recommended actions for this furnace are as follows:
 - Complete a full internal tube inspection for F-1160 during the 2017 crude unit turnaround using intelligent pigs.
 - In 2017, replace tubes as needed in F-1160 per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.
4. Conduct laboratory analyses to more accurately determine crude and crude blend sulfur speciation and H_2S evolution, which could be used to predict likely crude corrosion rates. This should be done by end of the fourth quarter of 2015.
5. Develop integrity operating windows (IOWs) for critical crude unit operating parameters per the guidelines in the draft version of API-584. This should be done by end of the third quarter of 2014.
6. The Crude Splitter software is used to predict the distribution of the sulfur in the atmospheric tower sidecut and bottom streams. Verify the Crude Splitter predicted sulfur results with post-Modernization Project data on the sulfur containing streams within the first year of operation following the implementation of the Modernization Project if the trigger points (2.25 wt.% sulfur and 2.75 wt. % sulfur) noted in the Modernization Project Reliability Program are reached.
7. Revise the asset integrity plans for the crude unit atmospheric column reflux drum, V-1100, the stabilizer column reflux drum, V-1190, and the vacuum column overhead seal drum, V-1160, to include inspection for Wet H_2S damage. An external automatic ultrasonic testing inspection of representative sections of the "water wet" portions of V-1100, V-1160 and V-1190 vessels should be conducted as a baseline before the start of post-Modernization Project conditions, then checked externally again approximately one year after the start of the Modernization Project conditions. In addition, a one-time internal inspection should be conducted of these vessels during the scheduled maintenance turnaround after the start of Modernization Project conditions, using eddy current or other approved internal inspection techniques per the Chevron Wet H_2S program.
8. Develop a process monitoring plan for the crude unit overhead to confirm any impacts of the increased sulfur levels. The monitoring plan should be implemented post-Modernization Project and should include:

- Process sampling of the accumulator for pH, chlorides, iron and H₂S content. Compare to established integrity operating windows (IOWs);
 - Monitor desalter pH;
 - Analyze the atmospheric tower post-Modernization Project to quantify if, and how much, increased H₂S is in the overhead system resulting from the increased sulfur feed to the unit;
 - Higher mercaptan crudes could lead to increased sulfidation corrosion rates in the jet or kerosene cuts. Modify asset integrity plans to monitor for potential increased corrosion if higher mercaptan crudes are run compared with current and historical crude and crude blends; and
 - Review the asset integrity plan to ensure that the Permasense continuous ultrasonic monitoring locations are properly placed to ensure early detection, should corrosion rates increase significantly beyond expectations per the McConomy curve predicted rates.
9. The reliability review for the Modernization Project has identified seventeen (17) piping circuits in the crude unit that warrant replacement based on post-Modernization Project operating conditions. The Refinery has committed to accelerating the replacement of these circuits during the next scheduled turnaround for the crude unit, no later than end-of-year (EOY) 2017, as shown above in Table A4.13-REL-5.

The reliability review for the Modernization Project has also identified four partial piping and valve replacements in the crude unit that warrant replacement based on reasonably foreseeable post-Project operating conditions. Chevron has committed to accelerating the replacement of these partial components during the next scheduled turnaround for the crude unit, no later than end-of-year (EOY) 2017, as shown in Table A4.13-REL-6 above.

10. As with all piping circuits in the Facility, new 9Cr circuits should be regularly monitored and inspected. Beginning one year from commencement of Modernization Project operations, the Facility should provide annual reports to the City summarizing the monitoring and inspection results for the identified circuits as noted above. These reports shall, at a minimum, include the following information:
- A list of all piping circuits identified as potentially susceptible to sulfidation corrosion, including specifically, piping circuits identified during the reliability review for the Modernization Project as being susceptible to sulfidation corrosion and subject to potential process changes;

- A list of components identified through the 100% component inspection conducted following the August 6, 2012 fire pursuant to the methodologies set forth in the *API-939-C - Guidelines for Avoiding Sulfidation (Sulfidic) Corrosion Failures in Oil Refineries* and *Updated Inspection Strategies for Preventing Sulfidation Corrosion Failures in Chevron Refineries* (API-939-C, 2009) that may lack sufficient thickness to remain in service until the next scheduled turnaround;
 - A description of the solutions implemented with respect to components of insufficient thickness identified above;
 - A description of the current fixed inspection frequency for carbon steel piping circuits identified as potentially susceptible to sulfidation corrosion;
 - A description of any findings from inspection and monitoring of the piping circuits identified during the reliability review for the Modernization Project as being susceptible to sulfidation corrosion and subject to potential process changes that indicate that any of these circuits lack sufficient thickness to remain in service until the next turnaround and a description of the solution to be implemented with respect to these circuits.
11. Chevron shall obtain all required permits for replacement of these piping circuits pursuant to the California Building Standards Code, inclusive of the California Fire Code, and, once the piping circuits are replaced, shall submit copies of closed permits to the Planning Department to demonstrate compliance with this commitment.
12. Re-evaluate and report on the validity of post-Modernization Project operating and process assumptions made during the reliability review. The reliability review for the Modernization Project assumed that certain operating conditions would exist once the Project is implemented, including projected temperatures, sulfur levels, and corrosion rates for various process units and individual piping circuits. These assumptions were based on either the P50 sulfur case or a conservative 3.28 wt.% (P90) sulfur case. In order to verify that the assumptions made during the reliability review were accurate, the Facility will undertake the following actions:
- When the sulfur weight percent of crude oil processed at the Facility reaches 2.25 wt.% sulfur on an annual average, and then again when it reaches 2.75 wt.% sulfur annual average, the Facility shall:
 - Assemble a reliability review team that will be made up of appropriate subject matter experts (SMEs), including a Senior

Process Engineer, Senior ETC Materials and Corrosion Engineer, Refinery Materials Engineer and Process Operator;

- For all damage mechanisms identified as being affected by the Project, and using then-current inspection and/or monitoring data, the reliability review team shall review, analyze, and, as necessary, update, the data and conclusions prepared during the reliability review for the Modernization Project to determine whether the assumptions made and conclusions reached during the reliability review accurately reflect actual post-Project operating conditions.
- Review any changes associated with sulfur speciation that have resulted from the Project.
- Review any operational or process changes that have occurred post-Project.
- Make recommendations concerning material upgrades and /or enhanced inspection opportunities as necessary based on the re-evaluation.
- Report on the results of this re-evaluation and any resulting recommendations.

13. Installation and Monitoring of Additional Permasense® Monitors on Identified Circuits

Since the beginning of 2013, the Refinery has installed a total of 117 Permasense® probes in the crude unit on six piping systems consisting of carbon steel, 5 Chrome, and 9 Chrome materials. Permasense® is the trade name of a type of high-temperature ultrasonic device that is mounted on a pipe or vessel, and penetrates through insulation. It has wireless sensors that provide periodic equipment thickness readings (at variable intervals, but currently set to collect thickness data twice a day) to monitor a system. Due to noise and sensitivity, the technology is limited to longer-term trending (days and months vs. hours) which is appropriate for piping subject to sulfidation conditions with its predictable rates.

The six piping systems on which the sensors were installed were chosen based on past and anticipated projected future operating conditions. The wireless probes collect pipe wall thickness data while the plant is operating, and are used to monitor corrosion rates. This long-term online monitoring program will be part of the reliability program to ensure safe operation of equipment after the Modernization Project commences operations. Thirteen of these piping circuits with Permasense® monitors installed have been

identified for replacement and will be upgraded to 9 Chrome pursuant to the planned piping circuit upgrades described above, and the Permasense® monitors will not be reinstalled on these circuits. In addition, as part of the Project, the Refinery will install at least 25 additional Permasense® monitors on carbon steel circuits in the SDA unit. These sensors are being installed to confirm the predictive model results that there will be little-to-no sulfidation corrosion in the SDA unit post-Project.

Data from the Permasense® monitors will be utilized in the reporting obligations.

14. Develop and implement physical or administrative controls to assure that carbon steel piping components downstream of high sulfur temperature sulfur streams operating > 500°F are not inadvertently placed into continuous (e.g., placement of a warning tag, locked valve, double-block-and-bleed valves or other measures). This should be completed prior to the commencement of Modernization Project operations.
15. Higher mercaptan crudes could lead to increased sulfidation corrosion rates in the jet or kerosene cuts. Conduct a historical review of purchased crudes and processed crude blends for the 90% confidence level of highest mercaptans processed and use this statistical number to set a review flag in the crude and gas oil acceptance procedure. If higher mercaptans crudes are run at the Facility, review the Permasense® corrosion rate data from this time period as part of the crude management of change lookback. This should be completed prior to the commencement of Modernization Project operations.
16. Add corrosion monitoring locations (CMLs) to the crude unit atmospheric column overhead piping (circuit 0955-003-001) at the termination of the overlay. This should include the termination of cladding in the vertical section of piping as well as the termination point at the inlet to the E-1101's. Review other, similar locations in the crude unit for missing dissimilar metal interface thickness monitoring locations (TMLs). This should be completed prior to the commencement of Modernization Project operations.

1.9.3 Hydroprocessing

1.9.3.1 Process Description

Hydroprocessing refers to the refining process that changes the chemical compositions of hydrocarbons by passing them over a catalyst in the presence of hot, high-pressure hydrogen. The catalyst is contained in one or more reactor vessels, which typically operate at temperatures of 600-850°F and at pressures of several hundred to several thousand pounds per square inch. The objective of hydroprocessing is one or both of the following:

- To remove sulfur and nitrogen compounds (“hydrotreating”)

- To alter the molecular structure of the oil to generate products of greater value (“hydrocracking”)

The feed to the HP units are generally naphtha or gas oils from the crude unit, or purchased feed streams from other refineries. The products coming from the HP units are de-sulfurized or de-nitrified hydrocarbon streams that are fed to other units for further processes, or final products such as gasoline, light gases, etc.

The hydrocarbons in the HP units are not corrosive. Corrosion is the result of non-hydrocarbon components such as sulfur, nitrogen, or chlorides in the system. Sulfur compounds in the feed convert to corrosive H_2S . Nitrogen compounds convert to ammonia, which react with H_2S to form corrosive ammonium bisulfide. Chlorides convert to HCl, which in turn reacts with ammonia to create ammonium chloride. Finally, at high enough temperatures and pressures hydrogen is capable of damaging metals.

The major parts of a hydroprocessing unit are:

- Unit feed and preheat system which raises the feed temperature and pressure. This includes piping and feed/effluent heat exchangers. Hydrogen is also introduced in this portion of the plant. The hydrogen enters at relatively cool temperatures such that alloy steels are not needed to combat sulfidation or high-temperature hydrogen attack.
- Feed furnaces are all 300-series stainless steels selected to avoid both sulfidation and HTHA, with typically 347SS used to minimize risk of polythionic SCC.
- The reactor loop uses 300-series stainless steels as cladding material for the reactors, and solid 300SS piping. The process exiting the reactors is used for preheat to the feed using the feed/effluent exchangers, then travels on to downstream separation vessels.

The reactor contains catalyst(s) and typically operates high pressures and temperatures. Hydrogen is injected into the feed which is heated in feed/effluent exchangers and a furnace. In the reactor(s), sulfur and nitrogen compounds are converted to H_2S and ammonia. The reactor effluent is cooled through various heat exchangers and typically one or more air coolers, and then is sent to the separator vessels. Water is typically injected for fouling/corrosion control upstream of the air coolers. The gas phase from the separators consists primarily of hydrogen with some very light hydrocarbons and a high percentage of the H_2S generated in the reactors. Gas from the separator is recycled back to the feed through a compressor, with some make-up hydrogen also being added. The liquid hydrocarbon phase from the separators is sent through pressure let-down valves to the fractionation section of the unit. The water phase from the separators contains almost all of the ammonia formed in the reactors. The

dissolved H_2S in this water combines with the NH_3 to form ammonium bisulfide (NH_4HS), as well as inorganic salts such as ammonium chloride. Traces of cyanide may also be present, depending on the feed to the unit.

As the process continues to the products section it is cooled further, and the gases (hydrogen, light gases) are separated from the liquids (hydrocarbons, water). Towards the end of this section large air coolers are used; this portion of the process is typically termed the Reactor Effluent Air Cooler (REAC) section. The corrosiveness of the REAC systems vary widely, depending upon the amount of the contaminants and the process, which in turn necessitates varying degrees of alloying in this section of the plant. Water wash systems are used for removing the corrosives from the reactor effluent stream. Chevron documents their process control, alloy and water wash strategies to control REAC ammonium bisulfide corrosion in the HP-002 "Reactor Effluent Air Cooler Piping and Equipment Corrosion Control Guidelines" Best Practice (Chevron [n.d.3]).

Downstream of the separators the hydrocarbon goes to the hydroprocessing distillation section which is primarily carbon steel, except for the distillation furnace tubes, which have shown erratic sulfidation behavior in the industry.

The Chevron refinery has eleven HP units, as detailed in Table A4.13-REL-7 below. These units have various degrees of damage mechanism susceptibility, based on post-Modernization Project conditions.

Of the eleven HP units, four of the units will see no impact of increased sulfur in feedstock:

- Chevron states that the GHT will not see an increase in feed sulfur because the sulfur content of the fluid catalytic cracker gasoline, which feeds the GHT, will not change.
- Chevron states that the ISO, LNF and HNF units will not see an increase in feed sulfur as they are all 2nd-stage units. These second stage units process the product from the 1st-stage TKN, LNC, and HNC units. While these three 1st-stage units will see a higher sulfur feedstock, they must still desulfurize and denitrify to the same level as current specifications to protect the 2nd-stage catalyst. Therefore, the 2nd-stage units (ISO, LNF, and HNF) will not see higher sulfur levels.

The TKN, LNC, and HNC units will see higher feed sulfur (Chevron [n.d.7]). In addition, the JHT, DHT, and TKC units will also see an increase in feed sulfur levels. However, the reactor inlet and outlet piping, which see process temperatures above the threshold sulfidation temperature ($\sim 450\text{-}500^\circ\text{F}$), are 300-series stainless steel to mitigate the high-temperature sulfidation corrosion so that there is no significant increase in corrosion risk in this area of the unit resulting from the higher sulfur feed. The NHT will also see a modest increase in sulfur but it does not have any carbon steel in the plant operating above 450°F ; it

TABLE A4.13-REL-7 CHEVRON RICHMOND HYDROPROCESSING UNITS

Unit	Description	Feed Source	Modernization Project
GHT	Fluid Catalytic Cracker Gasoline Hydrotreater	Fluid Catalytic Cracker Unit	Note 1
NHT	Naphtha Hydrotreater	Crude Unit Stabilizer	Note 2
JHT	Jet Hydrotreater	Crude Unit #1 & #2 Sidecut	Note 2
DHT	Diesel Hydrotreater	Crude Unit #3 Sidecut	Note 2
TKC	Fluid Catalytic Cracker Feed Hydrotreater	SDA unit DAO, Imports	Note 2
TKN	Stage I Denitrification	Crude Unit #4 & #6 Sidecut, Imports	Note 3
ISO	Stage 2 Isocracker	TKN	Note 1
LNC	Light Neutral Hydrocracker	Crude Unit #7 Sidecut	Note 2
LNF	Light Neutral Finisher	LNC	Note 1
HNC	Heavy Neutral Hydrocracker	Crude Unit #8 Sidecut	Note 2
HNF	Heavy Neutral Finisher	HNC	Note 1

Note: 1 – No Changes

2 – Sulfur increase in the P-50/P-90 Case and Sulfur and Nitrogen increases in the Sensitivity analysis

3 – Sulfur and Nitrogen increases in the P-50/P-90 Case and Sulfur and Nitrogen increases in the Sensitivity analysis

has 1 ¼ Cr- ½ Mo chrome piping in the reactor inlet and outlet piping, but it is all operating below 550F, which per the McConomy Curve is equivalent to less than a 3 mpy corrosion rate.

1.9.3.2 Corrosion and Materials Selection in Hydroprocessing Units ⁶

1.9.3.2.1 Reactor Loop— General

The materials of construction used in the reactor loop of a hydrotreater must be resistant to the following forms of corrosion damage:

- High-temperature hydrogen attack.
- High-temperature H₂-H₂S corrosion.
- Aqueous corrosion by ammonium bisulfide

⁶ C.A. Shargay, A.J. Bagdasarian, J.W. Coombs, W.K. Jenkins, Corrosion in Hydroprocessing Units, NACE International, Houston, TX.

- Stress corrosion cracking by chlorides, sulfur acids, or sulfides.
- Naphthenic acid corrosion (if feed has a high neutralization (TAN) number).

1.9.3.2.2 Reactor Feed System

Up to the point of recycle hydrogen addition, the hydrocarbon feed to the plant is generally noncorrosive to carbon steel, except when the feed contains H_2S at $>500^\circ F$ or naphthenic acids at $>450^\circ F$. In those cases where the plant feed is corrosive because of high temperature and dissolved H_2S , corrosion can be minimized by using the appropriate alloys to resist high-temperature sulfidation.

After the point of recycle hydrogen addition, progressively higher alloys are required to resist both hydrogen attack and high-temperature H_2 - H_2S corrosion as the feed is heated. The threshold temperature for H_2 - H_2S corrosion depends on the amount of H_2 introduced with the recycled gas, but in most plants it is on the order of $\sim 500^\circ F$. Above this temperature, austenitic stainless steels are typically used for piping and exchangers to provide corrosion resistance. Exchanger bundles are typically Type 321SS, and the shells and channel sections are clad with Type 321SS or Type 347SS. However, Type 347SS is normally used for cladding on thick-walled components, as there is a risk that Type 321SS might sensitize during the lengthy fabrication heat treatment.

Hydrogen attack becomes a materials consideration in the reactor feed system when above about $450^\circ F$. Although stainless steels are immune to hydrogen attack under plant conditions, hydrogen can diffuse through stainless cladding to attack the base metal. Based on these considerations, the reactor feed system is normally carbon steel where temperatures are below about $450^\circ F$. Within a relatively narrow temperature span of $450^\circ F$ to 500 - $550^\circ F$, 1 1/4Cr-1/2Mo or 2 1/4Cr-1 Mo may be used where resistance to hydrogen attack is required. Above $500^\circ F$ to $550^\circ F$, piping will generally be Type 321SS steel to prevent H_2 - H_2S corrosion and exchanger channel sections and shells will be stainless clad, with 1 1/4Cr-1/2Mo or 2 1/4Cr-1 Mo base metal used as needed for protection from hydrogen attack.

1.9.3.2.3 Reactor Feed Furnaces

Tubes and return bends are commonly constructed of Type 347 SS, although Type 321SS has also been used. Return bends should be wrought rather than cast, both to obtain superior quality and because castings tend to develop sigma embrittlement above $1000^\circ F$.

1.9.3.2.4 Reactors

Reactors are constructed of low alloy steel for hydrogen attack reasons and are protected against H_2 - H_2S corrosion by austenitic SS roll-bond cladding or weld overlays. The most common base metal for reactors is 2 1/4Cr-1Mo steel, although 3Cr-1Mo has also been used. Alloys lower than 2 1/4Cr-1Mo are

occasionally used when temperature and hydrogen partial pressure permit. Reactor internals are constructed of an austenitic stainless steel, typically Type 321SS or 347SS. Aluminizing is sometimes specified for catalyst support screens to help prevent corrosion which could result in plugging from scales. Aluminum is essentially immune to H_2S corrosion.

1.9.3.2.5 Reactor Effluent System

In the reactor effluent system, from reactor to the reactor effluent/stripper feed exchanger, materials selection is based on the same criteria as in the reactor feed system. Stainless steels should be used for corrosion protection until the stream is cooled below the threshold for high-temperature H_2 - H_2S corrosion (about 500°F). Alloys resistant to hydrogen attack should be used down to about 450°F. From the reactor outlet temperature down to about 500°F, piping and exchanger bundles are generally Type 321SS, and exchanger shells are Type 321SS or Type 347SS clad. Base metals used for exchanger shells may again be 2 1/4 Cr-1 Mo or 1 1/4 Cr-1/2Mo, depending on the alloy content required to provide resistance to hydrogen attack. Below the 450°F hydrogen attack threshold, carbon steel is generally used.

1.9.3.2.6 Reactor Effluent—Distillation Feed Exchangers

Many plants use an exchanger that cools the reactor effluent stream by exchanging it with the separator liquid on its way to the first distillation column after the reactor system. Such exchangers pose special corrosion problems. One problem is entrainment of small quantities of salt-containing water in the separator liquid. As this stock is heated, this water evaporates, leaving salt deposits on the tubes. Carbon steel tubes may corrode in the presence of these deposits. Tube life is highly variable, depending primarily on temperature and the amount of salt entrained into the exchanger. Chrome-moly steels perform no better than carbon steel in this instance. Austenitic stainless steels are likely to fail by chloride stress corrosion cracking or underdeposit, ammonium chloride pitting. In general, austenitic stainless steel tubes should not be used in this service except in existing plants where good performance has been proven. This results in the materials selection for these tubes being a choice between carbon steel and expensive alloys such as Alloy 825, AL6XN or Alloy 625. For new plant construction, carbon steel is generally specified. The exception is when reactor effluent-side temperatures are so high that a more resistant alloy is required for high-temperature H_2S corrosion. Under these conditions, and for replacement of existing exchanger bundles where carbon steel shows inadequate life, an alloy with good resistance to chloride corrosion and sec should be used.

1.9.3.2.7 Effluent Air Coolers

Effluent air coolers are probably the equipment most vulnerable to ammonium bisulfide corrosion. Most plants initially install carbon steel tubes for effluent air coolers, however some have installed duplex stainless steel or Alloy 800 or 825.

In some cases, carbon steel has experienced corrosion failures due to excessive velocities, oxygen in the injection water, maldistribution of flow or other causes. Where such problems have occurred and tube materials have been upgraded, Monel 400, Alloy 800 or 825 has been used for tube replacement. The Alloy 800 series provides resistance to high concentrations of ammonium bisulfide. However, there have been cases of polythionic SCC of Alloy 800 piping and equipment. Alloy 825 is stabilized and contains molybdenum, and hence, has superior resistance to polythionic and chloride SCC, as well as NH_4HS corrosion. Duplex stainless steels such as Type 2205 are increasing in use for tubes and header boxes. Although they should have good NH_4HS corrosion resistance, austenitic stainless steel tubes have seldom been used in this service, due to the risk of chloride stress corrosion cracking. In the past, several companies have used Type 410SS or Type 430SS tubes in effluent air coolers but failures have occurred by isolated pitting. Alloy 400 (Monel) has been used successfully for a few air coolers in the past, but may not be suitable for units with high levels of NH_4HS . In some plants, effluent air coolers have been constructed with stainless steel ferrules at both inlet and outlet ends of the steel tubes. This provides increased protection against tube end erosion-corrosion. Ferrules have also been installed with good results in existing steel air coolers where tube end attack had occurred. When ferrules are used, the ends of the ferrules must be tapered to provide a smooth flow transition. Carbon steel header boxes may also experience corrosion if velocities or turbulence are excessive. Industry experience indicates that the majority of those effluent air coolers experiencing tube corrosion will also suffer attack on header boxes. For this reason, alloy header boxes should be used with alloy tubes. Although ammonium bisulfide corrosion is the major concern, failures can also occur from NH_4Cl corrosion. NH_4Cl condenses at temperatures above the NH_4HS condensation temperature. The deposits are hygroscopic and often provide enough cooling of the metal to result in water condensation and acid formation beneath the deposit. No practical materials upgrade will resist this problem, so it is usually avoided by raising the process temperature.

1.9.3.2.8 Effluent Air Cooler Inlet and Outlet Piping

The piping upstream (from the water injection point) and downstream of the effluent air cooler is often subject to the same NH_4HS erosion-corrosion problem as the air cooler. Corrosion is typified by highly localized metal loss at bends, tees, and other points of local turbulence. Such corrosion is most likely to occur when the process fluid is high in NH_4HS concentration, and where fluid velocities are high. Carbon steel piping should be designed with a 20 ft./s maximum limit. When new units are predicted to be extremely corrosive, when high reliability is desired, when periodic rigorous inspection is considered difficult or uneconomical, or when corrosion occurs in existing plants, alloy piping is often installed. Alloy 800, Alloy 825, Type 316L SS (for application below 140°F), Alloy 20 and duplex alloy 2205 have been used. The upper velocity limit for alloy

piping can be increased to approximately 30 ft./s. When carbon steel is used, it generally has a high corrosion allowance of 1/4 in. Balanced inlet and outlet piping is also typically specified. This type of corrosion can also occur downstream of the separators in lines handling wet hydrocarbons or foul water, and in other piping where the process fluid contains appreciable quantities of H_2S and ammonia, and any quantity of liquid water.

1.9.3.2.9 Separator Vessels

Except for units operating with greater than 10% NH_4HS , separator vessels normally have very low corrosion rates. The major concern is that the incoming process fluid may impinge on the shell or heads, causing localized NH_4HS corrosion at that point. Typically, installing a stainless steel impingement baffle or wear plate of adequate size to shield the entire impingement area avoids the problem. The only major exception is the hot separator in a hydrotreater design where the first separator operates at or near the full reactor outlet temperature. Accordingly, stainless-clad construction is used to provide resistance to high-temperature H_2-H_2S corrosion. The base metal is chosen to resist hydrogen attack at operating temperature. Cold separators containing sour water may be subject to severe HIC and SOHIC. On recent units, these vessels have been built of HIC resistant steel or entirely clad with a 300 series stainless steel.

1.9.3.2.10 Recycle Hydrogen System

Significant corrosion is seldom encountered in this part of the system. The only potentially serious materials problem is SSC of the recycle gas compressor, as it typically contains materials like 4330 or 4140 steel, which can be susceptible to SSC if too high in hardness. To avoid this problem, it is common practice to limit the strength and hardness of compressor materials.

1.9.3.2.11 Distillation Section

Construction materials used in the distillation section are chosen on the basis of the need to resist high-temperature H_2S corrosion. Where H_2S is present at temperatures above about 500°F (depending on H_2S concentration), alloy is required. Where H_2S is absent or where temperatures are below 500°F, carbon steel is generally adequate. Where the temperature exceeds 600°F, corrosion may occur at H_2S levels as low as 1 ppm. Aside from the possibility of high-temperature H_2S corrosion, the only other corrosion concern is in the overhead of the distillation column. Overhead condensers and drums exposed to both water and H_2S may experience moderate corrosion, but this is rarely a serious problem and may be further controlled by injection of a filming amine inhibitor. In the overhead systems, many refiners may apply materials and fabrication controls to minimize wet H_2S cracking; however, HIC steels are not typically used in this location.

1.9.3.3 Hydroprocessing Damage Mechanisms

Based on the reported feeds to the seven impacted units, the following damage mechanisms were to be potentially impacted, based on post-Modernization Project conditions: (1) high-temperature sulfidation; (2) H_2 - H_2S Corrosion; (3) ammonium bisulfide corrosion; (4) wet H_2S damage and (5) HTHA. The damage mechanisms ammonium chloride, creep/stress rupture, PTASCC, temper embrittlement and, chloride SCC were determined to not change from existing conditions due to reasons discussed previously in *Section 1.7, Damage Mechanisms Active in the Facility and Impacted by the Modernization Project's Operational and Feedstock Changes* and *Section 1.8, Damage Mechanisms potentially Active in the facility impacted units but Determined to be not affected by the Modernization Project* of this Appendix.

1.9.3.3.1 High-Temperature Sulfidation and H_2 - H_2S Corrosion

HP units typically have two versions of high-temperature sulfidation corrosion possible:

1. High-temperature sulfidation corrosion in which significant hydrogen is not involved (essentially the same as described in the crude unit). This is often referred to as H_2S corrosion.
2. High-temperature sulfidation corrosion in which significant hydrogen is involved. This is often referred to as H_2 - H_2S corrosion.

In the Chevron HP units the hydrogen is either introduced into carbon steel or low alloy piping early in the process where the temperatures are still relatively low (~400°F), below sulfidation damage and HTHA initiation temperatures, or is injected into 300 series SS. Therefore, the HP units are exposed to the H_2 - H_2S version of the corrosion until the hydrogen is removed near the end of the process. Therefore, based on the conservative use of 300-series stainless steel piping and equipment in H_2 - H_2S service above ~450°F the Modernization Project will have no reasonably foreseeable impact related to high-temperature sulfidation.

At the distillation (fractionation) section of the hydroprocessing plants located at the back end of the HP units, much of the hydrogen and H_2S has been removed but the process stream is still sour. The industry has found that the corrosion behavior in the distillation section of HP units industry wide has been erratic (API-939-C, 2009) and this hydroprocessing distillation section corrosion issue is under continuing study in the industry. Therefore, Chevron needs to remain vigilant for possible corrosion in the distillation sections of the plants.

1.9.3.3.2 Ammonium Bisulfide Corrosion

As discussed in other sections of this Appendix, ammonium bisulfide forms from the chemical combination of H_2S and ammonia, typically in aqueous solutions where the two species are contacted with liquid water or by direct condensation from a vapor phase if solubility limits are exceeded. The ammonia and H_2S are created in the reactor section of HP units from catalytic conversion of sulfur and nitrogen in the feed to the unit.

The industry best practice document for ammonium bisulfide corrosion in hydroprocessing plants is API-932-B, *Design, Materials, Fabrication, Operation, and Inspection Guidelines for Corrosion Control in Hydroprocessing REAC Systems* (API-932-B, 2012). API-932-B does not provide specific guidance on inspection frequencies but general guidance on variables affecting corrosion rates and materials selection criteria. Chevron also has developed their own proprietary hydroprocessing Best Practice Document, HP-002 -*REAC Piping and Equipment Corrosion Control Guidelines* (Chevron [n.d.3]), that incorporate elements of API -932-B but add Chevron specific guidelines to provide guidance for acceptable operating conditions, based on plant metallurgy with regards to ammonium bisulfide corrosion.

Ammonium bisulfide corrosion in reactor effluent streams is influenced by three parameters: (1) H_2S partial pressure; (2) ammonium bisulfide concentration; and (3) velocity (shear stress). Chevron's HP-002 guideline defines operating severity ranges for ammonium bisulfide corrosion where each severity range has specified material selection, process limits, and inspection requirements. Chevron has a refinery REAC Corrosion Control Project underway which is planned for completion prior to the Modernization Project. This upgrade project was initiated to address changes made to HP-002 in 2011, which was revised to include the influence of H_2S partial pressure on ammonium bisulfide corrosion rates. Until certain metallurgy upgrades are made to TKN and Sour Water System the refinery crude blend has been limited to keep operations within the new HP-002 guidelines (Chevron [n.d.9]).

As mentioned above, Chevron has its own proprietary Best Practice document (HP-002) for controlling ammonium bisulfide corrosion. They calculate H_2S partial pressure in the reactor effluent using a proprietary refinery sour gas system simulation model. This model predicts the H_2S concentration in the High Pressure Separator. Multiplying the calculated H_2S concentration times the operating pressure yields an H_2S partial pressure. The ammonium bisulfide (NH_4HS) concentration in wash water is based on the degree of nitrogen conversion to ammonia that the reactor system will accomplish. The calculated ammonia in the reactor effluent vapor is removed by a water wash where it combines stoichiometrically with H_2S to generate ammonia bisulfide. These two parameters (H_2S partial pressure and ammonium bisulfide concentration) along with velocity

define the operating regime severity of the reactor effluent system according to a set of internal guidelines specified in HP-002.

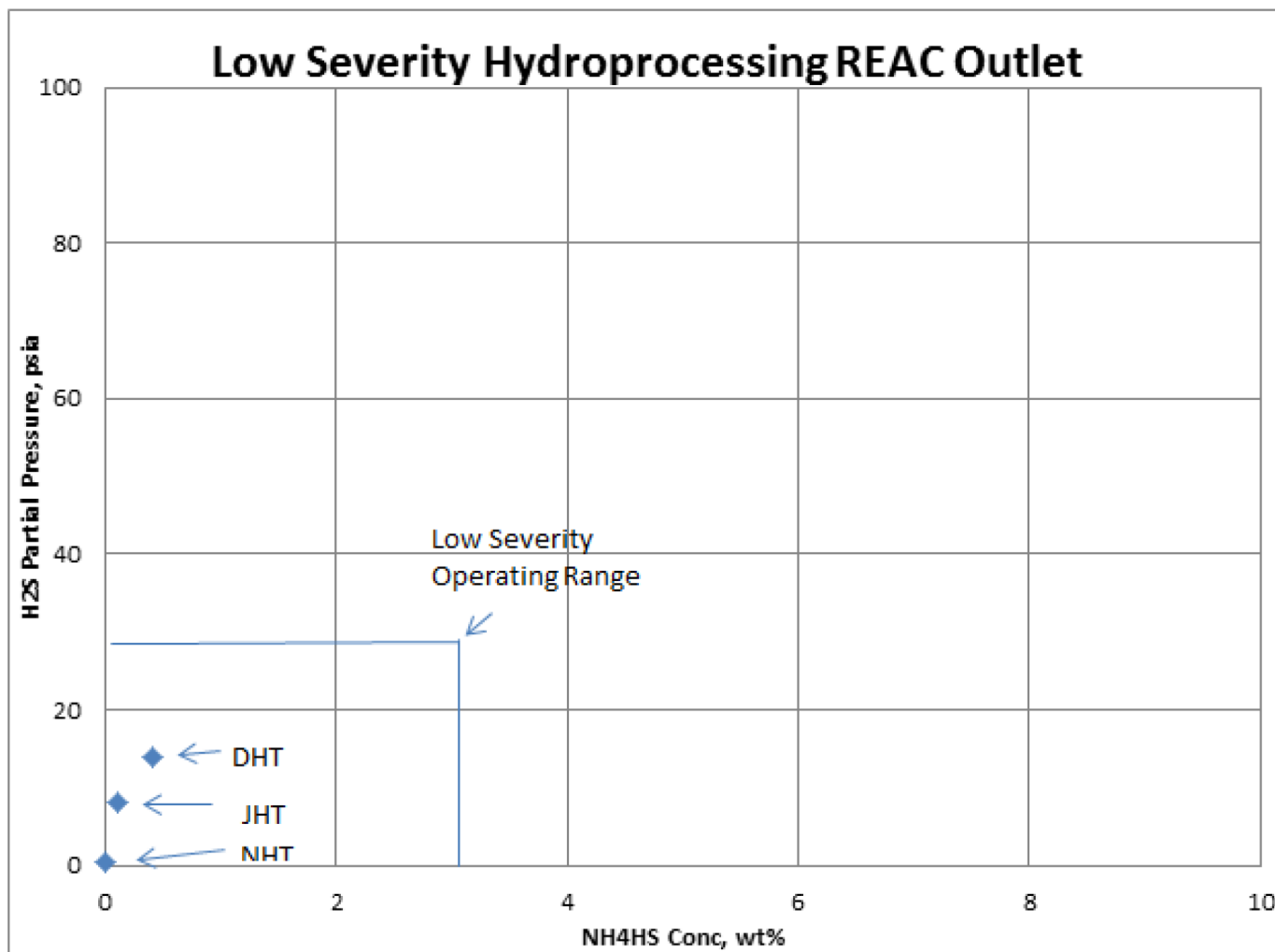
HP-002 Best Practice specifies design, materials and process parameters such that if the plant(s) stay within the parameters, corrosion remains low (less than 10 mpy carbon steel, 5 mpy REAC air cooler tubes, 5 mpy alloy piping, 3 mpy alloy REAC tubes). HP-002 also prescribes equipment inspection monitoring and process monitoring and control that take into account unit specific metallurgies and design that are used to verify HP-002 predicted corrosion rates. An important process parameter in controlling NH_4HS corrosion is the use of a water wash to absorb the NH_4HS from the overhead vapor stream. The use of the water wash permits the control of maximum NH_4HS content in the sour water within practical limits regardless of the amount of NH_3 being formed in the reactor. Therefore, because of the water wash, the absolute values of nitrogen in the feed to the HP unit become less important. See the below figures A4.13-REL-7 to A4.13-REL-11 for calculated pre- and post-Modernization Project corrosion rates for the HP high severity units, including the high sensitivity nitrogen case.

As an example of how the data points were derived, Table A4.13-REL-8 below gives feed property assumptions and resulting ammonium bisulfide and hydrogen sulfide partial pressures for the post-Modernization Project high nitrogen case shown by the yellow dots in the graphs.

TABLE A4.13-REL-8 HIGH SEVERITY HYDROPROCESSING UNIT P50 SULFUR AND NITROGEN FEED CASES VS. THE HIGH NITROGEN SENSITIVITY CASE

NH ₄ HS and H ₂ S PP Summary				
Crude Case:	1877 ppm N			
Crude Sulfur, wt.%	2.36			
Feed Property				
	Sul, wt.%	N, PPM	NH ₄ HS, wt.%	H ₂ SPP, psia
TKN	2.1	984	9.20	127
LNC	3	1308	8.20	102
HNC	3.2	1930	11.70	143
TKC	3.2	2304	14.9	92

The analysis included foreseeable nitrogen levels, including those under the more probable P-50 sulfur case and the improbable P-90 sulfur case, which includes a nitrogen range of 1138 ppm to 1541 ppm. Additionally, because the analysis in *Appendix 4.3-MET* concludes that “it is likely that the crude oils processed by the Refinery if the Modernization Project is implemented have the

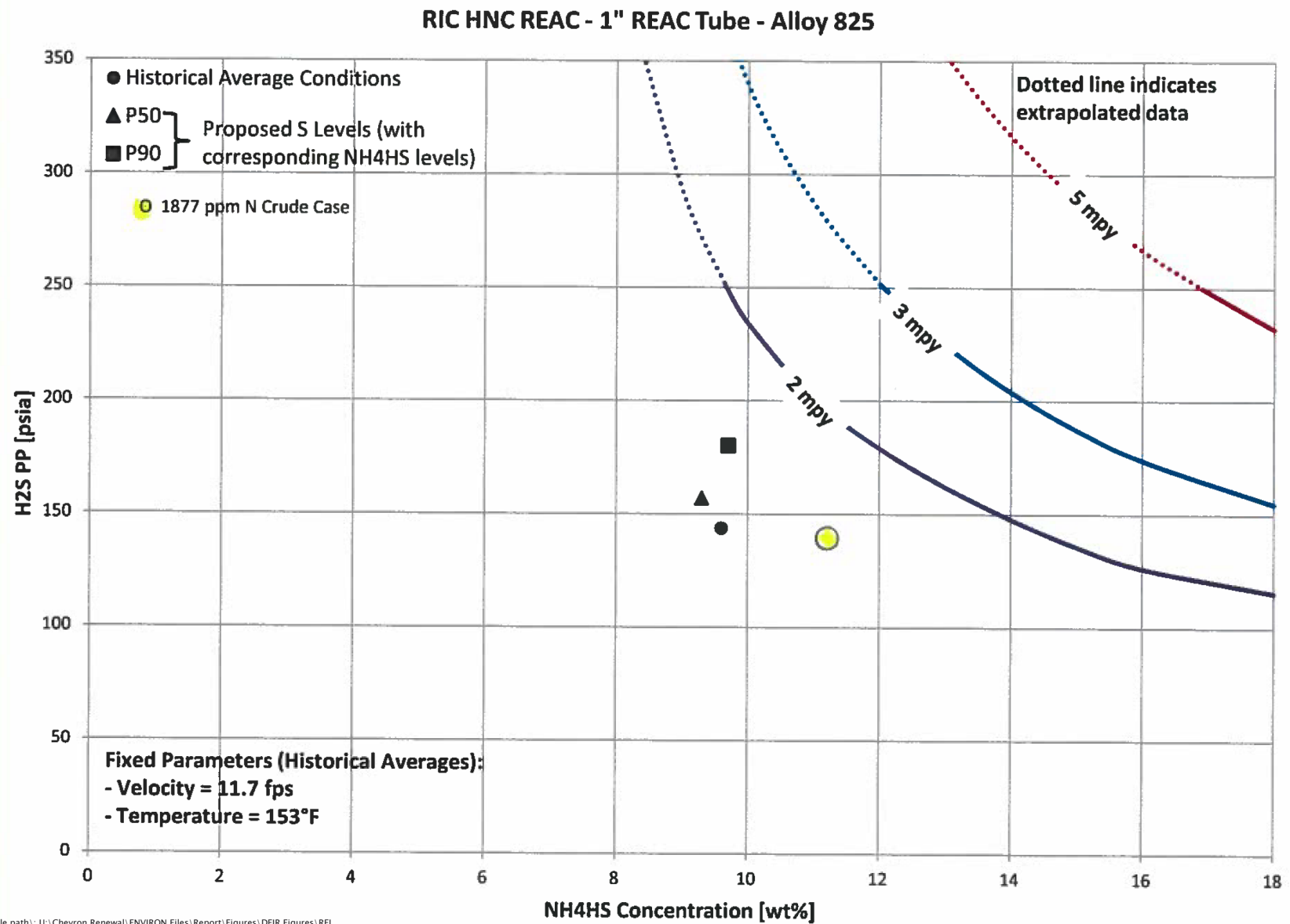


02.20.2014 file path: U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL

Source: Chevron (T85)

Figure A4.13-REL-7

Chevron Refinery Modernization Project EIR
Predicted Sour Water Calculator Results for the Low Severity Hydroprocessing Unit REAC Outlet Piping



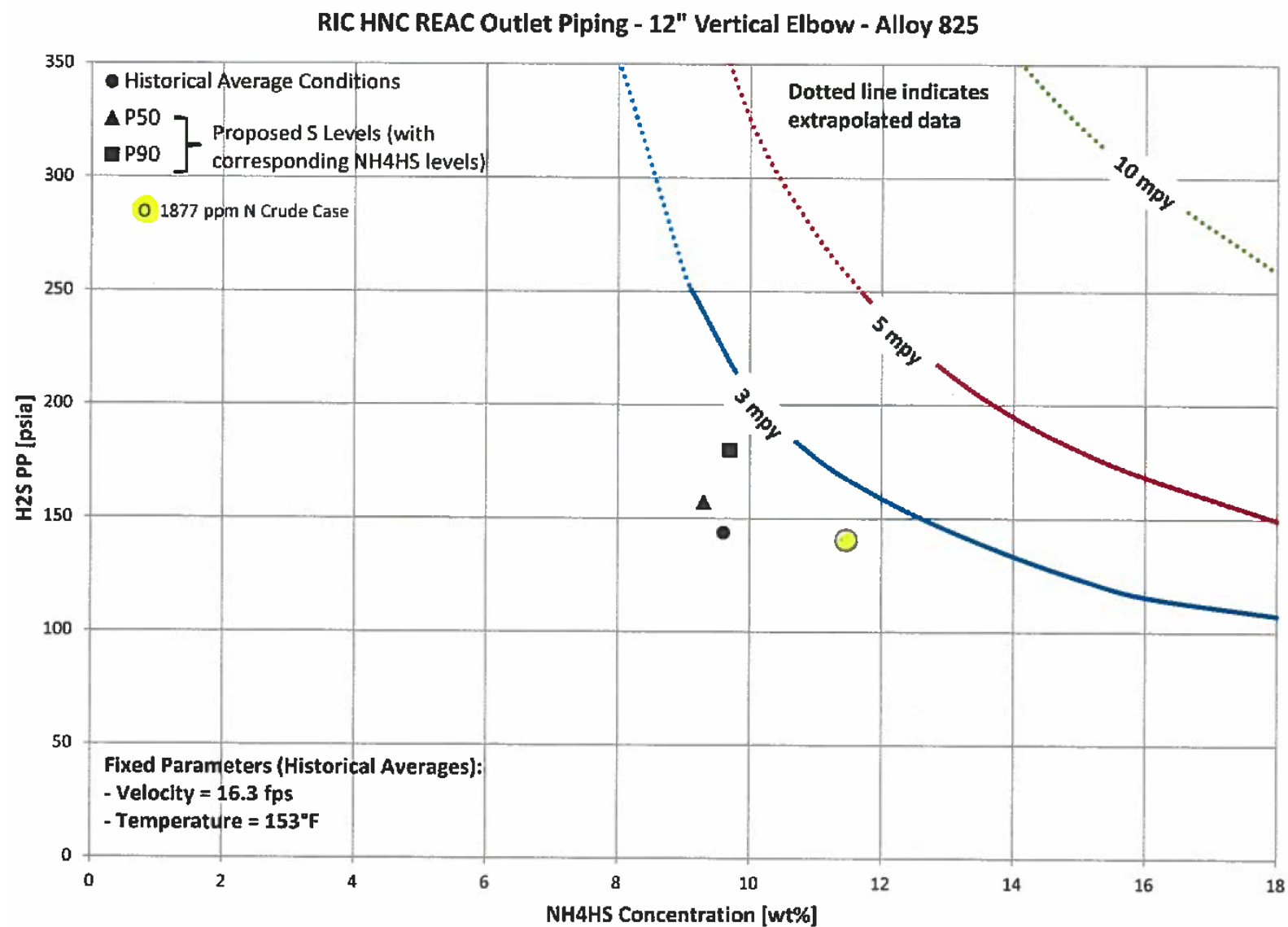
02.20.2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL

Source: Chevron (T85)

Figure A4.13-REL-8

Chevron Refinery Modernization Project EIR

Corrosion Rate Curves for Hydroprocessing High Severity Units – RIC HNC REAC – 1" REAC Tube – Alloy 825, represented as a function of NH₄HS concentration and H₂S partial pressure



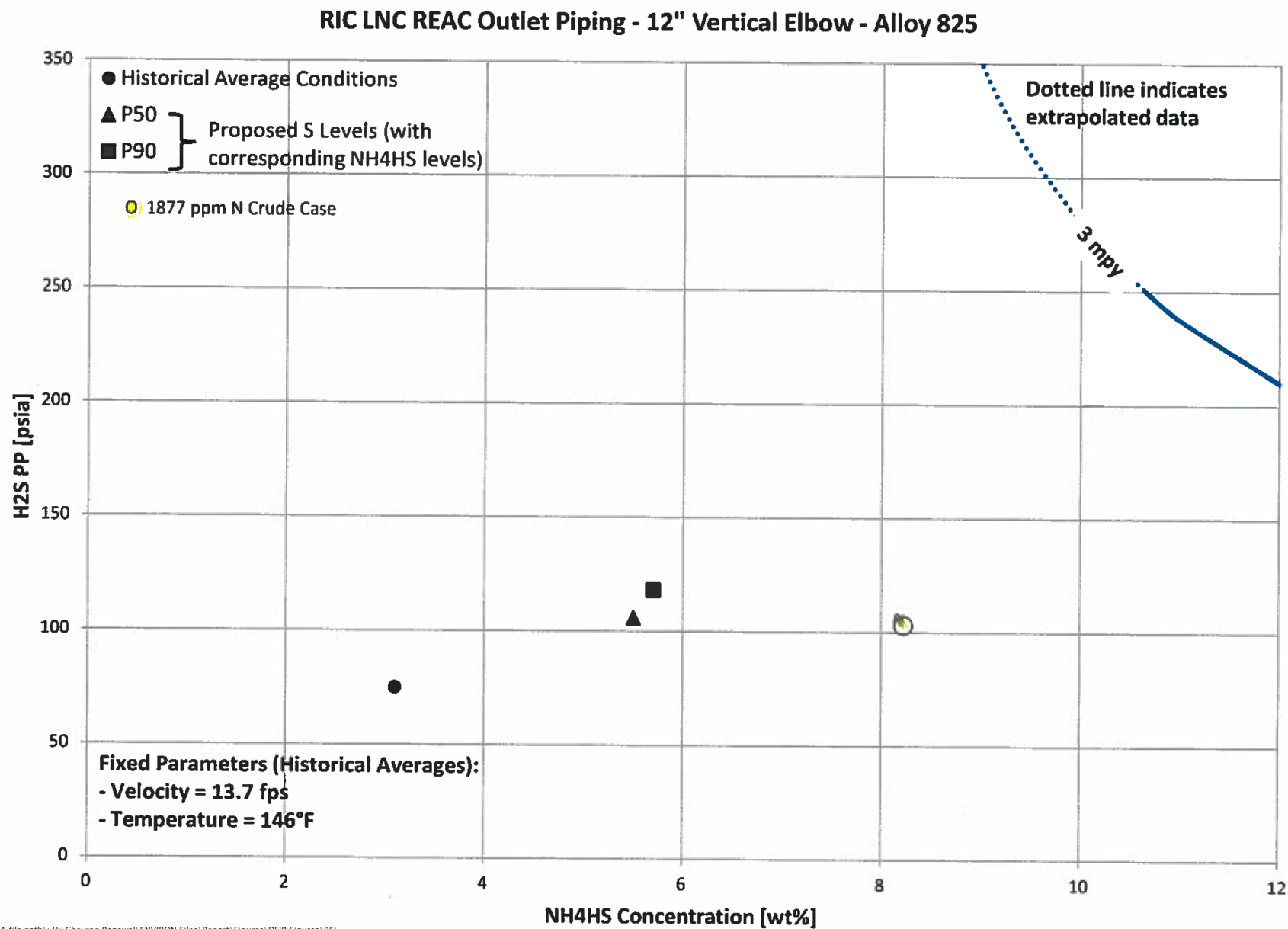
02.20.2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL

Source: Chevron (T85)

Figure A4.13-REL-9

Chevron Refinery Modernization Project EIR

Corrosion Rate Curves for Hydroprocessing High Severity Units - RIC HNC REAC Outlet Piping - 12" Vertical Elbow - Alloy 825, represented as a function of NH4HS concentration and H2S partial pressure



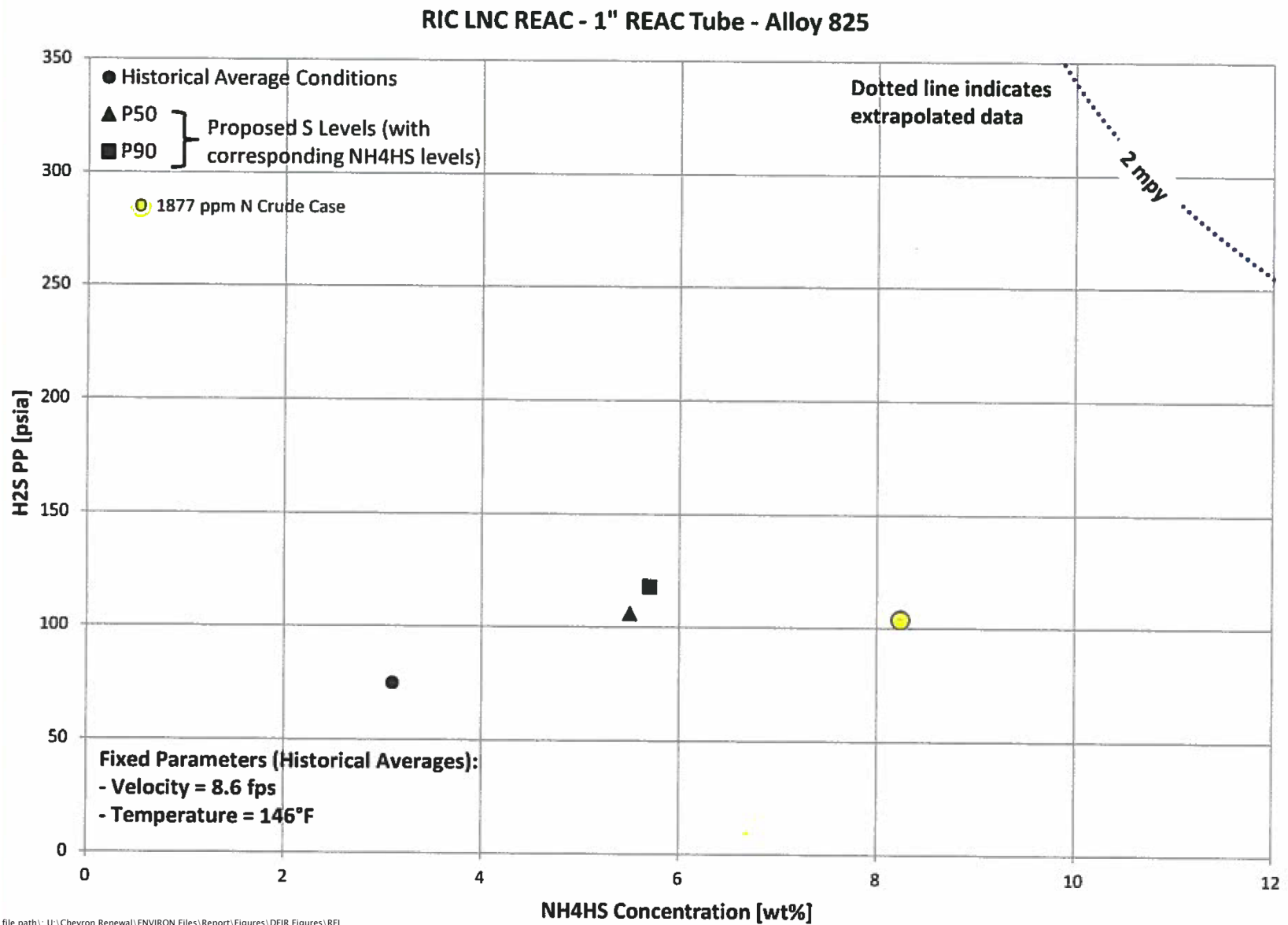
02.20.2014 file path: U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL

Source: Chevron (T85)

Figure A4.13-REL-10

Chevron Refinery Modernization Project EIR

Corrosion Rate Curves for Hydroprocessing High Severity Units – RIC LNC REAC Outlet Piping – 12" Vertical Elbow – Alloy 825, represented as a function of NH4HS concentration and H2S partial pressure



02.20.2014 file path: U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL
Source: Chevron (T85)

Figure A4.13-REL-11

Chevron Refinery Modernization Project EIR
Corrosion Rate Curves for Hydroprocessing High Severity Units – RIC LNC REAC – 1" REAC Tube – Alloy 825, represented as a function of NH4HS concentration and H2S partial pressure

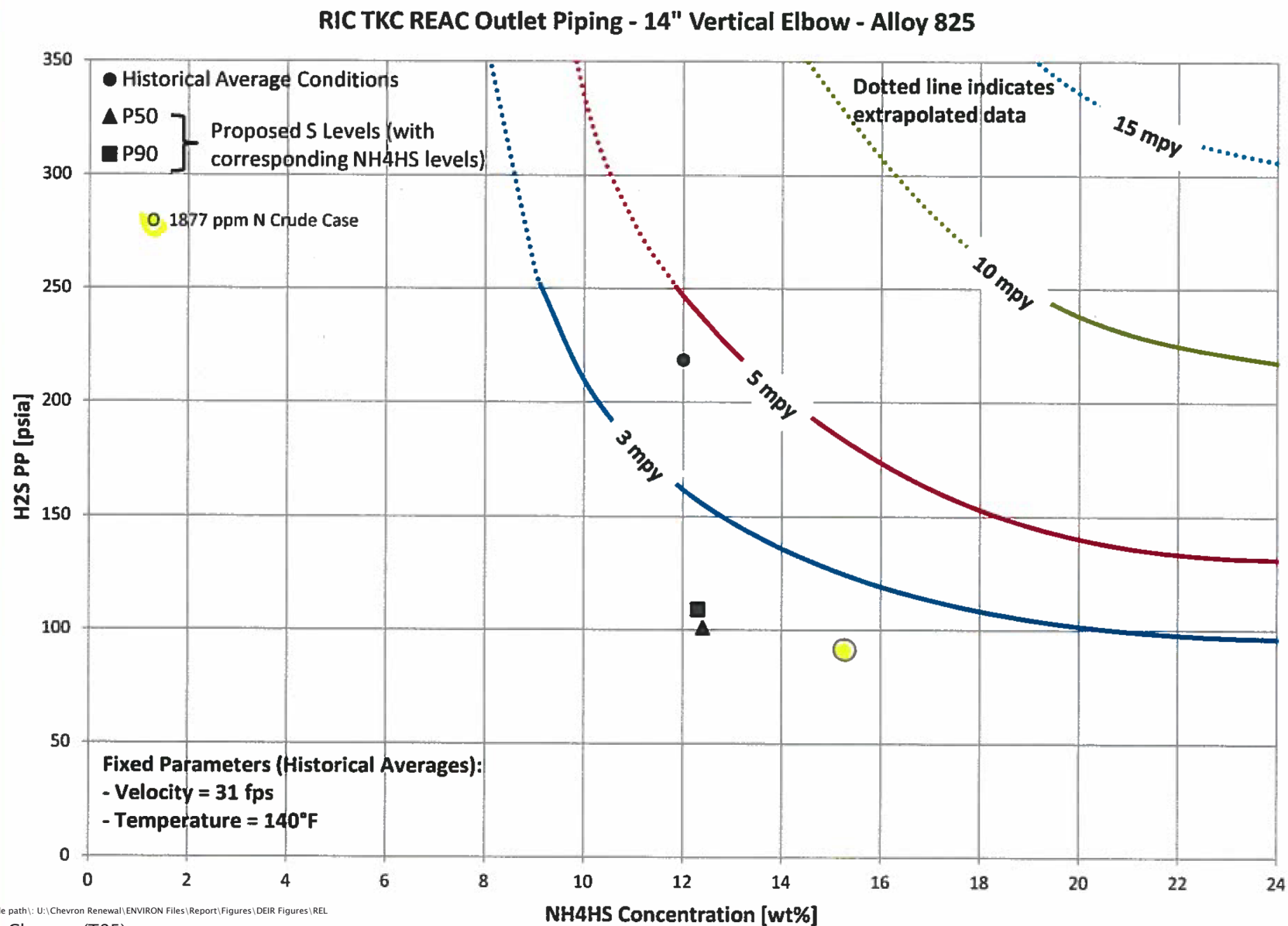
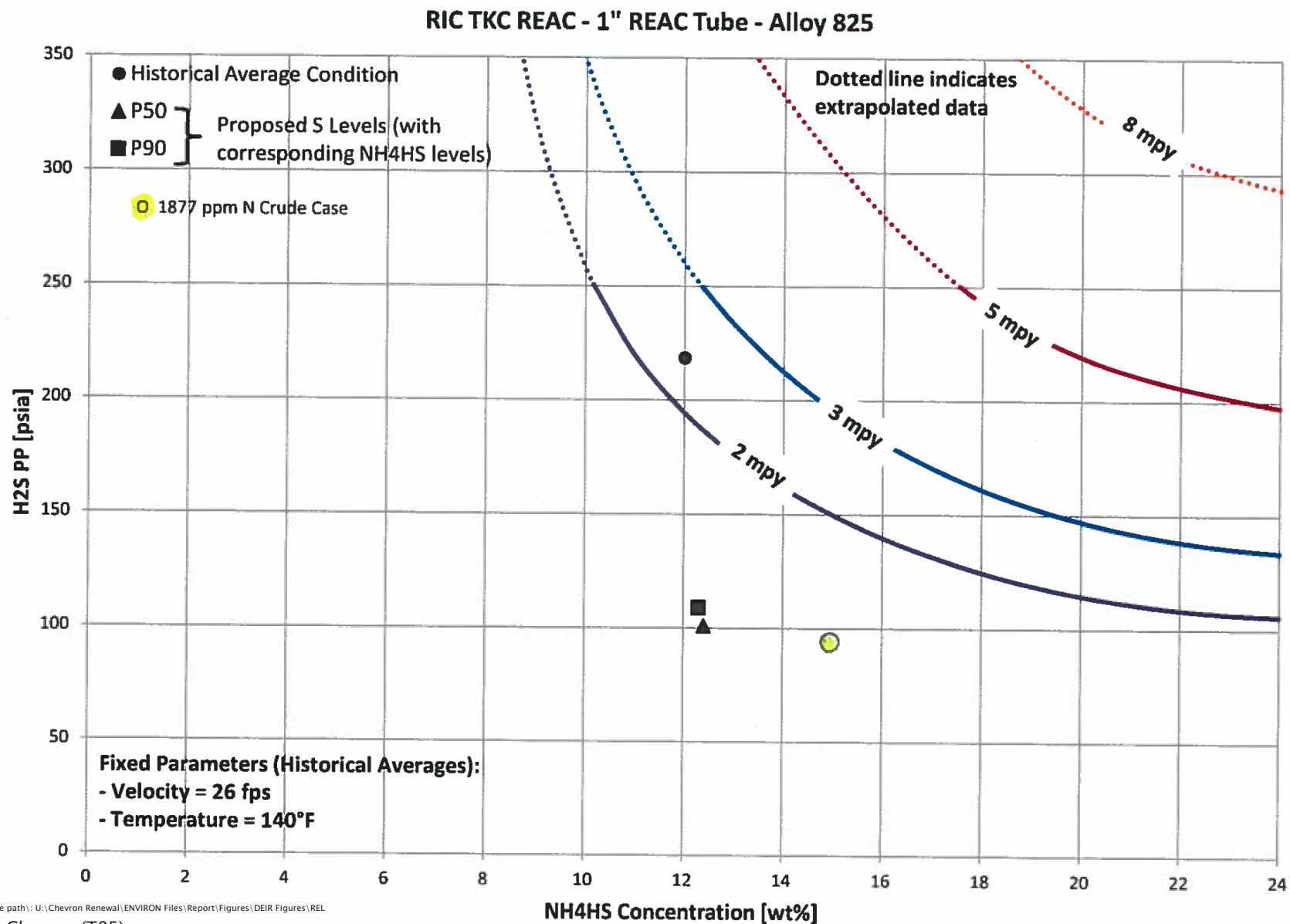


Figure A4.13-REL-12

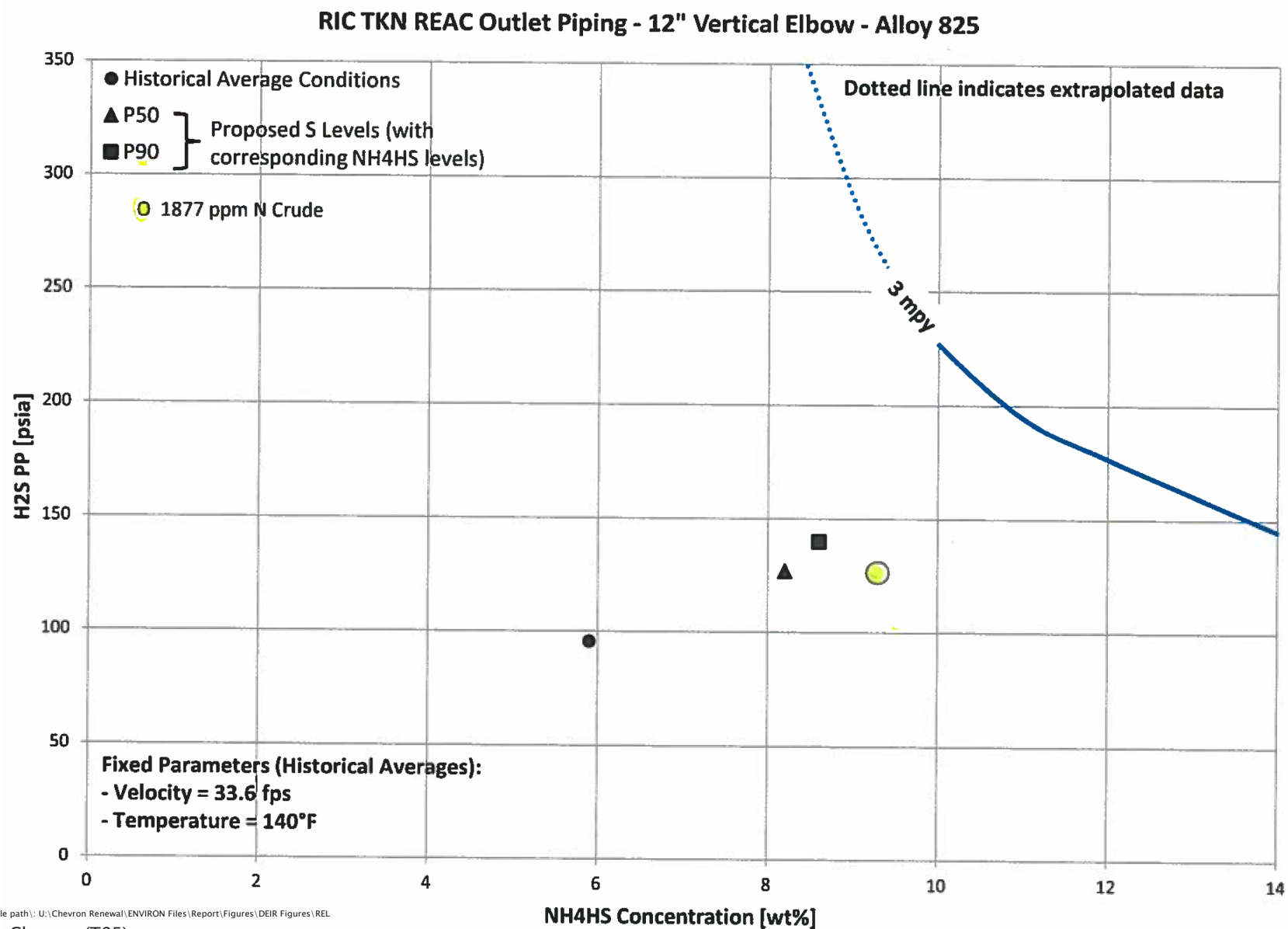
Chevron Refinery Modernization Project EIR
Corrosion Rate Curves for Hydroprocessing High Severity Units - RIC TKC REAC Outlet Piping - 14" Vertical Elbow - Alloy 825, represented as a function of NH4HS concentration and H2S partial pressure



02.20.2014 file path: U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL
Source: Chevron (T85)

Figure A4.13-REL-13

Chevron Refinery Modernization Project EIR
Corrosion Rate Curves for Hydroprocessing High Severity Units - RIC TKC REAC - 1" REAC Tube - Alloy 825, represented as a function of NH₄HS concentration and H₂S partial pressure



02.20.2014 file path: U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL

Source: Chevron (T85)

Figure A4.13-REL-14

Chevron Refinery Modernization Project EIR
Corrosion Rate Curves for Hydroprocessing High Severity Units - RIC TKN REAC Outlet Piping -
12" Vertical Elbow - Alloy 825, represented as a function of NH4HS concentration and H2S partial pressure

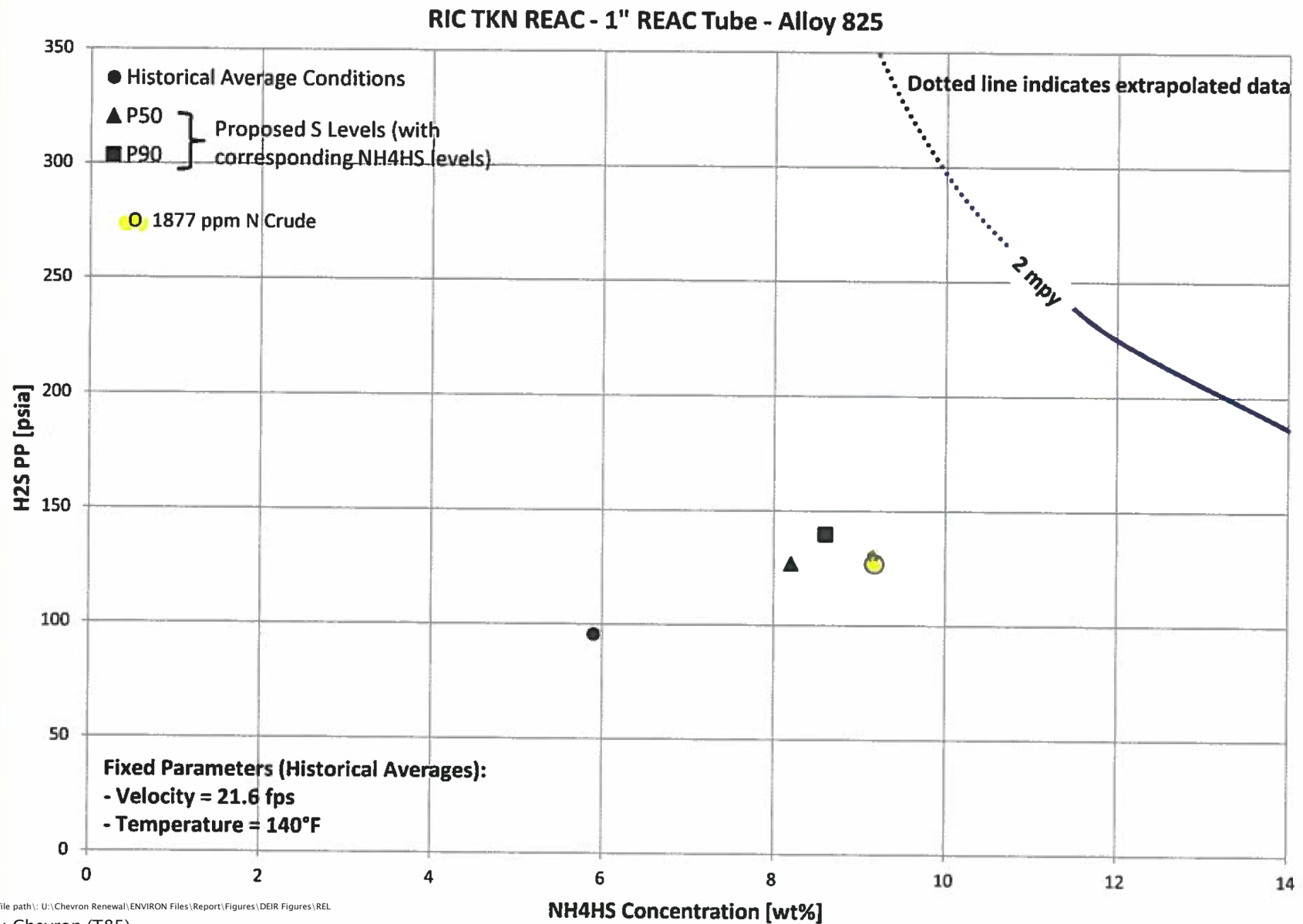


Figure A4.13-REL-15

Chevron Refinery Modernization Project EIR

Corrosion Rate Curves for Hydroprocessing High Severity Units - RIC TKN REAC - 1" REAC Tube - Alloy 825, represented as a function of NH4HS concentration and H2S partial pressure

potential to contain additional nitrogen,” a sensitivity analysis was completed that evaluated nitrogen levels at much higher levels (up to 1877, or 22% higher than the high nitrogen case of 1541 ppm). The sensitivity analysis case is shown in yellow in the curves above. The graphs show that, under all projected increased nitrogen feed rates to the HP units, corrosion rates remain below HP-002 guidelines.

1.9.3.3.3 Wet H₂S Damage

Similar to the assessment of the crude and SDA units, the likelihood of wet H₂S damage is not expected to change as the wet H₂S equipment and piping are already presently in National Association of Corrosion Engineers (NACE) MR0175/ISO15156 sour service. Any increase in wet H₂S above sour limits would not significantly impact the damage mechanism. Regardless, the wet H₂S sections of the HP units are already being inspected for wet H₂S per Chevron’s wet H₂S best practice.

1.9.3.3.4 HTHA Attack

The hydrogen feed to the HP units will increase from about 95% to 99% purity with installation of the new hydrogen plant. This purity increase amounts to an approximately 4% increase in the hydrogen partial pressure. HTHA attack of carbon and low alloy steels is based on the hydrogen pressure and temperature, per the “Nelson Curves” in API-941 *Steels for Hydrogen Service at Elevated Temperatures and Pressures in Petroleum Refineries and Petrochemical Plants*. This increase is insignificant with respect to increasing the potential for HTHA by going over the limits of a API-941 resistance curve for a specific alloy (API-941, 2008). In addition, Chevron has stated that they have a 50°F and 50 psig buffer limit for materials subject to HTHA in the HTHA Best Practice, except for 2 1/4 Cr to 1/2 Mo which has a 25°F and 50 psia buffer limit. This 25/25 buffer zone is common in the industry. The only unit where low alloy steels are installed where hydrogen is injected is the NHT unit and the 1.25Cr-1Mo piping installed in this unit operates at temperatures (550°F) well below the temperature for HTHA of this material.

1.9.3.4 Hydroprocessing Recommendations

1. At the 2.25% wt. % sulfur in crude feed trigger point, evaluate and modify as warranted, based on any increased sulfur in this section of the unit, inspection plans (what, where and how often) for the distillation section of the HP units where sulfidation corrosion rates have been “erratic” and uncertain, per API-939-C.
2. Report on the progress of the project to compare the HP-002 Best Practice Guideline regarding, water wash, to API-932-B recommendations to ensure that the HP-002 document is consistent with 932-B guidelines. This report

should be submitted prior to the commencement of Modernization Project operations.

3. Conduct process monitoring and sampling for post-Modernization Project operations for all HP units, to develop process data to confirm assumptions made during the damage mechanism review regarding amounts of H_2S and ammonium bisulfide in the overhead systems. This shall be completed after commencement of Modernization Project operations.
4. Develop integrity operating windows (IOWs) for the HP units to incorporate existing critical reliability variables such as the wash water rate for NH_4HS corrosion control. The IOWs shall be established prior to the startup of Modernization Project operations.
5. If the REAC Corrosion Control Project (TKN) is not completed pre-Modernization Project, conduct a review of current operations to ensure that corrosion rates will remain under REAC best practice guidelines with any increase in sulfur to the unit. This shall be completed prior to the startup of Modernization Project operations.

1.9.4 SDA Unit Reliability Impacts and Recommendations

1.9.4.1 Process Description

The SDA unit was upgraded and redesigned by mid-1994 to process 50,000 BPSD of residuum oil using Kerr-McGee Corporation's ROSE® technology. These facilities are designed with some flexibility to extract deasphalted oil (DAO) product from vacuum resid using a mix of solvents. 39,000 BPSD of DAO is extracted from 50,000 BPSD of vacuum resid (charge) with a C5-rich solvent. The remaining asphalt by-product is produced at a rate of 11,000 BPSD. DAO product is processed in the downstream TKC (high pressure hydrocracker) unit and subsequently in the Facility's fluid catalytic cracker unit to produce valuable lighter products. The asphalt by-product is cut with light cycle oil (LCO) in the unit to produce tar. The tar is blended in downstream operations to produce heavy fuel oil. The SDA unit can be divided into the following functional segments: separator section, DAO stripping section, asphaltene stripping section, solvent circulation systems, and hot oil system.

Based on a review of the SDA process description and process flow diagrams, the SDA unit will process resid from the crude unit vacuum column. Table A4.13-REL-9 shows the potential changes in post-Modernization Project sulfur conditions in the unit:

TABLE A4.13-REL-9 SDA SULFUR LEVELS

	Benchmark (P50)	P90	Baseline¹
SDA Feed	5.7%	6.9%	3.8%
DAO	5%	6.2%	3.6%
Asphalt	7.5%	8.7%	4.7%
F-1 100/200 to C-102/122	4.9%	5.7%	2.9%

Note: ¹Baseline is based on data from January through July 2012.

Based on the above projected changes in the vacuum resid feed to the SDA unit, the post-Modernization Project damage mechanisms are considered to be a subset of those identified for the crude unit, based on increased sulfur contents and otherwise similar operating conditions, i.e., high-temperature sulfidation and wet H₂S damage (SSC/HIC/SOHIC), based on increased H₂S in the overheads of the SDA unit.

The majority of the SDA unit is constructed of carbon steel, except for the feed heater furnace (chrome alloys) and some hotter heat exchanger tubes (chrome alloys).

1.9.4.2 Damage Mechanisms Assessment of Chevron Richmond Refinery's SDA Unit

1.9.4.2.1 HT Sulfidation

Based on an expected high-temperature sulfidation damage mechanism, the damage mechanism review process would be expected to be the same or similar to that for the similar service crude unit piping and equipment, i.e., (1) identify sulfur piping circuits above 500°F; (2) inspect for and identify/locate low Si piping (through locating and inspecting all components to identify any individual components that were corroding at significantly higher rates than the rest of the adjacent piping); (3) calculate (or simulate) the post-Modernization Project sulfur contents of the existing sulfur containing piping circuits; (4) calculate new corrosion rates and flag dates based on the higher sulfur content using the McConomy curves; (5) compare the post-Modernization Project corrosion rates and new flag dates with the existing piping circuit inspection database; and (6) develop a mitigation/monitoring plan for any piping circuits/fixed equipment that are projected to reach their flag dates prior to the next scheduled shutdown.

All piping/equipment in the SDA unit is carbon steel including that operating above the sulfidation temperature threshold of greater than about 500°F, except for the F-100/F-120 furnaces, in which the furnace tubing is either 7Cr or 5Cr

low alloy steel. Chevron has conducted a sulfidation inspection of the SDA unit, including conducting a 100% component inspection for low silicon carbon steel piping operating above 500°F and inspection for sulfidation “dead legs” per their sulfidation dead leg procedure. The facility plans to inspect all carbon steel piping operating between 450°F and 500°F by the end of 2014. In addition to their existing CMLs, additional CMLs were placed on all carbon steel piping where corrosion rates showed a deviation from adjacent piping. Re-inspection intervals for the newly placed CMLs were shortened based on the measured thicknesses and corrosion rates, per API-570 guidelines. The furnace tubes were inspected in 2009 using smart pig technology.

A review of Chevron’s summary inspection results and independent verification of corrosion rates using the McConomy curves, based on their published process temperatures and the sulfur levels (Chevron, 2014e), showed projected increases in high-temperature sulfidation corrosion rates to be minimal or about 5 mpy above current sulfur content rates. An analysis of existing available corrosion rate data for existing CS piping/equipment operating above 500°F show all corrosion rates less than 10 mpy. The flag dates for the piping systems are well into the future (the nearest SDA flag date is 2026). However, recognizing that corrosion rates will probably increase with increasing post-Modernization Project sulfur content of crude feed, a baseline inspection based upon the sulfur level triggers discussed above is recommended. In addition, Chevron has committed to installing 25 Permasense® probes in the SDA unit high-temperature carbon steel piping. Therefore based upon the existing good condition of the sulfidation piping/equipment and current low corrosion rates combined with the post-Modernization Project monitoring to be implemented, the continued use of carbon steel piping and equipment is justified.

1.9.4.2.2 Wet H₂S Damage

Based on the increased sulfur-containing resid to the SDA unit the H₂S content of the overhead streams in several equipment items is expected to increase. Vessels potentially impacted include V-141, Low Pressure Solvent Accumulator, V-142, Asphalt Flash Solvent Accumulator and the V-143/144 High Pressure Solvent Accumulators. There has been no data presented to verify to what extent the H₂S in these overhead systems will increase over current conditions; however, it would be prudent to verify post-Modernization Project worst case conditions regarding H₂S in the SDA overheads and target one or more of the accumulator drums for an internal inspection using Chevron’s existing wet H₂S program guidelines.

1.9.4.3 SDA Recommendations

1. Verify post-Modernization Project conditions regarding H₂S content in the SDA overheads and target one or more “water wet” vessels for inspection using internal eddy current, external automatic ultrasonics (AUT) or other

non-destructive evaluation (NDE) techniques appropriate for wet H₂S cracking detection within one year of operation under post-Modernization Project conditions.

2. Conduct water boot analysis for corrosive constituents similar to that conducted in the crude unit on the unit overhead accumulator drums, including cyanides. This should be conducted at the 2.25 wt.% and 2.75 wt. % sulfur trigger points.
3. When the sulfur wt.% of crude oil processed at the Facility reaches 2.25 wt.% sulfur on an annual average, and the again when it reaches 2.75 wt.% sulfur annual average, the Facility shall trigger the same responses for the SDA plant as described in the recommendation section of the crude unit.
4. Conduct a follow-up smart pig inspection of F-100 and F-120 furnace tubes during the first planned maintenance after the unit has seen at least 1 year of post-Modernization Project operating conditions.
5. Install at least 25 additional Permasense® monitors in carbon steel circuits in the SDA including sulfidation “dead legs,” based on a critical review of historical corrosion rates. These sensors will confirm the predictive model results that there will be little-to-no increase in sulfidation corrosion in the SDA post-Modernization Project. These installations should be completed prior to the commencement of Modernization Project operations.
6. Develop IOWs per draft API-584 for identified damage mechanisms in the SDA unit. The IOWs should be established prior to the commencement of Modernization Project operations.
7. Develop process monitoring and sampling plans for post-Modernization Project operating conditions to confirm assumptions made during the damage mechanism review project. The monitoring and sampling plans should be developed prior to the commencement of Modernization Project operations, and should be implemented after commencement of Project operations following an increase in sulfur content to the SDA unit.

1.9.5 Amine Systems

1.9.5.1 Process Description

The new amine system function removes the H₂S from the TKC sour recycle gas streams. The major components are the DEA absorber, C-430, the rich DEA flash drum V-2415, the DEA regenerator C-2420, the lean-rich amine exchanger, E-2425A/B, the regenerator reboiler, E-2427A/B, the regenerator overhead fin fans, E-2420A/D, the regenerator reflux drum, V-2420 acid gas KO drum, V-2470 and the lean amine cooler, E-2426A/D. The C-430 overhead product sweet gas is routed to the TKC recycle gas compressor. The C-430 bottoms rich DEA amine

solution with the absorbed H_2S is routed to the rich DEA flash drum, V-2415, at 6 H_2S . From the flash drum the rich DEA continues to DEA regenerator, C-2420, at 6 H_2S . The regenerator utilizes a steam reboiler to remove the H_2S from the rich DEA. The regenerator OH product is H_2S and the bottoms product is the regenerated, or lean amine. The lean amine is then routed back to the TKC H_2S absorber. The H_2S is routed to the sulfur recovery unit.

With the new H_2S absorber in the TKC plant, this effectively increases the number of absorption units from four currently to five. A new regenerator vessel will accommodate the increased amine regeneration load. Therefore, there should be no change in amine loading at the existing plants. Chevron will continue to adhere to their Best Practice guidelines for all of their amine units, including the new amine system for TKC, which should maintain corrosion rates at existing setting levels.

1.9.5.1.1 General Amine Unit Materials of Construction and Damage Mechanism Discussion ⁷

Carbon steel, with a nominal corrosion allowance, has been used for most equipment in amine units that remove H_2S or mixtures of H_2S and carbon dioxide containing at least 5% H_2S . Some problems have been experienced with erosion-corrosion associated with circumferential welds in piping made of carbon steel. The problems were solved by reducing fluid velocity to less than 5 ft./sec. Austenitic stainless steels have been used in locations where the corrosion rate of carbon steel is excessive. Such locations include those that contact ho rich solutions with high acid gas loading, areas of high velocity, turbulence, impingement, vapor flashing, or two-phase flow, and most heat transfer surfaces operating above approximately 230°F. Austenitic stainless steels are usually employed extensively in amine units to remove carbon dioxide from hydrocarbon streams that contain very little or no H_2S . Clad plate is preferred over solid stainless steel construction to avoid possible through-wall cracking that results from chloride stress corrosion. In some locations, solid stainless steel construction is used where control of external chloride stress cracking was achieved. Alloys, such as Types 304 and 316, have been used for regenerator reboiler tubes that handle little or no H_2S . Titanium tubes have been used in units handling CO, but they may hydride in service. Carbon steels with a low level of inclusions, inclusion shape control, or both may provide improved resistance to hydrogen blistering, HIC and SOHIC. These steels should be evaluated for potential use in equipment that handles rich amine solutions, and in the regenerator overhead, especially cyanides are present. In some units, operating conditions in the bottom of amine absorbers or contactors are conducive to hydrogen damage despite relatively low temperatures. Carbon steels with a low level of inclusions or inclusion shape control might also be

⁷ API RP-945

useful in these locations. However, it should be noted that these steels are not immune to blistering and cracking. Austenitic stainless steel cladding, lining, or weld overlay can offer alternative methods of protection in areas where chronic cracking or hydrogen blistering occurs.

1.9.5.1.2 Corrosion

Potential damage mechanisms in amine service for carbon steel include corrosion and various environmental cracking mechanisms. Corrosion in carbon steel can occur due to degradation of the amine, especially MEA, or elevated levels of heat-stable amine salts (HSAS). High levels of dissolved carbon dioxide may also result in corrosion, especially when the carbon dioxide comes out of solution. Corrosion can be in the form of uniform metal loss, localized attack and/or pitting.

Carbon steel corrosion in amine treating processes is a function of a number of inter-related factors, the primary ones being temperature, the concentration of the amine solution and the acid gas content of the solution (“loading”).

Corrosion is a strong function of temperature with increasing temperature increasing corrosion. The high alkalinity of the amine minimizes corrosion until temperatures in excess of about 250°F are reached. Above 250°F, carbon steel corrosion is significant and special alloys and/or inhibitors are required.

The amine solution strength also influences corrosion. Amine solution strength is the sum of the free amine concentration and the amine tied up as heat stable salts. Industry guidelines and company experience indicate that the upper limits for DEA concentrations are about 25 to 30 wt.%. Above this level serious corrosion is often encountered because high concentrations require increased regeneration temperatures, which tend to degrade the amine.

Another important factor in amine corrosion is the presence of amine degradation products, usually referred to as HSAS. HSAS formed by the reaction between amine and acids or oxygen in the feed are detrimental to amine plants in several ways. First, they are corrosive to carbon steel. The salts also reduce the amine available to react with acid gases.

Acid gas loading is reported in terms of moles of acid gas per mole of active amine. A “rich” solution is amine of higher acid gas loading and “lean” solution has lower acid gas loading (typically < 0.1 mole/mole). To control corrosion and optimize plant operation, heat stable salt concentration in the amine should be monitored and limited. In $H_2S + CO_2$ systems, rich loading is often limited to 0.35 to 0.45 mole/mole. Chevron has their own proprietary amine best practice for controlling corrosion and environmental cracking in amine services. A review of Chevron’s best practice, as compared with published industry guidelines, such as

API-571 and API-581, show that the control limits in their best practice are similar to published values.

Secondary contributors to corrosion include high velocity/turbulence, two phase flow and solution cleanliness. Contamination or degradation of amine solutions can lead to serious corrosion and foaming. Operating and corrosion problems usually begin when the circulating solution gets dirty. For long, trouble-free solution life, it is necessary to recognize these problems and to know how to prevent them. Contaminants can be degradation products, heat-stable salts, oxygen, dissolved hydrocarbons, liquid hydrocarbons, and solids. Degradation of amines can occur by several mechanisms. Amines oxidize readily in the presence of oxygen and form corrosive organic acids. To prevent oxidation, the amine storage and surge vessels should be gas blanketed to keep air out of the system. Air leakage into a hot system (pump suctions) causes serious problems.

1.9.5.1.3 Environmental Cracking

Environmental cracking refers to corrosion cracking caused by a combination of conditions that can result in SSC, HIC associated with hydrogen blistering, SOHIC, or alkaline stress-corrosion cracking (ASCC). The first three mechanisms are more common in rich amines. ASCC found in amine applications is typically identified as amine cracking. The pH and temperature are lower in amine cracking than other ASCC mechanisms, i.e., caustic cracking. Amine SCC has been reported in MEA service at temperatures as low as 40C (100F) with un-stress-relieved carbon steel equipment.

Amine cracking is most often associated with lean amines in contact with welded carbon steels without a post weld heat treat. Amine cracking does not reportedly occur in fresh amine solutions and the likelihood of cracking in rich solutions is low.

1.9.5.1.4 New Amine Contactor/Regenerator Reliability Impacts.

As discussed in the above amine damage mechanism discussion section, the corrosion of metals and alloys commonly employed in amine systems is not based on the amine itself, but on corrosive species absorbed by the amine, most commonly CO₂ and H₂S. The mitigation and control of excessive corrosion is based on maintaining the amine solution under controlled conditions of solution strength, acid gas loading and heat stable salts amine salts. The selective use of corrosion resistant alloys (CRA's) and maximum amine velocities is also employed where necessary to control corrosion to acceptable levels. Chevron's Amine Best Practice Guidelines document (Chevron [n.d.2]) is used to monitor and control amine system parameters within specified limits to maintain corrosion within manageable (safe) limits. The Chevron Amine Best Practice document defines operating parameters for the amine units, including maximum amine loading (H₂S content) and velocities.

Chevron has assured that the amine units will continue to operate in compliance with their best practice guidelines. Compliance is assured by daily calculations for amine loading and velocity. These calculations are done in their Process Engineering (Process Monitoring and Optimization) PMO system. Inputs to the PMO calculations include laboratory data and process data. The laboratory results are based on a master sample schedule for each refinery unit. Each morning the sample schedule downloads sample tags to the respective control houses for that day's samples.

1.9.5.2 Amine Systems Recommendations

It is recommended that Chevron review ongoing sampling results (per Best Practice timing plus vendor sampling and reports) to determine if post-Modernization Project amine loading and HSAS are impacted by any increase in H_2S to the TKC Unit. This should be done prior to the commencement of Modernization Project operations.

1.9.6 Sulfur Recovery Unit

The only physical or operational change to the sulfur recovery unit that was considered to be impacted by the Project is the installation of small diameter liquid oxygen piping to the reactor burners via a new 304 stainless steel line. This is a physical change that will be addressed in an upcoming PHA re-validation. Therefore, the only recommendations believed necessary associated with the new liquid oxygen piping to mitigate risk are those typically associated with new construction and the special design and installation precautions associated with oxygen piping systems, i.e., design and installation best practice details common in industry for oxygen piping systems, including pre-commissioning cleaning of the piping interior to remove harmful materials such as dirt, debris, iron, grease and other contaminants known to cause ignition of pure liquid and gaseous oxygen.

1.9.7 Sour Gas Systems

Damage mechanisms in HP units have been discussed elsewhere. Excluded from the hydroprocessing scope, and covered separately in this section, are sour gas (fuel gas) streams from two and three phase separator vessels in the HP units, plus some smaller streams from the crude and SDA units.

The facility sour gas system refers to the piping networks that transfer sour gas from the HP units to the H_2S absorbers (amine units). The sour gas system basically becomes extinct upon entering the H_2S absorbers, as the amine in the amine contactors absorbs the H_2S from the feed gas into the amine in the unit. This system should not experience any change in corrosion activity as a result of feedstock changes from the Modernization Project. Sour water is covered in the next section.

1.9.7.1 Sour Gas Process Description

The sour gas system is the piping network that moves sour gas from the processing units to the H_2S absorbers in the Facility's sour gas plants. The South Yard plants in D&R (such as the crude unit) have their sour gas routed to the #5 H_2S plant. The fluid catalytic cracker unit in the North Yard routes all of its sour gas to the #3 H_2S plant. This plant is dedicated to just the fluid catalytic cracker to keep the olefins in that process gas segregated. The North Yard RLOP and hydro plants route their high pressure sour gas preferentially to the North Yard H_2S absorber at 20 plant. The 20 plant is the preferred routing for these streams because it has a PSA facility to recover the high hydrogen content. The portion of the RLOP and hydro high-pressure streams in excess of 20 plant capacity are sent to #4 H_2S . The medium and low pressure sour gas streams from hydro and RLOP will fill #4 H_2S to capacity with the excess routed to the South Yard #5 H_2S . The sour gas system basically becomes extinct upon entering the H_2S absorbers as the amine in the amine contactors absorbs the H_2S from the feed gas into the amine in the unit.

1.9.7.2 Materials

The sour gas streams contain varying amounts of H_2S and ammonia so ammonium bisulfide corrosion is the primary concern. The North Yard Sour Gas Handling Project, executed in 2005 through 2008, has significantly addressed ammonium bisulfide corrosion and has the refinery well postured for the impact of the Modernization Project. The sour gas project installed an ammonia scrubber, C-771, to remove ammonia from certain high ammonia content streams. It also installed a stainless steel line for handling "wet" streams that are operating near their water dewpoints. This stainless steel line extends from V-470 at the TKC to 4 H_2S and 20 plant. The remaining South Yard sour gas systems have much lower ammonia than the North Yard and therefore less ammonium bisulfide; these systems are essentially all carbon steel.

1.9.7.3 Damage Mechanisms

There are two primary corrosive constituents generated in HP units that can act as damage mechanisms in sour gas systems: (1) sulfur, which is converted to H_2S in the reactor; and (2) nitrogen, which is converted to ammonia in the reactor. The two corrosive species will combine to form ammonium bisulfide, based on stoichiometric availability and thermodynamic conditions. As H_2S is usually the predominant corrosive species in HP units, including the Chevron Richmond units, any excess H_2S will also be present in the vapor phase. Thus, ammonium bisulfide and wet H_2S corrosion are the potential damage mechanisms associated with sour gas systems.

The presence of liquid water is a requirement for both of the above damage mechanisms to be active. Under the right conditions of partial pressure and

temperature, ammonium bisulfide can condense from H_2S and ammonia in vapor phase streams downstream of the reactor. It can also be absorbed in a water phase downstream of water wash injection points. Ammonium bisulfide salt deposits are hygroscopic; therefore, can potentially absorb water from water vapor in the process vapor stream. The corrosivity of sour gas streams (and sour water) can potentially increase, based on post-Modernization Project conditions, from: (1) an increase in sulfur to the HP units; (2) an increase in nitrogen to the HP units; or (3) from an increase in both constituents.

1.9.7.3.1 Wet H_2S Damage

If the sulfur feed to an hydroprocessing (HP) unit increases, the H_2S content in the reactor outlet stream and thus, in the HP overhead system will increase. However, because the overhead piping and equipment operates at temperatures substantially below that where high-temperature sulfidation becomes a threat (~450F), any increase in H_2S will only be a threat if water vapor containing H_2S were to condense. Also, while the H_2S content of certain HP overhead systems will increase with the Project, the increase will not necessarily result in an increase in wet H_2S damage mechanisms, as these streams are already NACE sour under existing conditions. Therefore, based on an increase in post-Modernization Project sulfur and nitrogen to the HP units, the primary impacted damage mechanism in the sour gas streams will be that based on ammonium bisulfide corrosion. Wet H_2S corrosion in the sour gas piping will be covered under Chevron's existing wet H_2S inspection program.

1.9.7.3.2 Ammonium Bisulfide Corrosion

Any increase in H_2S will not cause an increase in ammonium bisulfide corrosion over existing conditions, as no more ammonium bisulfide can be formed than the amount of ammonia formed in the reactor, as ammonia is the controlling (limiting) species in the formation of ammonium bisulfide in the HP units. However, the amount of ammonium bisulfide in the sour gas can increase under Project conditions with an increase in ammonia content of the sour gas streams if not removed in the wash water, based on increased nitrogen to the HP reactor.

Ammonium bisulfide corrosion can manifest itself in several forms for carbon steel, low alloy steels and corrosion resistant alloys (CRA's) equipment and piping. Depending on the partial pressure of ammonia, H_2S and temperature, ammonium bisulfide can condense from a vapor phase to form a ammonium bisulfide salt that can deposit out on surfaces causing under-deposit corrosion and fouling. The ammonium bisulfide deposits are hygroscopic and can absorb moisture from a vapor stream creating a corrosive environment under the deposit. When condensed in a liquid water stream it can cause more uniform corrosion, with the corrosion rate increasing with increasing ammonium bisulfide concentration in the water and water velocities and turbulence.

Different HP reactor effluent water washing schemes result in either a low or moderate NH_3 level in each complex's sour gas stream. It is the high severity HP units that will generate the large amounts of H_2S and ammonia in their reactor effluent streams. RLOP/TKN/TKC are the sour gas producers at Chevron. In these units the preferential routing is to send the high pressure gas to the H_2S absorber at 20 plant. The high pressure gas that does not go to 20 plant is combined with medium pressure gas from RLOP and routed to the H_2S absorber at 4 H_2S . The excess medium pressure sour gas is routed to the South Yard and the H_2S absorber at 5 H_2S . The sour gas system basically becomes extinct upon entering the H_2S absorbers as the amine in the amine contactors absorbs the H_2S from the feed gas into the amine in the unit.

The sour gas system in the RLOP/TKN/TKC units includes pressure vessels and piping. The piping is considered more susceptible to corrosion damage, compared with the vessel, based on the relative amount of piping vs. equipment and the increased opportunity to reach dew point conditions, based on long runs of uninsulated piping. As previously mentioned formation of ammonium bisulfide salt condensed from a vapor stream is possible; however, the susceptibility to ammonium bisulfide condensation and the location of any potential salt formation can be predicted relatively easily using Figure A-1 in API - 932-B, Design, Materials, Fabrication, Operation, And Inspection Guidelines For Corrosion Control In Hydroprocessing REAC Systems.

The analysis included foreseeable nitrogen levels, including those under the more probable P-50 sulfur case and the improbable P-90 sulfur case, which includes a nitrogen range of 1138 ppm to 1541 ppm. Additionally, because the analysis in *Appendix 4.3-MET* concludes that "it is likely that the crude oils processed by the Refinery if the Modernization Project is implemented have the potential to contain additional nitrogen", a sensitivity analysis was completed that evaluated nitrogen levels at much higher levels (up to 1877, or 22% higher than the high nitrogen case of 1541 ppm).

The elevated nitrogen case of 1877 ppm will increase the ammonia content of the RLOP and TKN high pressure sour gas streams. For the ammonium bisulfide condensation evaluation it was assumed that the post-Modernization Project ammonia content will increase by 50%, which is the increase in LNC and HNC feed nitrogen. Using Figure A-1 in API-932-B, the salt formation temperature was calculated at 40F. The RLOP stream operates well over 100F; therefore ammonium bisulfide salt formation from the RLOP sour gas is considered unlikely. The TKN sour gas NH_4HS salt formation temperature was calculated at 52 F and the TKN sour gas stream operates above 160 F; therefore ammonium bisulfide salt deposits in the TKN sour gas stream is also considered unlikely. The ammonia content of the TKC sour gas is orders of magnitude less than TKN (32 ppm vs. 1400 ppm); therefore ammonium bisulfide salt formation from TKC sour

gas is even less likely than in TKN or RLOP. Therefore, corrosion from ammonium bisulfide salt formation in the high severity sour gas systems is considered to be highly unlikely with the much higher sour gas operating temperatures compared with calculated salt formation temperatures and considering the relatively high, mean low atmospheric temperatures in the Richmond, CA area.

The other potential post-Modernization Project damage mechanism for sour gas is corrosion by ammonium bisulfide at water dew point conditions. Recognizing this potential in the higher severity sour gas HP units Chevron has upgraded some carbon steel piping containing sour gas at relatively high water dew points to stainless steel where water condensation was expected to occur. Thus, there is a mix of carbon steel piping and stainless steel piping handling sour gas to the H₂S absorbers. As Chevron has not conducted water dew point calculations for all carbon steel sour gas piping on a P&ID level and there could still exist small diameter tie in lines, dead legs and low points in the piping where sour water could condense, the actual risk of corrosion in the sour gas system is not known with certainty. Therefore, it is prudent to assume that some sour gas carbon steel piping is at risk and institute mitigation steps to minimize this risk.

1.9.7.4 Sour Gas Recommendations

1. Based on the potential risk of ammonium bisulfide corrosion in carbon steel due to the possibility of the sour gas condensing at locally cool portions of piping, Chevron should develop and implement a mitigation plan for this eventuality. The mitigation plan is to include reviewing sour gas P&IDs and isometric drawings to locate low points where water could accumulate, locate dead legs and establish inspection/monitoring plans for verifying if and where water is condensing out of the vapor phase. This should be conducted within 1 year of commencement of Modernization Project start-up.
2. Chevron should conduct a review to confirm their post-Modernization Project assumptions made during this review regarding ammonium bisulfide concentrations, dew points and potential for salt condensation in the sour gas piping, at the 2.25 wt. % and 2.75 wt. % average annual sulfur content trigger points.
3. Develop IOWs per draft API -584 for identified damage mechanisms for the sour gas system. These IOWs should be established prior to the commencement of Modernization Project operations.

1.9.8 Sour H₂O Systems and Plants (WWT)

1.9.8.1 Process Description

The sour water systems (in some cases “WWT” is used in Chevron terminology) includes the sour water vessels and piping from the Chevron HP units that collect

the sour water from the accumulator water boots and transports it to the sour water stripper for stripping of H_2S and ammonia from the water. The “stripped sour water” then can be reused as wash water in various refining units requiring a non-corrosive water for water washing, including HP units and the crude unit.

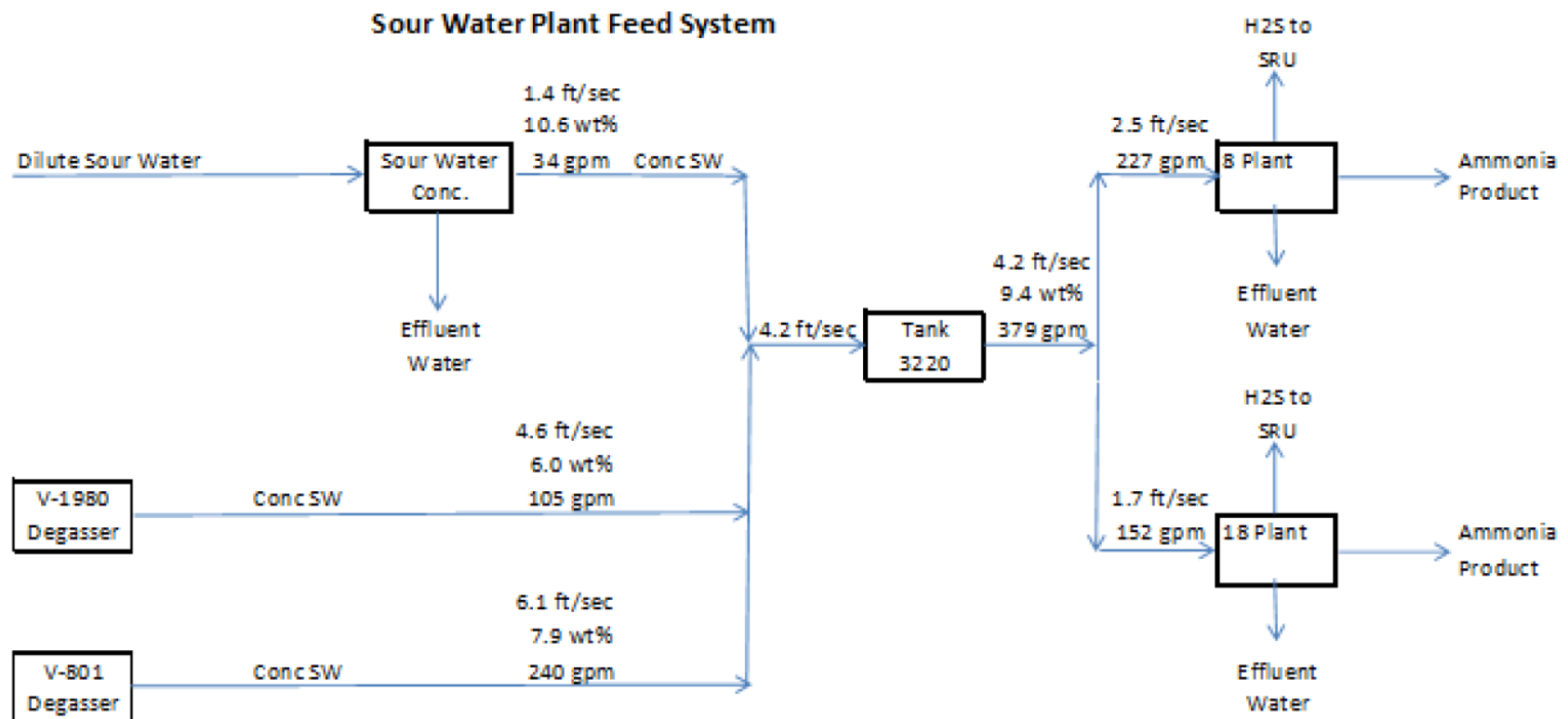
The sour water piping system is depicted in two block diagrams shown in Figure A4.13-REL-16 and Figure A4.13-REL-17. These diagrams show the concentrated sour water from the LNC, HNC, TKC and TKN flow through degassers and on to concentrated sour water tankage in TK-3220. Also combining in TK-3220 is a concentrated sour water stream from the sour water concentrators. The sour water concentrators process an accumulation of many dilute sour water streams with an estimated NH_4HS content of 0.6 wt.%. This is below the threshold of where ammonium bisulfide is considered to be corrosive in carbon steel piping. The sour water concentrators generate a bottoms product suitable for effluent water and an overhead product of concentrated sour water. TK-3220 concentrated sour water serves as feed to both sour water plants (i.e., #8 Plant and #18 Plant, which operate in parallel). The high nitrogen crude sensitivity case is projected to raise the NH_4HS content of the feeds to the sour water plants by an estimated 12% over the 2012 baseline. That baseline NH_4HS content was 8.4 wt.%, which brings the high nitrogen case NH_4HS to 9.4 wt.%. From tankage the sour water is routed to the sour water stripper (SWS) for further processing. In all cases, the sour water streams in the block diagram are within Chevron’s HP-002 BP guidelines (Chevron [n.d.3]) for controllable corrosion rates.

1.9.8.2 Sour Water Damage Mechanisms

The primary damage mechanisms in the sour water system and WWT plants are ammonium bisulfide (sour water) corrosion and wet H_2S cracking. The corrosivity of sour water primarily depends on: (1) the concentration of ammonium bisulfide in the water, typically expressed as wt. %; (2) the H_2S partial pressure and, (3) the liquid velocity or shear stress imposed on the piping wall. Even though sour water can be corrosive, the sour water boots of separation vessels and sour water piping to offside processing in the Facility's hydroprocessing plants is successfully handled in carbon steel piping due to the low velocities. A combination of Hastelloy, stainless steel and carbon steel piping are employed in the #8 Plant and #18 Plant.

1.9.8.3 Damage Mechanism Mitigation Discussion

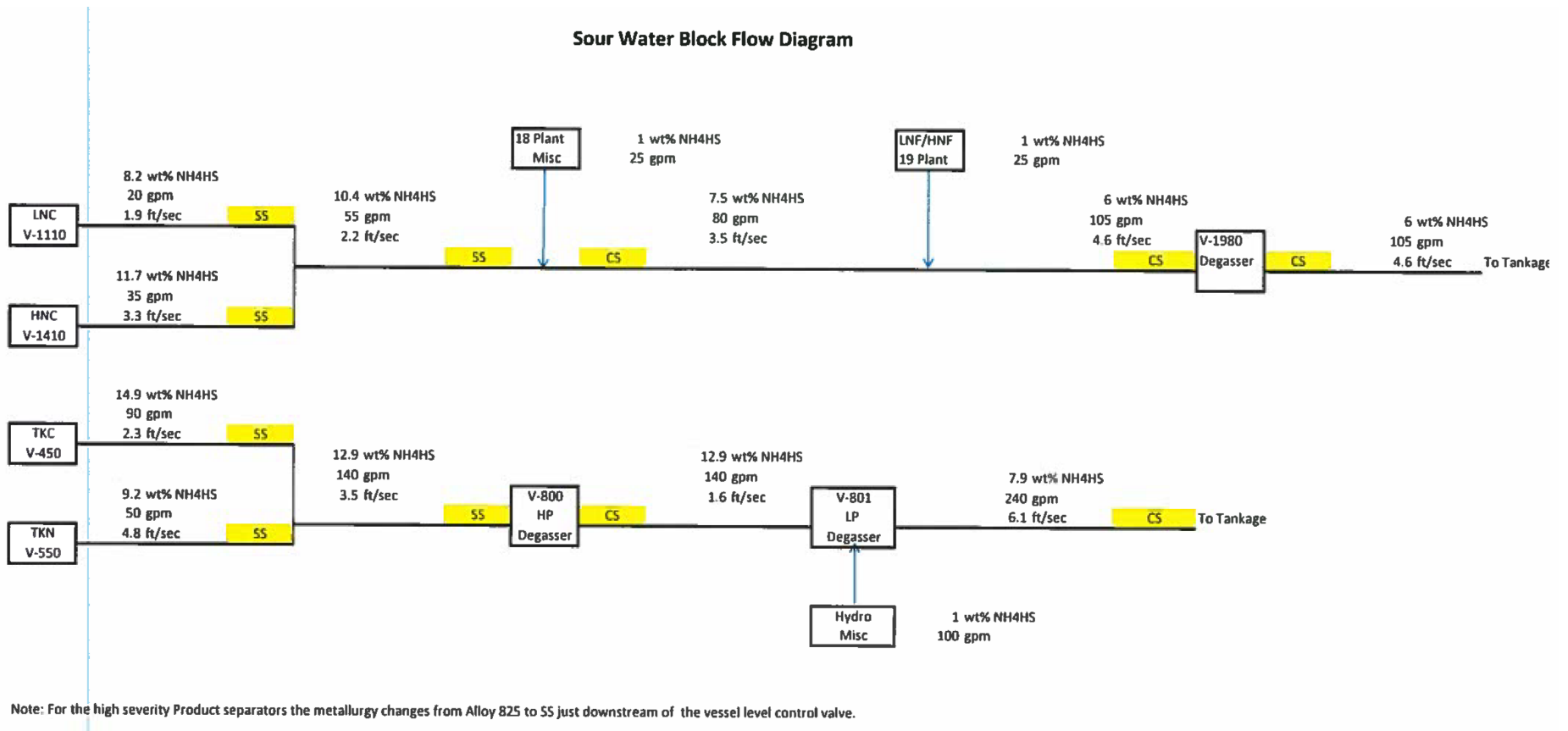
Corrosion due to sour water is typically mitigated by controlling velocity and/or using alloys to resist higher combinations of ammonium bisulfide or velocity. Much of this type of knowledge is captured in API -932-B. The majority of the corrosion concerns in Chevron’s WWT plants are in the overhead systems of the NH_3 stripper column where NH_4HS corrosion can be a concern and secondarily the H_2S stripper column where H_2S goes out the top of the stripper column. In the



02.20.2014 file path: U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL

Source: Chevron (T85)

Figure A4.13-REL-16
Chevron Refinery Modernization Project EIR
Sour Water Plant Feed System



02.20.2014 file path\U:\Chevron Renewal\ENVIRON Files\Report\Figures\DEIR Figures\REL

Source: Chevron (T85)

Figure A4.13-REL-17
Chevron Refinery Modernization Project EIR
Sour Water Block Flow Diagram

sour water plants, the ammonia stripper overhead condenser tube metallurgies are either Titanium (#8 Plant) or Hastelloy (#18 Plant) to resist ammonium bisulfide corrosion. Additionally, the piping from the NH_3 stripper overhead condensers to the stripper accumulator is Hastelloy.

1.9.8.4 Sour Water Systems Recommendations

1. The block diagrams shown in Figure A4.13-REL-16 and Figure A4.13-REL-17 do not include detailed information at the P&ID level. Also, information is lacking on the sour gas streams in the overhead of the H_2S and NH_3 strippers in the SWS unit. (However, for purposes of the review the overhead systems of the WWT plants were deemed to be out of scope.) The impact of post-Modernization Project corrosion from sour water corrosion should be minimal, based on the Reviewer's analysis of the sour water streams. However, based on a lack of detail at the P&ID level Chevron should conduct a review of their sour water piping inspection programs at the P&ID/Inspection Isometric level (including to ensure that low points, galvanic metal couple locations and CMLs are properly captured) to ensure that their program is sufficient to detect any ammonium bisulfide corrosion in the system. This should be completed prior to the commencement of Modernization Project operations.
2. Chevron should conduct monitoring and sampling to confirm their assumptions regarding the ammonium bisulfide concentrations and velocities in the sour water piping and H_2S concentrations in the H_2S Stripper and NH_3 Stripper overhead systems. This review should be conducted when average annual sulfur content levels reach 2.25 wt. % and again at 2.75 wt. %.
3. The H_2S stripper, NH_3 stripper, ammonia stripper overhead condenser, and ammonia stripper reflux drum are all Category 2 Wet H_2S vessels and therefore are included in Chevron's wet H_2S program. If a post-Modernization Project review of the assumptions regarding the severity of wet H_2S damage in the overhead systems warrants a change in the categorization of the overhead wet H_2S vessels, then a wet H_2S cracking inspection should be conducted. This should be conducted within one year after commencement of Modernization Project operations.
4. Continue as with the existing condition inspection, the X-ray and/or close-grid UT inspection techniques for all of the overhead piping from the NH_3 stripper to the reflux drum, regardless of metallurgy.
5. Develop IOWs per draft API -584 for identified damage mechanisms for the sour water system. The IOWs should be established prior to the commencement of Modernization Project operations.

1.9.9 Recovered Oil

1.9.9.1 Recovered Oil Process

The Facility recovered oil system includes two systems, D&R recovered oil that is processed in the crude unit, and North Yard (NY) recovered oil which includes cracking and hydroprocessing sources and is processed in the TKC Fractionator, C-710. The NY recovered oil is derived from the fluid catalytic cracker, hydroprocessing (RLOP, TKC/TKN/ISO), and SDA units. The HP units generate recovered oil in the reactor effluent water wash process. The SDA unit is also a contributor to NY recovered oil.

1.9.9.2 Damage Mechanism Impact Analysis

The D&R recovered oil is recovered from the crude unit desalter as an oil/water emulsion layer. The recovered oil is injected into the flash drum vapor stream from V-1103 which then enters the flash zone of the C-1100 atmospheric tower at nozzle NI7. This recovered oil will contain the same amount of sulfur as being fed to the unit and will also include organic and inorganic chlorides from the desalter that will not be captured by the desalter and will travel overhead in the crude unit, potentially contributing to HCL and ammonium chlorides in the overhead water. The V-1103 vapor stream typically is 295°F and the recovered oil is at ambient temperature. The temperature of the tower where the combined recovered oil/V-1103 vapor stream enters is 685°F, but the nozzle is overlaid with 300 series stainless steel and this portion of the tower is clad with 410SS; therefore, no sulfidation corrosion is expected at the injection location of the D&R recovered oil stream because of the stainless steel metallurgy. Chlorides in the recovered oil would hydrolyze to HCL in the crude charge furnace and travel overhead where they would either condense out in the wash water or combine with ammonia to form ammonium chlorides. The HCL or ammonium chlorides would be mitigated in the same manner as the residual chlorides in the desalted crude going to the crude tower by the ammonia additions and by dilution from the crude tower overhead wash water. In either case, corrosion due to chloride salts was not considered to be a post-Modernization Project damage mechanism(s) as chlorides were shown to not be correlated with increased sulfur or lower API gravity feeds.

The post-Modernization Project NY recovered oil will also not cause an increase in corrosion severity as the fluid catalytic cracker feed sulfur will not increase from the existing setting specification requirements. For the same reason the sulfur level in the HP units downstream of the reactor will not change with the Modernization Project. Therefore, any increase in sulfur in the NY recovered oil should not result in an increase in post-Modernization Project corrosion.

The sulfur content of the SDA feed will increase with the Modernization Project. However, the hydrocarbon stream from the SDA unit comprising the recovered

oil would be the pentane solvent which has negligible sulfur. Therefore, since the sulfur levels in the NY recovered oil will not change, the corrosion rate of the injection location in to C-710 should not increase.

1.9.9.3 Recovered Oil Recommendations

If not already present, add CML locations to the C-710 injection nozzle and adjacent C-710 tower shell so that the assumptions regarding post-Modernization Project corrosion rates not increasing in severity can be verified. Implement prior to the operational startup of the Modernization Project.

1.10 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

1.10.1 Overall Conclusions and Recommendations

In addition to the specific technical recommendations corresponding to each process unit, the Reviewer made several general observations and recommendations of broader applicability, as follows⁸:

Observation: The Facility has many sound appropriate procedures, best practice documents and technically qualified corrosion and materials engineering personnel to manage damage mechanisms associated with existing setting and post-Modernization Project refining processes.

Observation: Chevron's subject matter experts (SME's), who are primarily responsible for understanding and advising on damage mechanisms and their prevention, show a strong commitment to this responsibility.

1. Recommendation: Chevron should ensure that its organizational communication procedures and work processes incorporate mechanisms by which risk concerns, corrective actions, and recommendations that are identified (e.g., during inspections, turnarounds, audits, PHAs, etc.) by personnel (or contractors) are addressed, reviewed and authorized by management as appropriate, tracked, and closed out, and that the rationale for any decision not to implement a recommendation or corrective action, or otherwise address a risk concern, is clearly documented.
2. Recommendation: Chevron should further clarify and incorporate into its mechanical integrity program and program documents periodic reviews of work processes, procedures, inspection strategies, etc. to account for physical, operational and organizational changes over time, that could affect the assumptions that went into the original decisions. Examples that

⁸ The Reviewer has been informed by Chevron that the Facility is implementing corrective actions, resulting from the August 6, 2012 fire, that Chevron asserts address, at least in part, the recommendations below. The Reviewer did not independently review these corrective actions or the status of their implementation, so does not reach a conclusion regarding their adequacy to address the recommendations.

illustrate this include: (1) periodic reviews of inspection CML densities and placements to ensure that unpredictable damage mechanisms can be detected; and (2) reviews of wet H₂S damage risk, based on crude feed constituent changes. Chevron reports - though this Reviewer did not independently verify - that Chevron is developing "asset strategy plans" for each process unit, and that the development of the asset strategy plans will address this recommendation by including review of inspection procedures, working documents, CMLs, and damage mechanisms, and that the asset strategy plans will identify and implement changes needed to each as a result of the review. Whether called an "asset strategy plan" or otherwise included in another safety program (e.g., included as part of the Richmond Industrial Safety Ordinance documentation), Chevron should clarify its implementation tracking process for changes needed as a result of these periodic reviews.

3. Recommendation: Chevron should leverage its existing infrastructure and technology to lessen the reliance on human interaction in responding to potential risks, including for example Chevron's current pilot project to implement Integrity Operating Windows per the guidelines of the draft API-584 Recommended Practice for the crude unit. Chevron should extend the pilot project to the remaining operating units.
4. Recommendation: Chevron should review its Positive Material Identification (PMI) Procedure for compliance with API-578, Material Verification Program for New and Existing Alloy Piping Systems, based on PMI inspection of equipment and piping during shutdown/ dismantling/disassembly, and make revisions, as warranted, to ensure that Chevron's PMI Procedure conforms to API-578.
5. Recommendation: Chevron should review and modify its Piping Inspection Procedure to incorporate an engineering review of thickness inspection data with near term "Flag" dates for high risk equipment/piping to assure that the actual minimum thickness associated with the Flag date has either been verified through inspection or, alternatively, the inspection data analyzed with techniques such as a statistical analysis (95% CL or extreme value analysis) to evaluate what risk is involved if the actual minimum thickness was not measured.

1.10.2 Specific Recommendations

The following recommendations for specific processes should be implemented prior to commencement of post-Modernization Project operations, unless otherwise indicated.

1.10.2.1 Crude Unit Recommendations

The operational and feedstock changes contemplated by the Modernization Project have the potential to increase the risk of accidental release of hazardous

substances associated with increasing damage mechanism activity. Specifically, increases in sulfur content of feedstocks, increased hydrogen purity produced by the new hydrogen plant, or increased H₂S partial pressures in hydroprocessing plants recycle streams could all contribute to increased damage mechanism activity post-Modernization Project, thereby warranting the implementation of the following preventive measures.

1. Based on the results from the F-1100 radiant tube sulfidation analysis, Chevron should monitor the post-Modernization Project sulfur content being fed to the crude unit and use a 2.0 wt. % sulfur content of feed as a trigger to conduct a review of the F-1100 crude charge furnace to study whether the 5Cr radiant tubes are safe to operate until the 2017 shutdown.
2. Chevron's analysis of the atmospheric column furnace F-1100 does not include conclusive evidence as to the present creep/stress-rupture condition of the tubes. Therefore, it is believed that some additional actions are required in order to lower the risk of a creep/stress-rupture or sulfidation failure in a F-1100 tube under post-Modernization Project operating conditions. Acceptable options to lower the risk of heater tube failures include:
 - Furnace F-1100: Option 1, complete all of the following actions:
 - Complete a full internal tube inspection for F-1100 during the 4th quarter 2017 crude unit turnaround using intelligent pigs.
 - Conduct testing on the two currently available, radiant section tubes from the F-1100 Furnace to verify their existing metallurgical, physical and mechanical properties, plus remaining creep life using accelerated Omega creep testing as an input to decide whether the F-1100 furnace should be retubed during the 2017 shutdown.
 - Conduct additional metallurgical, physical, mechanical and Omega creep testing on radiant furnace tube samples to be removed during the 2017 shutdown, depending on the results of the Omega testing planned for the 2012 furnace tube samples.
 - In 2017, replace tubes as needed in F-1100, per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.

- Install at least three Permasense® continuous monitoring ultrasonic thickness gauge monitors in each of the furnace outlet systems. If the monitors indicate an increase in corrosion rates greater than 5 mpy, review the need for additional mitigation actions.
 - Furnace F-1100: Option 2:
 - Retube the F-1100A/B furnace during the 2017 turnaround with 9Cr or higher alloy tubes.
3. The vacuum column furnace, F-1160, is constructed of 5Cr radiant furnace tubes. The recommended actions for this furnace are as follows:
 - Complete a full internal tube inspection for F-1160 during the 2017 crude unit turnaround using intelligent pigs.
 - In 2017, replace tubes as needed in F-1160 per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.
 4. Conduct laboratory analyses to more accurately determine crude and crude blend sulfur speciation and H₂S evolution, which could be used to predict likely crude corrosion rates. This should be done by the end of the fourth quarter of 2015.
 5. Develop integrity operating windows (IOWs) for critical crude unit operating parameters per the guidelines in the draft version of API-584. This should be done by the end of the third quarter of 2014.
 6. The Crude Splitter software is used to predict the distribution of the sulfur in the atmospheric tower sidecut and bottom streams. Verify the Crude Splitter predicted sulfur results with post-Modernization Project data on the sulfur-containing streams within the first year of operation following the implementation of the Modernization Project if the trigger points (2.25 wt. % sulfur and 2.75 wt. % sulfur) noted in the Modernization Project Reliability Program are reached.
 7. Revise the asset integrity plans for the crude unit atmospheric column reflux drum (V-1100), the stabilizer column reflux drum (V-1190), and the vacuum column overhead seal drum (V-1160), to include inspection for wet H₂S damage. An external automatic ultrasonic testing inspection of representative sections of the "water wet" portions of V-1100, V-1160 and (V-1190) vessels should be conducted as a baseline before the start of post-Modernization Project conditions, then checked externally again

approximately one year after the start of the Modernization Project conditions. In addition, a one-time internal inspection should be conducted of these vessels during the scheduled maintenance turnaround after the start of Modernization Project conditions, using eddy current or other approved internal inspection techniques per the Chevron Wet H₂S program.

8. Develop a process monitoring plan for the crude unit overhead to confirm any impacts of the increased sulfur levels. The monitoring plan should be implemented post-Modernization Project and should include:
 - Process sampling of the accumulator for pH, chlorides, iron and H₂S content. Compare to established IOWs;
 - Monitor desalter pH;
 - Analyze the atmospheric tower post-Modernization Project to quantify if, and how much, increased H₂S is in the overhead system resulting from the increased sulfur feed to the unit;
 - Higher mercaptan crudes could lead to increased sulfidation corrosion rates in the jet or kerosene cuts. Modify asset integrity plans to monitor for potential increased corrosion if higher mercaptan crudes are run compared with current and historic crude and crude blends; and
 - Review the asset integrity plan to ensure that the Permasense continuous ultrasonic monitoring locations are properly placed to ensure early detection should corrosion rates increase significantly beyond expectations per the McConomy curve predicted rates.
9. The reliability review for the Modernization Project has identified seventeen (17) piping circuits in the crude unit that warrant replacement based on post-Modernization Project operation conditions. The Facility has committed to accelerating the replacement of these circuits during the next scheduled turnaround for the crude unit, no later than end-of-year (EOY) 2017, as detailed above in Section 1.9.2.8.5, High Temperature (HT) Sulfidation, Table A4.13-REL-5.

The reliability review for the Modernization Project has also identified four partial piping and valve replacements in the crude unit that warrant replacement based on reasonably foreseeable post-Modernization Project operating conditions. Chevron has committed to accelerating the replacement of these partial components during the next scheduled turnaround for the crude unit, no later than end-of-year (EOY) 2017, as

shown above in Section 1.9.2.8.5, High Temperature (HT) Sulfidation, Table A4.13-REL-6.

10. As with all piping circuits in the Facility, new 9Cr circuits should be regularly monitored and inspected. Beginning one year from commencement of Modernization Project operations, the Facility should provide annual reports to the City summarizing the monitoring and inspection results for the identified circuits as noted above. These reports shall, at a minimum, include the following information:

- A list of all piping circuits identified as potentially susceptible to sulfidation corrosion, including specifically piping circuits identified during the reliability review for the Modernization Project as being susceptible to sulfidation corrosion and subject to potential process changes;
- A list of components identified through the 100% component inspection conducted following the August 6, 2012 incident pursuant to the methodologies set forth in the *API-939-C - Guidelines for Avoiding Sulfidation (Sulfidic) Corrosion Failures in Oil Refineries* and *Updated Inspection Strategies for Preventing Sulfidation Corrosion Failures in Chevron Refineries* (API-939-C, 2009) that may lack sufficient thickness to remain in service until the next scheduled turnaround;
- A description of the solutions implemented with respect to components of insufficient thickness identified above;
- A description of the current fixed inspection frequency for carbon steel piping circuits identified as potentially susceptible to sulfidation corrosion;
- A description of any findings from inspection and monitoring of the piping circuits identified during the reliability review for the Modernization Project as being susceptible to sulfidation corrosion and subject to potential process changes that indicate that any of these circuits lack sufficient thickness to remain in service until the next turnaround, and a description of the solution to be implemented with respect to these circuits.

11. Chevron shall obtain all required permits for replacement of these piping circuits pursuant to the California Building Standards Code, inclusive of the California Fire Code, and, once the piping circuits are replaced, shall submit copies of closed permits to the Planning Department to demonstrate compliance with this commitment.

12. Re-evaluate and report on the validity of post-Modernization Project operating and process assumptions made during the reliability review. The reliability review for the Modernization Project assumed that certain operating conditions would exist once the Project is implemented, including projected temperatures, sulfur levels, and corrosion rates for various process units and individual piping circuits. These assumptions were based on either the P50 sulfur case or a conservative 3.28 wt. % (P90) sulfur case. In order to verify that the assumptions made during the reliability review were accurate, the Facility will undertake the following actions:

- When the sulfur weight percent of crude oil processed at the Facility reaches 2.25 wt. % sulfur on an annual average, and the again when it reaches 2.75 wt. % sulfur annual average, the Facility shall:
 - Assemble a reliability review team that will be made up of appropriate subject matter experts (SMEs), including a Senior Process Engineer, Senior ETC Materials and Corrosion Engineer, Refinery Materials Engineer and Process Operator;
 - For all damage mechanisms identified as being affected by the Project, and using then-current inspection and/or monitoring data, the reliability review team shall review, analyze, and, as necessary, update, the data and conclusions prepared during the reliability review for the Modernization Project to determine whether the assumptions made and conclusions reached during the reliability review accurately reflect actual post-Modernization Project operating conditions.
 - Review any changes associated with sulfur speciation that have resulted from the Modernization Project.
 - Review any operational or process changes that have occurred post-Modernization Project.
 - Make recommendations concerning material upgrades and/or enhanced inspection opportunities as necessary, based on the re-evaluation.
 - Report on the results of this re-evaluation and any resulting recommendations.

13. Installation and Monitoring of Additional Permasense® Monitors on Identified Circuits

Since the beginning of 2013, the Facility has installed a total of 117 Permasense® probes in the crude unit on six piping systems consisting of

carbon steel, 5 Chrome, and 9 Chrome materials. Permasense® is the trade name of a type of high-temperature ultrasonic device that is mounted on a pipe or vessel, and penetrates through insulation. It has wireless sensors that provide periodic equipment thickness readings (at variable intervals, but currently set to collect thickness data twice-a-day) to monitor a system. Due to noise and sensitivity, the technology is limited to longer-term trending (days and months vs. hours), which is appropriate for piping subject to sulfidation conditions with its predictable rates.

The six piping systems on which the sensors were installed, were chosen based on past and projected operating conditions. The wireless probes collect pipe wall thickness data while the plant is operating, and are used to monitor corrosion rates. This long-term online monitoring program will be part of the reliability program to ensure safe operation of equipment after the Modernization Project commences operation. Thirteen of these piping circuits with Permasense® monitors installed have been identified for replacement and will be upgraded to 9 Chrome pursuant to the planned piping circuit upgrades described above and the Permasense® monitors will not be reinstalled on these circuits. In addition, as part of the Modernization Project, the Facility will install at least 25 additional Permasense® monitors on carbon steel circuits in the SDA unit. These sensors are being installed to confirm the predictive model results that there will be little-to-no sulfidation corrosion in the SDA unit post-Modernization Project.

Data from the Permasense® monitors will be utilized in the reporting obligations.

14. Develop and implement physical or administrative controls to assure that carbon steel piping components downstream of high sulfur streams operating > 500°F are not inadvertently placed into continuous (e.g., placement of a warning tag, locked valve, double-block-and-bleed valves or other measures). This should be completed prior to the commencement of Modernization Project operations.
15. Higher mercaptan crudes could lead to increased sulfidation corrosion rates in the jet or kerosene cuts. Conduct a historical review of purchased crudes and processed crude blends for the 90% confidence level of highest mercaptans processed and use this statistical number to set a review flag in the crude and gas oil acceptance procedure. If higher mercaptans crudes are run at the Facility, review the Permasense® corrosion rate data from this time period as part of the crude management of change lookback. This should be completed prior to the commencement of Modernization Project operations.

16. Add corrosion monitoring locations (CMLs) to the crude unit atmospheric column overhead piping (circuit 0955-003-001) at the termination of the Hastelloy internal overlay. This should include the termination of cladding in the vertical section of piping, as well as the termination point at the inlet to the E- 1101's. Review other, similar locations in the crude unit for missing dissimilar metal interface thickness monitoring locations (TMLs). This should be completed prior to the commencement of Modernization Project operations.

1.10.2.2 Hydroprocessing Recommendations

1. At the 2.25% wt. % sulfur in crude feed trigger point, evaluate and modify as warranted, based on any increased sulfur in this section of the unit, inspection plans (what, where and how often) for the distillation section of the HP units where sulfidation corrosion rates have been “erratic” and uncertain, per API-939-C.
2. Report on the progress of the project to compare the HP-002 Best Practice Guideline regarding water wash to API-932-B recommendations to ensure that the HP-002 document is consistent with 932-B guidelines. This report should be submitted prior to the commencement of Modernization Project operations.
3. Conduct process monitoring and sampling for post-Modernization Project operations for all HP units, to develop process data to confirm assumptions made during the damage mechanism review regarding amounts of H₂S and ammonium bisulfide in the overhead systems. This shall be completed after commencement of Modernization Project operations.
4. Develop IOWs for the HP units to incorporate existing critical reliability variables such as the wash water rate for NH₄HS corrosion control. The IOWs shall be established prior to the startup of Modernization Project operations.
5. If the REAC Corrosion Control Project (TKN) is not completed pre-Modernization Project, conduct a review of current operations to ensure that corrosion rates will remain under REAC best practice guidelines with any increase in sulfur to the unit. This shall be completed prior to the startup of Modernization Project operations.

1.10.2.3 SDA Recommendations

1. Verify post-Modernization Project conditions regarding H₂S content in the SDA overheads and target one or more “water wet” vessels for inspection using internal eddy current, external automatic ultrasonics (AUT) or other non-destructive evaluation (NDE) techniques appropriate for wet H₂S cracking detection within one year of operation under post-Modernization Project conditions.

2. Conduct water boot analysis for corrosive constituents similar to that conducted in the crude unit on the unit overhead accumulator drums, including cyanides. This should be conducted at the 2.25 wt. % and 2.75 wt. % sulfur trigger points.
3. When the sulfur wt. % of crude oil processed at the Facility reaches 2.25 wt. % sulfur on an annual average, and again when it reaches 2.75 wt. % sulfur annual average, the Facility shall trigger the same responses for the SDA plant as described in the recommendation section for the crude unit.
4. Conduct a follow-up smart pig inspection of F-100 and F-120 furnace tubes during the first planned maintenance after the unit has seen at least 1 year of post-Modernization Project operating conditions.
5. Install at least 25 additional Permasense® monitors on carbon steel circuits in the SDA unit including sulfidation “dead legs,” based on a critical review of historical corrosion rates. These sensors will confirm the predictive model results that there will be little-to-no increase in sulfidation corrosion in the SDA post-Modernization Project. These installations should be completed prior to the commencement of Modernization Project operations.
6. Develop IOWs per draft API -584 for identified damage mechanisms in the SDA unit. The IOWs should be established prior to the commencement of Modernization Project operations.
7. Develop process monitoring and sampling plans for post-Modernization Project operating conditions to confirm assumptions made during the damage mechanism review project. The monitoring and sampling plans should be developed prior to the commencement of Modernization Project operations, and should be implemented after commencement of Project operations, following an increase in sulfur content to the SDA unit.

1.10.2.4 Amine Systems Recommendations

It is recommended that Chevron review ongoing sampling results (per Best Practice timing plus vendor sampling and reports) to determine if post-Modernization Project amine loading and heat stable amine salts (HSAS) are impacted by any increase in H₂S to the TKC Unit. This should be done prior to the commencement of Modernization Project operations.

1.10.2.5 Sulfur Recovery Unit Recommendations

Associated with the new liquid oxygen piping, the Facility shall design and build new construction in conformance with the special design and installation precautions associated with oxygen piping systems, i.e., design and installation best practice details common in the industry for oxygen piping systems, including pre-commissioning cleaning of the piping interior to remove harmful

materials such as dirt, debris, iron, grease and other contaminants known to cause ignition of pure liquid and gaseous oxygen.

1.10.2.6 Sour Gas System Recommendations

1. Based on the potential risk of ammonium bisulfide corrosion in carbon steel due to the possibility of the sour gas condensing at locally cool portions of piping, Chevron should develop and implement a mitigation plan for this eventuality. The mitigation plan is to include reviewing sour gas P&IDs and isometric drawings to locate low points where water could accumulate, locate dead legs and establish inspection/monitoring plans for verifying if and where water is condensing out of the vapor phase. This should be conducted within 1 year of commencement of Modernization Project start-up.
2. Chevron should conduct a review to confirm their post-Modernization Project assumptions made during this review regarding ammonium bisulfide concentrations, dew points and potential for salt condensation in the sour gas piping, at the 2.25 wt. % and 2.75 wt. % average annual sulfur content trigger points.
3. Develop IOWs per draft API -584 for identified damage mechanisms for the sour gas system. These IOWs should be established prior to the commencement of Modernization Project operations.

1.10.2.7 Sour Water System Recommendations

1. The block diagrams shown in Figure A4.13-REL-16 and Figure A4.13-REL-17 do not include detailed information at the P&ID level. Also, information is lacking on the sour gas streams in the overhead of the H₂S and NH₃ strippers in the SWS unit. (However, for purposes of the review, the overhead systems of the WWT plants were deemed to be out of scope). The impact of post-Modernization Project corrosion from sour water corrosion should be minimal, based on the Reviewer's analysis of the sour water streams. However, based on a lack of detail at the P&ID level Chevron should conduct a review of their sour water piping inspection programs at the P&ID/Inspection Isometric level (including to ensure that low points, galvanic metal couple locations and CMLs are properly captured) to ensure that their program is sufficient to detect any ammonium bisulfide corrosion in the system. This should be completed prior to the commencement of Modernization Project operations.
2. Chevron should conduct monitoring and sampling to confirm their assumptions regarding the ammonium bisulfide concentrations and velocities in the sour water piping and H₂S concentrations in the H₂S Stripper and NH₃ Stripper overhead systems. This review should be conducted when

average annual sulfur content levels reach 2.25 wt. %, and again at 2.75 wt. %.

3. The H₂S stripper, NH₃ stripper, ammonia stripper overhead condenser, and ammonia stripper reflux drum are all Category 2 Wet H₂S vessels and therefore, are included in Chevron's wet H₂S program. If a post-Modernization Project review of the assumptions regarding the severity of wet H₂S damage in the overhead systems warrants a change in the categorization of the overhead wet H₂S vessels, then a wet H₂S cracking inspection should be conducted. This should be conducted within one year after the commencement of Modernization Project operations.
4. Continue as with the existing condition inspection, the X-ray and/or close-grid UT inspection techniques for all of the overhead piping from the NH₃ stripper to the reflux drum, regardless of metallurgy.
5. Develop integrity operating windows (IOWs) per draft API-584 for identified damage mechanisms for the sour water system. The IOWs should be established prior to the commencement of Modernization Project operations.

1.10.2.8 Recovered Oil Recommendations

If not already present, add CML locations to the C-710 injection nozzle and adjacent C-710 tower shell so that the assumptions regarding post-Modernization Project corrosion rates not increasing in severity can be verified. Implement prior to the operational startup of the Modernization Project.

1.11 REFERENCES

- American Petroleum Institute (API). 2006. API-510 - Pressure Vessel Inspection Code: In-Service Inspection, Rating, Repair, and Alteration. 9th Ed.
- American Petroleum Institute (API). 2008. API -581 - Risk-Based Inspection Technology, 2nd Ed.
- American Petroleum Institute (API). 2008. API -941- Steels for Hydrogen Service at Elevated Temperatures and Pressures in Petroleum Refineries and Petrochemical Plants. 7th Ed.
- American Petroleum Institute (API). 2008. API - 945 - Avoiding Environmental Cracking in Amine Units. 3rd Ed.
- American Petroleum Institute (API). 2009. API-570 - Piping Inspection Code: In-Service Inspection, Rating, Repair, and Alteration of Piping Systems. 3rd Ed.
- American Petroleum Institute (API). 2009. API-572: Inspection of Pressure Vessels, 3rd Edition.

- American Petroleum Institute (API). 2009. API -574 - Inspection Practices for Piping System Components. 3rd Ed.
- American Petroleum Institute (API). 2009. API-580: Risk-Based Inspection. 2nd edition.
- American Petroleum Institute (API). 2009. API-653: Standard for Tank Inspection, Repair, Alteration and Reconstruction. 4th Edition.
- American Petroleum Institute (API). 2009. API-939C - Guidelines for Avoiding Sulfidation Corrosion Failures in Oil Refineries. 1st Ed.
- American Petroleum Institute (API). 2010. API-578 - Material Verification Program for New and Existing Alloy Piping Systems. 2nd Ed.
- American Petroleum Institute (API). 2011. API-571 - Damage Mechanisms Affecting Fixed Equipment in the Refining Industry. 2nd Ed.
- American Petroleum Institute (API). 2011. API-584 - Integrity Operating Windows (draft).
- American Petroleum Institute (API). 2012. API - 932B - Design, Materials, Fabrication, Operation, and Inspection Guidelines for Corrosion Control in Hydroprocessing Reactor Effluent Air Cooler (REAC) Systems. 2nd Ed.
- Bogaerts, W. F. 1998. Active Library on Corrosion 2.0. Elsevier Science B.V., Amsterdam, The Netherlands.
- Center for Chemical Process Safety (CCPS). 2014. Introduction to Management of Change. Accessed February 14, 2014.
<http://www.aiche.org/ccps/topics/elements-process-safety/manage-risks/management-change/introduction>.
- Chevron Data Transmittal #85: Public Safety Figures and Tables. March 3, 2014.
- Infrastructure Health & Safety Association (IHSA). 2014. Oil Refineries and Petrochemical Plants. Special Locations.
http://www.ihsa.ca/resources/health_safety_manual.cfm.
- Jong J. D., A. Saunders-Tack, M. Sargent, A. M. Etheridge, W. C. Fort, and N. Dowling. 2007. Effect of Mercaptans and Other Organic Sulfur Species on High Temperature Corrosion in Crude and Condensate Distillation Units. Paper No. 07565. NACE International, Houston, TX.
- NACE International (NACE). 2004. Overview of Sulfidic Corrosion in Petroleum Refining. NACE International Publication 34103, Houston, TX.
- Nichols E.H. et. al. 2008. High Temperature Sulfidation Corrosion in Refining. International Corrosion Conference, Las Vegas, NV.

Peabody, A.W. 2001. Peabody's Control of Pipeline Corrosion. 2nd Ed. NACE International, Houston, TX.

Shargay C.A., A.J. Bagdasarian, J.W. Coombs, W.K. Jenkins. [no date]. Corrosion in Hydroprocessing Units. NACE International, Houston, TX.

United States Steel Corporation. 1971. Making, Shaping and Treating of Steel, 9th Ed.

Van Delinder, L. S. and A. de S. Brasunas. 1984. Corrosion Basics: An Introduction. National Association of Corrosion Engineers.

Chevron provided the Reviewer with access to confidential business information under the terms of a confidentiality and non-disclosure agreement for purposes of conducting the Reliability Analysis. These documents are included in the reference list, but are Chevron proprietary and confidential business information. The following documents were provided:

Chevron U.S.A. Inc. 2005a. Atmospheric Overhead Corrosion Control Best Practice Document. May. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. 2005b. Risk Management of Wet H₂S Cracking in Process Plants. December. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. 2005c. Wet H₂S Final Report. December. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. [2005d]. Crude Unit Atmospheric Overhead Corrosion Control Best Practice. May. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. 2009. Inspection Strategies for Preventing Sulfidation Corrosion Failures in Chevron Refineries. September 30. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. 2010. Amine Best Practice Guidelines. April. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. 2011. Hydroprocessing REAC Corrosion Control Guidelines. April. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. 2012a. Crude Acceptance Job Aid. January. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. 2012b. Internal Process Safety Management (PSM) audit. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

- Chevron U.S.A. Inc. 2013a. #4 Crude Unit – Distillation and Reforming Division. October 29. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. 2013b. Introduction to the Damage Mechanism Review. October 25. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. 2014a. Crude Unit Damage Mechanism Review. February 5. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. 2014b. Crude Unit Sulfidation Corrosion Analysis. February 4. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. 2014c. F-1100 and F-1160 Damage Mechanism Review. January 30. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. 2014d. Hydroprocessing Units Damage Mechanism Review. February 13. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. 2014e. SDA Sulfidation Corrosion Analysis. February 4. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. [no date 1]. Second Stage Unit Specifications. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. [no date 2]. Amine Best Practice Guidelines Document. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. [no date 3]. Best Practice Document: HP-002 -Reactor Effluent Air-Cooler Piping and Equipment Corrosion Control Guidelines. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. [no date 4]. Crude Acceptance Policy and Gas Oil Quality Control. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. [no date 5]. Dead Leg Inspection Strategy. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. [no date 6]. Introduction Reference Manual. *Confidential Business Information*, reviewed by D. Hendrix in 2013.
- Chevron U.S.A. Inc. [no date 7]. Introduction Section Attachment 2 Crude and Gasoil Input Summary. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. [no date 8]. Introduction Section Attachment 2 Crude and Gasoil Input Summary. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. [no date 9]. REAC Corrosion Control Project DWRRI-HN249 02KJ1602 Phase 4. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. [no date 10]. Reference for higher sulfur limits for imported gas oil. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. [no date 11]. Review of Richmond 4CDU F-1100 and F-1160 Atmospheric Column and Vacuum Column Feed Furnaces: Sulfidation and Sulfidation-Creep Mechanisms. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. [no date 12]. Summary of Deadleg Inspection Program. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

Chevron U.S.A. Inc. [no date 13]. Wet H₂S Piping Summary. *Confidential Business Information*, reviewed by D. Hendrix in 2013.

APPENDIX 4.16

Traffic – Technical Data

MEMORANDUM

Date: February 26, 2014

To: Lynette Dias and Elizabeth Boyd, Urban Planning Partners

From: Sam Tabibnia

Subject: Traffic Impact Analysis for Chevron Facility Modernization Project EIR

WC11-2951

This memorandum summarizes the traffic impact analysis completed by Fehr & Peers for the Chevron Facility Modernization Project EIR. The memorandum summarizes existing traffic conditions in the project vicinity, and estimates trip generation and evaluates impacts on traffic operations at intersections in the project vicinity during project construction and after completion of project construction. This memorandum also identifies significant impacts, recommends improvements to mitigate those impacts, and identifies traffic volume thresholds that trigger those impacts and associated mitigation measures.

1. Study Area

Fehr & Peers analyzed traffic operations at the following 11 intersections, shown on **Figure 1** (All figures are provided at the end of this document), as part of this evaluation:

- | | |
|--|--|
| 1. Chevron Way/Marine Street | 7. Castro Street/Mills Street (Gate 31) |
| 2. Castro Street/Tewksbury Avenue | 8. Castro Street/Richmond Lane/General Chemical Access (Gate 91) |
| 3. Marine Street/I-580 Eastbound Ramps | 9. Castro Street/Hensley Street |
| 4. Castro Street/I-580 Eastbound Ramps | 10. Richmond Parkway/Hensley Street |
| 5. Castro Street/Chevron Way | 11. Richmond Parkway/Gertrude Avenue |
| 6. Castro Street/I-580 Westbound Ramps (Gate 14) | |

These intersections were selected because they provide access to the project site and would most likely be impacted by the project construction or project operations.



2. Analysis Methodology

Study intersection operations were evaluated using level of service (LOS) calculations. To measure and describe the operational status of a local roadway network, transportation engineers and planners commonly use a grading system called level of service (LOS). LOS is a description of a transportation facility's operation, ranging from LOS A, indicating free-flow traffic conditions with little or no delay experienced by motorists, to LOS F, which describes congested conditions where traffic flows exceed design capacity, resulting in long queues and delays.

This evaluation uses the Transportation Research Board's 2000 *Highway Capacity Manual* (HCM) method to analyze intersection operations at all signalized and unsignalized study intersections. The Synchro Software was used to estimate delay and LOS for all signalized and unsignalized study intersections. Synchro uses the equations provided in 2000 HCM to calculate control delay. These equations use intersection characteristics, such as vehicle and pedestrian volumes, lane geometry, and signal phasings, as inputs in estimating control delay. The analysis methodology for both signalized and unsignalized intersections are described below:

Signalized Intersections

The 2000 HCM method for signalized intersections evaluates average control delays and then assign an LOS. Control delay is defined as the delay associated with deceleration, stopping, moving up in the queue, and acceleration experienced by drivers at an intersection. **Table 1** provides descriptions of various LOS and the corresponding ranges of delays for signalized intersections.

Unsignalized Intersections

For unsignalized intersection, the 2000 HCM method calculates delay for movements that are controlled by a stop sign or that must yield the right-of-way. The movement or approach with the highest delay is reported. The LOS ranges for unsignalized intersections are shown in **Table 1**. They are lower than the delay ranges for signalized intersections because drivers generally tolerate more delay at signals.



TABLE 1
INTERSECTION LEVEL OF SERVICE DEFINITIONS

Unsignalized Intersections		Level of Service Grade	Signalized Intersections	
Description	Average Total Vehicle Delay (Seconds)		Average Control Vehicle Delay (Seconds)	Description
No delay for stop-controlled approaches.	≤10.0	A	≤10.0	Free Flow or Insignificant Delays: Operations with very low delay, when signal progression is extremely favorable and most vehicles arrive during the green light phase. Most vehicles do not stop at all.
Operations with minor delay.	>10.0 and ≤15.0	B	>10.0 and ≤20.0	Stable Operation or Minimal Delays: Generally occurs with good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average delay. An occasional approach phase is fully utilized.
Operations with moderate delays.	>15.0 and ≤25.0	C	>20.0 and ≤35.0	Stable Operation or Acceptable Delays: Higher delays resulting from fair signal progression and/or longer cycle lengths. Drivers begin having to wait through more than one red light. Most drivers feel somewhat restricted.
Operations with increasingly unacceptable delays.	>25.0 and ≤35.0	D	>35.0 and ≤55.0	Approaching Unstable or Tolerable Delays: Influence of congestion becomes more noticeable. Longer delays result from unfavorable signal progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop. Drivers may have to wait through more than one red light. Queues may develop, but dissipate rapidly, without excessive delays.
Operations with high delays, and long queues.	>35.0 and ≤50.0	E	>55.0 and ≤80.0	Unstable Operation or Significant Delays: Considered to be the limit of acceptable delay. High delays indicate poor signal progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurrences. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
Operations with extreme congestion, and with very high delays and long queues unacceptable to most drivers.	>50.0	F	>80.0	Forced Flow or Excessive Delays: Occurs with oversaturation when flows exceed the intersection capacity. Represents jammed conditions. Many cycle failures. Queues may block upstream intersections.

Source: Highway Capacity Manual, Transportation Research Board, 2000.



3. Existing Conditions

Fehr & Peers conducted peak period automobile intersection turning movement counts, as well as pedestrian, bicycle and truck counts from 6:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM on Tuesday, September 20, 2011, at all study intersections, while the Chevron Facility was operating under normal conditions.

Based on the collected counts, the weekday morning peak hour occurs from 7:15 to 8:15 AM and the evening peak hour occurs from 4:30 to 5:30 PM. **Figure 1** shows the existing intersection peak hour turning movements, intersection lane configurations and traffic controls. **Appendix A** provides the detailed count sheets.

Table 2 summarizes the intersection operation analysis results based on the traffic volumes, lane configurations, and traffic controls presented on Figure 1. **Appendix B** provides detailed intersection LOS calculation worksheets.

The City of Richmond General Plan classifies Richmond Parkway and Castro Street as Routes of Regional Significance.¹ Per West Contra Costa County Transportation Advisory Committee (WCCTAC) and the City of Richmond, signalized and unsignalized intersections on Routes of Regional Significance are considered to function at acceptable conditions if they operate at LOS D or better.² As shown in Table 2, all study intersections operate at LOS D or better during both AM and PM peak hours. These acceptable operations were confirmed by field observations.

¹ As described in the City of Richmond General Plan, routes of regional significance are roadways that (1) connect to a regional highway/transit facility; (2) carry significant amount of traffic; (3) cross County boundaries; and/or (4) connect more than one region of the County.

² The West Contra Costa County Transportation Advisory Committee's *West Contra Costa County Action Plan 2009 Update* (July 2009) establishes a Multi-Modal Traffic Service Objective of LOS D or better for intersections on Routes of Regional Significance. The City of Richmond General Plan policies state that LOS standards on routes of regional significance shall comply with WCCTAC's Action Plan.



**TABLE 2
EXISTING (2011) CONDITIONS
INTERSECTION LOS SUMMARY**

#	Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
			Delay ²	LOS	Delay ²	LOS
1.	Chevron Way/Marine Street	AWSC	5.7	A	8.5	A
2.	Castro Street/Tewksbury Avenue	AWSC	8.3	A	9.3	A
3.	Marine Street/I-580 Eastbound Ramps	Signal	1.9	A	17.5	B
4.	Castro Street/I-580 Eastbound Ramps	Signal	17.5	B	50.9	D
5.	Castro Street/Chevron Way	Signal	2.1	A	1.0	A
6.	Castro Street/I-580 Westbound Ramps	Signal	20.9	C	36.2	D
7.	Castro Street/Mills Street	Signal	6.5	A	7.9	A
8.	Castro Street/General Chemical Access	Signal	8.3	A	17.0	B
9.	Castro Street/Hensley Street	Signal	6.1	A	12.6	B
10.	Richmond Parkway/Hensley Street	Signal	11.8	B	8.6	A
11.	Richmond Parkway/Gertrude Avenue	Signal	18.2	B	25.5	C
¹ AWSC = all-way stop-controlled intersection; Signal = traffic signal-controlled intersection. ² Average overall intersection control delay (seconds per vehicle) reported for signalized and all-way stop-controlled intersections. Source: Fehr & Peers, 2014.						

4. Project Traffic Characteristics

Based on information provided by Chevron, the following are the primary sources of traffic generation during Project construction:

- **Facility Operations:** Normal day-to-day operations of the Facility, which will continue through the duration of Project construction. Existing Facility operations traffic is part of the Existing Conditions previously discussed. Changes to operations-related traffic generation, following Project construction, would be minor, as described below.
- **Project Construction:** Construction worker and truck Traffic associated with Project construction, which includes the construction of Hydrogen Plant Replacement, Sulfur Removal Improvements, Hydrogen Plant tie-ins, and Project Design Features.
- **Other Projects:** Construction worker and truck Traffic associated with other construction projects that would coincide with Project construction. This includes the Long Wharf



Maintenance and Efficiency Project, the Storage Tank Replacement Project, and other on-site projects and the Hensley Street and Kelham Warehouse Projects, both located east of Castro Street.

- **Periodic Facility Maintenance:** Facility maintenance activities, including shutdowns for maintenance of major Facility components ("Major Turnarounds"), which are anticipated to occur during Project construction;

This analysis evaluates the impacts associated with both Project construction and changes to Facility operations resulting from the Project construction. This analysis considers post-Project operations-related traffic generation as a potential cumulative impact in relation to past, present and reasonably foreseeable future projects. In addition, cumulative Project impacts associated with Other Projects and Major Turnarounds are also addressed.

The following scenarios are considered:

- Baseline (2016) No Project Conditions
- Baseline (2016) Plus Project Construction Conditions
- Baseline (2016) Plus Project Construction Plus Other Projects Construction Conditions
- Baseline (2016) Plus Project Construction Plus Other Projects Construction Plus Major Facility Turnaround Conditions
- Cumulative (2030) Conditions (assuming Facility operations, and changes to existing operations-related traffic generation, following Project construction).

For the Cumulative (2030) conditions, the Project would be in its operational phase (i.e., construction of its components would have been completed). The year 2030 was selected for the cumulative analysis due to the availability of traffic projections for that year from regional transportation authorities, and that the Project would have been fully operational for many years as of that time, and because this 2030 projection includes regional growth factors by expert agencies that are considered representative of long-term conditions. Specifically, the 2006 *Contra Costa Transportation Authority Travel Demand Forecasting Model* (CCTA Model) was used to forecast 2030 conditions. The CCTA Model forecasts include the most up-to-date information regarding City and County land use and transportation improvement information for both Contra Costa and Alameda Counties and also the greater Bay Area. The CCTA Model uses Association of Bay Area Governments (ABAG) *Projections 2009* for land use and employment. The City of



Richmond Preferred General Plan Alternative land use assumptions were used in the CCTA model to more accurately reflect expected growth in Richmond.

Operation of the Facility following Project construction would result in 29 new employees and generate about 94 new daily one-way truck trips because of increased import and export of materials to and from the Facility, which corresponds to 100 percent Facility utilization.

Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the roadway network. The automobile traffic generated by the Project (and Other Projects, and Major Facility Turnarounds) was estimated based on data provided by Chevron. These estimates include both construction-related passenger car and truck trips. Truck trips were converted to Passenger Car Equivalents (PCE)³ to more accurately reflect the potential impacts of trucks on traffic flow. **Table 3** summarizes and **Appendix C** provides more detailed data on the estimated increase in daily traffic during the construction period. The table includes estimates not only for Project construction traffic, but also estimates for trip generation associated with Other Projects and Major Turnarounds, and to be conservative assumes these activities will coincide as Project construction. Major Turnarounds, in particular, can be scheduled at various times of the year, but for analytical purposes it has been assumed that a Major Turnaround could occur in the first quarter of 2016 (when Project construction traffic is estimated to be at its highest level).

Table 4 presents the AM and PM peak hour traffic generation estimates for the peak construction period of the Project, and the Other Projects, and the Major Turnaround that would coincide with the planned Project construction. Peak construction activity is expected to occur during the first quarter of 2016, when the Project, the Other Project, and the Major Turnaround combined are estimated to generate 7,503 trips on a typical day, 1,878 trips during the AM peak hour, and 1,743 trips during the PM peak hour.

³ Passenger-car equivalent (PCE) represents the number of passenger cars displaced by each truck in the traffic stream. One truck is the equivalent of two passenger cars for this analysis.



TABLE 3
CHEVRON RICHMOND FACILITY MODERNIZATION PROJECT
ESTIMATED DAILY TRIP GENERATION, BY QUARTER, FOR PROJECT CONSTRUCTION, OTHER PROJECTS, AND MAJOR TURNAROUNDS¹

Year Quarter	2015				2016				2017			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Worker Vehicles												
<u>Project Construction</u>												
Craft labor vehicle traffic					2,000	1,940	1,340	850	650	370	370	370
Construction support ²					34	34	34	20	20	10	10	10
Total Project Construction Autos per day ³	0	0	0	0	2,034	1,974	1,374	870	670	380	380	380
<u>Other Projects</u>												
Craft labor vehicle traffic	1,415	1,435	1,423	1,389	1,349	1,333	1,333	1,333	20	20	20	0
Total Other Project Autos per day	1,415	1,435	1,423	1,389	1,349	1,333	1,333	1,333	20	20	20	0
<u>Major Facility Turnarounds⁴</u>												
Craft labor vehicle traffic					3,550							
Miscellaneous turnaround support ²	-	-	-	-	32	-	-	-	-	-	-	-
Total Turnaround Autos per day					3,582							
Total Auto Vehicle one-way trips per day	1,415	1,435	1,423	1,389	6,905	3,307	2,707	2,203	690	400	400	380
Vehicle Summary By Facility Gate												
Gate 91 (construction and turnaround contractors)	92	110	99	68	5,087	1,795	1,255	801	621	360	360	342
Gate 31 (construction and turnaround support)	10	12	11	8	565	199	139	89	69	40	40	38
Kelham Warehouse Trips	274	274	274	274	274	274	274	274				
Hensley Warehouse Trips	1,039	1,039	1,039	1,039	1,039	1,039	1,039	1,039	-	-	-	-
Trucks												
<u>Project Construction</u>												
Materials traffic (one-way truck trips)					55	22	12	12	4	154	154	154
Total Project Construction PCE per day ^{3, 5}	0	0	0	0	110	44	24	24	8	308	308	308
<u>Other Projects</u>												
Materials traffic (one-way truck trips)	194	202	180	174	174	170	170	170	8	8	8	0



TABLE 3
CHEVRON RICHMOND FACILITY MODERNIZATION PROJECT
ESTIMATED DAILY TRIP GENERATION, BY QUARTER, FOR PROJECT CONSTRUCTION, OTHER PROJECTS, AND MAJOR TURNAROUNDS¹

Year Quarter	2015				2016				2017			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Total Other Projects PCE per day⁵	388	404	360	348	348	340	340	340	16	16	16	0
<i>Major Facility Turnarounds⁴</i>												
Materials traffic (one-way truck trips)					40							
Total Turnaround PCE per day⁵					80							
<i>Total Truck one-way PCE per day</i>	<i>388</i>	<i>404</i>	<i>360</i>	<i>348</i>	<i>538</i>	<i>384</i>	<i>364</i>	<i>364</i>	<i>24</i>	<i>324</i>	<i>324</i>	<i>308</i>
Truck (PCE) Summary By Facility Gate												
Gate 31 (construction and turnaround materials, and Facility operation deliveries)	226	242	198	186	376	222	202	202	24	324	324	308
Kelham Warehouse Trips	34	34	34	34	34	34	34	34				
Hensley Warehouse Trips	128	128	128	128	128	128	128	128				
Total Project Construction PCE Volumes³	0	0	0	0	2,144	2,018	1,398	894	678	668	668	668
Total Volumes	1,803	1,839	1,783	1,737	7,503	3,691	3,071	2,567	714	724	724	668

¹ All vehicle and truck trips are shown as one-way trips per day. A round trip equals two trips. See Appendix C, for a breakdown of estimated daily traffic associated with separate individual projects.

² Miscellaneous construction support include lunch wagons, fueling, parts runs, etc.

³ Construction related trips (either vehicle or PCE) equals ONLY Project traffic. This is the basis for traffic impact evaluations and is shown **reversed** above.

⁴ Major turnarounds do not result from the Modernization Project and are shown here to provide an idea of total variability in Facility traffic. Totals reflect peak periods, and therefore are not at these levels for the entire quarter. Estimated durations of turnarounds vary from 18 to 38 days per turnaround. Turnaround schedules are subject to change (estimated traffic is based on Richmond Facility Long Range Shut Down Schedule, as of January 29, 2007). This analysis assumes that peak turnaround would coincide with peak activity generated by the Project Construction and Other Projects.

⁵ Passenger Car Equivalent (PCE) factor of 2.0 used per HCM 2000.

Source: Data provided by Chevron and summarized by Fehr & Peers, 2014.



TABLE 4
CHEVRON RICHMOND FACILITY CONSTRUCTION TRAFFIC ESTIMATES
(PEAK CONSTRUCTION ACTIVITY, FIRST QUARTER 2016)

Project	Type	Daily	AM Peak Hour (vehicle/hour)		PM Peak Hour (vehicle/hour)	
			In	Out	In	Out
Project Construction	Vehicle	2,034	509	0	0	509
	Trucks	110	28	0	0	0
	Subtotal	2,144	537	0	0	509
Other Projects	Vehicle	1,349	338	0	0	338
	Trucks	348	87	0	0	0
	Subtotal	1,697	425	0	0	338
Major Facility Turnaround	Vehicle	3,582	896	0	0	896
	Trucks	80	20	0	0	0
	Subtotal	3,662	916	0	0	896
Total Trips	Vehicle	6,965	1,743	0	0	1,743
	Trucks	538	135	0	0	0
	Total	7,503	1,878	0	0	1,743

¹ Peak construction activity during the first quarter of 2016, based on Chevron Construction Traffic Estimates (see Table 3). All trips are presented in PCEs.

² For peak hour trip generation, assume all inbound trips occur during the AM peak hour and all outbound trips occur during the PM peak hour, as shown:

- Half of the vehicle trips arrive at 6:00 AM for a 10-hour shift, departing at 4:00 PM.
- Half of the vehicle trips arrive at 7:00 AM for a 10-hour shift, departing at 5:00 PM.
- Assume all trucks are inbound in the AM and outbound in the PM.
- Assume half trucks arrive at 7:00 AM and depart at 3:00 PM; half arrive at 6:00 AM and depart at 2:00 PM. (Therefore, no trucks during the PM peak hour analysis period.)

Source: Data provided by Chevron and summarized by Fehr & Peers, 2014.



Trip Distribution

The trip distribution process estimates how the vehicle trips generated by a project site would distribute across the roadway network. The trip distribution of the construction-related vehicle trips was based on current observations at the Chevron Richmond Facility and a previous study (*Cleaner Fuels Project Circulation Analysis*). **Table 5** summarizes the trip distribution of the construction-related traffic. Both passenger vehicles and trucks generated by the Project are expected to depart and arrive from the following routes:

- North: to and from Richmond Parkway
- South: to and from I-580

TABLE 5 TRIP DISTRIBUTION CONSTRUCTION TRAFFIC		
Construction Trips	North	South
Passenger Vehicles	20%	80%
Trucks	80%	20%
Source: Fehr & Peers, 2014.		

Trip Assignment

The AM and PM peak hour peak construction-generated trip generation estimates were applied to the distribution paths described above, and the construction period trips were assigned to Gates 91 and 31, with the majority of the trips to/from Gate 91. The assigned Project construction trips were added to AM and PM peak hour volumes under the Baseline (2016) No Project Conditions to estimate the Baseline (2016) with-Project traffic volumes and to determine Project-specific construction impacts to study intersections.

5. Baseline (2016) No Project Conditions

The year 2016 was selected for the analysis of construction traffic impacts because construction traffic is expected to peak during the first quarter of 2016 (See Table 3). Intersection volumes in 2016 were interpolated using the 2011 measured traffic volumes and forecast growth rates developed using the Contra Costa County Transportation Authority Travel Demand Model (CCTA Model), as described in more detail below, to calculate the adjusted traffic Baseline. The impact



of the Project construction was estimated by evaluating how intersection LOS would change with the addition of construction-related traffic to this Baseline.

Although renovation work is currently underway on I-580 between the Chevron Facility and Richmond-San Rafael Bridge, this renovation work is anticipated to be completed prior to the expected start of Project construction in 2016. There are no other traffic-related improvements that are anticipated to change traffic conditions in 2016 relative to the conditions measured in 2011. Therefore, the intersection lane configurations and controls presented on Figure 1 continue to remain valid.

Project impacts are analyzed by comparing conditions with and without Project-generated traffic. The “without Project” (2016 Baseline) scenario represents reasonably-foreseeable conditions in 2016 without the addition of Project construction traffic. Current Facility operations will continue through the duration of Project construction, and existing traffic counts conducted at the study intersections and projected for Baseline conditions reflect the current operations. As described above, Project construction-generated traffic is expected to fluctuate during construction. The highest Project construction-generated traffic is expected in the first quarter of 2016. Therefore, the traffic impacts associated with the Project construction traffic were assessed under 2016 conditions.

Intersection volumes under Baseline conditions were interpolated using forecast growth rates developed using the Contra Costa County Transportation Authority Travel Demand Model (CCTA Model). CCTA Model was checked to ensure that it includes other planned and approved development projects within the City of Richmond expected to generate traffic in the year 2016 (see *Appendix 4.0, Cumulative Projects*), and it was determined that the CCTA model growth forecasts encompass the planned and approved development projects. **Figure 2** shows the intersection peak hour volumes under Baseline (2016) No Project conditions.

Table 6 shows the results of the intersection operations analysis for 2016 Baseline conditions. Under 2016 Baseline conditions (without Project), all study intersections would operate at acceptable LOS C or better during the AM peak hour. During the PM peak hour, eight of the 11 study intersections are estimated to operate at acceptable LOS D or better. The three intersections projected to operate at an unacceptable service (LOS E or F) during the PM peak hour are:



**TABLE 6
BASELINE (2016) NO PROJECT CONDITIONS
INTERSECTION LOS SUMMARY**

#	Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
			Delay ²	LOS	Delay ²	LOS
1.	Chevron Way/Marine Street	AWSC	5.9	A	8.5	A
2.	Castro Street/Tewksbury Avenue	AWSC	8.7	A	9.6	A
3.	Marine Street/I-580 Eastbound Ramps	Signal	2.5	A	25.6	C
4.	Castro Street/I-580 Eastbound Ramps	Signal	16.2	B	127.2	F
5.	Castro Street/Chevron Way	Signal	2.0	A	0.9	A
6.	Castro Street/I-580 Westbound Ramps	Signal	25.3	C	74.8	E
7.	Castro Street/Mills Street	Signal	7.6	A	9.9	A
8.	Castro Street/General Chemical Access	Signal	8.6	A	22.8	C
9.	Castro Street/Hensley Street	Signal	8.4	A	33.0	C
10.	Richmond Parkway/Hensley Street	Signal	13.1	B	10.1	B
11.	Richmond Parkway/Gertrude Avenue	Signal	21.1	C	85.5	F
¹ AWSC = all-way stop-controlled intersection; Signal = traffic signal-controlled intersection. ² Average overall intersection control delay (seconds per vehicle) reported for signalized and all-way stop-controlled intersections. Source: Fehr & Peers, 2014.						

- Castro Street/I-580 Eastbound Ramps
- Castro Street/Redwood Way/I-580 Westbound Ramps
- Richmond Parkway/Gertrude Avenue

6. Traffic Impact Significance Criteria

As previously described, both WCCTAC and the City of Richmond consider intersections on Routes of Regional Significance to function at acceptable conditions if they operate at LOS D or better. This analysis identifies impacts by comparing peak hour intersection operations under Baseline (2016) Plus Project scenarios with Baseline (2016) No Project conditions. Consistent with WCCTAC and City of Richmond requirements, this analysis identifies an impact as significant if the Project would cause:

- A signalized intersection to deteriorate from LOS D or better to LOS E or LOS F.



- A signalized intersection where the level of service is LOS E, the Project would cause the average control delay to increase by more than five seconds or deteriorate to LOS F.
- A signalized intersection where the level of service is LOS F, the Project would cause the average control delay to increase by more than five seconds.
- An unsignalized intersection to operate at LOS F and after Project completion satisfy the Caltrans peak hour traffic volume signal warrant.

7. Baseline (2016) Plus Project Construction Conditions

The AM and PM peak hour traffic generated during the Project Construction (as shown in Table 4) were added to the Baseline (2016) No Project traffic volumes to estimate traffic volumes under Baseline (2016) Plus Project Construction conditions. **Figure 3** shows the intersection peak hour volumes under Baseline (2016) Plus Project Construction conditions.

Table 7 shows the results of the intersection operations analysis for the weekday AM and PM peak hours under Baseline (2016) Plus Project Construction conditions. Under Baseline (2016) Plus Project Construction conditions, all intersections would operate at acceptable LOS during the AM peak period. Eight of the 11 study intersections are forecast to operate at acceptable LOS D or better during the PM peak hour. The three intersections projected to operate at an unacceptable service (LOS E or F) during the PM peak are:

- Castro Street/I-580 Eastbound Ramps
- Castro Street/Redwood Way/I-580 Westbound Ramps
- Richmond Parkway/Gertrude Avenue

The Project impact at the Castro Street/I-580 Eastbound Ramps intersection is considered less-than-significant, because conditions would remain unchanged at LOS F, with average delay remaining the same.

Project Construction would result in two significant impacts which can be mitigated to less-than-significant levels. **Table 8** summarizes intersection operations under Baseline (2016) Plus Project Construction conditions with and without the mitigation measures. Both impacts and their mitigation measures are described below:



**TABLE 7
BASELINE (2016) PLUS PROJECT CONSTRUCTION CONDITIONS
INTERSECTION LOS SUMMARY**

#	Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
			Delay ²	LOS	Delay ²	LOS
1.	Chevron Way/Marine Street	AWSC	5.9	A	8.5	A
2.	Castro Street/Tewksbury Avenue	AWSC	8.7	A	9.6	A
3.	Marine Street/I-580 Eastbound Ramps	Signal	2.5	A	35.0	C
4.	Castro Street/I-580 Eastbound Ramps	Signal	18.4	B	127.2	F
5.	Castro Street/Chevron Way	Signal	1.9	A	1.5	A
6.	Castro Street/I-580 Westbound Ramps	Signal	29.5	C	94.7	F
7.	Castro Street/Mills Street	Signal	10.0	A	10.8	B
8.	Castro Street/General Chemical Access	Signal	50.0	D	34.3	C
9.	Castro Street/Hensley Street	Signal	9.2	A	47.4	D
10.	Richmond Parkway/Hensley Street	Signal	13.1	B	10.1	B
11.	Richmond Parkway/Gertrude Avenue	Signal	29.6	C	99.5	F

Bold type indicates significant impact.

¹ AWSC = all-way stop-controlled intersection; Signal = traffic signal-controlled intersection.

² Average overall intersection control delay (seconds per vehicle) reported for signalized and all-way stop-controlled intersections.

Source: Fehr & Peers, 2014.

Impact 1: Project construction-generated increases in traffic volumes would result in a significant impact during the PM peak hour at the signalized Castro Street/I-580 Westbound Ramps intersection. This impact would be mitigated to a less-than-significant level by implementation of Mitigation Measure 1.

Project construction-related traffic is projected to add a substantial amount of traffic to the critical movements of the Castro Street/I-580 Westbound Ramps intersection, which would result in a significant worsening of its operating conditions (from LOS E to LOS F during the PM peak hour)

Mitigation Measure 1: Implement the following measures at the Castro Street/I-580 Westbound Ramps intersection:



TABLE 8 BASELINE (2016) PLUS PROJECT CONSTRUCTION MITIGATED CONDITIONS INTERSECTION LOS SUMMARY									
#	Intersection	Traffic Control ¹	Peak Hour	Baseline No Project		Baseline Plus Project Construction		Baseline Plus Project Construction Mitigated	
				Delay ²	LOS	Delay ²	LOS	Delay ²	LOS
6.	Castro Street/I-580 Westbound Ramps	Signal	AM	25.3	C	29.5	C	29.5	C
			PM	74.8	E	94.7	F	49.1	D
11.	Richmond Parkway/ Gertrude Avenue	Signal	AM	21.1	C	29.6	C	29.6	C
			PM	85.5	F	99.5	F	65.1	E
Bold type indicates significant impact.									
¹ AWSC = all-way stop-controlled intersection; Signal = traffic signal-controlled intersection.									
² Average overall intersection control delay (seconds per vehicle) reported for signalized and all-way stop-controlled intersections.									
Source: Fehr & Peers, 2014.									

- Chevron shall work with the City of Richmond's Director of Public Works Department (or the Director's designated representative) and Caltrans to provide modified traffic control during peak arrival and departure times in the PM peak hour. The modified traffic control shall be accomplished by one or more of the following methods: (1) posting a technician at the intersection to manually operate signal controls (using the police key feature of standard traffic signal controllers), (2) programming an alternate signal timing plan that would be in operation during specified peak commute periods, and/or (3) posting traffic control officers at the intersection to manually control traffic movements. Chevron shall pay the full cost of this measure, including costs for sheriff's deputies or other law enforcement personnel to provide the traffic control under above-cited methods (1) or (3).

Implementation of Mitigation Measure 1 would improve intersection operating conditions to LOS D during the PM peak hour, resulting in a less than significant impact after mitigation.

Impact 2: Project construction-generated increases in traffic volumes would result in a significant impact during the PM peak hour at the signalized Richmond Parkway/



Gertrude Avenue intersection. This impact would be mitigated to a less-than-significant level by implementation of Mitigation Measure 2.

Project construction-related traffic is projected to add a substantial amount of traffic to the critical movements of the Richmond Parkway/Gertrude Avenue intersection, which would result in a significant worsening of its operating conditions. (The intersection would continue to operate at LOS F during the PM peak hour with the Project increasing average intersection delay by about 14 seconds).

Mitigation Measure 2: Implement the following measures at the Richmond Parkway/Gertrude Avenue intersection:

- Chevron shall work with the City of Richmond's Director of Public Works Department (or the Director's designated representative) to provide modified traffic control during peak arrival and departure times in the PM peak hour. The modified traffic control shall be accomplished by one or more of the following methods: (1) posting a technician at the intersection to manually operate signal controls (using the police key feature of standard traffic signal controllers), (2) programming an alternate signal timing plan that would be in operation during specified peak commute periods, and/or (3) posting traffic control officers at the intersection to manually control traffic movements. Chevron shall pay the full cost of this measure, including costs for sheriff's deputies or other law enforcement personnel to provide the traffic control under above-cited methods (1) or (3).
- During the peak congestion periods, through the use of traffic cones (and flaggers as needed), Chevron shall reconfigure the southbound (Richmond Parkway) approach to the intersection to provide one shared left-through lane, one through lane, and one shared right-through lane.

Implementation of Mitigation Measure 2 would improve intersection operating conditions to LOS E during the PM peak hour, resulting in a less than significant impact.

In addition to the above mitigation measures, implementation of one or more of the following strategies would also reduce the constructed related traffic during Project Construction and reduce the magnitude of the Project impact at the study intersections during the AM and PM peak hours:



- Stagger the hours of operation of the craft labor so that the construction-related traffic would be distributed over the peak and non-peak hours of traffic operation.
- Promote the use of car-sharing by the craft labor.
- Coordinate the construction schedule between the Project, construction of the Other Projects, and the Major Facility Turnaround, to minimize combined traffic generation on any single day.

8. Baseline (2016) Plus Project Construction Plus Other Projects Conditions

This section addresses potential impacts of the Project Construction combined with construction of Other Projects that would occur at the same time. As shown in Table 3, Project Construction and Other Projects combined are expected to peak during the first quarter of 2016. The AM and PM peak hour traffic generated by the Other Projects (as shown in Table 4) were added to the Baseline (2016) Plus Project Construction traffic volumes to estimate traffic volumes under Baseline (2016) Plus Project Construction Plus Other Projects conditions. **Figure 4** shows the intersection peak hour volumes under Baseline (2016) Plus Project Construction Plus Other Projects conditions.

Table 9 shows the results of the intersection operations analysis for the weekday AM and PM peak hours under Baseline (2016) Plus Project Construction Plus Other Projects conditions. Under Baseline (2016) Plus Project Construction Plus Other Projects conditions, all intersections would operate at acceptable LOS during the AM peak period. Seven of the 11 study intersections are forecast to operate at acceptable LOS D or better during the PM peak hour. The four intersections projected to operate at an unacceptable service (LOS E or F) during the PM peak are:

- Castro Street/I-580 Eastbound Ramps
- Castro Street/Redwood Way/I-580 Westbound Ramps
- Castro Street/Hensley Street
- Richmond Parkway/Gertrude Avenue

The impact at the Castro Street/I-580 Eastbound Ramps intersection is considered less-than-significant, because conditions would remain unchanged at LOS F, with average delay remaining the same.



**TABLE 9
BASELINE (2016) PLUS PROJECT CONSTRUCTION
PLUS OTHER PROJECTS CONDITIONS
INTERSECTION LOS SUMMARY**

#	Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
			Delay ²	LOS	Delay ²	LOS
1.	Chevron Way/Marine Street	AWSC	5.9	A	8.5	A
2.	Castro Street/Tewksbury Avenue	AWSC	8.7	B	9.6	A
3.	Marine Street/I-580 Eastbound Ramps	Signal	2.8	A	35.0	C
4.	Castro Street/I-580 Eastbound Ramps	Signal	21.0	C	127.1	F
5.	Castro Street/Chevron Way	Signal	1.8	A	1.6	A
6.	Castro Street/I-580 Westbound Ramps	Signal	32.3	C	137.1	F
7.	Castro Street/Mills Street	Signal	10.8	B	10.8	B
8.	Castro Street/General Chemical Access	Signal	54.7	D	35.0	C
9.	Castro Street/Hensley Street	Signal	9.8	A	91.2	F
10.	Richmond Parkway/Hensley Street	Signal	21.3	C	11.7	B
11.	Richmond Parkway/Gertrude Avenue	Signal	43.8	D	108.9	F
Bold type indicates significant impact. ¹ AWSC = all-way stop-controlled intersection; Signal = traffic signal-controlled intersection. ² Average overall intersection control delay (seconds per vehicle) reported for signalized and all-way stop-controlled intersections. Source: Fehr & Peers, 2014.						

Project Construction and Other Projects combined would result in three significant impacts which can be mitigated to less-than-significant levels. **Table 10** summarizes intersection operations under Baseline (2016) Plus Project Construction Plus Other Projects conditions with and without the mitigation measures. The three impacts and their mitigation measures are described below:

Impact 3: Project Construction plus Other Projects-generated increases in traffic volumes would result in a significant impact during the PM peak hour at the signalized Castro Street/I-580 Westbound Ramps intersection. This impact would be mitigated to a less-than-significant level by implementation of Mitigation 3.



**TABLE 10
BASELINE (2016) PLUS PROJECT CONSTRUCTION
PLUS OTHER PROJECTS MITIGATED CONDITIONS
INTERSECTION LOS SUMMARY**

#	Intersection	Traffic Control ¹	Peak Hour	Baseline No Project		Baseline Plus Project Construction Plus Other Projects		Baseline Plus Project Construction Plus Other Projects Mitigated	
				Delay ²	LOS	Delay ²	LOS	Delay ²	LOS
6.	Castro Street/I-580 Westbound Ramps	Signal	AM	25.3	C	32.3	C	32.3	C
			PM	74.8	E	137.1	F	61.0	E
9.	Castro Street/Hensley Street	Signal	AM	8.4	A	9.8	A	9.8	A
			PM	33.0	C	91.2	F	31.9	C
11.	Richmond Parkway/Gertrude Avenue	Signal	AM	21.1	C	43.8	D	43.8	D
			PM	85.5	F	108.9	F	70.3	E

Bold type indicates significant impact.

¹ AWSC = all-way stop-controlled intersection; Signal = traffic signal-controlled intersection.

² Average overall intersection control delay (seconds per vehicle) reported for signalized and all-way stop-controlled intersections.

Source: Fehr & Peers, 2014.

Project Construction-related traffic combined with Other Project construction-related traffic is projected to add a substantial amount of traffic to the critical movements of the Castro Street/I-580 Westbound Ramps intersection, which would result in a significant worsening of its operating conditions (from LOS E to LOS F during the PM peak hour).

Mitigation Measure 3: Implementation of Mitigation Measure 1 would improve intersection operating conditions to LOS E during the PM peak hour.

Impact 4: Project Construction plus Other Projects-generated increases in traffic volumes would result in a significant impact during the PM peak hour at the signalized Castro Street/Hensley Street intersection. This impact would be mitigated to a less-than-significant level by implementation of Mitigation Measure 4.



Project Construction-related traffic combined with Other Project construction-related traffic is projected to add a substantial amount of traffic to the critical movements of the Castro Street/Hensley Street intersection, which would result in a significant worsening of its operating conditions (From LOS C to LOS F during the PM peak hour).

Mitigation Measure 4: Implement the following measures at the Castro Street/Hensley Street intersection:

- Chevron shall work with the City of Richmond's Director of Public Works Department (or the Director's designated representative) to provide modified traffic control during peak arrival and departure times in the PM peak hour. The modified traffic control shall be accomplished by one or more of the following methods: (1) posting a technician at the intersection to manually operate signal controls (using the police key feature of standard traffic signal controllers), (2) programming an alternate signal timing plan that would be in operation during specified peak commute periods, and/or (3) posting traffic control officers at the intersection to manually control traffic movements. Chevron shall pay the full cost of this measure, including costs for sheriff's deputies or other law enforcement personnel to provide the traffic control under above-cited methods (1) or (3).

Implementation of Mitigation Measure 4 would improve intersection operating conditions to LOS C during the PM peak hour, resulting in a less-than-significant impact.

Impact 5: Project Construction plus Other Projects-generated increases in traffic volumes would result in a significant impact during the PM peak hour at the signalized Richmond Parkway/Gertrude Avenue intersection. This impact would be mitigated to a less-than-significant level by implementation of Mitigation Measure 5.

Project construction-related traffic combined with Other Project construction-related traffic is projected to add a substantial amount of traffic to the critical movements of the Richmond Parkway/Gertrude Avenue intersection, which would result in a significant worsening of its operating conditions (The intersection would continue to operate at LOS F during the PM peak hour with the Project increasing average intersection delay by about 23 seconds).



Mitigation Measure 5: Implementation of Mitigation Measure 2 would improve intersection operating conditions to LOS E during the PM peak hour.

9. Baseline (2016) Plus Project Construction Plus Other Projects Plus Major Turnaround Conditions

This section addresses potential impacts of the Project Construction combined with construction of Other Projects and a Major Turnaround that would occur at the same time. This analysis assumes that a Major Turnaround would occur during the first quarter of 2016, when the traffic generated by the combined Project Construction and Other Projects would peak. The AM and PM peak hour traffic generated by the Major Turnaround (as shown in Table 4) were added to the Baseline (2016) Plus Project Construction Plus Other Projects traffic volumes to estimate traffic volumes under Baseline (2016) Plus Project Construction Plus Other Projects Plus Major Turnaround conditions. **Figure 5** shows the intersection peak hour volumes under Baseline (2016) Plus Project Construction Plus Other Projects Plus Major Turnaround conditions.

Table 11 shows the results of the intersection operations analysis for the weekday AM and PM peak hours under Baseline (2016) Plus Project Construction Plus Other Projects Plus Major Turnaround conditions. Under Baseline (2016) Plus Project Construction Plus Other Projects Plus Major Turnaround conditions, nine of the 11 study intersections during the AM peak hour and six of the 11 study intersections during the PM peak hour would operate at acceptable LOS D or better. The four intersections projected to operate at an unacceptable level (LOS E or F) during either or both peak hours are listed below:

- Castro Street/I-580 Eastbound Ramps (PM only)
- Castro Street/Redwood Way/I-580 Westbound Ramps (PM only)
- Castro Street/General Chemical Access (AM and PM)
- Castro Street/Hensley Street (PM only)
- Richmond Parkway/Gertrude Avenue (AM and PM)

The impact at the Castro Street/I-580 Eastbound Ramps intersection is considered less-than-significant, because conditions would remain unchanged at LOS F, with average delay remaining the same.



TABLE 11
BASELINE (2016) PLUS PROJECT CONSTRUCTION
PLUS OTHER PROJECTS PLUS MAJOR TURNAROUND CONDITIONS
INTERSECTION LOS SUMMARY

#	Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
			Delay ²	LOS	Delay ²	LOS
1.	Chevron Way/Marine Street	AWSC	5.9	A	8.5	A
2.	Castro Street/Tewksbury Avenue	AWSC	8.7	B	9.6	A
3.	Marine Street/I-580 Eastbound Ramps	Signal	3.2	A	35.0	C
4.	Castro Street/I-580 Eastbound Ramps	Signal	35.7	D	127.1	F
5.	Castro Street/Chevron Way	Signal	1.6	A	2.6	A
6.	Castro Street/I-580 Westbound Ramps	Signal	44.6	D	123.5	F
7.	Castro Street/Mills Street	Signal	19.2	B	13.1	B
8.	Castro Street/General Chemical Access	Signal	>150	F	>150	F
9.	Castro Street/Hensley Street	Signal	12.2	B	125.3	F
10.	Richmond Parkway/Hensley Street	Signal	21.3	C	11.7	B
11.	Richmond Parkway/Gertrude Avenue	Signal	69.4	E	109.8	F
Bold type indicates significant impact. ¹ AWSC = all-way stop-controlled intersection; Signal = traffic signal-controlled intersection. ² Average overall intersection control delay (seconds per vehicle) reported for signalized and all-way stop-controlled intersections. Source: Fehr & Peers, 2014.						

Project Construction, Other Projects, and a Major Turnaround combined would result in four significant impacts which can be mitigated to less-than-significant levels. **Table 12** summarizes intersection operations under Baseline (2016) Plus Project Construction Plus Other Projects Plus Major Turnaround conditions with and without the mitigation measures. The four impacts and their mitigation measures are described below:

Impact 6: Project Construction plus Other Projects plus Major Turnaround-generated increases in traffic volumes would result in a significant impact during the PM peak hour traffic operations at the signalized Castro Street/I-580 Westbound Ramps intersection. This impact would be mitigated to a less-than-significant level by implementation of Mitigation Measure 6.



TABLE 12
BASELINE (2016) PLUS PROJECT CONSTRUCTION PLUS
OTHER PROJECTS PLUS MAJOR TURNAROUND MITIGATED CONDITIONS
INTERSECTION LOS SUMMARY

#	Intersection	Traffic Control ¹	Peak Hour	Baseline No Project		Baseline Plus Project Construction Plus Other Projects Plus Major Turnaround		Baseline Plus Project Construction Plus Other Projects Plus Major Turnaround Mitigated	
				Delay ²	LOS	Delay ²	LOS	Delay ²	LOS
6.	Castro Street/I-580 Westbound Ramps	Signal	AM	25.3	C	44.6	D	44.6	D
			PM	74.8	E	123.5	F	75.0	E
8.	Castro Street/General Chemical Access	Signal	AM	8.4	A	>150	F	54.9	D
			PM	22.8	C	>150	F	53.7	D
9.	Castro Street/Hensley Street	Signal	AM	8.4	A	12.2	B	12.2	B
			PM	33.0	C	125.3	F	53.4	D
11.	Richmond Parkway/Gertrude Avenue	Signal	AM	21.1	C	69.4	E	12.0	B
			PM	85.5	F	109.8	F	71.1	E
Bold type indicates significant impact.									
¹ AWSC = all-way stop-controlled intersection; Signal = traffic signal-controlled intersection.									
² Average overall intersection control delay (seconds per vehicle) reported for signalized and all-way stop-controlled intersections.									
Source: Fehr & Peers, 2014.									

Project Construction-related traffic combined with Other Project construction and Major Turnaround-related traffic is projected to add a substantial amount of traffic to the critical movements of the Castro Street/I-580 Westbound Ramps intersection, which would result in a significant worsening of its operating conditions (from LOS E to LOS F during the PM peak hour).

Mitigation Measure 6: Implementation of Mitigation Measure 1 would improve intersection operating conditions to LOS E during the PM peak hour.

Impact 7: Project Construction plus Other Projects plus Major Turnaround-generated increases in traffic volumes would result in a significant impact during AM and



PM peak hours at the signalized Castro Street/General Chemical Access (Gate 91) intersection. This impact would be mitigated to a less-than-significant level by implementation of Mitigation Measure 7.

Project construction-related traffic combined with Other Project construction and Major Turnaround-related traffic is projected to add a substantial amount of traffic to the critical movements of the Castro Street/General Chemical Access (Gate 91) intersection, which would result in a significant worsening of its operating conditions (from LOS A during the AM peak hour and LOS during the PM peak hour to LOS F during both AM and PM peak hours).

Mitigation Measure 7: Implement the following measures at the intersection of Castro Street/General Chemical Access (Gate 91) intersection:

- During the AM peak period, through the use of traffic cones (and flaggers as needed), Chevron shall reconfigure the northbound (Castro Street) approach to the intersection to provide two left-turn lanes, and one shared right-through lane. The inbound approach on General Chemical Access would also be reconfigured to provide two receiving lanes.
- During the PM peak period, through the use of traffic cones (and flaggers as needed), Chevron shall reconfigure the eastbound (General Chemical Access) approach to the intersection to provide two exclusive right-turn lanes, and one exclusive left-turn lane.
- Chevron shall work with the City of Richmond's Director of Public Works Department (or the Director's designated representative) to provide modified traffic control during peak arrival and departure times in the AM and PM peak hours. The modified traffic control shall be accomplished by one or more of the following methods: (1) posting a technician at the intersection to manually operate signal controls (using the police key feature of standard traffic signal controllers), (2) programming an alternate signal timing plan that would be in operation during specified peak commute periods, and/or (3) posting traffic control officers at the intersection to manually control traffic movements. Chevron shall pay the full cost of this measure, including costs for sheriff's deputies or other law enforcement personnel to provide the traffic control under above-cited methods (1) or (3).



Implementation of Mitigation Measure 7 would improve intersection operating conditions to LOS D during both AM and PM peak hours.

Impact 8: Project Construction plus Other Projects Plus Major Turnaround-generated increases in traffic volumes would result in a significant impact during the PM peak hour at the signalized Castro Street/Hensley Street intersection. This impact would be mitigated to a less-than-significant level by implementation of Mitigation Measure 8.

Project construction-related traffic combined with Other Project construction and Major Turnaround-related traffic is projected to add a substantial amount of traffic to the critical movements of the Castro Street/Hensley Street intersection, which would result in a significant worsening of its operating conditions (From LOS C to LOS F during the PM peak hour).

Mitigation Measure 8: Implementation of Mitigation Measure 4 would improve intersection operating conditions to LOS D during the PM peak hour, resulting in a less-than-significant impact.

Impact 9: Project Construction Plus Other Projects Plus Major Turnaround-generated increases in traffic volumes would result in a significant impact during AM and PM peak hours at the signalized Richmond Parkway/Gertrude Avenue intersection. This impact would be mitigated to a less-than-significant level by implementation of Mitigation Measure 9.

Project construction-related traffic combined with Other Project construction and Major Turnaround related traffic is projected to add a substantial amount of traffic to the critical movements of the Richmond Parkway/Gertrude Avenue intersection, which would result in a significant worsening of its operating conditions (from LOS C to LOS E during the AM peak hour. The intersection would continue to operate at LOS F during the PM peak hour with the Project increasing average intersection delay by about 34 seconds).

Mitigation Measure 9: Implementation of Mitigation Measure 2 would improve intersection operating conditions to LOS B during the AM peak hour and LOS E during the PM peak hour.



10. Cumulative (2030) Conditions

The Cumulative 2030 scenario, which is defined by the horizon year of the CCTA countywide travel demand model, was assessed to determine long-term traffic impacts associated with buildout conditions in the area. The locations and sizes of the major development projects envisioned in the county and cities' General Plans have been programmed into the CCTA Model, which reflects regional growth based on projections that are consistent with forecasts by ABAG. In the vicinity of the Project, the Cumulative (2030) scenario accounts for the completion and occupancy of the proposed Hensley Street and Kelham Warehouse Projects.

Traffic operating conditions on project-used roadways in 2030 would be adversely affected by growth in population and employment in the area. **Table 13** presents intersection operations for the weekday AM and PM peak hours under Cumulative 2030 conditions. Under Cumulative (2030) conditions, 3 of the 11 study intersections are forecast to operate at acceptable LOS D or better during both peak hours. The eight intersections projected to operate at an unacceptable level of service (LOS E or F) during one or both peak hour are:

- Marine Street/I-580 Eastbound Ramps (LOS F in PM peak hour)
- Castro Street/I-580 Eastbound Ramps (LOS F in PM peak hour)
- Castro Street/I-580 Westbound Ramps (LOS E in the AM peak hour and LOS F in the PM peak hour)
- Castro Street/Mills Street (LOS E in PM peak hour)
- Castro Street/General Chemical Access (LOS F in PM peak hour)
- Castro Street/Hensley Street (LOS F in the PM peak hour).
- Richmond Parkway/Hensley Street (LOS E in the AM peak hour).
- Richmond Parkway/Gertrude Avenue (LOS F in the PM peak hour).

For the Cumulative (2030) scenario, the Project would be in its operational phase (i.e., construction of its components would have already been completed).



**TABLE 13
CUMULATIVE (2030) CONDITIONS
INTERSECTION LOS SUMMARY**

#	Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
			Delay ²	LOS	Delay ²	LOS
1.	Chevron Way/Marine Street	AWSC	5.9	A	8.5	A
2.	Castro Street/Tewksbury Avenue	AWSC	9.2	A	9.8	A
3.	Marine Street/I-580 Eastbound Ramps	Signal	3.6	A	126.4	F
4.	Castro Street/I-580 Eastbound Ramps	Signal	52.5	D	>150	F
5.	Castro Street/Chevron Way	Signal	1.7	A	1.1	A
6.	Castro Street/I-580 Westbound Ramps	Signal	57.6	E	>150	F
7.	Castro Street/Mills Street	Signal	10.3	B	75.0	E
8.	Castro Street/General Chemical Access	Signal	8.4	A	93.1	F
9.	Castro Street/Hensley Street	Signal	12.6	B	>150	F
10.	Richmond Parkway/Hensley Street	Signal	78.1	E	54.0	D
11.	Richmond Parkway/Gertrude Avenue	Signal	48.7	D	>150	F
¹ AWSC = all-way stop-controlled intersection; Signal = traffic signal-controlled intersection. ² Average overall intersection control delay (seconds per vehicle) reported for signalized and all-way stop-controlled intersections. Source: Fehr & Peers, 2014.						

Table 14 presents the new trips that would be generated by the Chevron Facility after completion of construction assuming 100 percent facility utilization. Operation of the Facility following Project construction would generate about 94 new daily one-way truck trips (corresponding to 188 PCE trips) because of increased import and export of materials to and from the Facility. Although, the additional truck trips would be spread over the operating hours of the day and are expected to occur primarily during off-peak traffic hours, this analysis conservatively assumes that they will be spread uniformly throughout the day. Facility permanent employment levels would increase by 29 employees, resulting in a maximum of 58 new daily commuter trips.



TABLE 14 CHEVRON RICHMOND FACILITY PROJECT OPERATIONS TRAFFIC ESTIMATE						
Project	Type	Daily	AM Peak Hour (vehicle/hour)		PM Peak Hour (vehicle/hour)	
			In	Out	In	Out
Project Operations (100% utilization)	Workers ¹	58	29	0	0	29
	Trucks ²	188	10	9	9	10
	Total	246	39	9	9	39
¹ Trips generated by 29 net new worker trips. Half arrive during the AM peak hour and half depart during the PM peak hour. ² Truck trips in PCEs. Trucks arrive and depart uniformly throughout a typical 10-hour weekday. Source: Chevron, Fehr & Peers, 2014.						

The Project's contribution to the unacceptable levels of service described above were determined on the basis of reasonably-conservative assumptions that 48 new PCE trips would occur during the peak traffic hours. The Project contribution would be less than one percent and that level of additional vehicles on area roadways during peak traffic hours would be within the typical fluctuation in day-to-day traffic volumes and would not be noticed by most drivers; therefore, its effect on traffic operating conditions would not be cumulatively considerable.

11. Threshold Analysis

This section identifies the following for each of the intersections identified as having a significant impact:

- The peak hour traffic volume threshold that triggers the significant impact.
- The peak hour traffic volume threshold that the recommended mitigation measure would no longer be sufficient.

Table 15 summarizes the thresholds for the identified impacts and mitigation measures. For each impacted intersection, the table shows the additional volume generated by the Project Construction (by itself or combined with Other Projects and the Major Turnaround) that would trigger an impact and the range where the recommended mitigation measures would continue to mitigate the identified impact to a less-than-significant level.



**TABLE 15
THRESHOLD ANALYSIS SUMMARY**

Intersection	Castro Street/ I-580 WB Ramps	Castro Street/ Richmond Lane/ General Chemical Access		Castro Street/ Hensley Street	Richmond Parkway/ Gertrude Avenue	
		AM	PM		AM	PM
Peak Hour	PM	AM	PM	PM	AM	PM
Identified Impacts and Mitigations	1, 3, and 6	7	7	4 and 8	9	2, 5, and 9
Critical Movement	Southbound Left	Northbound Left	Eastbound Left	Northbound Thru	Southbound Thru	Northbound Thru
Baseline (2016) Volume ¹	320	20	290	2,100	2,300	2,950
Volume Threshold ²	335	429	541	2,251	2,700	2,986
Threshold Added ³	15	409	251	151	400	36
2016 Plus Project Construction Volume	401	386	382	2,202	2,446	3,052
2016 Plus Project Construction Plus Other Projects Volume	497	393	383	2,217	2,604	3,119
2016 Plus Project Construction Plus Other Projects Plus Major Turnaround Volume	640	1,038	544	2,397	2,815	3,299
Threshold to Exceed Mitigation ⁴	667	1,038	556	2,409	3,764	3,460
Threshold Added to Critical Movement ⁵	27	0	12	12	949	161
Total Added Above Baseline (2016) Volume ⁶	347	1,018	266	309	1,464	510

¹ Forecasted Baseline (2016) No Project volume for the critical movement.

² Maximum critical movement volume that would not result in a significant impact.

³ Volume Threshold minus Baseline (2016) Volume.

⁴ Maximum volume for which the recommended Mitigation Measure would reduce the impact to a less-than-significant level

⁵ Additional traffic beyond Project Construction Plus Other Projects Plus Major Turnaround that can be added to the critical movement for which the recommended mitigation measure would continue to mitigate the impact to a less-than-significant level (Threshold to Exceed Mitigation minus 2016 Plus Project Construction Plus



Other Projects Plus Major Turnaround Volume).

⁶ Maximum volume that can be added to the critical movement beyond Baseline (2016) No Project conditions for which the recommended mitigation measure would continue to mitigate the to mitigate the impact to a less-than-significant level (Threshold to Exceed Mitigation minus Baseline (2016) Volume).

Source: Fehr & Peers, 2014.



Attachments:

Figure 1 – Existing Conditions Lane Configurations and Peak Hour Volumes

Figure 2 – Baseline (2016) No Project Conditions Lane Configurations and Peak Hour Volumes

Figure 3 – Baseline (2016) Plus Proposed Construction Lane Configurations and Peak Hour Volumes

Figure 4 – Baseline (2016) Plus Proposed Construction and Other Projects Lane Configurations and Peak Hour Volumes

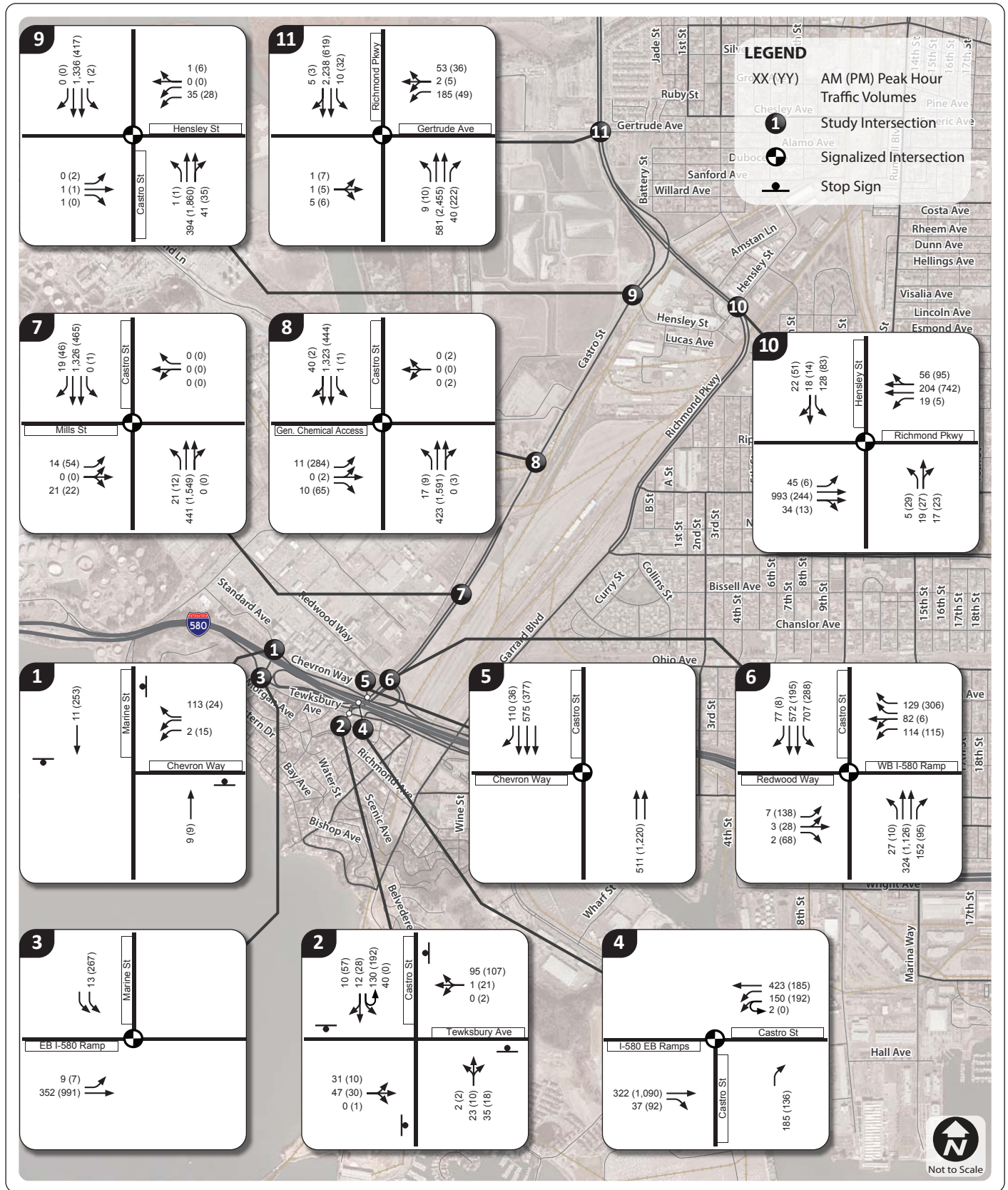
Figure 5 – Baseline (2016) Plus Proposed Construction and Other Projects and Major Turnaround Lane Configurations and Peak Hour Volumes

Figure 6 – Cumulative (2030) Conditions Lane Configurations and Peak Hour Volumes

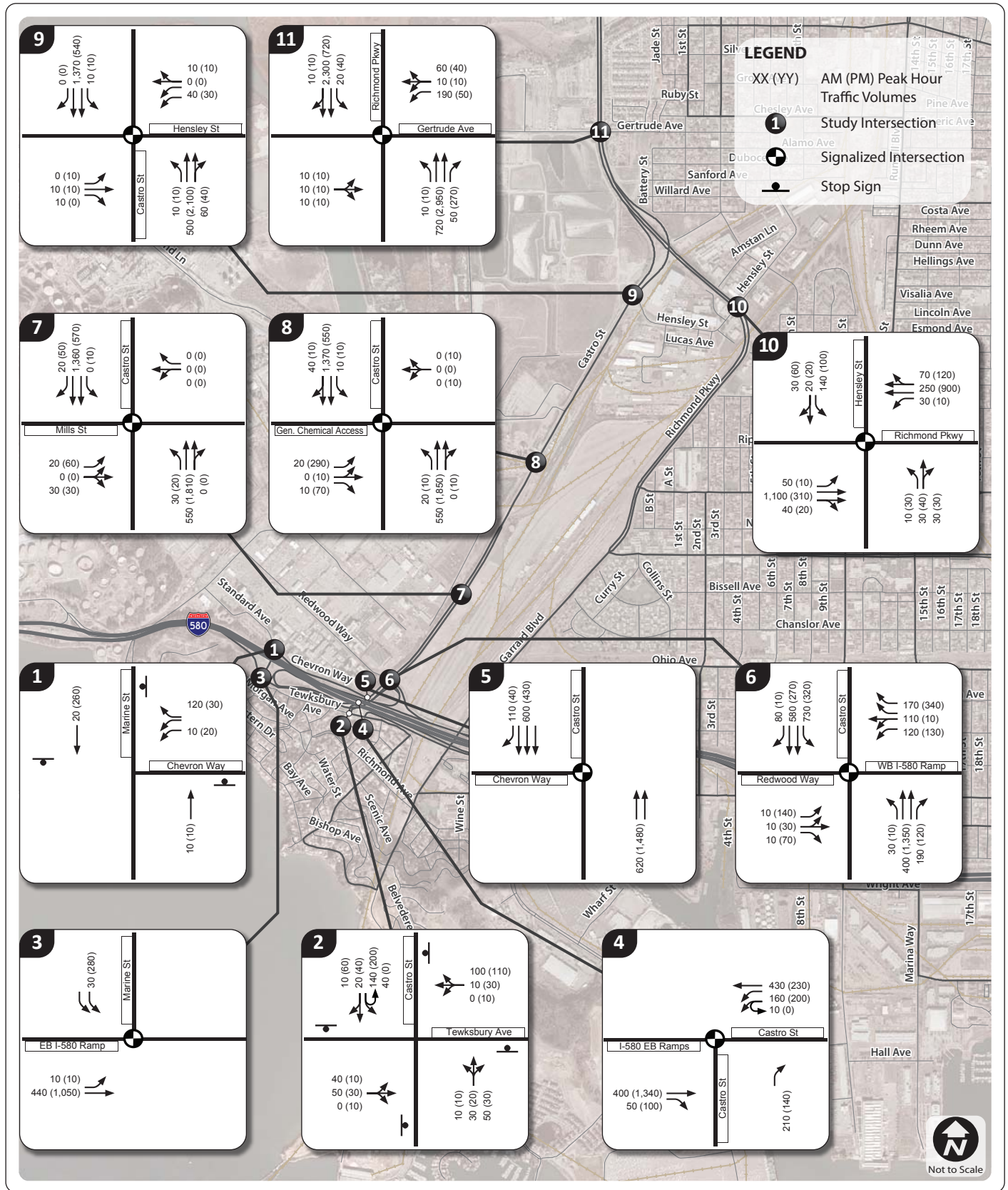
Appendix A – Intersection Count Data Sheets

Appendix B – Intersection LOS Calculations

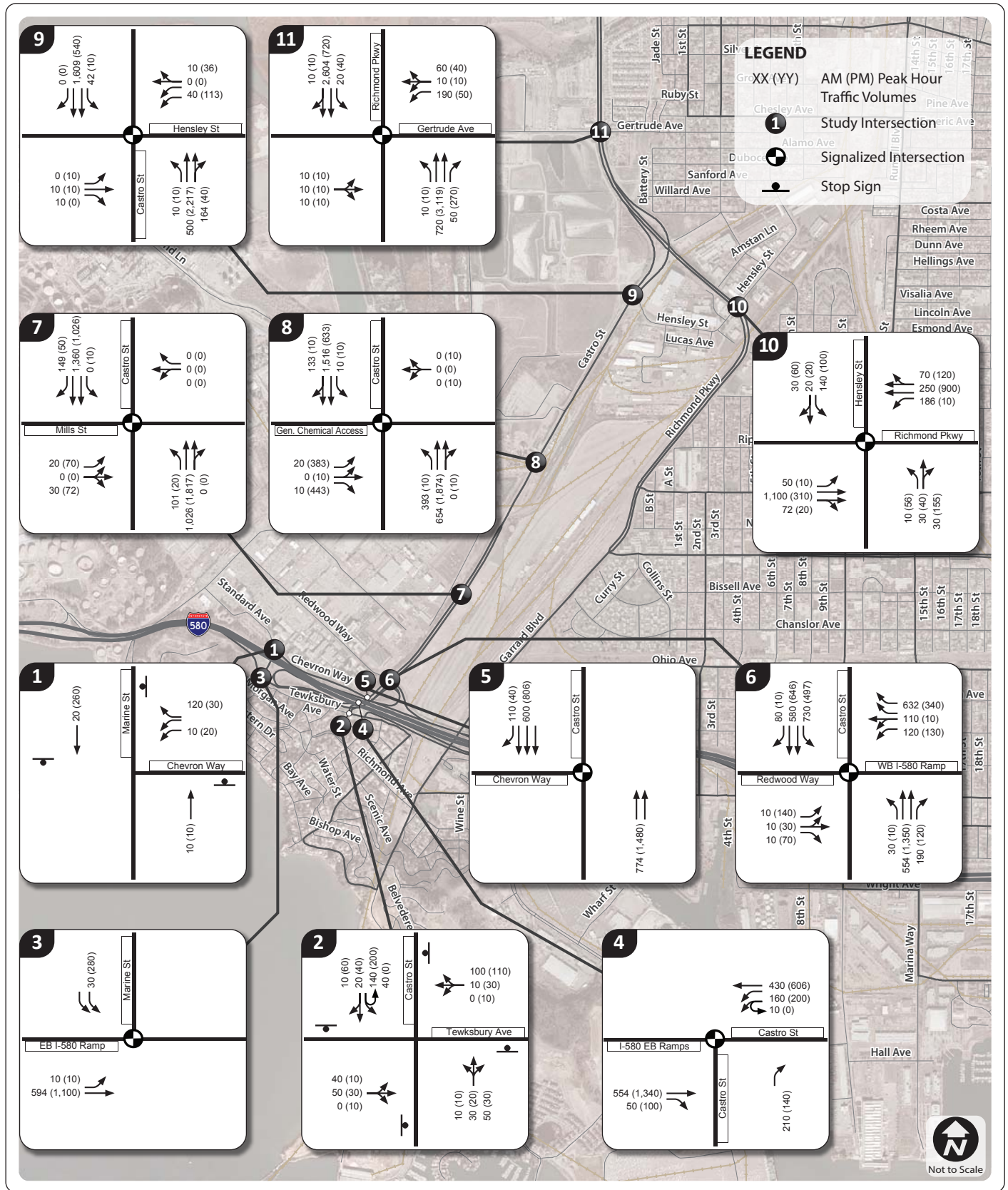
Appendix C – Detailed Project Trip Generation



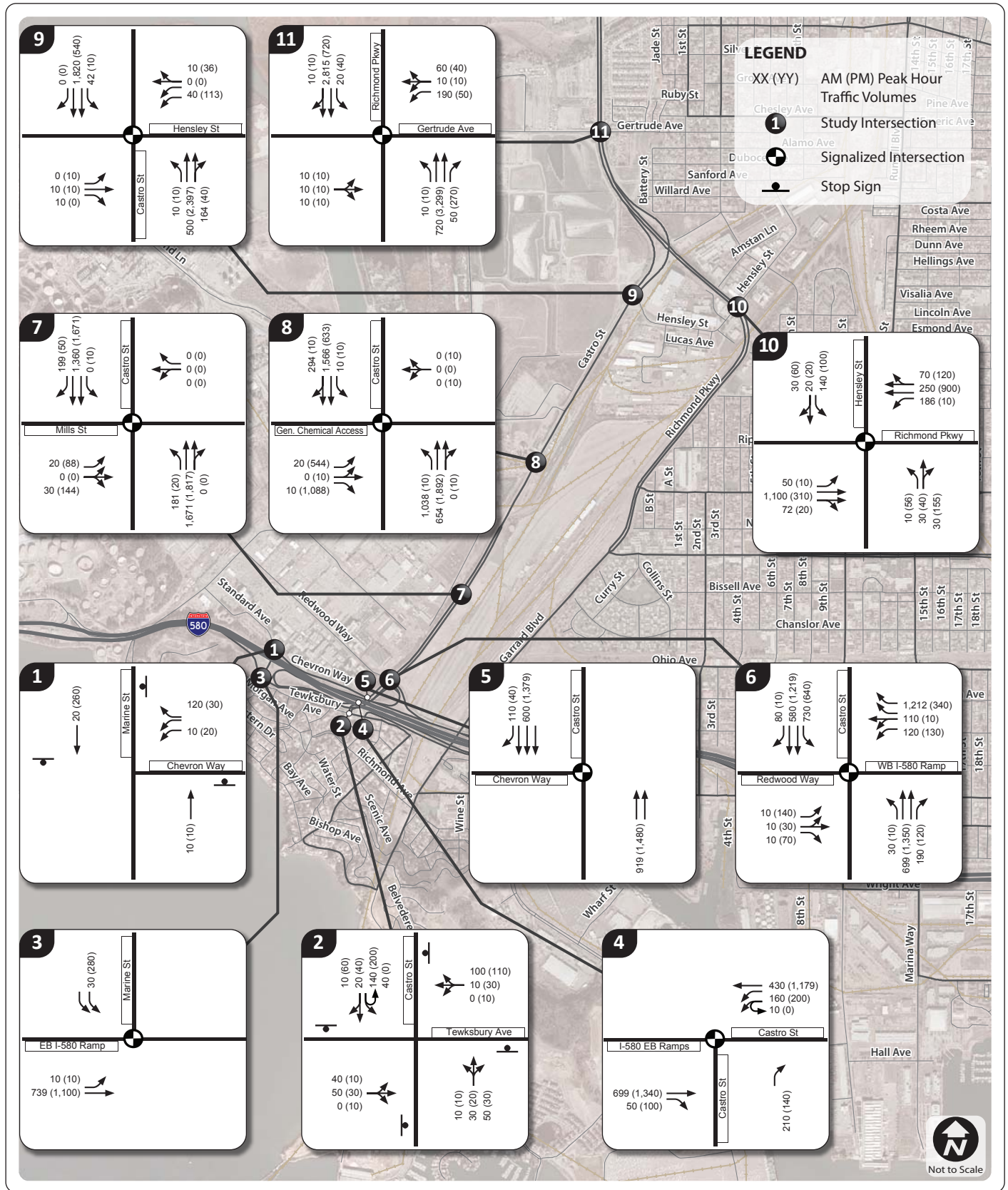
Chevron Facility Modernization Project



Chevron Facility Modernization Project

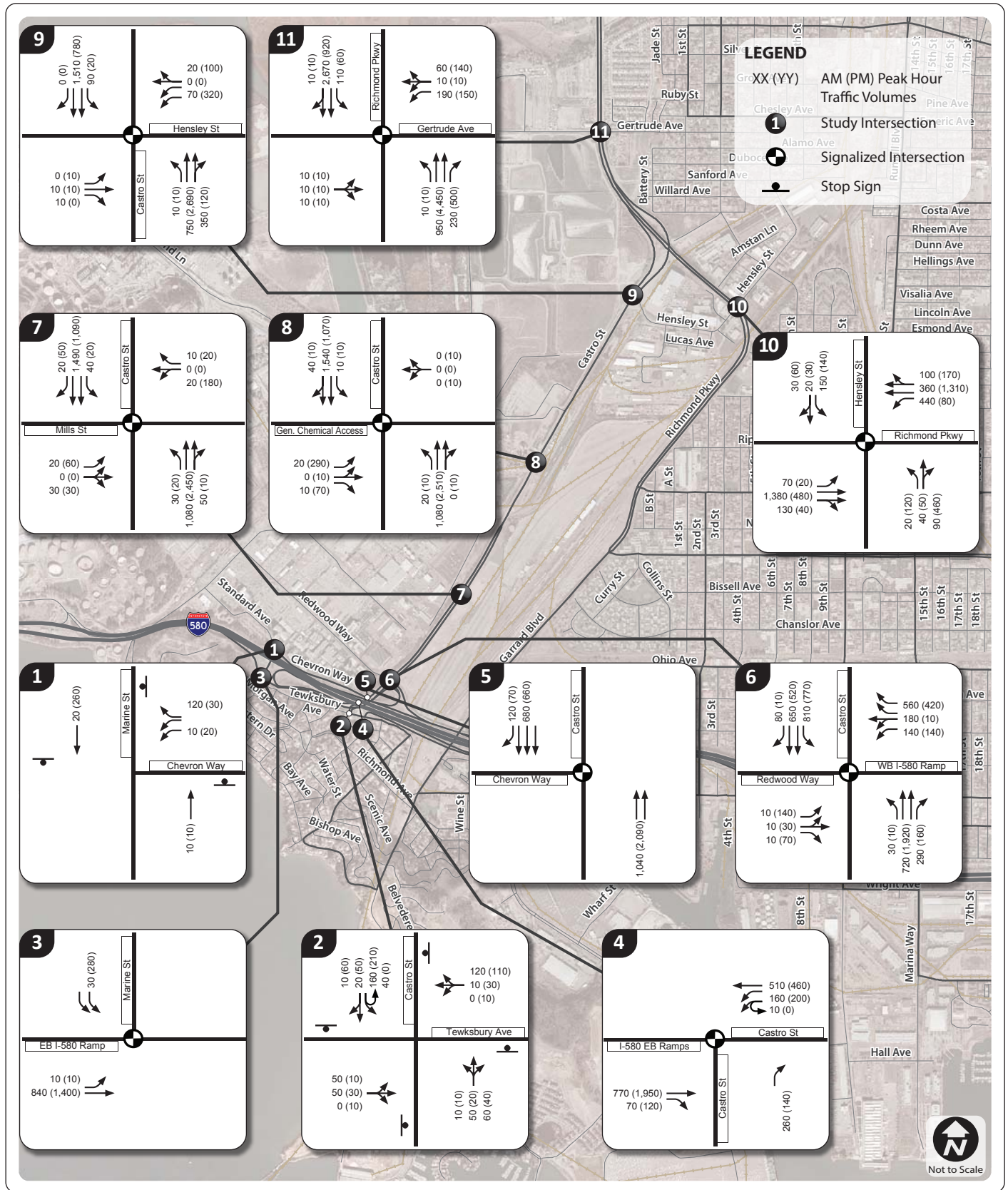


Chevron Facility Modernization Project



Chevron Facility Modernization Project

BASELINE PLUS PROPOSED CONSTRUCTION, OTHER PROJECTS, AND MAJOR TURNAROUND LANE CONFIGURATIONS AND PEAK HOUR VOLUMES



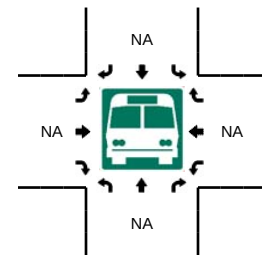
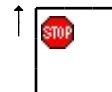
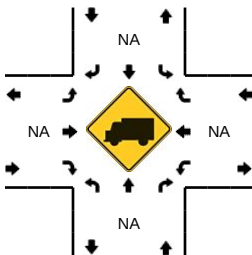
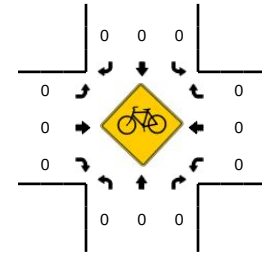
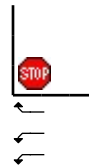
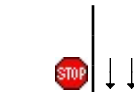
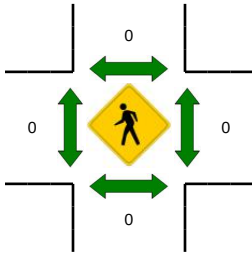
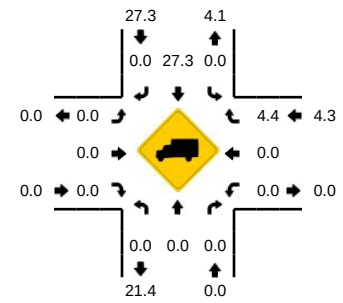
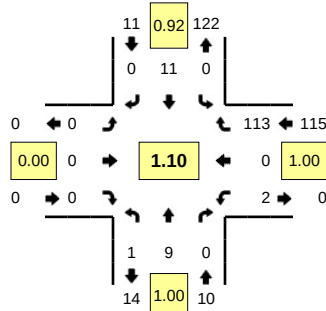
Chevron Facility Modernization Project

Appendix A
Intersection Count
Data Sheets

LOCATION: Marine St -- Chevron Way
CITY/STATE: Richmond, CA

QC JOB #: 10654702
DATE: Tue, Sep 20 2011

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



15-Min Count Period Beginning At	Marine St (Northbound)				Marine St (Southbound)				Chevron Way (Eastbound)				Chevron Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	2	0	0	0	5	0	0	0	0	0	0	1	0	46	0	54	204
6:15 AM	0	1	0	0	0	7	0	0	0	0	0	0	1	0	39	0	48	
6:30 AM	0	4	0	0	0	2	0	0	0	0	0	0	2	0	29	0	37	
6:45 AM	0	8	0	0	0	5	0	0	0	0	0	0	0	0	52	0	65	
7:00 AM	0	6	0	0	0	1	0	0	0	0	0	0	1	0	34	0	42	
7:15 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	24	0	30	174
7:30 AM	0	2	0	0	0	3	0	0	0	0	0	0	1	0	25	0	31	168
7:45 AM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	38	0	43	146
8:00 AM	0	1	0	1	0	3	0	0	0	0	0	0	1	0	26	0	32	136
8:15 AM	0	8	0	2	0	6	0	0	0	0	0	0	3	0	21	0	40	146
8:30 AM	0	2	0	1	0	6	0	0	0	0	0	0	1	0	20	0	30	145
8:45 AM	0	0	0	0	0	4	0	0	0	0	0	0	1	0	21	0	26	128
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	0	8	0	0	0	12	0	0	0	0	0	0	4	0	100	0	124	
Heavy Trucks	0	0	0	0	0	4	0	0	0	0	0	0	0	0	8	0	12	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

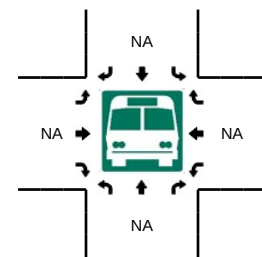
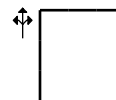
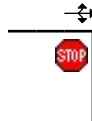
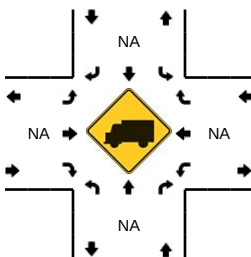
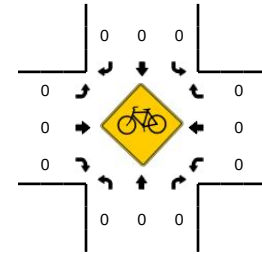
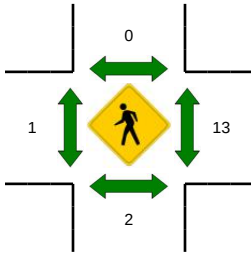
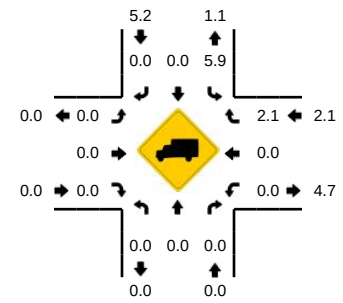
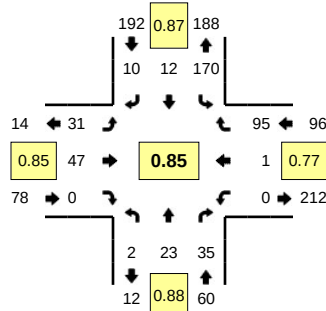
Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Castro St -- Tewksbury Ave
CITY/STATE: Richmond, CA

QC JOB #: 10654704
DATE: Tue, Sep 20 2011

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



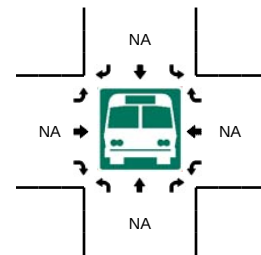
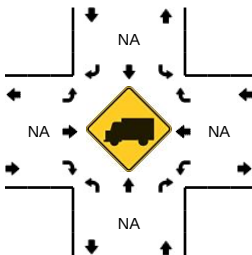
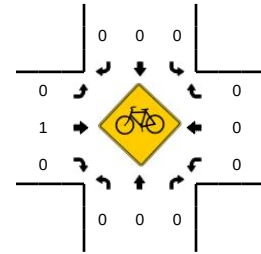
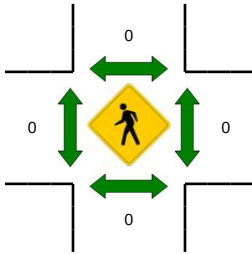
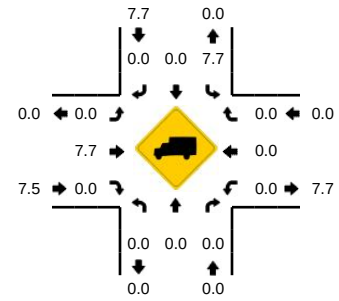
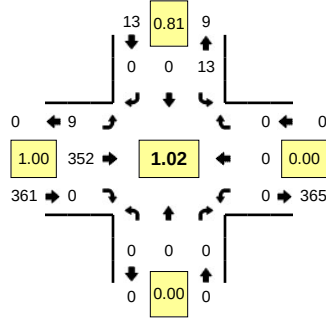
15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				Tewksbury Ave (Eastbound)				Tewksbury Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	1	2	2	0	17	0	1	1	2	7	0	0	0	0	17	0	50	250
6:15 AM	0	0	1	0	14	0	2	2	0	2	0	0	0	0	6	0	27	
6:30 AM	0	5	2	0	20	2	2	21	3	7	0	0	0	1	22	0	85	
6:45 AM	0	3	6	0	20	1	4	13	4	12	1	0	2	2	20	0	88	
7:00 AM	0	4	3	0	34	5	1	0	2	9	0	0	0	3	26	0	87	
7:15 AM	0	3	9	0	20	1	0	9	6	10	0	0	0	1	22	0	81	341
7:30 AM	0	5	12	0	31	4	4	16	8	15	0	0	0	0	31	0	126	382
7:45 AM	1	9	4	0	35	3	0	12	11	14	0	0	0	0	25	0	114	408
8:00 AM	1	6	10	0	44	4	6	3	5	8	0	1	0	0	17	0	105	426
8:15 AM	1	8	9	0	39	5	2	5	2	13	0	0	1	3	20	0	108	453
8:30 AM	0	5	5	0	43	2	5	6	8	7	1	0	0	3	17	0	102	429
8:45 AM	1	7	6	0	33	5	6	2	5	14	0	0	0	3	20	0	102	417
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	20	48	0	124	16	16	64	32	60	0	0	0	0	124	0	504	
Heavy Trucks	0	0	0		8	0	0		0	0	0		0	0	4		12	
Pedestrians	0	0	0		0	0	0		0	0	0		16	0	0		16	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Marine St -- I-580 EB Ramps
CITY/STATE: Richmond, CA

QC JOB #: 10654706
DATE: Tue, Sep 20 2011

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



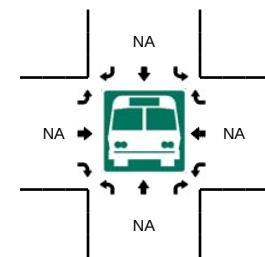
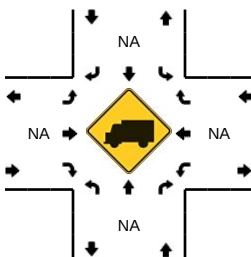
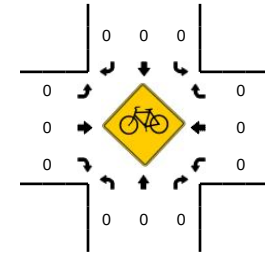
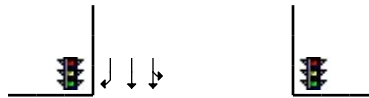
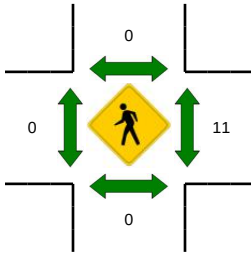
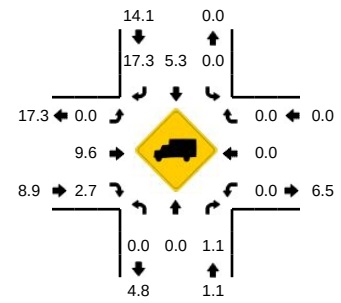
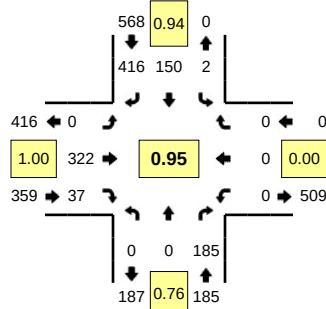
15-Min Count Period Beginning At	Marine St (Northbound)				Marine St (Southbound)				I-580 EB Ramps (Eastbound)				I-580 EB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	5	0	0	0	2	42	0	0	0	0	0	0	49	
6:15 AM	0	0	0	0	8	0	0	0	1	37	0	0	0	0	0	0	46	
6:30 AM	0	0	0	0	4	0	0	0	4	39	0	0	0	0	0	0	47	
6:45 AM	0	0	0	0	5	0	0	0	7	53	0	0	0	0	0	0	65	207
7:00 AM	0	0	0	0	1	0	0	0	7	57	0	0	0	0	0	0	65	223
7:15 AM	0	0	0	0	3	0	0	0	3	68	0	0	0	0	0	0	74	251
7:30 AM	0	0	0	0	4	0	0	0	1	87	0	0	0	0	0	0	92	296
7:45 AM	0	0	0	0	1	0	0	0	2	101	0	0	0	0	0	0	104	335
8:00 AM	0	0	0	0	5	0	0	0	3	96	0	0	0	0	0	0	104	374
8:15 AM	0	0	0	0	10	0	0	0	9	73	0	0	0	0	0	0	92	392
8:30 AM	0	0	0	0	8	0	0	0	3	82	0	0	0	0	0	0	93	393
8:45 AM	0	0	0	0	5	0	0	0	0	60	0	0	0	0	0	0	65	354
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	16	0	0	0	4	348	0	0	0	0	0	0	368	
Heavy Trucks	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	16	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: Castro St -- I-580 EB Ramps
CITY/STATE: Richmond, CA

QC JOB #: 10654708
DATE: Tue, Sep 20 2011

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



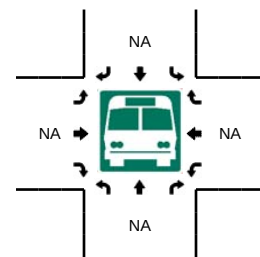
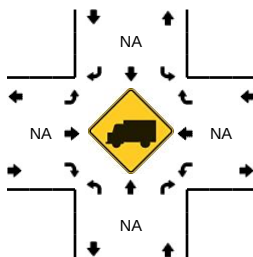
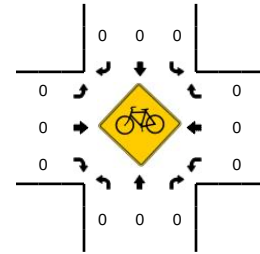
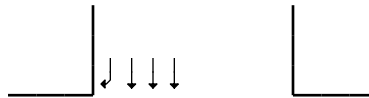
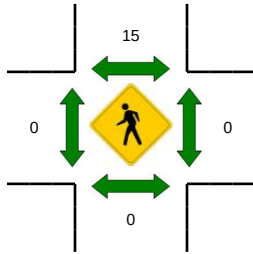
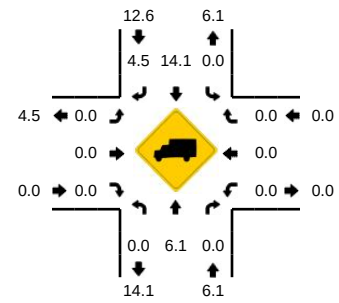
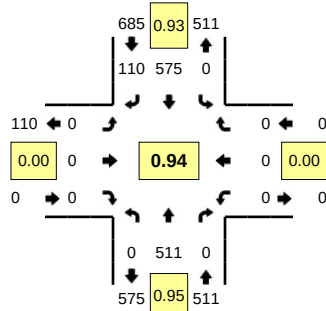
15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				I-580 EB Ramps (Eastbound)				I-580 EB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	18	0	1	14	28	0	0	41	4	0	0	0	0	0	106	
6:15 AM	0	0	10	0	0	15	32	0	0	43	3	0	0	0	0	0	103	
6:30 AM	0	0	45	0	2	37	38	0	0	39	5	0	0	0	0	0	166	
6:45 AM	0	0	44	0	2	36	57	0	0	49	5	0	0	0	0	0	193	568
7:00 AM	0	0	32	0	0	27	64	0	0	52	12	0	0	0	0	0	187	649
7:15 AM	0	0	37	0	0	19	100	0	0	62	12	0	0	0	0	0	230	776
7:30 AM	0	0	61	0	1	45	105	0	0	73	7	0	0	0	0	0	292	902
7:45 AM	0	0	57	0	0	39	111	0	0	104	11	0	0	0	0	0	322	1031
8:00 AM	0	0	30	0	1	47	100	0	0	83	7	0	0	0	0	0	268	1112
8:15 AM	0	0	36	0	1	42	70	0	0	66	13	0	0	0	0	0	228	1110
8:30 AM	0	0	36	0	1	41	70	0	0	69	15	0	0	0	0	0	232	1050
8:45 AM	0	0	32	0	0	30	65	0	0	64	17	0	0	0	0	0	208	936
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	244	0	4	180	420	0	0	292	28	0	0	0	0	0	1168	
Heavy Trucks	0	0	4	0	0	8	64	0	0	28	0	0	0	0	0	0	104	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: Castro St -- Chevron Way
CITY/STATE: Richmond, CA

QC JOB #: 10654710
DATE: Tue, Sep 20 2011

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

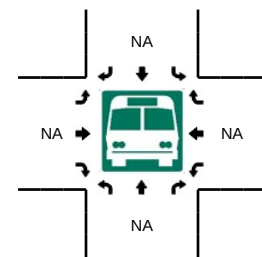
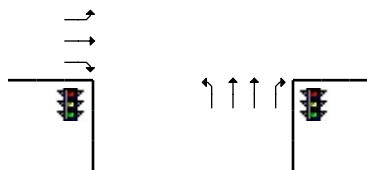
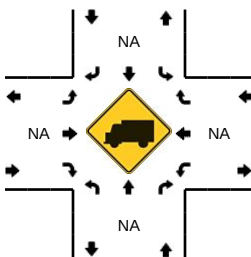
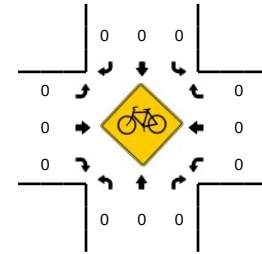
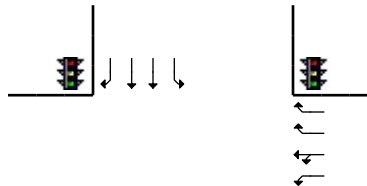
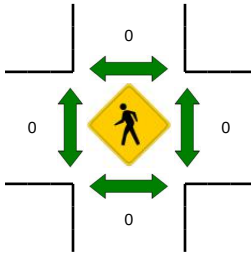
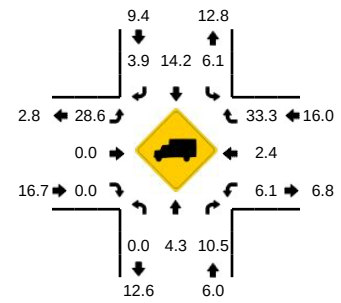
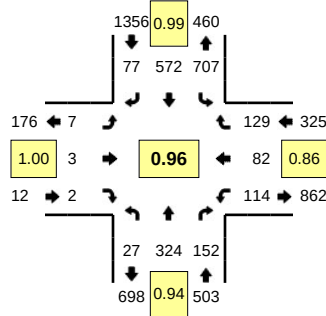


15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				Chevron Way (Eastbound)				Chevron Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	63	0	0	0	43	51	0	0	0	0	0	0	0	0	0	157	
6:15 AM	0	50	0	0	0	46	40	0	0	0	0	0	0	0	0	0	136	
6:30 AM	0	92	0	0	0	83	30	0	0	0	0	0	0	0	0	0	205	
6:45 AM	0	96	0	0	0	89	52	0	0	0	0	0	0	0	0	0	237	735
7:00 AM	0	82	0	0	0	98	32	0	0	0	0	0	0	0	0	0	212	790
7:15 AM	0	105	0	0	0	114	30	0	0	0	0	0	0	0	0	0	249	903
7:30 AM	0	134	0	0	0	157	27	0	0	0	0	0	0	0	0	0	318	1016
7:45 AM	0	158	0	0	0	145	22	0	0	0	0	0	0	0	0	0	325	1104
8:00 AM	0	114	0	0	0	159	31	0	0	0	0	0	0	0	0	0	304	1196
8:15 AM	0	106	0	0	0	107	22	0	0	0	0	0	0	0	0	0	235	1182
8:30 AM	0	106	0	0	0	113	23	0	0	0	0	0	0	0	0	0	242	1106
8:45 AM	0	94	0	0	0	93	24	0	0	0	0	0	0	0	0	0	211	992
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	0	536	0	0	0	628	108	0	0	0	0	0	0	0	0	0	1272	
Heavy Trucks	0	32	0	0	0	80	8	0	0	0	0	0	0	0	0	0	120	
Pedestrians	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	20	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: Castro St -- I-580 WB Ramps (Gate 14)**CITY/STATE:** Richmond, CA**QC JOB #:** 10654712**DATE:** Tue, Sep 20 2011

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



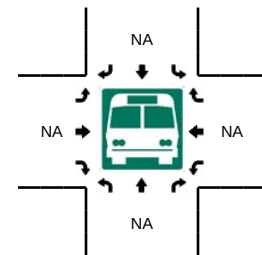
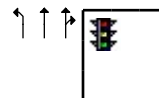
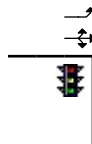
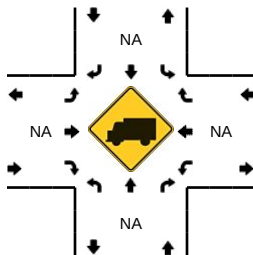
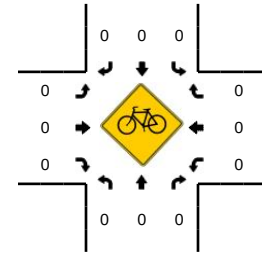
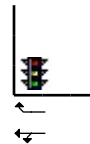
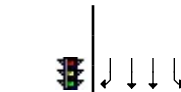
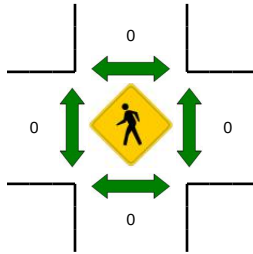
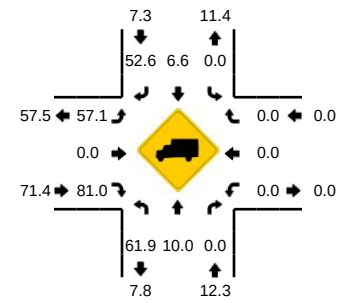
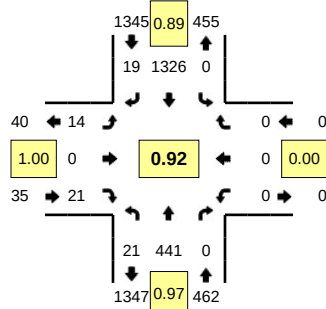
15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				I-580 WB Ramps (Gate 14) (Eastbound)				I-580 WB Ramps (Gate 14) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	8	43	7	2	91	53	22	0	1	0	3	0	26	15	20	0	291	
6:15 AM	2	30	8	5	159	58	23	0	1	0	0	0	20	17	24	0	347	
6:30 AM	2	43	50	1	154	82	19	0	1	0	0	0	27	17	37	0	433	
6:45 AM	2	56	24	4	169	115	15	0	6	1	0	0	33	15	37	0	477	1548
7:00 AM	4	54	17	3	169	89	13	0	3	0	2	0	34	18	33	0	439	1696
7:15 AM	4	64	31	3	202	136	21	0	1	1	0	0	20	22	31	0	536	1885
7:30 AM	3	78	50	3	188	145	11	0	2	0	0	0	34	26	34	0	574	2026
7:45 AM	5	98	45	3	148	150	26	0	2	2	1	0	30	21	36	0	567	2116
8:00 AM	5	84	26	1	169	141	19	0	2	0	1	0	30	13	28	0	519	2196
8:15 AM	3	74	34	0	199	89	16	0	1	0	0	0	22	11	29	0	478	2138
8:30 AM	3	71	28	3	185	104	12	0	0	1	2	0	30	13	33	0	485	2049
8:45 AM	3	47	33	1	166	102	10	0	2	0	1	0	22	4	29	0	420	1902
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	12	312	200	12	752	580	44	0	8	0	0	0	136	104	136	0	2296	
Heavy Trucks	0	8	20		48	72	8		0	0	0		12	0	28		196	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Castro St -- Mills St (Gate 31)
CITY/STATE: Richmond, CA

QC JOB #: 10654714
DATE: Tue, Sep 20 2011

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

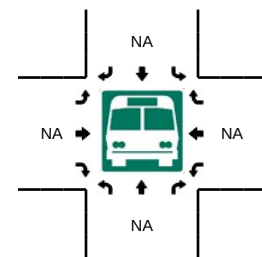
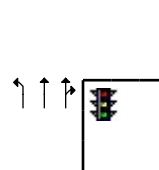
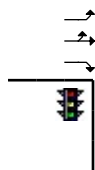
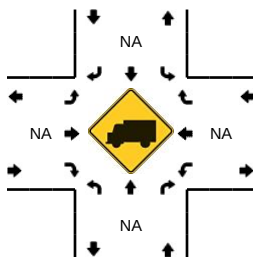
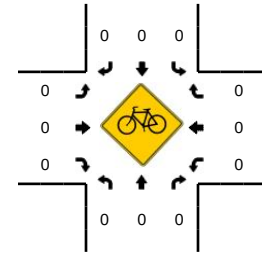
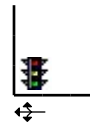
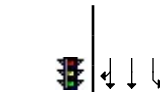
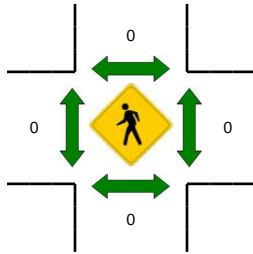
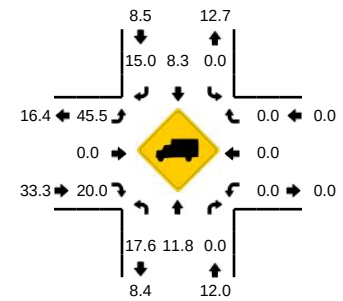
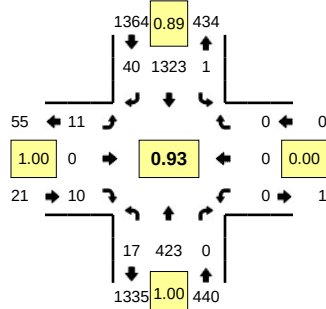


15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				Mills St (Gate 31) (Eastbound)				Mills St (Gate 31) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	8	65	0	1	1	169	10	0	3	0	5	0	0	0	0	0	262	1311
6:15 AM	5	51	1	0	1	230	5	0	1	0	2	0	0	1	0	0	297	
6:30 AM	6	71	1	2	1	288	5	1	4	0	6	0	2	0	0	0	387	
6:45 AM	5	92	0	0	1	255	4	0	2	0	3	0	2	1	0	0	365	
7:00 AM	8	92	0	0	0	279	7	0	6	0	3	0	0	0	0	0	395	
7:15 AM	6	87	0	0	0	350	4	0	3	0	8	0	0	0	0	0	458	1605
7:30 AM	3	116	0	0	0	375	4	0	1	0	4	0	0	0	0	0	503	1721
7:45 AM	6	125	0	0	0	282	5	0	6	0	7	0	0	0	0	0	431	1787
8:00 AM	6	113	0	0	0	319	6	0	4	0	2	0	0	0	0	0	450	1842
8:15 AM	4	103	0	0	0	280	7	0	4	0	6	0	0	0	0	0	404	1788
8:30 AM	2	98	0	1	0	288	4	0	2	0	5	0	0	0	0	0	400	1685
8:45 AM	9	80	0	0	0	270	3	0	2	0	10	0	0	0	0	0	374	1628
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	464	0	0	0	1500	16	0	4	0	16	0	0	0	0	0	2012	
Heavy Trucks	4	32	0		0	100	0		4	0	16		0	0	0		156	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Castro St -- Richmond Ln (Gate 91)**QC JOB #:** 10654716**CITY/STATE:** Richmond, CA**DATE:** Tue, Sep 20 2011

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



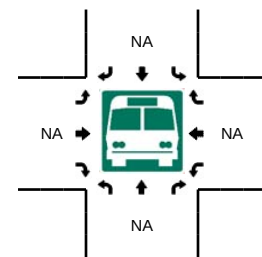
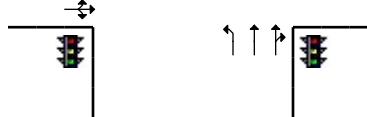
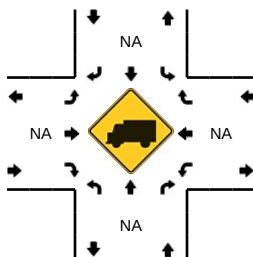
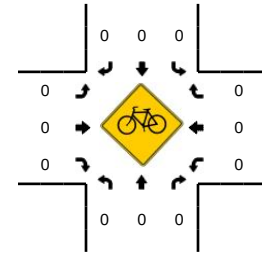
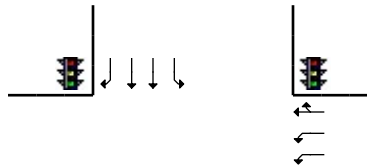
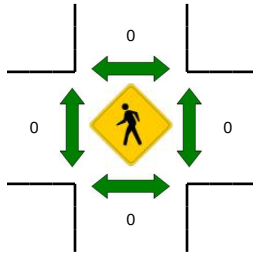
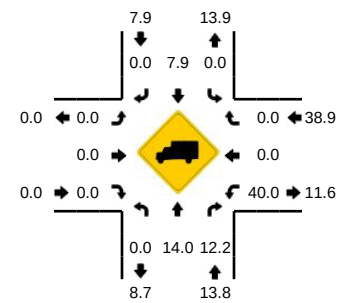
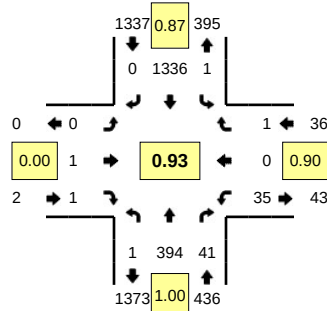
15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				Richmond Ln (Gate 91) (Eastbound)				Richmond Ln (Gate 91) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	5	52	0	0	0	173	24	0	1	0	6	0	1	0	1	0	263	1305
6:15 AM	4	51	0	0	1	235	11	0	1	0	2	0	0	0	1	0	306	
6:30 AM	2	68	0	0	0	290	9	0	3	0	1	0	0	0	0	0	373	
6:45 AM	7	87	0	0	0	253	8	0	3	0	5	0	0	0	0	0	363	
7:00 AM	9	91	2	0	0	280	3	0	9	0	9	0	0	0	1	0	404	
7:15 AM	4	75	0	1	0	351	10	0	5	0	3	0	0	0	0	0	449	1589
7:30 AM	3	99	0	0	0	377	8	0	1	0	0	0	0	0	0	0	488	1704
7:45 AM	5	136	0	0	1	274	9	0	3	0	3	0	0	0	0	0	431	1772
8:00 AM	3	113	0	1	0	321	13	0	2	0	4	0	0	0	0	0	457	1825
8:15 AM	5	99	0	0	0	291	8	0	2	0	3	0	0	0	0	0	408	1784
8:30 AM	6	92	0	0	0	280	8	0	3	0	2	0	0	0	0	0	391	1687
8:45 AM	4	84	0	0	0	263	8	0	4	0	4	0	0	0	0	0	367	1623
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	12	396	0	0	0	1508	32	0	4	0	0	0	0	0	0	0	1952	
Heavy Trucks	0	32	0	0	0	108	4	0	0	0	0	0	0	0	0	0	144	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: Castro St -- Hensley St
CITY/STATE: Richmond, CA

QC JOB #: 10654718
DATE: Tue, Sep 20 2011

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



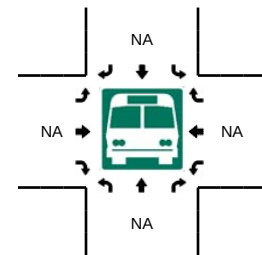
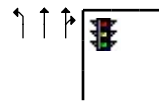
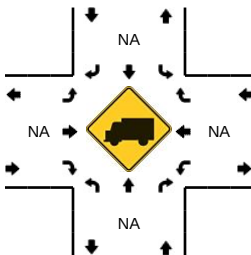
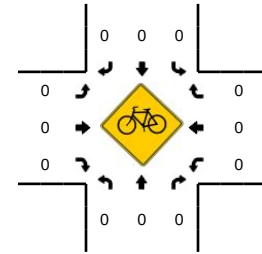
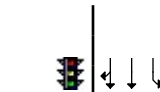
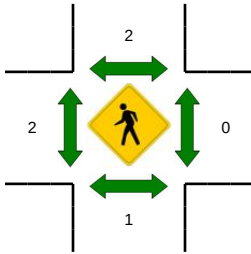
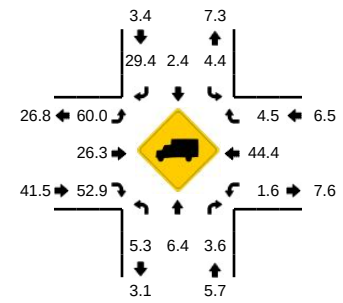
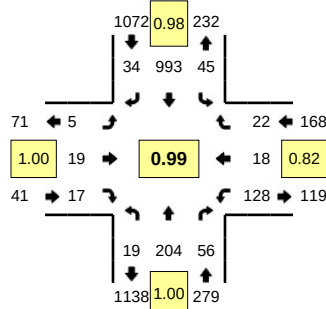
15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				Hensley St (Eastbound)				Hensley St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	42	14	0	2	189	0	0	0	0	0	0	6	0	1	0	254	1279
6:15 AM	1	43	5	0	1	241	1	0	0	0	0	0	2	0	0	0	294	
6:30 AM	0	58	9	1	1	278	1	0	0	1	0	0	6	0	1	0	356	
6:45 AM	0	72	18	0	4	260	5	0	0	1	4	0	11	0	0	0	375	
7:00 AM	1	86	15	0	2	274	0	0	0	0	0	0	5	0	8	0	391	
7:15 AM	0	74	10	0	0	351	0	0	0	0	0	0	8	0	0	0	443	1565
7:30 AM	0	91	5	0	1	382	0	0	0	0	0	0	9	0	1	0	489	1698
7:45 AM	0	121	15	1	0	291	0	0	0	1	1	0	8	0	0	0	438	1761
8:00 AM	0	108	11	0	0	312	0	0	0	0	0	0	10	0	0	0	441	1811
8:15 AM	0	90	6	0	0	293	0	0	0	1	0	0	7	0	0	0	397	1765
8:30 AM	0	90	13	0	3	288	0	0	0	0	1	0	6	1	0	0	402	1678
8:45 AM	0	75	12	0	2	266	0	0	0	0	0	0	7	1	1	0	364	1604
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	364	20	0	4	1528	0	0	0	0	0	0	36	0	4	0	1956	
Heavy Trucks	0	36	0		0	116	0		0	0	0		12	0	0		164	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Richmond Pkwy -- Hensley St
CITY/STATE: Richmond, CA

QC JOB #: 10654720
DATE: Tue, Sep 20 2011

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



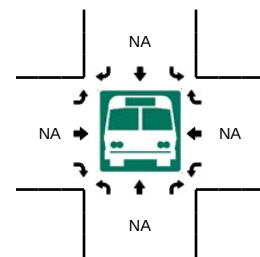
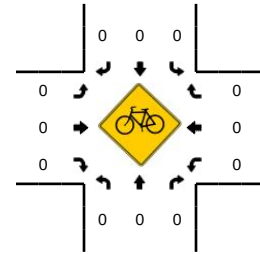
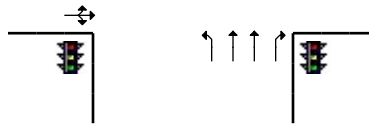
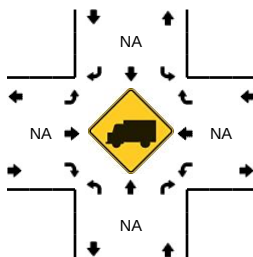
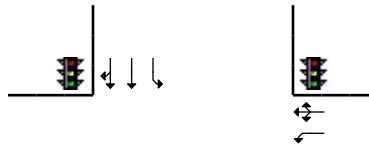
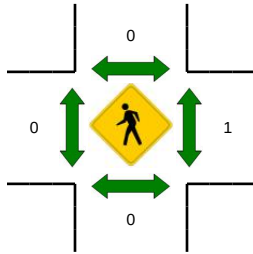
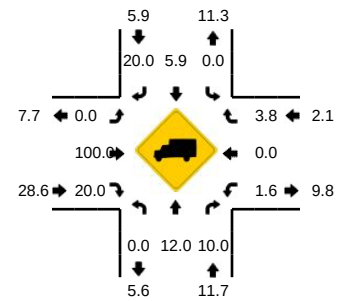
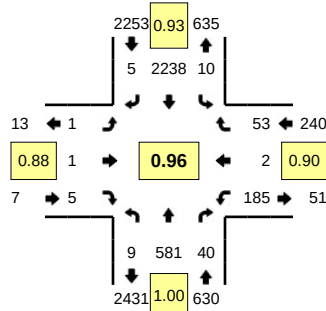
15-Min Count Period Beginning At	Richmond Pkwy (Northbound)				Richmond Pkwy (Southbound)				Hensley St (Eastbound)				Hensley St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	1	19	7	0	6	65	13	0	2	2	5	0	17	3	1	0	141	910
6:15 AM	3	24	10	0	7	106	7	0	0	5	5	0	20	5	2	0	194	
6:30 AM	2	34	17	0	10	133	4	0	6	3	5	0	28	9	2	0	253	
6:45 AM	1	32	13	0	19	188	15	0	2	5	4	0	31	8	4	0	322	
7:00 AM	3	38	7	0	5	204	1	0	2	5	1	0	43	3	5	0	317	
7:15 AM	2	40	16	0	10	224	5	0	2	7	3	0	47	5	2	0	363	1255
7:30 AM	4	50	10	0	7	254	12	0	0	2	4	0	37	7	7	0	394	1396
7:45 AM	3	56	14	0	16	282	13	1	1	5	1	0	23	4	8	0	427	1501
8:00 AM	10	58	16	0	11	233	4	0	2	5	9	0	21	2	5	0	376	1560
8:15 AM	6	56	13	0	22	290	7	0	0	2	6	0	22	2	3	0	429	1626
8:30 AM	8	64	14	0	11	219	3	0	2	3	1	0	18	3	0	0	346	1578
8:45 AM	3	54	12	0	10	193	6	0	4	9	3	0	13	3	3	0	313	1464
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	16	200	40	0	28	1016	48	0	0	8	16	0	148	28	28	0	1576	
Heavy Trucks	0	8	4		4	20	20		0	4	8		0	20	4		92	
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Richmond Pkwy -- Gertrude Ave
CITY/STATE: Richmond, CA

QC JOB #: 10654722
DATE: Tue, Sep 20 2011

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



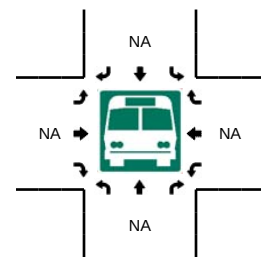
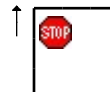
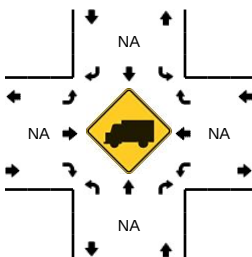
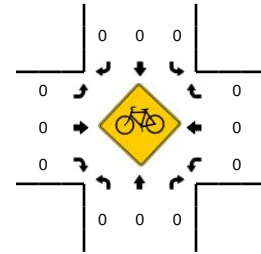
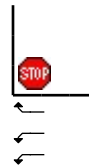
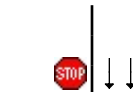
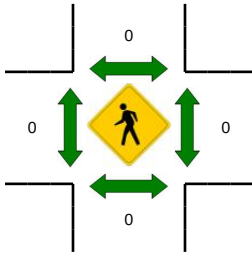
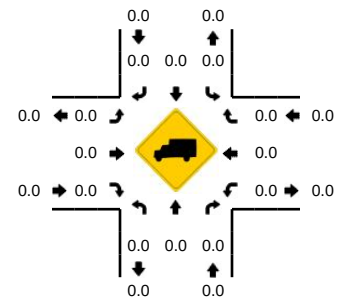
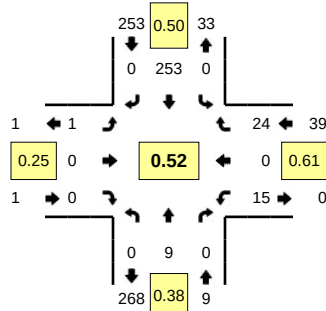
15-Min Count Period Beginning At	Richmond Pkwy (Northbound)				Richmond Pkwy (Southbound)				Gertrude Ave (Eastbound)				Gertrude Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	1	64	0	0	1	258	1	0	0	0	1	0	20	0	3	0	349	
6:15 AM	0	71	3	0	0	346	2	0	0	0	3	0	31	1	3	0	460	
6:30 AM	0	87	7	0	2	403	0	0	1	0	0	0	27	0	7	0	534	
6:45 AM	0	107	7	0	2	465	1	1	0	0	0	0	44	0	6	0	633	1976
7:00 AM	2	115	9	0	3	438	1	0	0	0	1	0	36	0	7	0	612	2239
7:15 AM	1	119	7	0	4	536	2	0	1	0	0	0	66	0	8	0	744	2523
7:30 AM	0	136	8	1	1	603	1	0	0	0	2	0	53	1	13	0	819	2808
7:45 AM	2	163	10	1	2	544	0	0	0	1	0	0	36	1	14	0	774	2949
8:00 AM	3	163	15	1	3	555	2	0	0	0	3	0	30	0	18	0	793	3130
8:15 AM	1	133	11	0	11	592	2	0	1	0	2	0	30	0	9	0	792	3178
8:30 AM	0	150	16	0	5	506	1	0	0	1	4	0	23	1	1	0	708	3067
8:45 AM	0	125	9	1	5	459	2	0	0	0	1	0	21	0	7	0	630	2923
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	0	544	32	4	4	2412	4	0	0	0	8	0	212	4	52	0	3276	
Heavy Trucks	0	56	0		0	144	0		0	0	4		4	0	8		216	
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Marine St -- Chevron Way
CITY/STATE: Richmond, CA

QC JOB #: 10654701
DATE: Tue, Sep 20 2011

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM



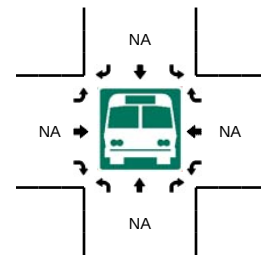
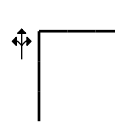
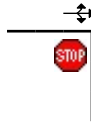
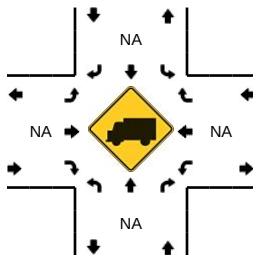
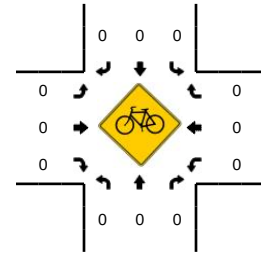
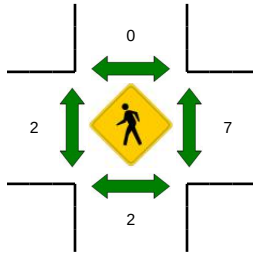
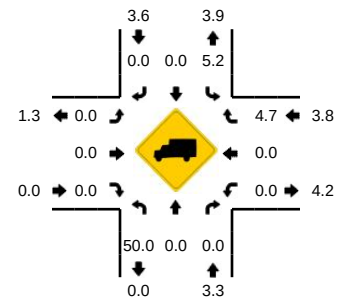
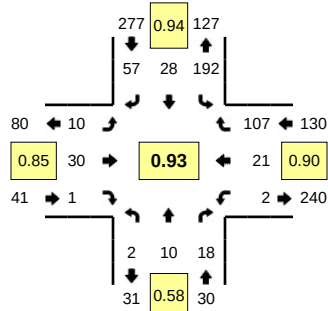
15-Min Count Period Beginning At	Marine St (Northbound)				Marine St (Southbound)				Chevron Way (Eastbound)				Chevron Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	1	0	0	0	41	0	0	0	0	0	1	4	0	6	0	53	
4:15 PM	0	1	0	0	0	73	0	0	0	0	0	1	2	0	10	0	87	
4:30 PM	0	6	0	0	0	126	0	0	0	0	0	0	3	0	9	0	144	
4:45 PM	0	2	0	0	0	44	0	0	0	0	0	1	9	0	7	0	63	347
5:00 PM	0	0	0	0	0	46	0	0	0	0	0	0	0	0	6	0	52	346
5:15 PM	0	1	0	0	0	37	0	0	0	0	0	0	3	0	2	0	43	302
5:30 PM	0	0	0	0	0	43	0	0	0	0	0	0	0	0	0	0	43	201
5:45 PM	0	0	0	0	0	33	0	0	0	0	0	0	3	0	3	0	39	177
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	24	0	0	0	504	0	0	0	0	0	0	12	0	36	0	576	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Castro St -- Tewksbury Ave
CITY/STATE: Richmond, CA

QC JOB #: 10654703
DATE: Tue, Sep 20 2011

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:45 PM -- 5:00 PM



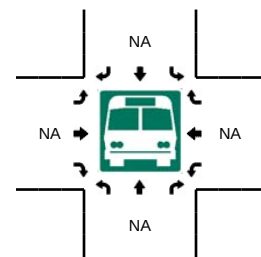
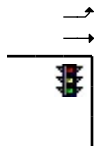
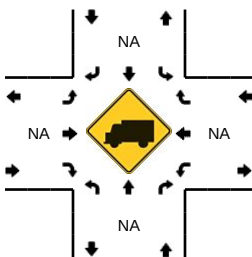
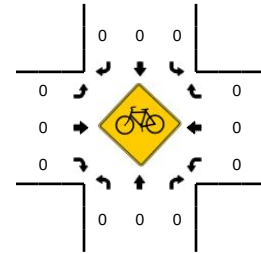
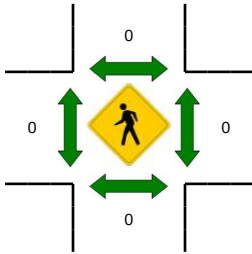
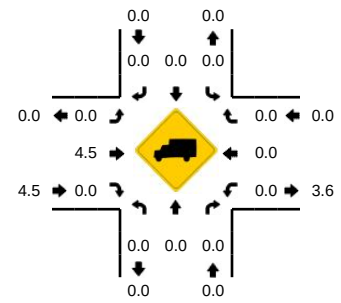
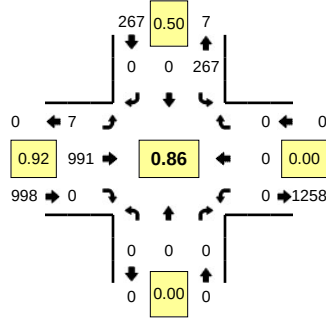
15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				Tewksbury Ave (Eastbound)				Tewksbury Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	5	4	0	38	3	15	0	2	14	0	0	0	5	25	0	111	
4:15 PM	0	1	3	0	42	5	12	0	7	4	0	0	1	5	20	0	100	
4:30 PM	0	0	4	0	50	8	14	0	2	8	0	0	0	5	25	0	116	
4:45 PM	0	3	4	0	60	6	8	0	6	6	0	0	1	6	29	0	129	456
5:00 PM	1	3	9	0	44	4	16	0	1	6	0	0	1	5	28	0	118	463
5:15 PM	1	4	1	0	38	10	19	0	1	10	1	0	0	5	25	0	115	478
5:30 PM	0	1	7	0	54	8	21	0	0	9	0	0	0	6	30	0	136	498
5:45 PM	0	4	6	0	40	8	20	0	3	5	0	0	3	8	23	0	120	489
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	12	16	0	240	24	32	0	24	24	0	0	4	24	116	0	516	
Heavy Trucks	0	0	0	0	12	0	0	0	0	0	0	0	0	0	4	0	16	
Pedestrians	0	8	0	0	0	0	0	0	0	8	0	0	0	12	0	0	28	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: Marine St -- I-580 EB Ramps
CITY/STATE: Richmond, CA

QC JOB #: 10654705
DATE: Tue, Sep 20 2011

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM



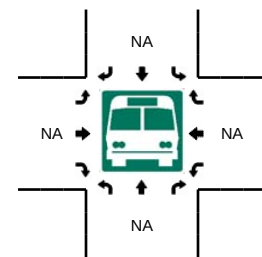
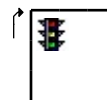
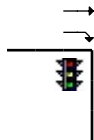
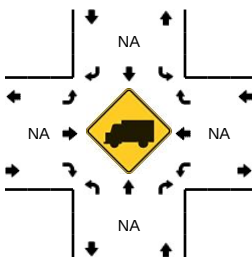
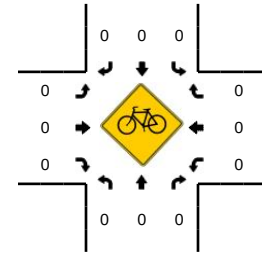
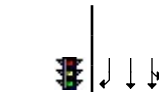
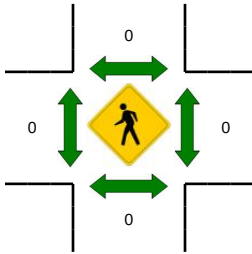
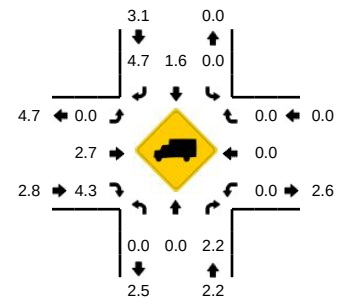
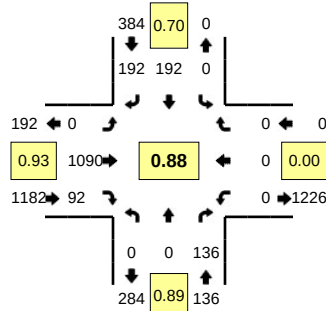
15-Min Count Period Beginning At	Marine St (Northbound)				Marine St (Southbound)				I-580 EB Ramps (Eastbound)				I-580 EB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	45	0	0	0	2	241	0	0	0	0	0	0	288	
4:15 PM	0	0	0	0	72	0	0	0	2	223	0	0	0	0	0	0	297	
4:30 PM	0	0	0	0	133	0	0	0	4	231	0	0	0	0	0	0	368	
4:45 PM	0	0	0	0	53	0	0	0	2	266	0	0	0	0	0	0	321	1274
5:00 PM	0	0	0	0	46	0	0	0	0	270	0	0	0	0	0	0	316	1302
5:15 PM	0	0	0	0	35	0	0	0	1	224	0	0	0	0	0	0	260	1265
5:30 PM	0	0	0	0	42	0	0	0	0	255	0	0	0	0	0	0	297	1194
5:45 PM	0	0	0	0	40	0	0	0	0	221	0	0	0	0	0	0	261	1134
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	532	0	0	0	16	924	0	0	0	0	0	0	1472	
Heavy Trucks	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0	0	40	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: Castro St -- I-580 EB Ramps
CITY/STATE: Richmond, CA

QC JOB #: 10654707
DATE: Tue, Sep 20 2011

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM



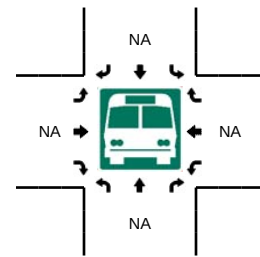
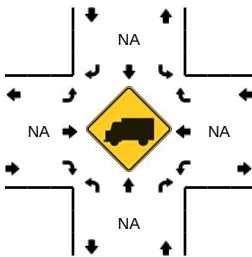
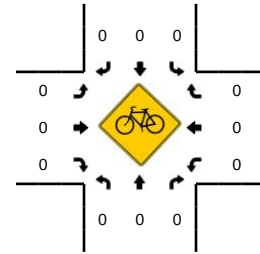
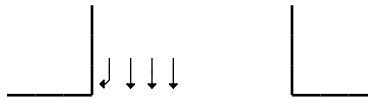
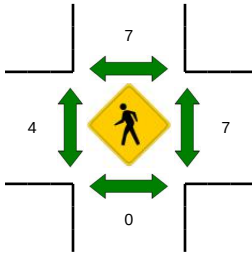
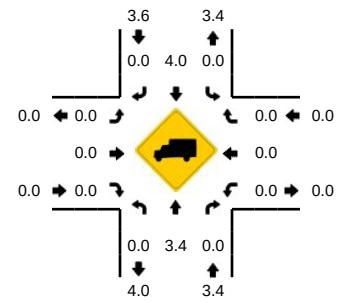
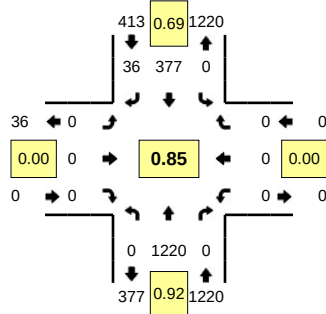
15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				I-580 EB Ramps (Eastbound)				I-580 EB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	31	0	0	31	43	0	0	236	16	0	0	0	0	0	357	
4:15 PM	0	0	28	0	0	38	39	0	0	246	25	0	0	0	0	0	376	
4:30 PM	0	0	31	0	0	53	84	0	0	295	21	0	0	0	0	0	484	
4:45 PM	0	0	38	0	0	47	29	0	0	259	28	0	0	0	0	0	401	1618
5:00 PM	0	0	33	0	0	42	43	0	0	291	28	0	0	0	0	0	437	1698
5:15 PM	0	0	34	0	0	50	36	0	0	245	15	0	0	0	0	0	380	1702
5:30 PM	0	0	32	0	0	49	32	0	0	255	30	0	0	0	0	0	398	1616
5:45 PM	0	0	29	0	0	47	35	0	0	229	18	0	0	0	0	0	358	1573
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	124	0	0	212	336	0	0	1180	84	0	0	0	0	0	1936	
Heavy Trucks	0	0	8	0	0	4	12	0	0	32	4	0	0	0	0	0	60	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: Castro St -- Chevron Way
CITY/STATE: Richmond, CA

QC JOB #: 10654709
DATE: Tue, Sep 20 2011

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

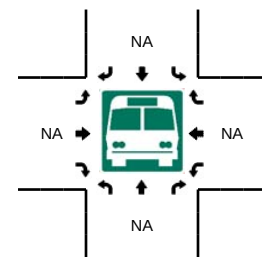
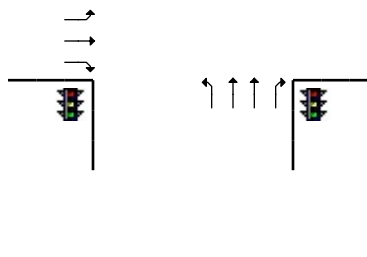
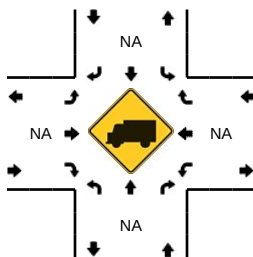
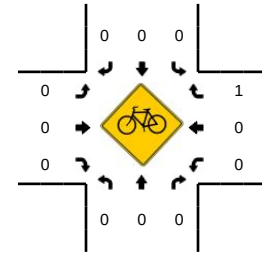
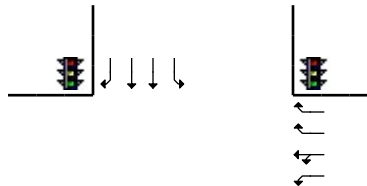
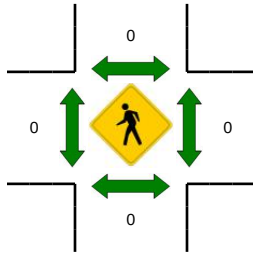
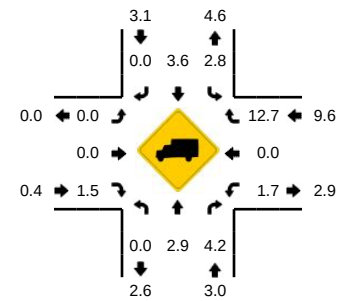
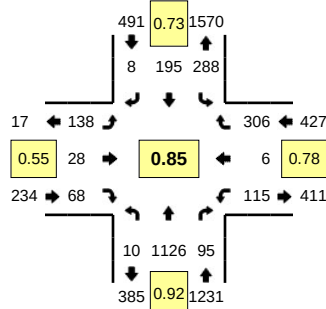


15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				Chevron Way (Eastbound)				Chevron Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	271	0	0	0	80	11	0	0	0	0	0	0	0	0	0	362	
4:15 PM	0	275	0	0	0	73	14	0	0	0	0	0	0	0	0	0	362	
4:30 PM	0	330	0	0	0	135	14	0	0	0	0	0	0	0	0	0	479	
4:45 PM	0	302	0	0	0	69	9	0	0	0	0	0	0	0	0	0	380	1583
5:00 PM	0	318	0	0	0	84	7	0	0	0	0	0	0	0	0	0	409	1630
5:15 PM	0	270	0	0	0	89	6	0	0	0	0	0	0	0	0	0	365	1633
5:30 PM	0	289	0	0	0	84	0	0	0	0	0	0	0	0	0	0	373	1527
5:45 PM	0	268	0	0	0	79	6	0	0	0	0	0	0	0	0	0	353	1500
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	1320	0	0	0	540	56	0	0	0	0	0	0	0	0	0	1916	
Heavy Trucks	0	44	0	0	0	16	0	0	0	0	0	0	0	0	0	0	60	
Pedestrians	0	0	0	0	0	12	0	0	0	4	0	0	0	12	0	0	28	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: Castro St -- I-580 WB Ramps (Gate 14)**CITY/STATE:** Richmond, CA**QC JOB #:** 10654711**DATE:** Tue, Sep 20 2011

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM



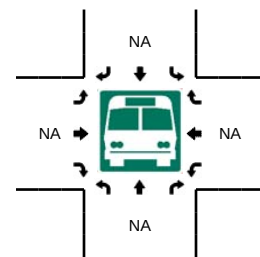
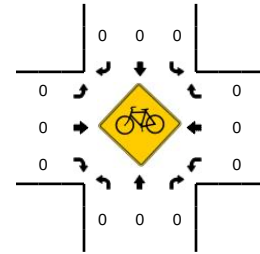
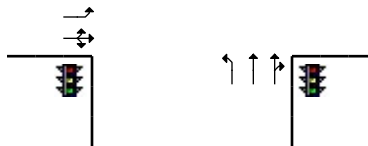
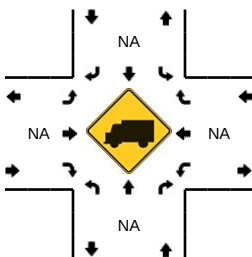
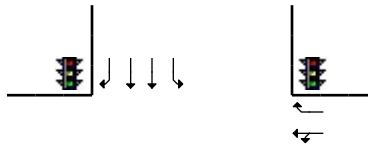
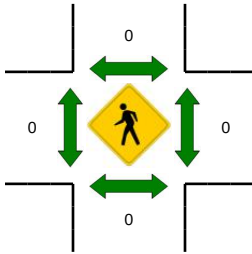
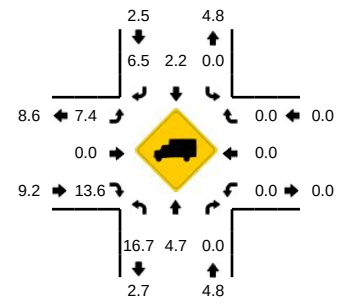
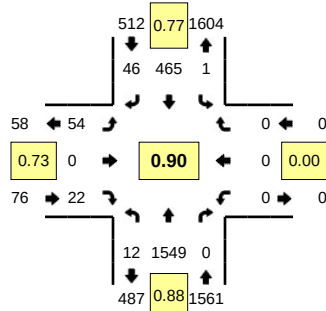
15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				I-580 WB Ramps (Gate 14) (Eastbound)				I-580 WB Ramps (Gate 14) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	251	20	1	62	41	2	0	28	3	14	0	27	2	51	0	505	
4:15 PM	4	247	15	5	56	49	2	0	25	1	13	0	29	5	62	0	513	
4:30 PM	2	297	35	0	89	76	4	0	62	13	32	0	27	3	60	0	700	
4:45 PM	0	276	20	4	70	43	1	0	29	3	4	0	24	1	51	0	526	2244
5:00 PM	0	304	20	2	59	42	1	0	27	4	20	0	29	1	107	0	616	2355
5:15 PM	1	249	20	1	70	34	2	0	20	8	12	0	35	1	88	0	541	2383
5:30 PM	0	267	17	1	77	43	1	0	22	1	15	0	28	2	99	1	574	2257
5:45 PM	0	235	21	2	60	33	1	0	16	6	12	0	32	0	79	0	497	2228
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	1188	140	0	356	304	16	0	248	52	128	0	108	12	240	0	2800	
Heavy Trucks	0	36	8		12	4	0		0	0	4		0	0	28		92	
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Castro St -- Mills St (Gate 31)
CITY/STATE: Richmond, CA

QC JOB #: 10654713
DATE: Tue, Sep 20 2011

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

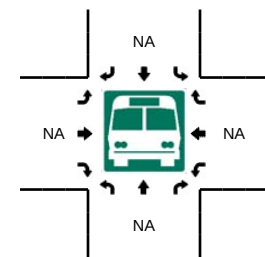
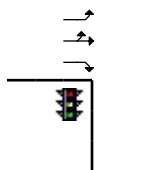
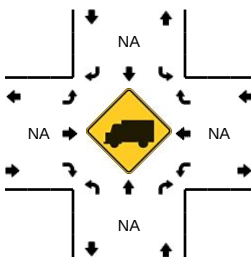
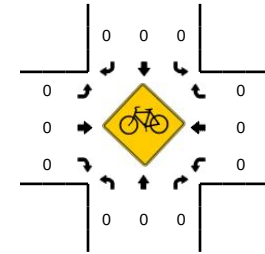
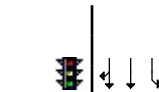
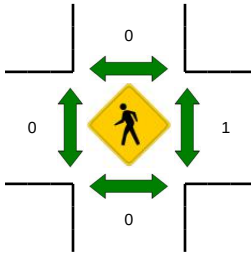
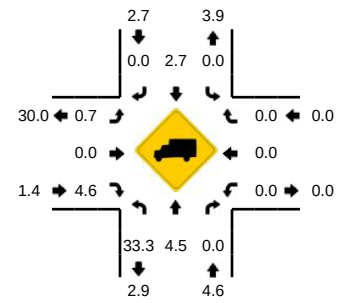
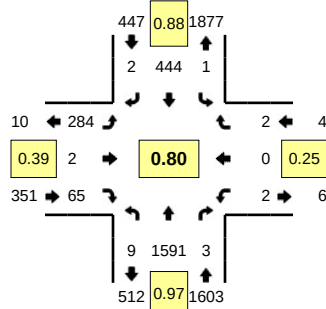


15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				Mills St (Gate 31) (Eastbound)				Mills St (Gate 31) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	311	0	0	0	101	1	0	7	0	5	0	0	0	0	0	431	
4:15 PM	2	325	0	0	0	107	5	0	12	0	2	0	0	0	0	0	453	
4:30 PM	4	400	0	0	0	154	12	1	18	0	8	0	0	0	0	0	597	
4:45 PM	3	351	0	0	0	105	21	0	8	0	4	0	0	0	0	0	492	1973
5:00 PM	2	444	0	0	0	111	7	0	12	0	7	0	0	0	0	0	583	2125
5:15 PM	3	354	0	0	0	95	6	0	16	0	3	0	0	0	0	0	477	2149
5:30 PM	3	357	0	0	0	102	2	0	11	0	5	0	0	0	0	0	480	2032
5:45 PM	5	334	0	0	0	94	2	0	3	0	4	0	0	0	0	0	442	1982
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	1600	0	0	0	616	48	4	72	0	32	0	0	0	0	0	2388	
Heavy Trucks	0	68	0	0	0	0	0	0	12	0	4	0	0	0	0	0	84	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: Castro St -- Richmond Ln (Gate 91)**QC JOB #:** 10654715**CITY/STATE:** Richmond, CA**DATE:** Tue, Sep 20 2011

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM



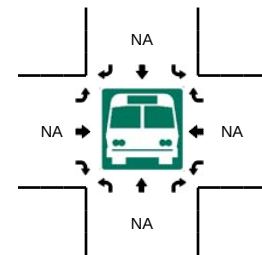
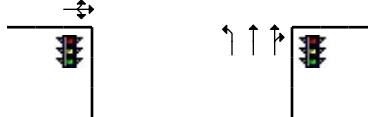
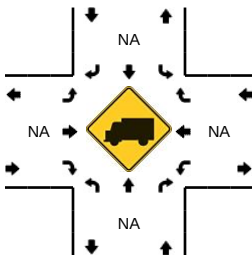
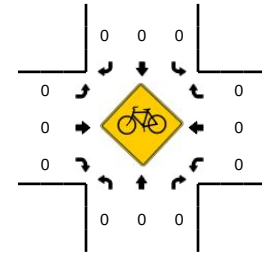
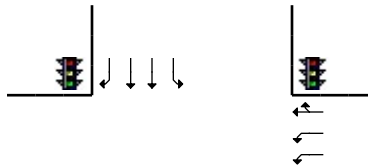
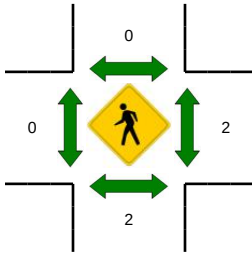
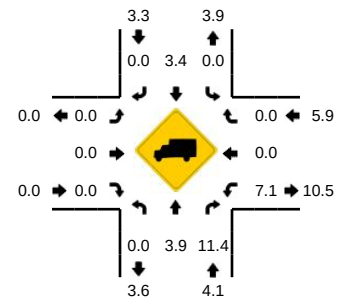
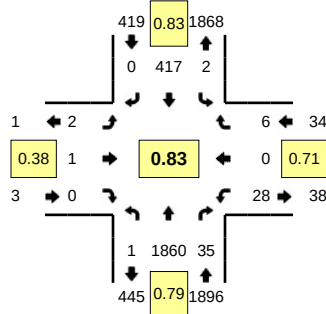
15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				Richmond Ln (Gate 91) (Eastbound)				Richmond Ln (Gate 91) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	310	0	0	0	96	6	0	15	0	2	0	0	0	0	0	433	
4:15 PM	1	328	0	0	0	99	5	0	115	0	21	0	0	0	0	0	569	
4:30 PM	2	411	2	0	0	107	1	0	177	2	44	0	2	0	2	0	750	
4:45 PM	1	361	1	0	0	127	0	0	60	0	10	0	0	0	0	0	560	2312
5:00 PM	2	412	0	0	0	102	1	0	39	0	9	0	0	0	0	0	565	2444
5:15 PM	3	407	0	1	1	108	0	0	8	0	2	0	0	0	0	0	530	2405
5:30 PM	1	350	0	0	1	114	1	0	7	0	3	0	0	0	0	0	477	2132
5:45 PM	0	353	0	1	0	91	1	0	5	0	3	0	0	0	0	0	454	2026
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	1644	8	0	0	428	4	0	708	8	176	0	8	0	8	0	3000	
Heavy Trucks	8	76	0	0	0	0	0	0	0	0	4	0	0	0	0	0	88	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Castro St -- Hensley St
CITY/STATE: Richmond, CA

QC JOB #: 10654717
DATE: Tue, Sep 20 2011

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM



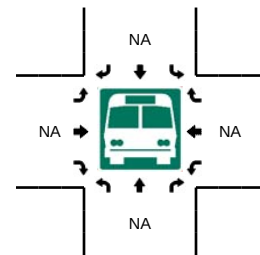
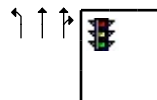
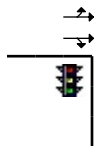
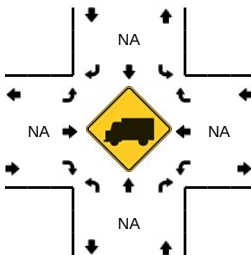
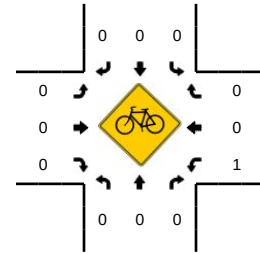
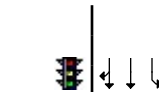
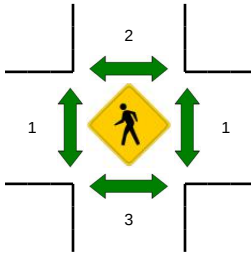
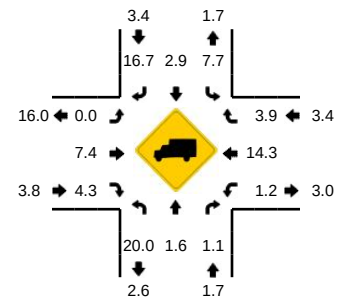
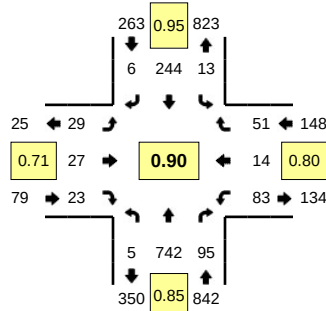
15-Min Count Period Beginning At	Castro St (Northbound)				Castro St (Southbound)				Hensley St (Eastbound)				Hensley St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	321	3	0	1	84	0	0	0	0	0	0	15	0	2	0	426	
4:15 PM	0	412	10	0	0	98	0	0	0	0	0	0	6	0	3	0	529	
4:30 PM	0	587	14	0	0	100	0	0	1	1	0	0	4	0	1	0	708	
4:45 PM	0	446	7	0	2	124	0	0	0	0	0	0	8	0	4	0	591	2254
5:00 PM	0	430	6	0	0	91	0	0	0	0	0	0	8	0	1	0	536	2364
5:15 PM	1	397	8	0	0	102	0	0	1	0	0	0	8	0	0	0	517	2352
5:30 PM	0	389	2	0	0	109	0	0	0	0	0	0	5	0	0	0	505	2149
5:45 PM	0	338	8	0	0	89	0	1	0	0	0	0	2	0	1	0	439	1997
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	2348	56	0	0	400	0	0	4	4	0	0	16	0	4	0	2832	
Heavy Trucks	0	72	0	0	0	8	0	0	0	0	0	0	0	0	0	0	80	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: Richmond Pkwy -- Hensley St
CITY/STATE: Richmond, CA

QC JOB #: 10654719
DATE: Tue, Sep 20 2011

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

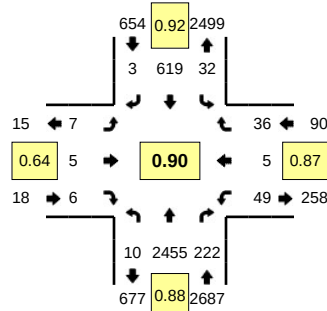


15-Min Count Period Beginning At	Richmond Pkwy (Northbound)				Richmond Pkwy (Southbound)				Hensley St (Eastbound)				Hensley St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	184	26	0	4	62	0	0	8	4	4	0	14	5	18	0	329	
4:15 PM	3	165	21	0	9	60	1	0	7	5	5	0	12	6	9	0	303	
4:30 PM	1	200	28	0	5	61	3	0	12	9	7	0	21	3	20	0	370	
4:45 PM	1	182	17	0	2	60	1	0	8	7	7	0	18	7	13	0	323	1325
5:00 PM	1	148	17	0	3	59	1	1	4	4	7	0	29	3	14	0	291	1287
5:15 PM	2	212	33	0	2	64	1	0	5	7	2	0	15	1	4	0	348	1332
5:30 PM	0	194	25	0	3	62	0	0	8	1	3	0	14	3	8	0	321	1283
5:45 PM	0	180	18	0	4	62	3	0	4	7	3	0	9	1	3	0	294	1254
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	800	112	0	20	244	12	0	48	36	28	0	84	12	80	0	1480	
Heavy Trucks	0	20	4		0	0	4		0	0	4		0	0	4		36	
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

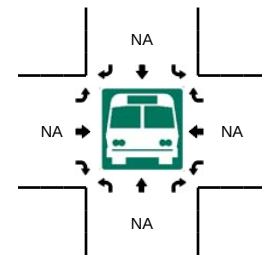
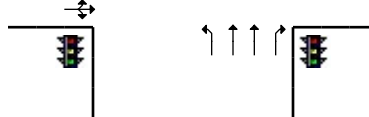
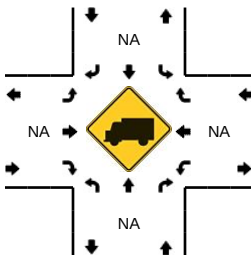
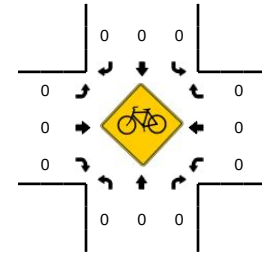
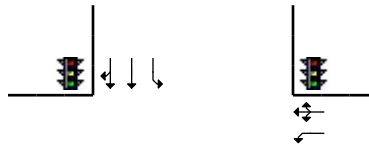
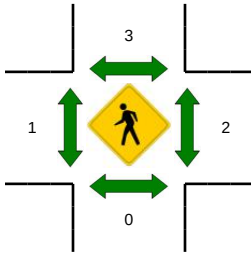
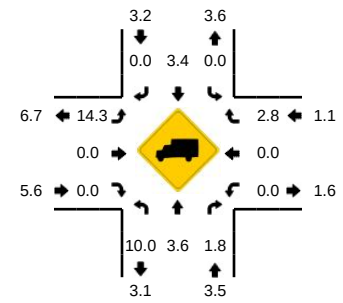
Comments:

LOCATION: Richmond Pkwy -- Gertrude Ave
CITY/STATE: Richmond, CA

QC JOB #: 10654721
DATE: Tue, Sep 20 2011



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

[illegible]

Comments:

Appendix B

Intersection LOS Calculations

HCM Unsignalized Intersection Capacity Analysis

Chevron Revised EIR

1: Marine St & Chevron Way

Existing AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	2	113	9	0	0	11
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	2	133	11	0	0	13
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1	
Volume Total (vph)	1	1	133	11	13	
Volume Left (vph)	1	1	0	0	0	
Volume Right (vph)	0	0	133	0	0	
Hadj (s)	0.50	0.50	-0.63	0.00	0.46	
Departure Headway (s)	5.1	5.1	3.2	3.9	4.4	
Degree Utilization, x	0.00	0.00	0.12	0.01	0.02	
Capacity (veh/h)	704	698	1121	914	817	
Control Delay (s)	6.9	6.9	5.4	7.0	7.4	
Approach Delay (s)	5.5			7.0	7.4	
Approach LOS	A			A	A	
Intersection Summary						
Delay			5.7			
Level of Service			A			
Intersection Capacity Utilization			31.3%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 2: Castro St & Tewksbury Ave

Chevron Revised EIR
Existing AM

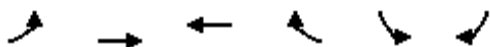
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Sign Control		Stop			Stop			Stop				Stop
Volume (vph)	31	47	0	0	1	95	2	23	35	40	130	12
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	36	55	0	0	1	112	2	27	41	0	153	14
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	92	113	71	153	26							
Volume Left (vph)	36	0	2	153	0							
Volume Right (vph)	0	112	41	0	12							
Hadj (s)	0.08	-0.56	-0.34	0.60	-0.32							
Departure Headway (s)	4.8	4.1	4.4	5.6	4.7							
Degree Utilization, x	0.12	0.13	0.09	0.24	0.03							
Capacity (veh/h)	707	816	773	611	728							
Control Delay (s)	8.4	7.7	7.8	9.2	6.7							
Approach Delay (s)	8.4	7.7	7.8	8.8								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.3									
Level of Service			A									
Intersection Capacity Utilization			33.8%			ICU Level of Service			A			
Analysis Period (min)			15									

	
Movement	SBR
Lane Configurations	
Sign Control	
Volume (vph)	10
Peak Hour Factor	0.85
Hourly flow rate (vph)	12
Direction, Lane #	

HCM Signalized Intersection Capacity Analysis

3: EB I-580 Ramp & Marine St

Chevron Revised EIR
Existing AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	9	352	0	0	13	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3			3.0	
Lane Util. Factor	1.00	1.00			0.97	
Flt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	1805	1759			3242	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	1805	1759			3242	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	391	0	0	14	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	10	391	0	0	14	0
Heavy Vehicles (%)	0%	8%	0%	0%	8%	0%
Turn Type	Split	NA			NA	
Protected Phases	4	4			2	
Permitted Phases						
Actuated Green, G (s)	24.5	24.5			1.0	
Effective Green, g (s)	24.5	24.5			1.0	
Actuated g/C Ratio	0.75	0.75			0.03	
Clearance Time (s)	4.3	4.3			3.0	
Vehicle Extension (s)	3.0	3.0			2.0	
Lane Grp Cap (vph)	1348	1313			98	
v/s Ratio Prot	0.01	c0.22			c0.00	
v/s Ratio Perm						
v/c Ratio	0.01	0.30			0.14	
Uniform Delay, d1	1.1	1.4			15.5	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.1			0.2	
Delay (s)	1.1	1.5			15.7	
Level of Service	A	A			B	
Approach Delay (s)		1.5	0.0		15.7	
Approach LOS		A	A		B	
Intersection Summary						
HCM 2000 Control Delay		1.9		HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio		0.29				
Actuated Cycle Length (s)		32.8		Sum of lost time (s)		7.3
Intersection Capacity Utilization		31.3%		ICU Level of Service		A
Analysis Period (min)		15				
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

4: Castro St & I-580 EB Ramps

Chevron Revised EIR
Existing AM

							
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations				 			
Volume (vph)	322	37	2	150	0	0	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		3.0			3.0
Lane Util. Factor	1.00	1.00		0.97			1.00
Frpb, ped/bikes	1.00	1.00		1.00			1.00
Flpb, ped/bikes	1.00	1.00		0.99			1.00
Frt	1.00	0.85		1.00			0.86
Flt Protected	1.00	1.00		0.95			1.00
Satd. Flow (prot)	1727	1568		3311			1627
Flt Permitted	1.00	1.00		0.54			1.00
Satd. Flow (perm)	1727	1568		1879			1627
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	374	43	2	174	0	0	215
RTOR Reduction (vph)	0	22	0	0	0	0	68
Lane Group Flow (vph)	374	21	0	176	0	0	147
Confl. Peds. (#/hr)			11				11
Heavy Vehicles (%)	10%	3%	0%	5%	17%	0%	1%
Turn Type	NA	Perm		Prot			custom
Protected Phases	6!			5 4			5 6!
Permitted Phases		6					
Actuated Green, G (s)	48.5	48.5		42.0			68.5
Effective Green, g (s)	48.5	48.5		42.0			68.5
Actuated g/C Ratio	0.48	0.48		0.42			0.68
Clearance Time (s)	6.5	6.5					
Vehicle Extension (s)	3.0	3.0					
Lane Grp Cap (vph)	837	760		789			1114
v/s Ratio Prot	c0.22						0.09
v/s Ratio Perm		0.01		c0.09			
v/c Ratio	0.45	0.03		0.22			0.13
Uniform Delay, d1	16.9	13.4		18.6			5.5
Progression Factor	1.00	1.00		1.65			1.00
Incremental Delay, d2	1.7	0.1		0.1			0.1
Delay (s)	18.7	13.5		30.8			5.5
Level of Service	B	B		C			A
Approach Delay (s)	18.1				30.8	5.5	
Approach LOS	B				C	A	
Intersection Summary							
HCM 2000 Control Delay			17.5		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.35				
Actuated Cycle Length (s)			100.0		Sum of lost time (s)		12.5
Intersection Capacity Utilization			46.0%		ICU Level of Service		A
Analysis Period (min)			15				
! Phase conflict between lane groups.							
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis

5: Castro St & Chevron Way

Chevron Revised EIR
Existing AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑↑	↗
Volume (vph)	0	0	0	511	575	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.5	4.5
Lane Util. Factor				0.95	0.91	1.00
Frbp, ped/bikes				1.00	1.00	1.00
Flpb, ped/bikes				1.00	1.00	1.00
Frt				1.00	1.00	0.85
Flt Protected				1.00	1.00	1.00
Satd. Flow (prot)				3406	4550	1553
Flt Permitted				1.00	1.00	1.00
Satd. Flow (perm)				3406	4550	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	555	625	120
RTOR Reduction (vph)	0	0	0	0	0	29
Lane Group Flow (vph)	0	0	0	555	625	91
Confl. Peds. (#/hr)	15					
Heavy Vehicles (%)	0%	0%	0%	6%	14%	4%
Turn Type				NA	NA	Perm
Protected Phases				Free	2	
Permitted Phases						2
Actuated Green, G (s)				100.0	75.5	75.5
Effective Green, g (s)				100.0	75.5	75.5
Actuated g/C Ratio				1.00	0.76	0.76
Clearance Time (s)					4.5	4.5
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)				3406	3435	1172
v/s Ratio Prot				0.16	c0.14	
v/s Ratio Perm						0.06
v/c Ratio				0.16	0.18	0.08
Uniform Delay, d1				0.0	3.5	3.2
Progression Factor				1.00	1.00	1.00
Incremental Delay, d2				0.1	0.1	0.1
Delay (s)				0.1	3.6	3.3
Level of Service				A	A	A
Approach Delay (s)	0.0			0.1	3.6	
Approach LOS	A			A	A	
Intersection Summary						
HCM 2000 Control Delay			2.1	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.18			
Actuated Cycle Length (s)			100.0	Sum of lost time (s)		7.5
Intersection Capacity Utilization			17.5%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

6: Castro St & Redwood Way/WB I-580 Ramp

Chevron Revised EIR
Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	3	2	114	82	129	27	324	152	707	572	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Flt Protected	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Permitted	0.95	0.98	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1329	1586	1615	1618	1741	2137	1805	3471	1468	1703	3167	1553
Satd. Flow (perm)	1329	1586	1615	1618	1741	2137	1805	3471	1468	1703	3167	1553
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	7	3	2	119	85	134	28	338	158	736	596	80
RTOR Reduction (vph)	0	0	2	0	0	119	0	0	0	0	0	25
Lane Group Flow (vph)	5	5	0	100	104	15	28	338	158	736	596	55
Heavy Vehicles (%)	29%	0%	0%	6%	2%	33%	0%	4%	10%	6%	14%	4%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	2.0	2.0	2.0	10.2	10.2	10.2	2.6	15.8	93.4	50.7	64.1	64.1
Effective Green, g (s)	2.0	2.0	2.0	10.2	10.2	10.2	2.6	15.8	93.4	50.7	64.1	64.1
Actuated g/C Ratio	0.02	0.02	0.02	0.11	0.11	0.11	0.03	0.17	1.00	0.54	0.69	0.69
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	28	33	34	176	190	233	50	587	1468	924	2173	1065
v/s Ratio Prot	0.00	0.00		c0.06	0.06		0.02	c0.10		c0.43	0.19	
v/s Ratio Perm			0.00			0.01			c0.11			0.04
v/c Ratio	0.18	0.15	0.00	0.57	0.55	0.06	0.56	0.58	0.11	0.80	0.27	0.05
Uniform Delay, d1	44.9	44.9	44.7	39.5	39.4	37.3	44.8	35.7	0.0	17.2	5.7	4.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.8	0.0	2.5	1.7	0.0	8.3	1.1	0.1	4.5	0.1	0.0
Delay (s)	46.0	45.6	44.7	42.0	41.1	37.4	53.1	36.8	0.1	21.7	5.7	4.8
Level of Service	D	D	D	D	D	D	D	D	A	C	A	A
Approach Delay (s)		45.6			39.9			26.6			14.0	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			20.9			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			93.4			Sum of lost time (s)			14.7			
Intersection Capacity Utilization			70.5%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

7: Castro St & Mills St

Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	0	21	0	0	0	21	441	0	0	1326	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	5.5			5.5	5.5
Lane Util. Factor	0.95	0.95					1.00	0.95			0.95	1.00
Frt	1.00	0.86					1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00					0.95	1.00			1.00	1.00
Satd. Flow (prot)	1092	865					1114	3282			3374	1056
Flt Permitted	0.76	0.98					0.95	1.00			1.00	1.00
Satd. Flow (perm)	871	852					1114	3282			3374	1056
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	0	23	0	0	0	23	479	0	0	1441	21
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	13	2	0	0	0	0	23	479	0	0	1441	16
Heavy Vehicles (%)	57%	0%	81%	0%	0%	0%	62%	10%	0%	0%	7%	53%
Turn Type	Perm	NA		Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						6
Actuated Green, G (s)	7.3	7.3					3.1	77.6			70.5	70.5
Effective Green, g (s)	7.3	7.3					3.1	77.6			70.5	70.5
Actuated g/C Ratio	0.08	0.08					0.03	0.82			0.75	0.75
Clearance Time (s)	4.0	4.0					4.0	5.5			5.5	5.5
Vehicle Extension (s)	3.0	3.0					2.0	3.5			3.5	3.5
Lane Grp Cap (vph)	67	65					36	2697			2519	788
v/s Ratio Prot							c0.02	0.15			c0.43	
v/s Ratio Perm	c0.01	0.00										0.01
v/c Ratio	0.19	0.03					0.64	0.18			0.57	0.02
Uniform Delay, d1	40.8	40.3					45.1	1.8			5.3	3.1
Progression Factor	1.00	1.00					1.00	1.00			1.00	1.00
Incremental Delay, d2	1.4	0.2					24.2	0.1			1.0	0.0
Delay (s)	42.2	40.5					69.3	1.9			6.2	3.1
Level of Service	D	D					E	A			A	A
Approach Delay (s)		41.1			0.0			5.0			6.2	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			6.5				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			94.4				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			49.6%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Castro St & General Chemical Access

Chevron Revised EIR
Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	0	10	0	0	0	17	423	0	1	1323	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	5.7		4.0	5.7	
Lane Util. Factor	0.95	0.95	1.00				1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85				1.00	1.00		1.00	1.00	
Flt Protected	0.95	0.95	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1174	1174	1346				1530	3223		1805	3322	
Flt Permitted	0.76	0.76	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)	936	936	1346				1530	3223		1805	3322	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	12	0	11	0	0	0	18	455	0	1	1423	43
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	6	6	1	0	0	0	18	455	0	1	1465	0
Heavy Vehicles (%)	46%	0%	20%	0%	0%	0%	18%	12%	0%	0%	8%	15%
Turn Type	Perm	NA	Perm	Perm			Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	5.3	5.3	5.3				5.7	47.3		0.7	42.3	
Effective Green, g (s)	5.3	5.3	5.3				5.7	47.3		0.7	42.3	
Actuated g/C Ratio	0.08	0.08	0.08				0.09	0.71		0.01	0.63	
Clearance Time (s)	4.0	4.0	4.0				4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0				2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	74	74	106				130	2275		18	2097	
v/s Ratio Prot							c0.01	c0.14		0.00	c0.44	
v/s Ratio Perm	c0.01	0.01	0.00									
v/c Ratio	0.08	0.08	0.01				0.14	0.20		0.06	0.70	
Uniform Delay, d1	28.6	28.6	28.4				28.4	3.4		32.8	8.1	
Progression Factor	1.00	1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.2	0.0				0.2	0.1		0.5	1.1	
Delay (s)	28.8	28.8	28.4				28.6	3.4		33.3	9.3	
Level of Service	C	C	C				C	A		C	A	
Approach Delay (s)		28.6			0.0			4.4			9.3	
Approach LOS		C			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.3				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			67.0				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			49.3%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Castro St & Hensley St

Chevron Revised EIR

Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1	1	35	0	1	1	394	41	1	1336	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.85		1.00	0.99		1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1900	1615	2501	1615		1805	3127		1805	3343	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1900	1615	2501	1615		1805	3127		1805	3343	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	1	1	38	0	1	1	424	44	1	1437	0
RTOR Reduction (vph)	0	0	1	0	1	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1	0	38	0	0	1	465	0	1	1437	0
Heavy Vehicles (%)	0%	0%	0%	40%	0%	0%	0%	14%	12%	0%	8%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)		1.2	1.2	2.4	7.6		0.8	52.9		0.8	52.9	
Effective Green, g (s)		1.2	1.2	2.4	7.6		0.8	52.9		0.8	52.9	
Actuated g/C Ratio		0.02	0.02	0.03	0.10		0.01	0.71		0.01	0.71	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)		4.0	4.0	2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		30	26	80	165		19	2226		19	2380	
v/s Ratio Prot		c0.00		c0.02	0.00		c0.00	0.15		0.00	c0.43	
v/s Ratio Perm			0.00									
v/c Ratio		0.03	0.00	0.47	0.00		0.05	0.21		0.05	0.60	
Uniform Delay, d1		36.0	36.0	35.3	29.9		36.4	3.6		36.4	5.4	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.0	1.6	0.0		0.4	0.1		0.4	0.5	
Delay (s)		36.6	36.0	36.9	29.9		36.8	3.7		36.8	5.9	
Level of Service		D	D	D	C		D	A		D	A	
Approach Delay (s)		36.3			36.8			3.8			5.9	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			6.1			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			74.3			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			54.4%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

10: Hensley St & Richmond Pkwy

Chevron Revised EIR
Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	993	34	19	204	56	5	19	17	128	18	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.97		1.00	0.93		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3489		1719	3308		1127	1432		1768	1606	
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00		0.73	1.00	
Satd. Flow (perm)	1736	3489		1719	3308		864	1432		1361	1606	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	49	1091	37	21	224	62	5	21	19	141	20	24
RTOR Reduction (vph)	0	2	0	0	17	0	0	15	0	0	19	0
Lane Group Flow (vph)	49	1126	0	21	269	0	5	25	0	141	25	0
Confl. Peds. (#/hr)			2	2			2		1	1		2
Heavy Vehicles (%)	4%	2%	29%	5%	6%	4%	60%	26%	53%	2%	44%	4%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	4.1	35.6		1.1	32.6		12.1	12.1		12.1	12.1	
Effective Green, g (s)	4.1	35.6		1.1	32.6		12.1	12.1		12.1	12.1	
Actuated g/C Ratio	0.07	0.58		0.02	0.53		0.20	0.20		0.20	0.20	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)	115	2009		30	1744		169	280		266	314	
v/s Ratio Prot	c0.03	c0.32		0.01	0.08			0.02			0.02	
v/s Ratio Perm							0.01			c0.10		
v/c Ratio	0.43	0.56		0.70	0.15		0.03	0.09		0.53	0.08	
Uniform Delay, d1	27.7	8.2		30.2	7.5		20.1	20.3		22.3	20.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.5		44.4	0.1		0.1	0.1		1.8	0.1	
Delay (s)	28.6	8.7		74.6	7.6		20.2	20.5		24.1	20.4	
Level of Service	C	A		E	A		C	C		C	C	
Approach Delay (s)		9.5			12.2			20.4			23.3	
Approach LOS		A			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			11.8			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			61.8			Sum of lost time (s)			13.0			
Intersection Capacity Utilization			57.1%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR
Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	5	185	2	53	9	581	40	10	2238	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.90		1.00	0.93		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1326		1681	1594		1805	3223	1435	1805	3404	
Flt Permitted		0.98		0.75	0.83		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1304		1333	1364		1805	3223	1435	1805	3404	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1	1	5	193	2	55	9	605	42	10	2331	5
RTOR Reduction (vph)	0	4	0	0	22	0	0	0	10	0	0	0
Lane Group Flow (vph)	0	3	0	127	101	0	9	605	32	10	2336	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	0%	100%	20%	2%	0%	4%	0%	12%	10%	0%	6%	20%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		17.0		17.0	17.0		1.2	96.0	96.0	1.2	96.0	
Effective Green, g (s)		17.0		17.0	17.0		1.2	96.0	96.0	1.2	96.0	
Actuated g/C Ratio		0.13		0.13	0.13		0.01	0.76	0.76	0.01	0.76	
Clearance Time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	3.1	3.1	2.0	3.1	
Lane Grp Cap (vph)		174		178	183		17	2442	1087	17	2579	
v/s Ratio Prot							0.00	0.19		c0.01	c0.69	
v/s Ratio Perm		0.00		c0.10	0.07				0.02			
v/c Ratio		0.02		0.71	0.55		0.53	0.25	0.03	0.59	0.91	
Uniform Delay, d1		47.6		52.5	51.3		62.5	4.6	3.8	62.5	11.9	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		12.7	3.6		13.0	0.1	0.0	29.3	5.1	
Delay (s)		47.6		65.2	54.9		75.5	4.6	3.8	91.8	16.9	
Level of Service		D		E	D		E	A	A	F	B	
Approach Delay (s)		47.6			60.1			5.6			17.2	
Approach LOS		D			E			A			B	
Intersection Summary												
HCM 2000 Control Delay			18.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			126.7			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			83.4%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

Chevron Revised EIR

1: Marine St & Chevron Way

Existing PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	15	24	9	0	0	253
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	18	28	11	0	0	298
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1	
Volume Total (vph)	9	9	28	11	298	
Volume Left (vph)	9	9	0	0	0	
Volume Right (vph)	0	0	28	0	0	
Hadj (s)	0.50	0.50	-0.70	0.00	0.00	
Departure Headway (s)	5.7	5.7	3.2	4.2	4.0	
Degree Utilization, x	0.01	0.01	0.03	0.01	0.33	
Capacity (veh/h)	595	598	1121	826	901	
Control Delay (s)	7.5	7.5	5.1	7.3	8.9	
Approach Delay (s)	6.0			7.3	8.9	
Approach LOS	A			A	A	
Intersection Summary						
Delay			8.5			
Level of Service			A			
Intersection Capacity Utilization			72.4%	ICU Level of Service		C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 2: Castro St & Tewksbury Ave

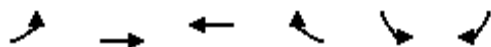
Chevron Revised EIR
Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	30	1	2	21	107	2	10	18	192	28	57
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	32	1	2	23	115	2	11	19	206	30	61
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	44	140	32	206	91							
Volume Left (vph)	11	2	2	206	0							
Volume Right (vph)	1	115	19	0	61							
Hadj (s)	0.03	0.91	-0.29	0.58	-0.47							
Departure Headway (s)	5.0	5.7	4.6	5.7	4.6							
Degree Utilization, x	0.06	0.22	0.04	0.32	0.12							
Capacity (veh/h)	669	599	732	615	755							
Control Delay (s)	8.3	10.3	7.8	10.1	7.0							
Approach Delay (s)	8.3	10.3	7.8	9.2								
Approach LOS	A	B	A	A								
Intersection Summary												
Delay			9.3									
Level of Service			A									
Intersection Capacity Utilization			32.3%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

3: EB I-580 Ramp & Marine St

Chevron Revised EIR
Existing PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	7	991	0	0	267	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3			3.0	
Lane Util. Factor	1.00	1.00			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	1805	1827			3502	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	1805	1827			3502	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	8	1152	0	0	310	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	8	1152	0	0	310	0
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Turn Type	Split	NA			NA	
Protected Phases	4	4			2	
Permitted Phases						
Actuated Green, G (s)	36.6	36.6			9.0	
Effective Green, g (s)	36.6	36.6			9.0	
Actuated g/C Ratio	0.69	0.69			0.17	
Clearance Time (s)	4.3	4.3			3.0	
Vehicle Extension (s)	3.0	3.0			2.0	
Lane Grp Cap (vph)	1248	1264			595	
v/s Ratio Prot	0.00	c0.63			c0.09	
v/s Ratio Perm						
v/c Ratio	0.01	0.91			0.52	
Uniform Delay, d1	2.5	6.8			20.0	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	10.0			0.4	
Delay (s)	2.5	16.8			20.4	
Level of Service	A	B			C	
Approach Delay (s)		16.7	0.0		20.4	
Approach LOS		B	A		C	
Intersection Summary						
HCM 2000 Control Delay		17.5		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.83				
Actuated Cycle Length (s)		52.9		Sum of lost time (s)		7.3
Intersection Capacity Utilization		89.7%		ICU Level of Service		E
Analysis Period (min)		15				
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

4: Castro St & I-580 EB Ramps

Chevron Revised EIR
Existing PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↘↙			↑
Volume (vph)	1090	92	192	0	0	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	3.0			3.0
Lane Util. Factor	1.00	1.00	0.97			1.00
Frt	1.00	0.85	1.00			0.86
Flt Protected	1.00	1.00	0.95			1.00
Satd. Flow (prot)	1845	1553	3433			1611
Flt Permitted	1.00	1.00	0.95			1.00
Satd. Flow (perm)	1845	1553	3433			1611
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1239	105	218	0	0	155
RTOR Reduction (vph)	0	18	0	0	0	42
Lane Group Flow (vph)	1239	87	218	0	0	113
Heavy Vehicles (%)	3%	4%	2%	5%	0%	2%
Turn Type	NA	Perm	Prot			custom
Protected Phases	6!		5 4			5 6!
Permitted Phases		6				
Actuated Green, G (s)	56.8	56.8	23.7			65.5
Effective Green, g (s)	56.8	56.8	23.7			65.5
Actuated g/C Ratio	0.63	0.63	0.26			0.73
Clearance Time (s)	6.5	6.5				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	1164	980	904			1172
v/s Ratio Prot	c0.67		c0.06			0.07
v/s Ratio Perm		0.06				
v/c Ratio	1.06	0.09	0.24			0.10
Uniform Delay, d1	16.6	6.5	26.1			3.6
Progression Factor	1.00	1.00	1.64			1.00
Incremental Delay, d2	45.3	0.2	0.1			0.0
Delay (s)	61.9	6.7	42.9			3.6
Level of Service	E	A	D			A
Approach Delay (s)	57.6			42.9	3.6	
Approach LOS	E			D	A	
Intersection Summary						
HCM 2000 Control Delay			50.9		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.85			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.5
Intersection Capacity Utilization			83.4%		ICU Level of Service	E
Analysis Period (min)			15			
! Phase conflict between lane groups.						
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

5: Castro St & Chevron Way

Chevron Revised EIR
Existing PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑↑	↗
Volume (vph)	0	0	0	1220	377	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.5	4.5
Lane Util. Factor				0.95	0.91	1.00
Frpb, ped/bikes				1.00	1.00	0.98
Flpb, ped/bikes				1.00	1.00	1.00
Frt				1.00	1.00	0.85
Flt Protected				1.00	1.00	1.00
Satd. Flow (prot)				3505	4988	1575
Flt Permitted				1.00	1.00	1.00
Satd. Flow (perm)				3505	4988	1575
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	0	1435	444	42
RTOR Reduction (vph)	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	1435	444	31
Confl. Peds. (#/hr)	7		4			7
Heavy Vehicles (%)	0%	0%	0%	3%	4%	0%
Turn Type				NA	NA	Perm
Protected Phases				Free	2	
Permitted Phases						2
Actuated Green, G (s)				90.0	65.5	65.5
Effective Green, g (s)				90.0	65.5	65.5
Actuated g/C Ratio				1.00	0.73	0.73
Clearance Time (s)					4.5	4.5
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)				3505	3630	1146
v/s Ratio Prot				0.41	0.09	
v/s Ratio Perm						0.02
v/c Ratio				0.41	0.12	0.03
Uniform Delay, d1				0.0	3.7	3.4
Progression Factor				1.00	1.00	1.00
Incremental Delay, d2				0.1	0.1	0.0
Delay (s)				0.1	3.7	3.4
Level of Service				A	A	A
Approach Delay (s)	0.0			0.1	3.7	
Approach LOS	A			A	A	
Intersection Summary						
HCM 2000 Control Delay			1.0	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.45			
Actuated Cycle Length (s)			90.0	Sum of lost time (s)		7.5
Intersection Capacity Utilization			37.1%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

6: Castro St & Redwood Way/WB I-580 Ramp

Chevron Revised EIR
Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	28	68	115	6	306	10	1126	95	288	195	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1747	1583	1681	1696	2515	1805	3505	1553	1752	3471	1615
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1715	1747	1583	1681	1696	2515	1805	3505	1553	1752	3471	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	162	33	80	135	7	360	12	1325	112	339	229	9
RTOR Reduction (vph)	0	0	71	0	0	326	0	0	0	0	0	3
Lane Group Flow (vph)	97	98	9	70	72	34	12	1325	112	339	229	6
Heavy Vehicles (%)	0%	0%	2%	2%	0%	13%	0%	3%	4%	3%	4%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	10.2	10.2	10.2	8.8	8.8	8.8	1.1	37.3	93.4	22.4	58.8	58.8
Effective Green, g (s)	10.2	10.2	10.2	8.8	8.8	8.8	1.1	37.3	93.4	22.4	58.8	58.8
Actuated g/C Ratio	0.11	0.11	0.11	0.09	0.09	0.09	0.01	0.40	1.00	0.24	0.63	0.63
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	187	190	172	158	159	236	21	1399	1553	420	2185	1016
v/s Ratio Prot	c0.06	0.06		0.04	c0.04		0.01	c0.38		c0.19	0.07	
v/s Ratio Perm			0.01			0.01			0.07			0.00
v/c Ratio	0.52	0.52	0.05	0.44	0.45	0.14	0.57	0.95	0.07	0.81	0.10	0.01
Uniform Delay, d1	39.3	39.3	37.3	40.0	40.0	38.8	45.9	27.1	0.0	33.5	6.9	6.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	1.0	0.0	0.7	0.7	0.1	21.2	13.3	0.1	10.3	0.0	0.0
Delay (s)	40.3	40.3	37.3	40.7	40.8	38.9	67.1	40.4	0.1	43.7	6.9	6.4
Level of Service	D	D	D	D	D	D	E	D	A	D	A	A
Approach Delay (s)		39.4			39.5			37.5			28.5	
Approach LOS		D			D			D			C	
Intersection Summary												
HCM 2000 Control Delay			36.2			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			93.4			Sum of lost time (s)			14.7			
Intersection Capacity Utilization			68.7%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

7: Castro St & Mills St

Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	0	22	0	0	0	12	1549	0	1	465	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	0.95	0.95					1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.91					1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.98					0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1603	1452					1543	3438		1805	3539	1524
Flt Permitted	0.76	0.88					0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1277	1309					1543	3438		1805	3539	1524
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	60	0	24	0	0	0	13	1721	0	1	517	51
RTOR Reduction (vph)	0	37	0	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	43	4	0	0	0	0	13	1721	0	1	517	38
Heavy Vehicles (%)	7%	0%	14%	0%	0%	0%	17%	5%	0%	0%	2%	6%
Turn Type	Perm	NA		Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						6
Actuated Green, G (s)	8.7	8.7					1.2	70.7		0.9	70.4	70.4
Effective Green, g (s)	8.7	8.7					1.2	70.7		0.9	70.4	70.4
Actuated g/C Ratio	0.09	0.09					0.01	0.75		0.01	0.75	0.75
Clearance Time (s)	4.0	4.0					4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0					2.0	3.5		2.0	3.5	3.5
Lane Grp Cap (vph)	118	121					19	2591		17	2656	1143
v/s Ratio Prot							c0.01	c0.50		0.00	0.15	
v/s Ratio Perm	c0.03	0.00										0.03
v/c Ratio	0.36	0.03					0.68	0.66		0.06	0.19	0.03
Uniform Delay, d1	40.0	38.7					46.1	5.7		46.0	3.4	3.0
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	0.1					58.7	1.4		0.5	0.2	0.1
Delay (s)	41.9	38.8					104.8	7.1		46.6	3.6	3.0
Level of Service	D	D					F	A		D	A	A
Approach Delay (s)		40.4			0.0			7.8			3.6	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.9									
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			93.8									
Intersection Capacity Utilization			55.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Castro St & General Chemical Access

Chevron Revised EIR
Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	284	2	65	2	0	2	9	1591	3	1	444	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		0.93		1.00	1.00		1.00	1.00	
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1698	1703	1538		1729		1357	3470		1799	3503	
Flt Permitted	0.76	0.73	1.00		0.91		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1350	1299	1538		1612		1357	3470		1799	3503	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	334	2	76	2	0	2	11	1872	4	1	522	2
RTOR Reduction (vph)	0	0	54	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	167	169	22	0	1	0	11	1876	0	1	524	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	1%	0%	5%	0%	0%	0%	33%	4%	0%	0%	3%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	16.9	16.9	16.9		16.9		5.5	62.9		0.8	58.2	
Effective Green, g (s)	16.9	16.9	16.9		16.9		5.5	62.9		0.8	58.2	
Actuated g/C Ratio	0.18	0.18	0.18		0.18		0.06	0.67		0.01	0.62	
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	241	232	275		288		79	2314		15	2161	
v/s Ratio Prot							c0.01	c0.54		0.00	0.15	
v/s Ratio Perm	0.12	c0.13	0.01		0.00							
v/c Ratio	0.69	0.73	0.08		0.00		0.14	0.81		0.07	0.24	
Uniform Delay, d1	36.3	36.5	32.2		31.8		42.2	11.4		46.4	8.1	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.8	9.3	0.0		0.0		0.3	2.4		0.7	0.1	
Delay (s)	43.0	45.8	32.3		31.8		42.4	13.8		47.1	8.2	
Level of Service	D	D	C		C		D	B		D	A	
Approach Delay (s)		42.2			31.8			13.9			8.3	
Approach LOS		D			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			17.0				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			94.3				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			66.1%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Castro St & Hensley St

Chevron Revised EIR

Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1	0	28	0	6	1	1860	35	2	417	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.85		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1900		3273	1615		1805	3456		1805	3505	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1900		3273	1615		1805	3456		1805	3505	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	2	1	0	33	0	7	1	2188	41	2	491	0
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	2	1	0	33	0	0	1	2229	0	2	491	0
Confl. Peds. (#/hr)			2	2					2	2		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	4%	11%	0%	3%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	0.9	1.2		2.3	2.6		0.8	52.9		0.9	53.0	
Effective Green, g (s)	0.9	1.2		2.3	2.6		0.8	52.9		0.9	53.0	
Actuated g/C Ratio	0.01	0.02		0.03	0.03		0.01	0.71		0.01	0.71	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	21	30		101	56		19	2460		21	2500	
v/s Ratio Prot	0.00	c0.00		c0.01	0.00		0.00	c0.64		c0.00	0.14	
v/s Ratio Perm												
v/c Ratio	0.10	0.03		0.33	0.00		0.05	0.91		0.10	0.20	
Uniform Delay, d1	36.3	36.0		35.2	34.6		36.4	8.7		36.3	3.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.6		0.7	0.0		0.4	5.4		0.7	0.1	
Delay (s)	37.0	36.6		35.9	34.6		36.8	14.1		37.0	3.6	
Level of Service	D	D		D	C		D	B		D	A	
Approach Delay (s)		36.9			35.7			14.1			3.7	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			12.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			74.3			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			67.5%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

10: Hensley St & Richmond Pkwy

Chevron Revised EIR
Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	244	13	5	742	95	29	27	23	83	14	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.93		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3452		1503	3474		1803	1885		1784	1772	
Flt Permitted	0.95	1.00		0.95	1.00		0.71	1.00		0.72	1.00	
Satd. Flow (perm)	1671	3452		1503	3474		1347	1885		1353	1772	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	271	14	6	824	106	32	30	26	92	16	57
RTOR Reduction (vph)	0	2	0	0	6	0	0	22	0	0	48	0
Lane Group Flow (vph)	7	283	0	6	924	0	32	34	0	92	25	0
Confl. Peds. (#/hr)	1		1	1		1	2		3	3		2
Heavy Vehicles (%)	8%	3%	17%	20%	2%	1%	0%	7%	4%	1%	14%	4%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	0.7	28.2		0.7	28.2		7.7	7.7		7.7	7.7	
Effective Green, g (s)	0.7	28.2		0.7	28.2		7.7	7.7		7.7	7.7	
Actuated g/C Ratio	0.01	0.57		0.01	0.57		0.16	0.16		0.16	0.16	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)	23	1962		21	1975		209	292		210	275	
v/s Ratio Prot	c0.00	0.08		0.00	c0.27			0.02			0.01	
v/s Ratio Perm							0.02			c0.07		
v/c Ratio	0.30	0.14		0.29	0.47		0.15	0.12		0.44	0.09	
Uniform Delay, d1	24.2	5.0		24.2	6.3		18.1	18.0		19.0	17.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	0.1		2.7	0.3		0.3	0.2		1.3	0.1	
Delay (s)	26.9	5.1		26.9	6.6		18.4	18.2		20.3	18.1	
Level of Service	C	A		C	A		B	B		C	B	
Approach Delay (s)		5.6			6.7			18.3			19.3	
Approach LOS		A			A			B			B	
Intersection Summary												
HCM 2000 Control Delay	8.6			HCM 2000 Level of Service			A					
HCM 2000 Volume to Capacity ratio	0.46											
Actuated Cycle Length (s)	49.6			Sum of lost time (s)			13.0					
Intersection Capacity Utilization	43.1%			ICU Level of Service			A					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR
Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	5	6	49	5	36	10	2455	222	32	619	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	0.99		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	0.88		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1688		1715	1529		1641	3471	1544	1805	3503	
Flt Permitted		0.90		0.90	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1549		1628	1501		1641	3471	1544	1805	3503	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	8	6	7	54	6	40	11	2728	247	36	688	3
RTOR Reduction (vph)	0	6	0	0	37	0	0	0	33	0	0	0
Lane Group Flow (vph)	0	15	0	49	14	0	11	2728	214	36	691	0
Confl. Peds. (#/hr)	3					3	1		2	2		1
Heavy Vehicles (%)	14%	0%	0%	0%	0%	3%	10%	4%	2%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		9.9		9.9	9.9		1.3	97.3	97.3	4.3	100.3	
Effective Green, g (s)		9.9		9.9	9.9		1.3	97.3	97.3	4.3	100.3	
Actuated g/C Ratio		0.08		0.08	0.08		0.01	0.78	0.78	0.03	0.81	
Clearance Time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	3.1	3.1	2.0	3.1	
Lane Grp Cap (vph)		123		129	119		17	2723	1211	62	2833	
v/s Ratio Prot							0.01	c0.79		c0.02	c0.20	
v/s Ratio Perm		0.01		c0.03	0.01				0.14			
v/c Ratio		0.12		0.38	0.12		0.65	1.00	0.18	0.58	0.24	
Uniform Delay, d1		53.0		54.1	53.0		61.1	13.4	3.3	59.0	2.8	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4		1.9	0.5		49.2	17.7	0.1	8.6	0.0	
Delay (s)		53.4		56.0	53.5		110.3	31.0	3.4	67.6	2.9	
Level of Service		D		E	D		F	C	A	E	A	
Approach Delay (s)		53.4			54.7			29.0			6.1	
Approach LOS		D			D			C			A	
Intersection Summary												
HCM 2000 Control Delay			25.5			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			124.0			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			82.9%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

1: Marine St & Chevron Way

Chevron Revised EIR
2016 Baseline No Project AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	10	120	10	0	0	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	141	12	0	0	24
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1	
Volume Total (vph)	6	6	141	12	24	
Volume Left (vph)	6	6	0	0	0	
Volume Right (vph)	0	0	141	0	0	
Hadj (s)	0.50	0.50	-0.63	0.00	0.46	
Departure Headway (s)	5.1	5.1	3.2	4.0	4.4	
Degree Utilization, x	0.01	0.01	0.13	0.01	0.03	
Capacity (veh/h)	699	693	1121	903	811	
Control Delay (s)	6.9	6.9	5.5	7.0	7.5	
Approach Delay (s)	5.6			7.0	7.5	
Approach LOS	A			A	A	
Intersection Summary						
Delay			5.9			
Level of Service			A			
Intersection Capacity Utilization			37.4%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: Castro St & Tewksbury Ave

Chevron Revised EIR
2016 Baseline No Project AM

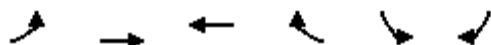
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Sign Control		Stop			Stop			Stop				Stop
Volume (vph)	40	50	0	0	10	100	10	30	50	40	140	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	47	59	0	0	12	118	12	35	59	0	165	24
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	106	129	106	165	35							
Volume Left (vph)	47	0	12	165	0							
Volume Right (vph)	0	118	59	0	12							
Hadj (s)	0.09	-0.51	-0.31	0.60	-0.23							
Departure Headway (s)	4.9	4.3	4.5	5.8	4.9							
Degree Utilization, x	0.15	0.16	0.13	0.26	0.05							
Capacity (veh/h)	676	769	743	595	693							
Control Delay (s)	8.8	8.1	8.2	9.6	7.0							
Approach Delay (s)	8.8	8.1	8.2	9.2								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.7									
Level of Service			A									
Intersection Capacity Utilization			34.9%	ICU Level of Service					A			
Analysis Period (min)			15									

	
Movement	SBR
Lane Configurations	
Sign Control	
Volume (vph)	10
Peak Hour Factor	0.85
Hourly flow rate (vph)	12
Direction, Lane #	

HCM Signalized Intersection Capacity Analysis

3: EB I-580 Ramp & Marine St

Chevron Revised EIR
2016 Baseline No Project AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	440	0	0	30	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3			3.0	
Lane Util. Factor	1.00	1.00			0.97	
Flt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	1805	1759			3242	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	1805	1759			3242	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	489	0	0	33	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	11	489	0	0	33	0
Heavy Vehicles (%)	0%	8%	0%	0%	8%	0%
Turn Type	Split	NA			NA	
Protected Phases	4	4			2	
Permitted Phases						
Actuated Green, G (s)	26.1	26.1			0.9	
Effective Green, g (s)	26.1	26.1			0.9	
Actuated g/C Ratio	0.76	0.76			0.03	
Clearance Time (s)	4.3	4.3			3.0	
Vehicle Extension (s)	3.0	3.0			2.0	
Lane Grp Cap (vph)	1373	1338			85	
v/s Ratio Prot	0.01	c0.28			c0.01	
v/s Ratio Perm						
v/c Ratio	0.01	0.37			0.39	
Uniform Delay, d1	1.0	1.4			16.4	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.2			1.1	
Delay (s)	1.0	1.5			17.5	
Level of Service	A	A			B	
Approach Delay (s)		1.5	0.0		17.5	
Approach LOS		A	A		B	
Intersection Summary						
HCM 2000 Control Delay		2.5		HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio		0.37				
Actuated Cycle Length (s)		34.3		Sum of lost time (s)		7.3
Intersection Capacity Utilization		50.7%		ICU Level of Service		A
Analysis Period (min)		15				
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

4: Castro St & I-580 EB Ramps

Chevron Revised EIR
2016 Baseline No Project AM

	→	↘	↶	↙	←	↗	↘
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↙			↗
Volume (vph)	400	50	10	160	0	0	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		3.0			3.0
Lane Util. Factor	1.00	1.00		0.97			1.00
Frpb, ped/bikes	1.00	1.00		1.00			1.00
Flpb, ped/bikes	1.00	1.00		0.99			1.00
Frt	1.00	0.85		1.00			0.86
Flt Protected	1.00	1.00		0.95			1.00
Satd. Flow (prot)	1727	1568		3322			1627
Flt Permitted	1.00	1.00		0.50			1.00
Satd. Flow (perm)	1727	1568		1734			1627
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	465	58	12	186	0	0	244
RTOR Reduction (vph)	0	30	0	0	0	0	77
Lane Group Flow (vph)	465	28	0	198	0	0	167
Confl. Peds. (#/hr)			11				11
Heavy Vehicles (%)	10%	3%	0%	5%	17%	0%	1%
Turn Type	NA	Perm		Prot			custom
Protected Phases	6!			5 4			5 6!
Permitted Phases		6					
Actuated Green, G (s)	48.5	48.5		42.0			68.5
Effective Green, g (s)	48.5	48.5		42.0			68.5
Actuated g/C Ratio	0.48	0.48		0.42			0.68
Clearance Time (s)	6.5	6.5					
Vehicle Extension (s)	3.0	3.0					
Lane Grp Cap (vph)	837	760		728			1114
v/s Ratio Prot	c0.27						0.10
v/s Ratio Perm		0.02		c0.11			
v/c Ratio	0.56	0.04		0.27			0.15
Uniform Delay, d1	18.2	13.5		19.0			5.5
Progression Factor	1.00	1.00		1.00			1.00
Incremental Delay, d2	2.7	0.1		0.2			0.1
Delay (s)	20.8	13.6		19.2			5.6
Level of Service	C	B		B			A
Approach Delay (s)	20.0				19.2	5.6	
Approach LOS	C				B	A	
Intersection Summary							
HCM 2000 Control Delay			16.2		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.44				
Actuated Cycle Length (s)			100.0		Sum of lost time (s)		12.5
Intersection Capacity Utilization			52.1%		ICU Level of Service		A
Analysis Period (min)			15				
! Phase conflict between lane groups.							
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis

5: Castro St & Chevron Way

Chevron Revised EIR
2016 Baseline No Project AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑↑	↗
Volume (vph)	0	0	0	620	600	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.5	4.5
Lane Util. Factor				0.95	0.91	1.00
Frpb, ped/bikes				1.00	1.00	1.00
Flpb, ped/bikes				1.00	1.00	1.00
Frt				1.00	1.00	0.85
Flt Protected				1.00	1.00	1.00
Satd. Flow (prot)				3406	4550	1553
Flt Permitted				1.00	1.00	1.00
Satd. Flow (perm)				3406	4550	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	674	652	120
RTOR Reduction (vph)	0	0	0	0	0	29
Lane Group Flow (vph)	0	0	0	674	652	91
Confl. Peds. (#/hr)	15					
Heavy Vehicles (%)	0%	0%	0%	6%	14%	4%
Turn Type				NA	NA	Perm
Protected Phases				Free	2	
Permitted Phases						2
Actuated Green, G (s)				100.0	75.5	75.5
Effective Green, g (s)				100.0	75.5	75.5
Actuated g/C Ratio				1.00	0.76	0.76
Clearance Time (s)					4.5	4.5
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)				3406	3435	1172
v/s Ratio Prot				0.20	0.14	
v/s Ratio Perm						0.06
v/c Ratio				0.20	0.19	0.08
Uniform Delay, d1				0.0	3.5	3.2
Progression Factor				1.00	1.00	1.00
Incremental Delay, d2				0.1	0.1	0.1
Delay (s)				0.1	3.6	3.3
Level of Service				A	A	A
Approach Delay (s)	0.0			0.1	3.6	
Approach LOS	A			A	A	
Intersection Summary						
HCM 2000 Control Delay			2.0	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.21			
Actuated Cycle Length (s)			100.0	Sum of lost time (s)		7.5
Intersection Capacity Utilization			20.5%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

6: Castro St & Redwood Way/WB I-580 Ramp

Chevron Revised EIR
2016 Baseline No Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	120	110	170	30	400	190	730	580	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1329	1751	1615	1618	1754	2137	1805	3471	1468	1703	3167	1553
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1329	1751	1615	1618	1754	2137	1805	3471	1468	1703	3167	1553
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	10	125	115	177	31	417	198	760	604	83
RTOR Reduction (vph)	0	0	10	0	0	156	0	0	0	0	0	28
Lane Group Flow (vph)	9	11	0	112	128	21	31	417	198	760	604	55
Heavy Vehicles (%)	29%	0%	0%	6%	2%	33%	0%	4%	10%	6%	14%	4%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	3.3	3.3	3.3	11.8	11.8	11.8	4.0	18.0	98.6	50.8	65.0	65.0
Effective Green, g (s)	3.3	3.3	3.3	11.8	11.8	11.8	4.0	18.0	98.6	50.8	65.0	65.0
Actuated g/C Ratio	0.03	0.03	0.03	0.12	0.12	0.12	0.04	0.18	1.00	0.52	0.66	0.66
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	44	58	54	193	209	255	73	633	1468	877	2087	1023
v/s Ratio Prot	0.01	0.01		0.07	c0.07		0.02	c0.12		c0.45	0.19	
v/s Ratio Perm			0.00			0.01			c0.13			0.04
v/c Ratio	0.20	0.19	0.01	0.58	0.61	0.08	0.42	0.66	0.13	0.87	0.29	0.05
Uniform Delay, d1	46.4	46.3	46.1	41.1	41.2	38.6	46.2	37.4	0.0	20.9	7.1	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.6	0.0	2.8	3.7	0.1	1.4	2.2	0.2	8.7	0.1	0.0
Delay (s)	47.2	46.9	46.1	43.9	44.9	38.6	47.6	39.7	0.2	29.6	7.2	6.0
Level of Service	D	D	D	D	D	D	D	D	A	C	A	A
Approach Delay (s)		46.7			42.0			27.9			18.9	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			25.3			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			98.6			Sum of lost time (s)			14.7			
Intersection Capacity Utilization			74.8%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Castro St & Mills St

Chevron Revised EIR

2016 Baseline No Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	0	30	0	0	0	30	550	0	0	1360	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	5.5			5.5	5.5
Lane Util. Factor	0.95	0.95					1.00	0.95			0.95	1.00
Frt	1.00	0.86					1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00					0.95	1.00			1.00	1.00
Satd. Flow (prot)	1092	860					1114	3282			3374	1056
Flt Permitted	0.76	0.99					0.95	1.00			1.00	1.00
Satd. Flow (perm)	871	851					1114	3282			3374	1056
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	0	33	0	0	0	33	598	0	0	1478	22
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0	0	6
Lane Group Flow (vph)	20	3	0	0	0	0	33	598	0	0	1478	16
Heavy Vehicles (%)	57%	0%	81%	0%	0%	0%	62%	10%	0%	0%	7%	53%
Turn Type	Perm	NA		Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						6
Actuated Green, G (s)	8.0	8.0					5.1	79.7			70.6	70.6
Effective Green, g (s)	8.0	8.0					5.1	79.7			70.6	70.6
Actuated g/C Ratio	0.08	0.08					0.05	0.82			0.73	0.73
Clearance Time (s)	4.0	4.0					4.0	5.5			5.5	5.5
Vehicle Extension (s)	3.0	3.0					2.0	3.5			3.5	3.5
Lane Grp Cap (vph)	71	70					58	2691			2450	767
v/s Ratio Prot							c0.03	0.18			c0.44	
v/s Ratio Perm	c0.02	0.00										0.02
v/c Ratio	0.28	0.04					0.57	0.22			0.60	0.02
Uniform Delay, d1	41.9	41.1					45.0	1.9			6.5	3.7
Progression Factor	1.00	1.00					1.00	1.00			1.00	1.00
Incremental Delay, d2	2.2	0.2					7.4	0.2			1.1	0.0
Delay (s)	44.1	41.3					52.4	2.1			7.6	3.7
Level of Service	D	D					D	A			A	A
Approach Delay (s)		42.3			0.0			4.7			7.5	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.6				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			97.2				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			50.5%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Castro St & General Chemical Access

Chevron Revised EIR
2016 Baseline No Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	0	10	0	0	0	20	550	0	10	1370	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	5.7		4.0	5.7	
Lane Util. Factor	0.95	0.95	1.00				1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85				1.00	1.00		1.00	1.00	
Flt Protected	0.95	0.95	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1174	1174	1346				1530	3223		1805	3322	
Flt Permitted	0.76	0.76	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)	936	936	1346				1530	3223		1805	3322	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	22	0	11	0	0	0	22	591	0	11	1473	43
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	11	11	1	0	0	0	22	591	0	11	1515	0
Heavy Vehicles (%)	46%	0%	20%	0%	0%	0%	18%	12%	0%	0%	8%	15%
Turn Type	Perm	NA	Perm	Perm			Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	5.8	5.8	5.8				5.9	50.7		0.9	45.7	
Effective Green, g (s)	5.8	5.8	5.8				5.9	50.7		0.9	45.7	
Actuated g/C Ratio	0.08	0.08	0.08				0.08	0.71		0.01	0.64	
Clearance Time (s)	4.0	4.0	4.0				4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0				2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	76	76	109				126	2298		22	2135	
v/s Ratio Prot							0.01	c0.18		c0.01	c0.46	
v/s Ratio Perm	c0.01	0.01	0.00									
v/c Ratio	0.14	0.14	0.01				0.17	0.26		0.50	0.71	
Uniform Delay, d1	30.3	30.3	30.0				30.3	3.6		34.9	8.3	
Progression Factor	1.00	1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.3	0.0				0.2	0.1		6.4	1.2	
Delay (s)	30.7	30.7	30.0				30.6	3.7		41.2	9.5	
Level of Service	C	C	C				C	A		D	A	
Approach Delay (s)		30.4			0.0			4.6			9.8	
Approach LOS		C			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.6				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			71.1				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			50.6%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Castro St & Hensley St

Chevron Revised EIR
2016 Baseline No Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	10	10	40	0	10	10	500	60	10	1370	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.85		1.00	0.98		1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1900	1615	2501	1615		1805	3121		1805	3343	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1900	1615	2501	1615		1805	3121		1805	3343	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	11	11	43	0	11	11	538	65	11	1473	0
RTOR Reduction (vph)	0	0	11	0	9	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	11	0	43	2	0	11	599	0	11	1473	0
Heavy Vehicles (%)	0%	0%	0%	40%	0%	0%	0%	14%	12%	0%	8%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)		2.8	2.8	3.7	10.5		1.0	50.2		1.0	50.2	
Effective Green, g (s)		2.8	2.8	3.7	10.5		1.0	50.2		1.0	50.2	
Actuated g/C Ratio		0.04	0.04	0.05	0.14		0.01	0.67		0.01	0.67	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)		4.0	4.0	2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		71	60	123	227		24	2097		24	2246	
v/s Ratio Prot		c0.01		c0.02	0.00		c0.01	0.19		0.01	c0.44	
v/s Ratio Perm			0.00									
v/c Ratio		0.15	0.01	0.35	0.01		0.46	0.29		0.46	0.66	
Uniform Delay, d1		34.8	34.6	34.3	27.6		36.6	5.0		36.6	7.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.4	0.1	0.6	0.0		5.0	0.1		5.0	0.8	
Delay (s)		36.2	34.7	35.0	27.6		41.6	5.1		41.6	8.0	
Level of Service		D	C	C	C		D	A		D	A	
Approach Delay (s)		35.4			33.5			5.7			8.2	
Approach LOS		D			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.4			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			74.7			Sum of lost time (s)				17.0		
Intersection Capacity Utilization			55.4%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

10: Hensley St & Richmond Pkwy

Chevron Revised EIR
2016 Baseline No Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1100	40	30	250	70	10	30	30	140	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.93		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3485		1719	3308		1127	1419		1768	1620	
Flt Permitted	0.95	1.00		0.95	1.00		0.72	1.00		0.71	1.00	
Satd. Flow (perm)	1736	3485		1719	3308		855	1419		1329	1620	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	55	1209	44	33	275	77	11	33	33	154	22	33
RTOR Reduction (vph)	0	2	0	0	17	0	0	27	0	0	27	0
Lane Group Flow (vph)	55	1251	0	33	335	0	11	39	0	154	28	0
Confl. Peds. (#/hr)			2	2			2		1	1		2
Heavy Vehicles (%)	4%	2%	29%	5%	6%	4%	60%	26%	53%	2%	44%	4%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	4.4	40.7		2.5	38.8		13.3	13.3		13.3	13.3	
Effective Green, g (s)	4.4	40.7		2.5	38.8		13.3	13.3		13.3	13.3	
Actuated g/C Ratio	0.06	0.59		0.04	0.56		0.19	0.19		0.19	0.19	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)	109	2040		61	1846		163	271		254	310	
v/s Ratio Prot	c0.03	c0.36		0.02	0.10			0.03			0.02	
v/s Ratio Perm							0.01			c0.12		
v/c Ratio	0.50	0.61		0.54	0.18		0.07	0.15		0.61	0.09	
Uniform Delay, d1	31.5	9.3		32.9	7.5		23.0	23.4		25.7	23.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.7		5.2	0.1		0.2	0.2		3.8	0.1	
Delay (s)	32.8	10.0		38.1	7.6		23.2	23.6		29.5	23.2	
Level of Service	C	B		D	A		C	C		C	C	
Approach Delay (s)		11.0			10.2			23.5			27.9	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			13.1				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			69.5				Sum of lost time (s)			13.0		
Intersection Capacity Utilization			60.9%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR
2016 Baseline No Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	190	10	60	10	720	50	20	2300	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1275		1681	1595		1805	3223	1435	1805	3402	
Flt Permitted		0.91		0.80	0.85		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1177		1417	1387		1805	3223	1435	1805	3402	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	10	198	10	62	10	750	52	21	2396	10
RTOR Reduction (vph)	0	9	0	0	24	0	0	0	14	0	0	0
Lane Group Flow (vph)	0	21	0	139	107	0	10	750	38	21	2406	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	0%	100%	20%	2%	0%	4%	0%	12%	10%	0%	6%	20%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		17.8		17.8	17.8		1.2	93.3	93.3	3.9	96.0	
Effective Green, g (s)		17.8		17.8	17.8		1.2	93.3	93.3	3.9	96.0	
Actuated g/C Ratio		0.14		0.14	0.14		0.01	0.73	0.73	0.03	0.75	
Clearance Time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	3.1	3.1	2.0	3.1	
Lane Grp Cap (vph)		164		197	193		16	2358	1050	55	2561	
v/s Ratio Prot							0.01	0.23		c0.01	c0.71	
v/s Ratio Perm		0.02		c0.10	0.08				0.03			
v/c Ratio		0.13		0.71	0.55		0.62	0.32	0.04	0.38	0.94	
Uniform Delay, d1		48.1		52.3	51.1		62.9	6.0	4.7	60.6	13.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4		10.9	3.4		44.0	0.1	0.0	1.6	7.6	
Delay (s)		48.4		63.3	54.6		106.9	6.1	4.7	62.2	20.9	
Level of Service		D		E	D		F	A	A	E	C	
Approach Delay (s)		48.4			59.0			7.2			21.2	
Approach LOS		D			E			A			C	
Intersection Summary												
HCM 2000 Control Delay			21.1			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			127.5			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			85.8%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

1: Marine St & Chevron Way

Chevron Revised EIR
2016 Baseline No Project PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	20	30	10	0	0	260
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	24	35	12	0	0	306
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1	
Volume Total (vph)	12	12	35	12	306	
Volume Left (vph)	12	12	0	0	0	
Volume Right (vph)	0	0	35	0	0	
Hadj (s)	0.50	0.50	-0.70	0.00	0.00	
Departure Headway (s)	5.7	5.7	3.2	4.3	4.0	
Degree Utilization, x	0.02	0.02	0.03	0.01	0.34	
Capacity (veh/h)	592	595	1121	820	896	
Control Delay (s)	7.6	7.6	5.1	7.3	9.0	
Approach Delay (s)	6.1			7.3	9.0	
Approach LOS	A			A	A	
Intersection Summary						
Delay			8.5			
Level of Service			A			
Intersection Capacity Utilization			75.9%	ICU Level of Service		D
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 2: Castro St & Tewksbury Ave

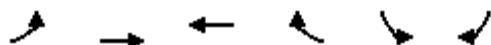
Chevron Revised EIR
2016 Baseline No Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	30	10	10	30	110	10	20	30	200	40	60
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	32	11	11	32	118	11	22	32	215	43	65
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	54	161	65	215	108							
Volume Left (vph)	11	11	11	215	0							
Volume Right (vph)	11	118	32	0	65							
Hadj (s)	-0.08	0.82	-0.13	0.58	-0.42							
Departure Headway (s)	5.1	5.8	4.9	5.8	4.8							
Degree Utilization, x	0.08	0.26	0.09	0.35	0.14							
Capacity (veh/h)	651	589	685	599	724							
Control Delay (s)	8.5	10.8	8.4	10.6	7.4							
Approach Delay (s)	8.5	10.8	8.4	9.5								
Approach LOS	A	B	A	A								
Intersection Summary												
Delay			9.6									
Level of Service			A									
Intersection Capacity Utilization			34.1%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

3: EB I-580 Ramp & Marine St

Chevron Revised EIR
2016 Baseline No Project PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	1050	0	0	280	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3			3.0	
Lane Util. Factor	1.00	1.00			0.97	
Flt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	1805	1827			3502	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	1805	1827			3502	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	12	1221	0	0	326	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	12	1221	0	0	326	0
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Turn Type	Split	NA			NA	
Protected Phases	4	4			2	
Permitted Phases						
Actuated Green, G (s)	36.1	36.1			9.2	
Effective Green, g (s)	36.1	36.1			9.2	
Actuated g/C Ratio	0.69	0.69			0.17	
Clearance Time (s)	4.3	4.3			3.0	
Vehicle Extension (s)	3.0	3.0			2.0	
Lane Grp Cap (vph)	1238	1253			612	
v/s Ratio Prot	0.01	c0.67			c0.09	
v/s Ratio Perm						
v/c Ratio	0.01	0.97			0.53	
Uniform Delay, d1	2.6	7.8			19.7	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	19.4			0.4	
Delay (s)	2.6	27.2			20.2	
Level of Service	A	C			C	
Approach Delay (s)		27.0	0.0		20.2	
Approach LOS		C	A		C	
Intersection Summary						
HCM 2000 Control Delay		25.6		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio		0.88				
Actuated Cycle Length (s)		52.6		Sum of lost time (s)		7.3
Intersection Capacity Utilization		93.2%		ICU Level of Service		F
Analysis Period (min)		15				
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

4: Castro St & I-580 EB Ramps

Chevron Revised EIR
2016 Baseline No Project PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘↙			↗
Volume (vph)	1340	100	200	0	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	3.0			3.0
Lane Util. Factor	1.00	1.00	0.97			1.00
Frt	1.00	0.85	1.00			0.86
Flt Protected	1.00	1.00	0.95			1.00
Satd. Flow (prot)	1845	1553	3433			1611
Flt Permitted	1.00	1.00	0.95			1.00
Satd. Flow (perm)	1845	1553	3433			1611
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1523	114	227	0	0	159
RTOR Reduction (vph)	0	16	0	0	0	43
Lane Group Flow (vph)	1523	98	227	0	0	116
Heavy Vehicles (%)	3%	4%	2%	5%	0%	2%
Turn Type	NA	Perm	Prot			custom
Protected Phases	6!		5 4			5 6!
Permitted Phases		6				
Actuated Green, G (s)	56.8	56.8	23.7			65.5
Effective Green, g (s)	56.8	56.8	23.7			65.5
Actuated g/C Ratio	0.63	0.63	0.26			0.73
Clearance Time (s)	6.5	6.5				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	1164	980	904			1172
v/s Ratio Prot	c0.83		c0.07			0.07
v/s Ratio Perm		0.06				
v/c Ratio	1.31	0.10	0.25			0.10
Uniform Delay, d1	16.6	6.5	26.1			3.6
Progression Factor	1.00	1.00	1.64			1.00
Incremental Delay, d2	145.1	0.2	0.1			0.0
Delay (s)	161.7	6.7	43.0			3.6
Level of Service	F	A	D			A
Approach Delay (s)	150.9			43.0	3.6	
Approach LOS	F			D	A	
Intersection Summary						
HCM 2000 Control Delay			127.2		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.04			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.5
Intersection Capacity Utilization			97.0%		ICU Level of Service	F
Analysis Period (min)			15			
! Phase conflict between lane groups.						
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

5: Castro St & Chevron Way

Chevron Revised EIR
2016 Baseline No Project PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑↑	↗
Volume (vph)	0	0	0	1480	430	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.5	4.5
Lane Util. Factor				0.95	0.91	1.00
Frpb, ped/bikes				1.00	1.00	0.98
Flpb, ped/bikes				1.00	1.00	1.00
Frt				1.00	1.00	0.85
Flt Protected				1.00	1.00	1.00
Satd. Flow (prot)				3505	4988	1575
Flt Permitted				1.00	1.00	1.00
Satd. Flow (perm)				3505	4988	1575
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	0	1741	506	47
RTOR Reduction (vph)	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	1741	506	34
Confl. Peds. (#/hr)	7		4			7
Heavy Vehicles (%)	0%	0%	0%	3%	4%	0%
Turn Type				NA	NA	Perm
Protected Phases				Free	2	
Permitted Phases						2
Actuated Green, G (s)				90.0	65.5	65.5
Effective Green, g (s)				90.0	65.5	65.5
Actuated g/C Ratio				1.00	0.73	0.73
Clearance Time (s)					4.5	4.5
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)				3505	3630	1146
v/s Ratio Prot				0.50	0.10	
v/s Ratio Perm						0.02
v/c Ratio				0.50	0.14	0.03
Uniform Delay, d1				0.0	3.7	3.4
Progression Factor				1.00	1.00	1.00
Incremental Delay, d2				0.0	0.1	0.0
Delay (s)				0.0	3.8	3.5
Level of Service				A	A	A
Approach Delay (s)	0.0			0.0	3.8	
Approach LOS	A			A	A	
Intersection Summary						
HCM 2000 Control Delay			0.9	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			90.0	Sum of lost time (s)		7.5
Intersection Capacity Utilization			44.2%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

6: Castro St & Redwood Way/WB I-580 Ramp

Chevron Revised EIR
2016 Baseline No Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	30	70	130	10	340	10	1350	120	320	270	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	165	35	82	153	12	400	12	1588	141	376	318	12
RTOR Reduction (vph)	0	0	73	0	0	360	0	0	0	0	0	4
Lane Group Flow (vph)	99	101	9	83	82	40	12	1588	141	376	318	8
Heavy Vehicles (%)	0%	0%	2%	2%	0%	13%	0%	3%	4%	3%	4%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	10.6	10.6	10.6	9.7	9.7	9.7	1.1	37.4	97.6	25.2	61.7	61.7
Effective Green, g (s)	10.6	10.6	10.6	9.7	9.7	9.7	1.1	37.4	97.6	25.2	61.7	61.7
Actuated g/C Ratio	0.11	0.11	0.11	0.10	0.10	0.10	0.01	0.38	1.00	0.26	0.63	0.63
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	186	189	171	167	169	249	20	1343	1553	452	2194	1020
v/s Ratio Prot	0.06	c0.06		c0.05	0.05		0.01	c0.45		c0.21	0.09	
v/s Ratio Perm			0.01			0.02			0.09			0.00
v/c Ratio	0.53	0.53	0.05	0.50	0.49	0.16	0.60	1.18	0.09	0.83	0.14	0.01
Uniform Delay, d1	41.2	41.2	39.0	41.6	41.6	40.2	48.0	30.1	0.0	34.2	7.3	6.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	1.5	0.0	0.8	0.8	0.1	28.2	90.0	0.1	11.8	0.0	0.0
Delay (s)	42.6	42.6	39.0	42.5	42.4	40.3	76.3	120.1	0.1	46.0	7.3	6.6
Level of Service	D	D	D	D	D	D	E	F	A	D	A	A
Approach Delay (s)		41.6			40.9			110.1			27.9	
Approach LOS		D			D			F			C	
Intersection Summary												
HCM 2000 Control Delay	74.8			HCM 2000 Level of Service					E			
HCM 2000 Volume to Capacity ratio	0.91											
Actuated Cycle Length (s)	97.6			Sum of lost time (s)					14.7			
Intersection Capacity Utilization	76.8%			ICU Level of Service					D			
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Castro St & Mills St

Chevron Revised EIR

2016 Baseline No Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	0	30	0	0	0	20	1810	0	10	570	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	0.95	0.95					1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.90					1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.98					0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1603	1426					1543	3438		1805	3539	1524
Flt Permitted	0.76	0.91					0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1277	1324					1543	3438		1805	3539	1524
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	0	33	0	0	0	22	2011	0	11	633	56
RTOR Reduction (vph)	0	43	0	0	0	0	0	0	0	0	0	15
Lane Group Flow (vph)	52	5	0	0	0	0	22	2011	0	11	633	41
Heavy Vehicles (%)	7%	0%	14%	0%	0%	0%	17%	5%	0%	0%	2%	6%
Turn Type	Perm	NA		Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						6
Actuated Green, G (s)	9.4	9.4					2.7	72.8		1.1	71.2	71.2
Effective Green, g (s)	9.4	9.4					2.7	72.8		1.1	71.2	71.2
Actuated g/C Ratio	0.10	0.10					0.03	0.75		0.01	0.74	0.74
Clearance Time (s)	4.0	4.0					4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0					2.0	3.5		2.0	3.5	3.5
Lane Grp Cap (vph)	124	128					43	2585		20	2603	1120
v/s Ratio Prot							c0.01	c0.58		0.01	0.18	
v/s Ratio Perm	c0.04	0.00										0.03
v/c Ratio	0.42	0.04					0.51	0.78		0.55	0.24	0.04
Uniform Delay, d1	41.1	39.6					46.4	7.2		47.6	4.1	3.5
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.3	0.1					4.2	2.4		17.2	0.2	0.1
Delay (s)	43.4	39.7					50.6	9.6		64.8	4.3	3.5
Level of Service	D	D					D	A		E	A	A
Approach Delay (s)		41.6			0.0			10.0			5.2	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.9									
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			96.8									
Intersection Capacity Utilization			62.9%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Castro St & General Chemical Access

Chevron Revised EIR
2016 Baseline No Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	10	70	10	0	10	10	1850	10	10	550	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		0.93		1.00	1.00		1.00	1.00	
Flt Protected	0.95	0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1698	1709	1538		1729		1357	3469		1805	3497	
Flt Permitted	0.74	0.72	1.00		0.85		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1325	1293	1538		1513		1357	3469		1805	3497	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	341	12	82	12	0	12	12	2176	12	12	647	12
RTOR Reduction (vph)	0	0	56	0	20	0	0	0	0	0	1	0
Lane Group Flow (vph)	177	176	26	0	4	0	12	2188	0	12	658	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	1%	0%	5%	0%	0%	0%	33%	4%	0%	0%	3%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	17.7	17.7	17.7		17.7		5.5	70.2		1.2	65.9	
Effective Green, g (s)	17.7	17.7	17.7		17.7		5.5	70.2		1.2	65.9	
Actuated g/C Ratio	0.17	0.17	0.17		0.17		0.05	0.68		0.01	0.64	
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	228	222	264		260		72	2368		21	2241	
v/s Ratio Prot							0.01	c0.63		c0.01	0.19	
v/s Ratio Perm	0.13	c0.14	0.02		0.00							
v/c Ratio	0.78	0.79	0.10		0.02		0.17	0.92		0.57	0.29	
Uniform Delay, d1	40.7	40.8	35.8		35.3		46.5	14.0		50.5	8.2	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.0	16.4	0.1		0.0		0.4	6.8		21.2	0.1	
Delay (s)	54.6	57.2	35.9		35.3		46.9	20.8		71.8	8.3	
Level of Service	D	E	D		D		D	C		E	A	
Approach Delay (s)		52.1			35.3			21.0			9.4	
Approach LOS		D			D			C			A	
Intersection Summary												
HCM 2000 Control Delay			22.8				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			102.8				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			73.9%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Castro St & Hensley St

Chevron Revised EIR
2016 Baseline No Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	0	30	0	10	10	2100	40	10	540	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.85		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1900		3273	1615		1805	3456		1805	3505	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1900		3273	1615		1805	3456		1805	3505	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	12	12	0	35	0	12	12	2471	47	12	635	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	1	0	0	0	0
Lane Group Flow (vph)	12	12	0	35	0	0	12	2517	0	12	635	0
Confl. Peds. (#/hr)			2	2					2	2		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	4%	11%	0%	3%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	1.0	1.3		2.4	2.7		1.0	51.0		1.0	51.0	
Effective Green, g (s)	1.0	1.3		2.4	2.7		1.0	51.0		1.0	51.0	
Actuated g/C Ratio	0.01	0.02		0.03	0.04		0.01	0.70		0.01	0.70	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	24	33		108	59		24	2424		24	2458	
v/s Ratio Prot	0.01	c0.01		c0.01	0.00		c0.01	c0.73		0.01	0.18	
v/s Ratio Perm												
v/c Ratio	0.50	0.36		0.32	0.01		0.50	1.04		0.50	0.26	
Uniform Delay, d1	35.6	35.3		34.4	33.7		35.6	10.9		35.6	4.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.8	9.1		0.6	0.1		5.8	29.2		5.8	0.1	
Delay (s)	41.4	44.4		35.0	33.8		41.4	40.1		41.4	4.0	
Level of Service	D	D		C	C		D	D		D	A	
Approach Delay (s)		42.9			34.7			40.1			4.7	
Approach LOS		D			C			D			A	
Intersection Summary												
HCM 2000 Control Delay			33.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			72.7			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			75.0%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

10: Hensley St & Richmond Pkwy

Chevron Revised EIR
2016 Baseline No Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	310	20	10	900	120	30	40	30	100	20	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.94		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3441		1503	3472		1803	1895		1784	1776	
Flt Permitted	0.95	1.00		0.95	1.00		0.70	1.00		0.71	1.00	
Satd. Flow (perm)	1671	3441		1503	3472		1327	1895		1328	1776	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	344	22	11	1000	133	33	44	33	111	22	67
RTOR Reduction (vph)	0	3	0	0	6	0	0	27	0	0	55	0
Lane Group Flow (vph)	11	363	0	11	1127	0	33	50	0	111	34	0
Confl. Peds. (#/hr)	1		1	1		1	2		3	3		2
Heavy Vehicles (%)	8%	3%	17%	20%	2%	1%	0%	7%	4%	1%	14%	4%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	0.9	34.1		0.9	34.1		10.4	10.4		10.4	10.4	
Effective Green, g (s)	0.9	34.1		0.9	34.1		10.4	10.4		10.4	10.4	
Actuated g/C Ratio	0.02	0.58		0.02	0.58		0.18	0.18		0.18	0.18	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)	25	2009		23	2027		236	337		236	316	
v/s Ratio Prot	0.01	0.11		c0.01	c0.32			0.03			0.02	
v/s Ratio Perm							0.02			c0.08		
v/c Ratio	0.44	0.18		0.48	0.56		0.14	0.15		0.47	0.11	
Uniform Delay, d1	28.5	5.7		28.5	7.5		20.2	20.3		21.5	20.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.4	0.1		5.6	0.5		0.2	0.2		1.3	0.1	
Delay (s)	32.9	5.7		34.1	8.0		20.5	20.4		22.8	20.2	
Level of Service	C	A		C	A		C	C		C	C	
Approach Delay (s)		6.5			8.2			20.5			21.7	
Approach LOS		A			A			C			C	
Intersection Summary												
HCM 2000 Control Delay			10.1			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			58.4			Sum of lost time (s)			13.0			
Intersection Capacity Utilization			49.1%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR
2016 Baseline No Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	50	10	40	10	2950	270	40	720	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	0.99		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	0.89		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1703		1715	1550		1641	3471	1544	1805	3498	
Flt Permitted		0.90		0.81	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1559		1469	1518		1641	3471	1544	1805	3498	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	11	11	56	11	44	11	3278	300	44	800	11
RTOR Reduction (vph)	0	10	0	0	41	0	0	0	34	0	0	0
Lane Group Flow (vph)	0	23	0	50	20	0	11	3278	266	44	811	0
Confl. Peds. (#/hr)	3					3	1		2	2		1
Heavy Vehicles (%)	14%	0%	0%	0%	0%	3%	10%	4%	2%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		9.8		9.8	9.8		1.3	97.9	97.9	5.8	102.4	
Effective Green, g (s)		9.8		9.8	9.8		1.3	97.9	97.9	5.8	102.4	
Actuated g/C Ratio		0.08		0.08	0.08		0.01	0.78	0.78	0.05	0.81	
Clearance Time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	3.1	3.1	2.0	3.1	
Lane Grp Cap (vph)		121		114	118		16	2696	1199	83	2842	
v/s Ratio Prot							0.01	c0.94		c0.02	0.23	
v/s Ratio Perm		0.01		c0.03	0.01				0.17			
v/c Ratio		0.19		0.44	0.17		0.69	1.22	0.22	0.53	0.29	
Uniform Delay, d1		54.4		55.5	54.3		62.1	14.0	3.8	58.8	2.9	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.8		2.7	0.7		67.5	100.8	0.1	3.2	0.1	
Delay (s)		55.1		58.2	55.0		129.7	114.8	3.9	62.0	2.9	
Level of Service		E		E	E		F	F	A	E	A	
Approach Delay (s)		55.1			56.4			105.6			6.0	
Approach LOS		E			E			F			A	
Intersection Summary												
HCM 2000 Control Delay			85.5			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.11									
Actuated Cycle Length (s)			126.0			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			97.8%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

1: Marine St & Chevron Way

Chevron Revised EIR

2016 Baseline Plus Proposed Construction AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	10	120	10	0	0	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	141	12	0	0	24
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1	
Volume Total (vph)	6	6	141	12	24	
Volume Left (vph)	6	6	0	0	0	
Volume Right (vph)	0	0	141	0	0	
Hadj (s)	0.50	0.50	-0.63	0.00	0.46	
Departure Headway (s)	5.1	5.1	3.2	4.0	4.4	
Degree Utilization, x	0.01	0.01	0.13	0.01	0.03	
Capacity (veh/h)	699	693	1121	903	811	
Control Delay (s)	6.9	6.9	5.5	7.0	7.5	
Approach Delay (s)	5.6			7.0	7.5	
Approach LOS	A			A	A	
Intersection Summary						
Delay			5.9			
Level of Service			A			
Intersection Capacity Utilization			41.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: Castro St & Tewksbury Ave

Chevron Revised EIR
2016 Baseline Plus Proposed Construction AM

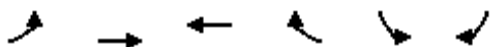
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Sign Control		Stop			Stop			Stop				Stop
Volume (vph)	40	50	0	0	10	100	10	30	50	40	140	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	47	59	0	0	12	118	12	35	59	0	165	24
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	106	129	106	165	35							
Volume Left (vph)	47	0	12	165	0							
Volume Right (vph)	0	118	59	0	12							
Hadj (s)	0.09	-0.51	-0.31	0.60	-0.23							
Departure Headway (s)	4.9	4.3	4.5	5.8	4.9							
Degree Utilization, x	0.15	0.16	0.13	0.26	0.05							
Capacity (veh/h)	676	769	743	595	693							
Control Delay (s)	8.8	8.1	8.2	9.6	7.0							
Approach Delay (s)	8.8	8.1	8.2	9.2								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.7									
Level of Service			A									
Intersection Capacity Utilization			34.9%			ICU Level of Service			A			
Analysis Period (min)			15									

	
Movement	SBR
Lane Configurations	
Sign Control	
Volume (vph)	10
Peak Hour Factor	0.85
Hourly flow rate (vph)	12
Direction, Lane #	

HCM Signalized Intersection Capacity Analysis

3: EB I-580 Ramp & Marine St

Chevron Revised EIR
2016 Baseline Plus Proposed Construction AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	524	0	0	30	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3			3.0	
Lane Util. Factor	1.00	1.00			0.97	
Flt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	1805	1759			3242	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	1805	1759			3242	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	582	0	0	33	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	11	582	0	0	33	0
Heavy Vehicles (%)	0%	8%	0%	0%	8%	0%
Turn Type	Split	NA			NA	
Protected Phases	4	4			2	
Permitted Phases						
Actuated Green, G (s)	27.9	27.9			0.9	
Effective Green, g (s)	27.9	27.9			0.9	
Actuated g/C Ratio	0.77	0.77			0.02	
Clearance Time (s)	4.3	4.3			3.0	
Vehicle Extension (s)	3.0	3.0			2.0	
Lane Grp Cap (vph)	1395	1359			80	
v/s Ratio Prot	0.01	c0.33			c0.01	
v/s Ratio Perm						
v/c Ratio	0.01	0.43			0.41	
Uniform Delay, d1	0.9	1.4			17.3	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.2			1.3	
Delay (s)	0.9	1.6			18.6	
Level of Service	A	A			B	
Approach Delay (s)		1.6	0.0		18.6	
Approach LOS		A	A		B	

Intersection Summary

HCM 2000 Control Delay	2.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	36.1	Sum of lost time (s)	7.3
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

4: Castro St & I-580 EB Ramps

Chevron Revised EIR
2016 Baseline Plus Proposed Construction AM

							
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations				 			
Volume (vph)	484	50	10	160	0	0	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		3.0			3.0
Lane Util. Factor	1.00	1.00		0.97			1.00
Frpb, ped/bikes	1.00	1.00		1.00			1.00
Flpb, ped/bikes	1.00	1.00		0.99			1.00
Frt	1.00	0.85		1.00			0.86
Flt Protected	1.00	1.00		0.95			1.00
Satd. Flow (prot)	1727	1568		3325			1627
Flt Permitted	1.00	1.00		0.45			1.00
Satd. Flow (perm)	1727	1568		1585			1627
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	563	58	12	186	0	0	244
RTOR Reduction (vph)	0	26	0	0	0	0	77
Lane Group Flow (vph)	563	32	0	198	0	0	167
Confl. Peds. (#/hr)			11				11
Heavy Vehicles (%)	10%	3%	0%	5%	17%	0%	1%
Turn Type	NA	Perm		Prot			custom
Protected Phases	6!			5 4			5 6!
Permitted Phases		6					
Actuated Green, G (s)	48.5	48.5		42.0			68.5
Effective Green, g (s)	48.5	48.5		42.0			68.5
Actuated g/C Ratio	0.48	0.48		0.42			0.68
Clearance Time (s)	6.5	6.5					
Vehicle Extension (s)	3.0	3.0					
Lane Grp Cap (vph)	837	760		665			1114
v/s Ratio Prot	c0.33						0.10
v/s Ratio Perm		0.02		c0.12			
v/c Ratio	0.67	0.04		0.30			0.15
Uniform Delay, d1	19.7	13.5		19.2			5.5
Progression Factor	1.00	1.00		1.00			1.00
Incremental Delay, d2	4.3	0.1		0.2			0.1
Delay (s)	24.0	13.6		19.5			5.6
Level of Service	C	B		B			A
Approach Delay (s)	23.0				19.5	5.6	
Approach LOS	C				B	A	
Intersection Summary							
HCM 2000 Control Delay			18.4		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.52				
Actuated Cycle Length (s)			100.0		Sum of lost time (s)		12.5
Intersection Capacity Utilization			56.5%		ICU Level of Service		B
Analysis Period (min)			15				
! Phase conflict between lane groups.							
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis

5: Castro St & Chevron Way

Chevron Revised EIR
2016 Baseline Plus Proposed Construction AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑↑	↗
Volume (vph)	0	0	0	704	600	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.5	4.5
Lane Util. Factor				0.95	0.91	1.00
Frpb, ped/bikes				1.00	1.00	1.00
Flpb, ped/bikes				1.00	1.00	1.00
Frt				1.00	1.00	0.85
Flt Protected				1.00	1.00	1.00
Satd. Flow (prot)				3406	4550	1553
Flt Permitted				1.00	1.00	1.00
Satd. Flow (perm)				3406	4550	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	765	652	120
RTOR Reduction (vph)	0	0	0	0	0	29
Lane Group Flow (vph)	0	0	0	765	652	91
Confl. Peds. (#/hr)	15					
Heavy Vehicles (%)	0%	0%	0%	6%	14%	4%
Turn Type				NA	NA	Perm
Protected Phases				Free	2	
Permitted Phases						2
Actuated Green, G (s)				100.0	75.5	75.5
Effective Green, g (s)				100.0	75.5	75.5
Actuated g/C Ratio				1.00	0.76	0.76
Clearance Time (s)					4.5	4.5
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)				3406	3435	1172
v/s Ratio Prot				0.22	0.14	
v/s Ratio Perm						0.06
v/c Ratio				0.22	0.19	0.08
Uniform Delay, d1				0.0	3.5	3.2
Progression Factor				1.00	1.00	1.00
Incremental Delay, d2				0.1	0.1	0.1
Delay (s)				0.1	3.6	3.3
Level of Service				A	A	A
Approach Delay (s)	0.0			0.1	3.6	
Approach LOS	A			A	A	
Intersection Summary						
HCM 2000 Control Delay			1.9	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.24			
Actuated Cycle Length (s)			100.0	Sum of lost time (s)		7.5
Intersection Capacity Utilization			22.8%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

6: Castro St & Redwood Way/WB I-580 Ramp

Chevron Revised EIR
2016 Baseline Plus Proposed Construction AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	120	110	505	30	484	190	730	580	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1329	1751	1615	1618	1754	2137	1805	3471	1468	1703	3167	1553
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1329	1751	1615	1618	1754	2137	1805	3471	1468	1703	3167	1553
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	10	125	115	526	31	504	198	760	604	83
RTOR Reduction (vph)	0	0	10	0	0	462	0	0	0	0	0	28
Lane Group Flow (vph)	9	11	0	112	128	64	31	504	198	760	604	55
Heavy Vehicles (%)	29%	0%	0%	6%	2%	33%	0%	4%	10%	6%	14%	4%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	3.3	3.3	3.3	12.5	12.5	12.5	4.1	21.0	102.4	50.9	68.0	68.0
Effective Green, g (s)	3.3	3.3	3.3	12.5	12.5	12.5	4.1	21.0	102.4	50.9	68.0	68.0
Actuated g/C Ratio	0.03	0.03	0.03	0.12	0.12	0.12	0.04	0.21	1.00	0.50	0.66	0.66
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	42	56	52	197	214	260	72	711	1468	846	2103	1031
v/s Ratio Prot	0.01	0.01		0.07	c0.07		0.02	c0.15		c0.45	0.19	
v/s Ratio Perm			0.00			0.03			c0.13			0.04
v/c Ratio	0.21	0.20	0.01	0.57	0.60	0.25	0.43	0.71	0.13	0.90	0.29	0.05
Uniform Delay, d1	48.3	48.3	48.0	42.4	42.6	40.7	48.0	37.9	0.0	23.4	7.1	6.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.6	0.0	2.2	3.0	0.2	1.5	3.0	0.2	12.0	0.1	0.0
Delay (s)	49.2	48.9	48.0	44.6	45.6	40.9	49.5	40.9	0.2	35.4	7.2	6.0
Level of Service	D	D	D	D	D	D	D	D	A	D	A	A
Approach Delay (s)		48.7			42.2			30.2			21.9	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			29.5			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			102.4			Sum of lost time (s)			14.7			
Intersection Capacity Utilization			77.1%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Castro St & Mills St

Chevron Revised EIR

2016 Baseline Plus Proposed Construction AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	0	30	0	0	0	82	916	0	0	1360	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	5.5			5.5	5.5
Lane Util. Factor	0.95	0.95					1.00	0.95			0.95	1.00
Frt	1.00	0.86					1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00					0.95	1.00			1.00	1.00
Satd. Flow (prot)	1092	860					1114	3282			3374	1056
Flt Permitted	0.76	0.99					0.95	1.00			1.00	1.00
Satd. Flow (perm)	871	851					1114	3282			3374	1056
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	0	33	0	0	0	89	996	0	0	1478	80
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0	0	26
Lane Group Flow (vph)	20	3	0	0	0	0	89	996	0	0	1478	54
Heavy Vehicles (%)	57%	0%	81%	0%	0%	0%	62%	10%	0%	0%	7%	53%
Turn Type	Perm	NA		Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						6
Actuated Green, G (s)	8.1	8.1					12.1	86.3			70.2	70.2
Effective Green, g (s)	8.1	8.1					12.1	86.3			70.2	70.2
Actuated g/C Ratio	0.08	0.08					0.12	0.83			0.68	0.68
Clearance Time (s)	4.0	4.0					4.0	5.5			5.5	5.5
Vehicle Extension (s)	3.0	3.0					2.0	3.5			3.5	3.5
Lane Grp Cap (vph)	67	66					129	2726			2279	713
v/s Ratio Prot							c0.08	0.30			c0.44	
v/s Ratio Perm	c0.02	0.00										0.05
v/c Ratio	0.30	0.04					0.69	0.37			0.65	0.08
Uniform Delay, d1	45.2	44.3					44.1	2.1			9.7	5.8
Progression Factor	1.00	1.00					1.00	1.00			1.00	1.00
Incremental Delay, d2	2.5	0.3					11.6	0.4			1.4	0.2
Delay (s)	47.7	44.6					55.7	2.5			11.2	6.0
Level of Service	D	D					E	A			B	A
Approach Delay (s)		45.7			0.0			6.9			10.9	
Approach LOS		D			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			10.0				HCM 2000 Level of Service				A	
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			103.9				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			58.4%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Castro St & General Chemical Access

Chevron Revised EIR

2016 Baseline Plus Proposed Construction AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	0	10	0	0	0	386	550	0	10	1424	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	5.7		4.0	5.7	
Lane Util. Factor	0.95	0.95	1.00				1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85				1.00	1.00		1.00	0.99	
Flt Protected	0.95	0.95	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1174	1174	1346				1530	3223		1805	3282	
Flt Permitted	0.76	0.76	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)	936	936	1346				1530	3223		1805	3282	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	22	0	11	0	0	0	415	591	0	11	1531	142
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	11	11	1	0	0	0	415	591	0	11	1668	0
Heavy Vehicles (%)	46%	0%	20%	0%	0%	0%	18%	12%	0%	0%	8%	15%
Turn Type	Perm	NA	Perm	Perm			Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	6.0	6.0	6.0				20.2	83.8		1.2	64.8	
Effective Green, g (s)	6.0	6.0	6.0				20.2	83.8		1.2	64.8	
Actuated g/C Ratio	0.06	0.06	0.06				0.19	0.80		0.01	0.62	
Clearance Time (s)	4.0	4.0	4.0				4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0				2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	53	53	77				295	2579		20	2031	
v/s Ratio Prot							c0.27	0.18		0.01	c0.51	
v/s Ratio Perm	c0.01	0.01	0.00									
v/c Ratio	0.21	0.21	0.01				1.41	0.23		0.55	0.82	
Uniform Delay, d1	47.1	47.1	46.5				42.2	2.6		51.5	15.5	
Progression Factor	1.00	1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.7	0.0				202.2	0.1		17.2	2.9	
Delay (s)	47.8	47.8	46.6				244.4	2.6		68.7	18.4	
Level of Service	D	D	D				F	A		E	B	
Approach Delay (s)		47.4			0.0			102.4			18.7	
Approach LOS		D			A			F			B	
Intersection Summary												
HCM 2000 Control Delay			50.0				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			104.7				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			79.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Castro St & Hensley St

Chevron Revised EIR

2016 Baseline Plus Proposed Construction AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	10	10	40	0	10	10	500	60	10	1516	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.85		1.00	0.98		1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1900	1615	2501	1615		1805	3121		1805	3343	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1900	1615	2501	1615		1805	3121		1805	3343	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	11	11	43	0	11	11	538	65	11	1630	0
RTOR Reduction (vph)	0	0	11	0	9	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	11	0	43	2	0	11	599	0	11	1630	0
Heavy Vehicles (%)	0%	0%	0%	40%	0%	0%	0%	14%	12%	0%	8%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)		2.8	2.8	3.7	10.5		1.0	50.2		1.0	50.2	
Effective Green, g (s)		2.8	2.8	3.7	10.5		1.0	50.2		1.0	50.2	
Actuated g/C Ratio		0.04	0.04	0.05	0.14		0.01	0.67		0.01	0.67	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)		4.0	4.0	2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		71	60	123	227		24	2097		24	2246	
v/s Ratio Prot		c0.01		c0.02	0.00		c0.01	0.19		0.01	c0.49	
v/s Ratio Perm			0.00									
v/c Ratio		0.15	0.01	0.35	0.01		0.46	0.29		0.46	0.73	
Uniform Delay, d1		34.8	34.6	34.3	27.6		36.6	5.0		36.6	7.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.4	0.1	0.6	0.0		5.0	0.1		5.0	1.3	
Delay (s)		36.2	34.7	35.0	27.6		41.6	5.1		41.6	9.1	
Level of Service		D	C	C	C		D	A		D	A	
Approach Delay (s)		35.4			33.5			5.7			9.3	
Approach LOS		D			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.2			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			74.7			Sum of lost time (s)				17.0		
Intersection Capacity Utilization			59.4%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

10: Hensley St & Richmond Pkwy

Chevron Revised EIR
2016 Baseline Plus Proposed Construction AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1100	40	30	250	70	10	30	30	140	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.93		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3485		1719	3308		1127	1419		1768	1620	
Flt Permitted	0.95	1.00		0.95	1.00		0.72	1.00		0.71	1.00	
Satd. Flow (perm)	1736	3485		1719	3308		855	1419		1329	1620	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	55	1209	44	33	275	77	11	33	33	154	22	33
RTOR Reduction (vph)	0	2	0	0	17	0	0	27	0	0	27	0
Lane Group Flow (vph)	55	1251	0	33	335	0	11	39	0	154	28	0
Confl. Peds. (#/hr)			2	2			2		1	1		2
Heavy Vehicles (%)	4%	2%	29%	5%	6%	4%	60%	26%	53%	2%	44%	4%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	4.4	40.7		2.5	38.8		13.3	13.3		13.3	13.3	
Effective Green, g (s)	4.4	40.7		2.5	38.8		13.3	13.3		13.3	13.3	
Actuated g/C Ratio	0.06	0.59		0.04	0.56		0.19	0.19		0.19	0.19	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)	109	2040		61	1846		163	271		254	310	
v/s Ratio Prot	c0.03	c0.36		0.02	0.10			0.03			0.02	
v/s Ratio Perm							0.01			c0.12		
v/c Ratio	0.50	0.61		0.54	0.18		0.07	0.15		0.61	0.09	
Uniform Delay, d1	31.5	9.3		32.9	7.5		23.0	23.4		25.7	23.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.7		5.2	0.1		0.2	0.2		3.8	0.1	
Delay (s)	32.8	10.0		38.1	7.6		23.2	23.6		29.5	23.2	
Level of Service	C	B		D	A		C	C		C	C	
Approach Delay (s)		11.0			10.2			23.5			27.9	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			13.1			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			69.5			Sum of lost time (s)			13.0			
Intersection Capacity Utilization			60.9%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR
2016 Baseline Plus Proposed Construction AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	190	10	60	10	720	50	20	2446	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1275		1681	1595		1805	3223	1435	1805	3402	
Flt Permitted		0.91		0.80	0.85		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1177		1417	1387		1805	3223	1435	1805	3402	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	10	198	10	62	10	750	52	21	2548	10
RTOR Reduction (vph)	0	9	0	0	24	0	0	0	14	0	0	0
Lane Group Flow (vph)	0	21	0	139	107	0	10	750	38	21	2558	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	0%	100%	20%	2%	0%	4%	0%	12%	10%	0%	6%	20%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		17.8		17.8	17.8		1.2	93.3	93.3	3.9	96.0	
Effective Green, g (s)		17.8		17.8	17.8		1.2	93.3	93.3	3.9	96.0	
Actuated g/C Ratio		0.14		0.14	0.14		0.01	0.73	0.73	0.03	0.75	
Clearance Time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	3.1	3.1	2.0	3.1	
Lane Grp Cap (vph)		164		197	193		16	2358	1050	55	2561	
v/s Ratio Prot							0.01	0.23		c0.01	c0.75	
v/s Ratio Perm		0.02		c0.10	0.08				0.03			
v/c Ratio		0.13		0.71	0.55		0.62	0.32	0.04	0.38	1.00	
Uniform Delay, d1		48.1		52.3	51.1		62.9	6.0	4.7	60.6	15.7	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4		10.9	3.4		44.0	0.1	0.0	1.6	17.4	
Delay (s)		48.4		63.3	54.6		106.9	6.1	4.7	62.2	33.0	
Level of Service		D		E	D		F	A	A	E	C	
Approach Delay (s)		48.4			59.0			7.2			33.3	
Approach LOS		D			E			A			C	
Intersection Summary												
HCM 2000 Control Delay			29.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			127.5			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			89.9%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

1: Marine St & Chevron Way

Chevron Revised EIR

2016 Baseline Plus Proposed Construction PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	20	30	10	0	0	260
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	24	35	12	0	0	306
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1	
Volume Total (vph)	12	12	35	12	306	
Volume Left (vph)	12	12	0	0	0	
Volume Right (vph)	0	0	35	0	0	
Hadj (s)	0.50	0.50	-0.70	0.00	0.00	
Departure Headway (s)	5.7	5.7	3.2	4.3	4.0	
Degree Utilization, x	0.02	0.02	0.03	0.01	0.34	
Capacity (veh/h)	592	595	1121	820	896	
Control Delay (s)	7.6	7.6	5.1	7.3	9.0	
Approach Delay (s)	6.1			7.3	9.0	
Approach LOS	A			A	A	
Intersection Summary						
Delay			8.5			
Level of Service			A			
Intersection Capacity Utilization			78.5%	ICU Level of Service		D
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis2: Castro St & Tewksbury Ave

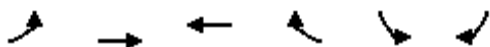
Chevron Revised EIR
2016 Baseline Plus Proposed Construction PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	30	10	10	30	110	10	20	30	200	40	60
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	32	11	11	32	118	11	22	32	215	43	65
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	54	161	65	215	108							
Volume Left (vph)	11	11	11	215	0							
Volume Right (vph)	11	118	32	0	65							
Hadj (s)	-0.08	0.82	-0.13	0.58	-0.42							
Departure Headway (s)	5.1	5.8	4.9	5.8	4.8							
Degree Utilization, x	0.08	0.26	0.09	0.35	0.14							
Capacity (veh/h)	651	589	685	599	724							
Control Delay (s)	8.5	10.8	8.4	10.6	7.4							
Approach Delay (s)	8.5	10.8	8.4	9.5								
Approach LOS	A	B	A	A								
Intersection Summary												
Delay			9.6									
Level of Service			A									
Intersection Capacity Utilization			34.1%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

3: EB I-580 Ramp & Marine St

Chevron Revised EIR
2016 Baseline Plus Proposed Construction PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	1100	0	0	280	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3			3.0	
Lane Util. Factor	1.00	1.00			0.97	
Flt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	1805	1827			3502	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	1805	1827			3502	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	12	1279	0	0	326	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	12	1279	0	0	326	0
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Turn Type	Split	NA			NA	
Protected Phases	4	4			2	
Permitted Phases						
Actuated Green, G (s)	36.1	36.1			9.2	
Effective Green, g (s)	36.1	36.1			9.2	
Actuated g/C Ratio	0.69	0.69			0.17	
Clearance Time (s)	4.3	4.3			3.0	
Vehicle Extension (s)	3.0	3.0			2.0	
Lane Grp Cap (vph)	1238	1253			612	
v/s Ratio Prot	0.01	c0.70			c0.09	
v/s Ratio Perm						
v/c Ratio	0.01	1.02			0.53	
Uniform Delay, d1	2.6	8.2			19.7	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	30.8			0.4	
Delay (s)	2.6	39.0			20.2	
Level of Service	A	D			C	
Approach Delay (s)		38.7	0.0		20.2	
Approach LOS		D	A		C	
Intersection Summary						
HCM 2000 Control Delay			35.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.92			
Actuated Cycle Length (s)			52.6		Sum of lost time (s)	7.3
Intersection Capacity Utilization			95.8%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

4: Castro St & I-580 EB Ramps

Chevron Revised EIR
2016 Baseline Plus Proposed Construction PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘↙			↗
Volume (vph)	1340	100	200	0	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	3.0			3.0
Lane Util. Factor	1.00	1.00	0.97			1.00
Frt	1.00	0.85	1.00			0.86
Flt Protected	1.00	1.00	0.95			1.00
Satd. Flow (prot)	1845	1553	3433			1611
Flt Permitted	1.00	1.00	0.95			1.00
Satd. Flow (perm)	1845	1553	3433			1611
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1523	114	227	0	0	159
RTOR Reduction (vph)	0	16	0	0	0	43
Lane Group Flow (vph)	1523	98	227	0	0	116
Heavy Vehicles (%)	3%	4%	2%	5%	0%	2%
Turn Type	NA	Perm	Prot			custom
Protected Phases	6!		5 4			5 6!
Permitted Phases		6				
Actuated Green, G (s)	56.8	56.8	23.7			65.5
Effective Green, g (s)	56.8	56.8	23.7			65.5
Actuated g/C Ratio	0.63	0.63	0.26			0.73
Clearance Time (s)	6.5	6.5				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	1164	980	904			1172
v/s Ratio Prot	c0.83		c0.07			0.07
v/s Ratio Perm		0.06				
v/c Ratio	1.31	0.10	0.25			0.10
Uniform Delay, d1	16.6	6.5	26.1			3.6
Progression Factor	1.00	1.00	1.63			1.00
Incremental Delay, d2	145.1	0.2	0.1			0.0
Delay (s)	161.7	6.7	42.7			3.6
Level of Service	F	A	D			A
Approach Delay (s)	150.9			42.7	3.6	
Approach LOS	F			D	A	
Intersection Summary						
HCM 2000 Control Delay			127.2		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.04			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.5
Intersection Capacity Utilization			97.0%		ICU Level of Service	F
Analysis Period (min)			15			
! Phase conflict between lane groups.						
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

5: Castro St & Chevron Way

Chevron Revised EIR
2016 Baseline Plus Proposed Construction PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑↑	↗
Volume (vph)	0	0	0	1480	756	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.5	4.5
Lane Util. Factor				0.95	0.91	1.00
Frpb, ped/bikes				1.00	1.00	0.98
Flpb, ped/bikes				1.00	1.00	1.00
Frt				1.00	1.00	0.85
Flt Protected				1.00	1.00	1.00
Satd. Flow (prot)				3505	4988	1575
Flt Permitted				1.00	1.00	1.00
Satd. Flow (perm)				3505	4988	1575
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	0	1741	889	47
RTOR Reduction (vph)	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	1741	889	34
Confl. Peds. (#/hr)	7		4			7
Heavy Vehicles (%)	0%	0%	0%	3%	4%	0%
Turn Type				NA	NA	Perm
Protected Phases				Free	2	
Permitted Phases						2
Actuated Green, G (s)				90.0	65.5	65.5
Effective Green, g (s)				90.0	65.5	65.5
Actuated g/C Ratio				1.00	0.73	0.73
Clearance Time (s)					4.5	4.5
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)				3505	3630	1146
v/s Ratio Prot				0.50	0.18	
v/s Ratio Perm						0.02
v/c Ratio				0.50	0.24	0.03
Uniform Delay, d1				0.0	4.1	3.4
Progression Factor				1.00	1.00	1.00
Incremental Delay, d2				0.0	0.2	0.0
Delay (s)				0.0	4.2	3.5
Level of Service				A	A	A
Approach Delay (s)	0.0			0.0	4.2	
Approach LOS	A			A	A	
Intersection Summary						
HCM 2000 Control Delay			1.5	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			90.0	Sum of lost time (s)		7.5
Intersection Capacity Utilization			44.2%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

6: Castro St & Redwood Way/WB I-580 Ramp

Chevron Revised EIR
2016 Baseline Plus Proposed Construction PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	30	70	130	10	340	10	1350	120	401	596	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	165	35	82	153	12	400	12	1588	141	472	701	12
RTOR Reduction (vph)	0	0	73	0	0	362	0	0	0	0	0	4
Lane Group Flow (vph)	99	101	9	83	82	38	12	1588	141	472	701	8
Heavy Vehicles (%)	0%	0%	2%	2%	0%	13%	0%	3%	4%	3%	4%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	11.1	11.1	11.1	10.1	10.1	10.1	2.2	36.8	106.8	34.1	68.9	68.9
Effective Green, g (s)	11.1	11.1	11.1	10.1	10.1	10.1	2.2	36.8	106.8	34.1	68.9	68.9
Actuated g/C Ratio	0.10	0.10	0.10	0.09	0.09	0.09	0.02	0.34	1.00	0.32	0.65	0.65
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	178	181	164	158	160	237	37	1207	1553	559	2239	1041
v/s Ratio Prot	0.06	c0.06		c0.05	0.05		0.01	c0.45		c0.27	0.20	
v/s Ratio Perm			0.01			0.02			0.09			0.00
v/c Ratio	0.56	0.56	0.05	0.53	0.51	0.16	0.32	1.32	0.09	0.84	0.31	0.01
Uniform Delay, d1	45.5	45.5	43.1	46.1	46.0	44.4	51.6	35.0	0.0	33.9	8.4	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	2.1	0.0	1.5	1.2	0.1	1.9	148.0	0.1	10.8	0.1	0.0
Delay (s)	47.6	47.6	43.2	47.5	47.2	44.6	53.4	183.0	0.1	44.7	8.5	6.8
Level of Service	D	D	D	D	D	D	D	F	A	D	A	A
Approach Delay (s)		46.3			45.4			167.3			22.9	
Approach LOS		D			D			F			C	
Intersection Summary												
HCM 2000 Control Delay	94.7			HCM 2000 Level of Service					F			
HCM 2000 Volume to Capacity ratio	0.96											
Actuated Cycle Length (s)	106.8			Sum of lost time (s)					14.7			
Intersection Capacity Utilization	81.3%			ICU Level of Service					D			
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Castro St & Mills St

Chevron Revised EIR

2016 Baseline Plus Proposed Construction PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	0	71	0	0	0	20	1810	0	10	936	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	0.95	0.95					1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.86					1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00					0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1603	1369					1543	3438		1805	3539	1524
Flt Permitted	0.76	0.98					0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1277	1345					1543	3438		1805	3539	1524
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	78	0	79	0	0	0	22	2011	0	11	1040	56
RTOR Reduction (vph)	0	78	0	0	0	0	0	0	0	0	0	15
Lane Group Flow (vph)	70	9	0	0	0	0	22	2011	0	11	1040	41
Heavy Vehicles (%)	7%	0%	14%	0%	0%	0%	17%	5%	0%	0%	2%	6%
Turn Type	Perm	NA		Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						6
Actuated Green, G (s)	10.7	10.7					2.7	72.9		1.1	71.3	71.3
Effective Green, g (s)	10.7	10.7					2.7	72.9		1.1	71.3	71.3
Actuated g/C Ratio	0.11	0.11					0.03	0.74		0.01	0.73	0.73
Clearance Time (s)	4.0	4.0					4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0					2.0	3.5		2.0	3.5	3.5
Lane Grp Cap (vph)	139	146					42	2552		20	2569	1106
v/s Ratio Prot							c0.01	c0.58		0.01	0.29	
v/s Ratio Perm	c0.05	0.01										0.03
v/c Ratio	0.50	0.06					0.52	0.79		0.55	0.40	0.04
Uniform Delay, d1	41.2	39.3					47.1	7.9		48.3	5.2	3.8
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.9	0.2					5.3	2.6		17.2	0.5	0.1
Delay (s)	44.1	39.4					52.5	10.4		65.5	5.7	3.8
Level of Service	D	D					D	B		E	A	A
Approach Delay (s)		41.5			0.0			10.9			6.2	
Approach LOS		D			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			10.8		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			98.2		Sum of lost time (s)					13.5		
Intersection Capacity Utilization			62.9%		ICU Level of Service					B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Castro St & General Chemical Access

Chevron Revised EIR
2016 Baseline Plus Proposed Construction PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	382	10	436	10	0	10	10	1860	10	10	550	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		0.93		1.00	1.00		1.00	1.00	
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1698	1707	1538		1729		1357	3469		1805	3497	
Flt Permitted	0.74	0.72	1.00		0.82		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1325	1287	1538		1462		1357	3469		1805	3497	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	449	12	513	12	0	12	12	2188	12	12	647	12
RTOR Reduction (vph)	0	0	261	0	19	0	0	0	0	0	1	0
Lane Group Flow (vph)	229	232	252	0	5	0	12	2200	0	12	658	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	1%	0%	5%	0%	0%	0%	33%	4%	0%	0%	3%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	20.0	20.0	20.0		20.0		5.5	70.1		1.2	65.8	
Effective Green, g (s)	20.0	20.0	20.0		20.0		5.5	70.1		1.2	65.8	
Actuated g/C Ratio	0.19	0.19	0.19		0.19		0.05	0.67		0.01	0.63	
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	252	245	292		278		71	2315		20	2191	
v/s Ratio Prot							0.01	c0.63		c0.01	0.19	
v/s Ratio Perm	0.17	c0.18	0.16		0.00							
v/c Ratio	0.91	0.95	0.86		0.02		0.17	0.95		0.60	0.30	
Uniform Delay, d1	41.6	42.0	41.2		34.5		47.6	15.9		51.7	9.0	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	32.5	42.2	21.7		0.0		0.4	9.6		28.2	0.1	
Delay (s)	74.1	84.2	62.8		34.5		48.0	25.5		79.9	9.1	
Level of Service	E	F	E		C		D	C		E	A	
Approach Delay (s)		70.6			34.5			25.6			10.4	
Approach LOS		E			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			34.3				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			105.0				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			77.3%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Castro St & Hensley St

Chevron Revised EIR

2016 Baseline Plus Proposed Construction PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	0	30	0	10	10	2202	40	10	540	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.85		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1900		3273	1615		1805	3456		1805	3505	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1900		3273	1615		1805	3456		1805	3505	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	12	12	0	35	0	12	12	2591	47	12	635	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	0
Lane Group Flow (vph)	12	12	0	35	0	0	12	2638	0	12	635	0
Confl. Peds. (#/hr)			2	2					2	2		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	4%	11%	0%	3%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	1.0	1.3		2.4	2.7		1.0	51.0		1.0	51.0	
Effective Green, g (s)	1.0	1.3		2.4	2.7		1.0	51.0		1.0	51.0	
Actuated g/C Ratio	0.01	0.02		0.03	0.04		0.01	0.70		0.01	0.70	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	24	33		108	59		24	2424		24	2458	
v/s Ratio Prot	0.01	c0.01		c0.01	0.00		c0.01	c0.76		0.01	0.18	
v/s Ratio Perm												
v/c Ratio	0.50	0.36		0.32	0.01		0.50	1.09		0.50	0.26	
Uniform Delay, d1	35.6	35.3		34.4	33.7		35.6	10.9		35.6	4.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.8	9.1		0.6	0.1		5.8	47.4		5.8	0.1	
Delay (s)	41.4	44.4		35.0	33.8		41.4	58.2		41.4	4.0	
Level of Service	D	D		C	C		D	E		D	A	
Approach Delay (s)		42.9			34.7			58.1			4.7	
Approach LOS		D			C			E			A	
Intersection Summary												
HCM 2000 Control Delay			47.4			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			72.7			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			77.9%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

10: Hensley St & Richmond Pkwy

Chevron Revised EIR
2016 Baseline Plus Proposed Construction PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	310	20	10	900	120	30	40	30	100	20	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.94		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3441		1503	3472		1803	1895		1784	1776	
Flt Permitted	0.95	1.00		0.95	1.00		0.70	1.00		0.71	1.00	
Satd. Flow (perm)	1671	3441		1503	3472		1327	1895		1328	1776	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	344	22	11	1000	133	33	44	33	111	22	67
RTOR Reduction (vph)	0	3	0	0	6	0	0	27	0	0	55	0
Lane Group Flow (vph)	11	363	0	11	1127	0	33	50	0	111	34	0
Confl. Peds. (#/hr)	1		1	1		1	2		3	3		2
Heavy Vehicles (%)	8%	3%	17%	20%	2%	1%	0%	7%	4%	1%	14%	4%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	0.9	34.1		0.9	34.1		10.4	10.4		10.4	10.4	
Effective Green, g (s)	0.9	34.1		0.9	34.1		10.4	10.4		10.4	10.4	
Actuated g/C Ratio	0.02	0.58		0.02	0.58		0.18	0.18		0.18	0.18	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)	25	2009		23	2027		236	337		236	316	
v/s Ratio Prot	0.01	0.11		c0.01	c0.32			0.03			0.02	
v/s Ratio Perm							0.02			c0.08		
v/c Ratio	0.44	0.18		0.48	0.56		0.14	0.15		0.47	0.11	
Uniform Delay, d1	28.5	5.7		28.5	7.5		20.2	20.3		21.5	20.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.4	0.1		5.6	0.5		0.2	0.2		1.3	0.1	
Delay (s)	32.9	5.7		34.1	8.0		20.5	20.4		22.8	20.2	
Level of Service	C	A		C	A		C	C		C	C	
Approach Delay (s)		6.5			8.2			20.5			21.7	
Approach LOS		A			A			C			C	
Intersection Summary												
HCM 2000 Control Delay	10.1			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.53											
Actuated Cycle Length (s)	58.4			Sum of lost time (s)			13.0					
Intersection Capacity Utilization	49.1%			ICU Level of Service			A					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR
2016 Baseline Plus Proposed Construction PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	50	10	40	10	3052	270	40	720	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	0.99		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	0.89		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1703		1715	1550		1641	3471	1544	1805	3498	
Flt Permitted		0.90		0.81	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1559		1469	1518		1641	3471	1544	1805	3498	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	11	11	56	11	44	11	3391	300	44	800	11
RTOR Reduction (vph)	0	10	0	0	41	0	0	0	33	0	0	0
Lane Group Flow (vph)	0	23	0	50	20	0	11	3391	267	44	811	0
Confl. Peds. (#/hr)	3					3	1		2	2		1
Heavy Vehicles (%)	14%	0%	0%	0%	0%	3%	10%	4%	2%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		9.8		9.8	9.8		1.3	97.9	97.9	5.8	102.4	
Effective Green, g (s)		9.8		9.8	9.8		1.3	97.9	97.9	5.8	102.4	
Actuated g/C Ratio		0.08		0.08	0.08		0.01	0.78	0.78	0.05	0.81	
Clearance Time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	3.1	3.1	2.0	3.1	
Lane Grp Cap (vph)		121		114	118		16	2696	1199	83	2842	
v/s Ratio Prot							0.01	c0.98		c0.02	0.23	
v/s Ratio Perm		0.01		c0.03	0.01				0.17			
v/c Ratio		0.19		0.44	0.17		0.69	1.26	0.22	0.53	0.29	
Uniform Delay, d1		54.4		55.5	54.3		62.1	14.0	3.8	58.8	2.9	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.8		2.7	0.7		67.5	119.2	0.1	3.2	0.1	
Delay (s)		55.1		58.2	55.0		129.7	133.2	3.9	62.0	2.9	
Level of Service		E		E	E		F	F	A	E	A	
Approach Delay (s)		55.1			56.4			122.7			6.0	
Approach LOS		E			E			F			A	
Intersection Summary												
HCM 2000 Control Delay			99.5			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.15									
Actuated Cycle Length (s)			126.0			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			100.6%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: Castro St & Redwood Way/WB I-580 Ramp

Chevron Revised EIR
Mitigation - Baseline Plus Prop Constr PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	30	70	130	10	340	10	1350	120	401	596	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	165	35	82	153	12	400	12	1588	141	472	701	12
RTOR Reduction (vph)	0	0	75	0	0	379	0	0	0	0	0	3
Lane Group Flow (vph)	99	101	7	83	82	21	12	1588	141	472	701	9
Heavy Vehicles (%)	0%	0%	2%	2%	0%	13%	0%	3%	4%	3%	4%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	12.3	12.3	12.3	7.5	7.5	7.5	2.6	68.6	139.9	36.8	103.0	103.0
Effective Green, g (s)	12.3	12.3	12.3	7.5	7.5	7.5	2.6	68.6	139.9	36.8	103.0	103.0
Actuated g/C Ratio	0.09	0.09	0.09	0.05	0.05	0.05	0.02	0.49	1.00	0.26	0.74	0.74
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	150	153	139	90	91	134	33	1718	1553	460	2555	1189
v/s Ratio Prot	0.06	c0.06		c0.05	0.05		0.01	c0.45		c0.27	0.20	
v/s Ratio Perm			0.00			0.01			0.09			0.01
v/c Ratio	0.66	0.66	0.05	0.92	0.90	0.16	0.36	0.92	0.09	1.03	0.27	0.01
Uniform Delay, d1	61.8	61.8	58.5	65.9	65.8	63.2	67.8	33.2	0.0	51.6	6.1	4.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	8.0	0.1	68.6	61.8	0.2	2.5	8.9	0.1	48.8	0.1	0.0
Delay (s)	69.9	69.8	58.5	134.5	127.7	63.4	70.3	42.1	0.1	100.3	6.2	4.9
Level of Service	E	E	E	F	F	E	E	D	A	F	A	A
Approach Delay (s)		66.5			83.2			38.9			43.7	
Approach LOS		E			F			D			D	
Intersection Summary												
HCM 2000 Control Delay			49.1			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			139.9			Sum of lost time (s)			14.7			
Intersection Capacity Utilization			81.3%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR
Mitigation - Baseline Plus Prop Constr PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	50	10	40	10	3052	270	40	720	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		5.5	5.5	5.5		5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00		0.91	
Frpb, ped/bikes		1.00		1.00	0.99		1.00	1.00	0.98		1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Frt		0.95		1.00	0.89		1.00	1.00	0.85		1.00	
Flt Protected		0.98		0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1703		1715	1550		1640	3471	1544		5021	
Flt Permitted		0.90		0.83	0.98		0.32	1.00	1.00		0.69	
Satd. Flow (perm)		1563		1493	1519		550	3471	1544		3492	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	11	11	56	11	44	11	3391	300	44	800	11
RTOR Reduction (vph)	0	10	0	0	1	0	0	0	31	0	0	0
Lane Group Flow (vph)	0	23	0	50	60	0	11	3391	269	0	855	0
Confl. Peds. (#/hr)	3					3	1		2	2		1
Heavy Vehicles (%)	14%	0%	0%	0%	0%	3%	10%	4%	2%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		10.0		10.0	10.0		99.6	99.6	99.6		99.6	
Effective Green, g (s)		10.0		10.0	10.0		99.6	99.6	99.6		99.6	
Actuated g/C Ratio		0.08		0.08	0.08		0.84	0.84	0.84		0.84	
Clearance Time (s)		3.5		3.5	3.5		5.5	5.5	5.5		5.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.1	3.1	3.1		3.1	
Lane Grp Cap (vph)		131		125	128		461	2914	1296		2932	
v/s Ratio Prot							c0.98					
v/s Ratio Perm		0.01		0.03	c0.04		0.02		0.17		0.24	
v/c Ratio		0.18		0.40	0.47		0.02	1.16	0.21		0.29	
Uniform Delay, d1		50.5		51.5	51.8		1.6	9.5	1.8		2.0	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.6		2.1	2.7		0.0	77.8	0.1		0.1	
Delay (s)		51.1		53.6	54.5		1.6	87.3	1.9		2.1	
Level of Service		D		D	D		A	F	A		A	
Approach Delay (s)		51.1			54.1			80.1			2.1	
Approach LOS		D			D			F			A	
Intersection Summary												
HCM 2000 Control Delay			65.1			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.10									
Actuated Cycle Length (s)			118.6			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			100.6%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

Chevron Revised EIR

1: Marine St & Chevron Way

2016 Baseline Plus Proposed Construction and Other Projects AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	10	120	10	0	0	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	141	12	0	0	24
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1	
Volume Total (vph)	6	6	141	12	24	
Volume Left (vph)	6	6	0	0	0	
Volume Right (vph)	0	0	141	0	0	
Hadj (s)	0.50	0.50	-0.63	0.00	0.46	
Departure Headway (s)	5.1	5.1	3.2	4.0	4.4	
Degree Utilization, x	0.01	0.01	0.13	0.01	0.03	
Capacity (veh/h)	699	693	1121	903	811	
Control Delay (s)	6.9	6.9	5.5	7.0	7.5	
Approach Delay (s)	5.6			7.0	7.5	
Approach LOS	A			A	A	
Intersection Summary						
Delay			5.9			
Level of Service			A			
Intersection Capacity Utilization			45.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

Chevron Revised EIR

2: Castro St & Tewksbury Ave

2016 Baseline Plus Proposed Construction and Other Projects AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Sign Control		Stop			Stop			Stop				Stop
Volume (vph)	40	50	0	0	10	100	10	30	50	40	140	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	47	59	0	0	12	118	12	35	59	0	165	24
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	106	129	106	165	35							
Volume Left (vph)	47	0	12	165	0							
Volume Right (vph)	0	118	59	0	12							
Hadj (s)	0.09	-0.51	-0.31	0.60	-0.23							
Departure Headway (s)	4.9	4.3	4.5	5.8	4.9							
Degree Utilization, x	0.15	0.16	0.13	0.26	0.05							
Capacity (veh/h)	676	769	743	595	693							
Control Delay (s)	8.8	8.1	8.2	9.6	7.0							
Approach Delay (s)	8.8	8.1	8.2	9.2								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.7									
Level of Service			A									
Intersection Capacity Utilization			34.9%	ICU Level of Service					A			
Analysis Period (min)			15									

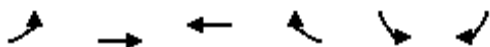
												
Movement	SBR											
Lane Configurations												
Sign Control												
Volume (vph)	10											
Peak Hour Factor	0.85											
Hourly flow rate (vph)	12											
Direction, Lane #												

HCM Signalized Intersection Capacity Analysis

3: EB I-580 Ramp & Marine St

Chevron Revised EIR

2016 Baseline Plus Proposed Construction and Other Projects AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	594	0	0	30	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3			3.0	
Lane Util. Factor	1.00	1.00			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	1805	1759			3242	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	1805	1759			3242	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	660	0	0	33	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	11	660	0	0	33	0
Heavy Vehicles (%)	0%	8%	0%	0%	8%	0%
Turn Type	Split	NA			NA	
Protected Phases	4	4			2	
Permitted Phases						
Actuated Green, G (s)	30.0	30.0			2.1	
Effective Green, g (s)	30.0	30.0			2.1	
Actuated g/C Ratio	0.76	0.76			0.05	
Clearance Time (s)	4.3	4.3			3.0	
Vehicle Extension (s)	3.0	3.0			2.0	
Lane Grp Cap (vph)	1374	1339			172	
v/s Ratio Prot	0.01	c0.38			c0.01	
v/s Ratio Perm						
v/c Ratio	0.01	0.49			0.19	
Uniform Delay, d1	1.1	1.8			17.8	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.3			0.2	
Delay (s)	1.1	2.1			18.0	
Level of Service	A	A			B	
Approach Delay (s)		2.1	0.0		18.0	
Approach LOS		A	A		B	

Intersection Summary

HCM 2000 Control Delay	2.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	39.4	Sum of lost time (s)	7.3
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

4: Castro St & I-580 EB Ramps

2016 Baseline Plus Proposed Construction and Other Projects AM

	→	↘	↶	↙	←	↖	↗
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↘			↗
Volume (vph)	554	50	10	160	0	0	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		3.0			3.0
Lane Util. Factor	1.00	1.00		0.97			1.00
Frpb, ped/bikes	1.00	1.00		1.00			1.00
Flpb, ped/bikes	1.00	1.00		0.99			1.00
Frt	1.00	0.85		1.00			0.86
Flt Protected	1.00	1.00		0.95			1.00
Satd. Flow (prot)	1727	1568		3327			1627
Flt Permitted	1.00	1.00		0.42			1.00
Satd. Flow (perm)	1727	1568		1472			1627
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	644	58	12	186	0	0	244
RTOR Reduction (vph)	0	23	0	0	0	0	77
Lane Group Flow (vph)	644	35	0	198	0	0	167
Confl. Peds. (#/hr)			11				11
Heavy Vehicles (%)	10%	3%	0%	5%	17%	0%	1%
Turn Type	NA	Perm		Prot			custom
Protected Phases	6!			5 4			5 6!
Permitted Phases		6					
Actuated Green, G (s)	48.5	48.5		42.0			68.5
Effective Green, g (s)	48.5	48.5		42.0			68.5
Actuated g/C Ratio	0.48	0.48		0.42			0.68
Clearance Time (s)	6.5	6.5					
Vehicle Extension (s)	3.0	3.0					
Lane Grp Cap (vph)	837	760		618			1114
v/s Ratio Prot	c0.37						0.10
v/s Ratio Perm		0.02		c0.13			
v/c Ratio	0.77	0.05		0.32			0.15
Uniform Delay, d1	21.2	13.6		19.4			5.5
Progression Factor	1.00	1.00		1.00			1.00
Incremental Delay, d2	6.7	0.1		0.3			0.1
Delay (s)	27.9	13.7		19.7			5.6
Level of Service	C	B		B			A
Approach Delay (s)	26.7				19.7	5.6	
Approach LOS	C				B	A	
Intersection Summary							
HCM 2000 Control Delay			21.0		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.58				
Actuated Cycle Length (s)			100.0		Sum of lost time (s)		12.5
Intersection Capacity Utilization			60.2%		ICU Level of Service		B
Analysis Period (min)			15				
! Phase conflict between lane groups.							
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis

5: Castro St & Chevron Way

Chevron Revised EIR

2016 Baseline Plus Proposed Construction and Other Projects AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑↑	↗
Volume (vph)	0	0	0	774	600	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.5	4.5
Lane Util. Factor				0.95	0.91	1.00
Frpb, ped/bikes				1.00	1.00	1.00
Flpb, ped/bikes				1.00	1.00	1.00
Frt				1.00	1.00	0.85
Flt Protected				1.00	1.00	1.00
Satd. Flow (prot)				3406	4550	1553
Flt Permitted				1.00	1.00	1.00
Satd. Flow (perm)				3406	4550	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	841	652	120
RTOR Reduction (vph)	0	0	0	0	0	29
Lane Group Flow (vph)	0	0	0	841	652	91
Confl. Peds. (#/hr)	15					
Heavy Vehicles (%)	0%	0%	0%	6%	14%	4%
Turn Type				NA	NA	Perm
Protected Phases				Free	2	
Permitted Phases						2
Actuated Green, G (s)				100.0	75.5	75.5
Effective Green, g (s)				100.0	75.5	75.5
Actuated g/C Ratio				1.00	0.76	0.76
Clearance Time (s)					4.5	4.5
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)				3406	3435	1172
v/s Ratio Prot				0.25	0.14	
v/s Ratio Perm						0.06
v/c Ratio				0.25	0.19	0.08
Uniform Delay, d1				0.0	3.5	3.2
Progression Factor				1.00	1.00	1.00
Incremental Delay, d2				0.1	0.1	0.1
Delay (s)				0.1	3.6	3.3
Level of Service				A	A	A
Approach Delay (s)	0.0			0.1	3.6	
Approach LOS	A			A	A	
Intersection Summary						
HCM 2000 Control Delay			1.8	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.27			
Actuated Cycle Length (s)			100.0	Sum of lost time (s)		7.5
Intersection Capacity Utilization			24.7%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

6: Castro St & Redwood Way/WB I-580 Ramp

2016 Baseline Plus Proposed Construction and Other Projects AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	120	110	632	30	554	190	730	580	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1329	1751	1615	1618	1754	2137	1805	3471	1468	1703	3167	1553
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1329	1751	1615	1618	1754	2137	1805	3471	1468	1703	3167	1553
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	10	125	115	658	31	577	198	760	604	83
RTOR Reduction (vph)	0	0	10	0	0	577	0	0	0	0	0	27
Lane Group Flow (vph)	9	11	0	112	128	81	31	577	198	760	604	56
Heavy Vehicles (%)	29%	0%	0%	6%	2%	33%	0%	4%	10%	6%	14%	4%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	3.3	3.3	3.3	13.1	13.1	13.1	4.1	23.8	105.9	51.0	70.9	70.9
Effective Green, g (s)	3.3	3.3	3.3	13.1	13.1	13.1	4.1	23.8	105.9	51.0	70.9	70.9
Actuated g/C Ratio	0.03	0.03	0.03	0.12	0.12	0.12	0.04	0.22	1.00	0.48	0.67	0.67
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	41	54	50	200	216	264	69	780	1468	820	2120	1039
v/s Ratio Prot	0.01	0.01		0.07	c0.07		0.02	c0.17		c0.45	0.19	
v/s Ratio Perm			0.00			0.04			c0.13			0.04
v/c Ratio	0.22	0.20	0.01	0.56	0.59	0.31	0.45	0.74	0.13	0.93	0.28	0.05
Uniform Delay, d1	50.0	50.0	49.7	43.7	43.9	42.3	49.8	38.2	0.0	25.7	7.1	6.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.7	0.0	2.1	2.9	0.2	1.7	3.5	0.2	16.0	0.1	0.0
Delay (s)	51.0	50.7	49.7	45.8	46.8	42.5	51.5	41.7	0.2	41.7	7.2	6.0
Level of Service	D	D	D	D	D	D	D	D	A	D	A	A
Approach Delay (s)		50.5			43.5			31.9			25.3	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			32.3			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			105.9			Sum of lost time (s)			14.7			
Intersection Capacity Utilization			79.1%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

7: Castro St & Mills St

2016 Baseline Plus Proposed Construction and Other Projects AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	0	30	0	0	0	101	1026	0	0	1360	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	5.5			5.5	5.5
Lane Util. Factor	0.95	0.95					1.00	0.95			0.95	1.00
Frt	1.00	0.86					1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00					0.95	1.00			1.00	1.00
Satd. Flow (prot)	1092	860					1114	3282			3374	1056
Flt Permitted	0.76	0.99					0.95	1.00			1.00	1.00
Satd. Flow (perm)	871	851					1114	3282			3374	1056
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	0	33	0	0	0	110	1115	0	0	1478	162
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0	0	54
Lane Group Flow (vph)	20	3	0	0	0	0	110	1115	0	0	1478	108
Heavy Vehicles (%)	57%	0%	81%	0%	0%	0%	62%	10%	0%	0%	7%	53%
Turn Type	Perm	NA		Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						6
Actuated Green, G (s)	8.2	8.2					13.8	87.9			70.1	70.1
Effective Green, g (s)	8.2	8.2					13.8	87.9			70.1	70.1
Actuated g/C Ratio	0.08	0.08					0.13	0.83			0.66	0.66
Clearance Time (s)	4.0	4.0					4.0	5.5			5.5	5.5
Vehicle Extension (s)	3.0	3.0					2.0	3.5			3.5	3.5
Lane Grp Cap (vph)	67	66					145	2731			2239	701
v/s Ratio Prot							c0.10	0.34			c0.44	
v/s Ratio Perm	c0.02	0.00										0.10
v/c Ratio	0.30	0.04					0.76	0.41			0.66	0.15
Uniform Delay, d1	46.0	45.1					44.3	2.2			10.6	6.6
Progression Factor	1.00	1.00					1.00	1.00			1.00	1.00
Incremental Delay, d2	2.5	0.3					18.1	0.5			1.5	0.5
Delay (s)	48.5	45.3					62.4	2.7			12.2	7.1
Level of Service	D	D					E	A			B	A
Approach Delay (s)		46.5			0.0			8.1			11.7	
Approach LOS		D			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			10.8				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			105.6				Sum of lost time (s)				13.5	
Intersection Capacity Utilization			59.4%				ICU Level of Service				B	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

8: Castro St & General Chemical Access

2016 Baseline Plus Proposed Construction and Other Projects AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	0	10	0	0	0	393	654	0	10	1516	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	5.7		4.0	5.7	
Lane Util. Factor	0.95	0.95	1.00				1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85				1.00	1.00		1.00	0.99	
Flt Protected	0.95	0.95	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1174	1174	1346				1530	3223		1805	3285	
Flt Permitted	0.76	0.76	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)	936	936	1346				1530	3223		1805	3285	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	22	0	11	0	0	0	423	703	0	11	1630	143
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	11	11	1	0	0	0	423	703	0	11	1769	0
Heavy Vehicles (%)	46%	0%	20%	0%	0%	0%	18%	12%	0%	0%	8%	15%
Turn Type	Perm	NA	Perm	Perm			Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	6.0	6.0	6.0				20.1	88.5		1.2	69.6	
Effective Green, g (s)	6.0	6.0	6.0				20.1	88.5		1.2	69.6	
Actuated g/C Ratio	0.05	0.05	0.05				0.18	0.81		0.01	0.64	
Clearance Time (s)	4.0	4.0	4.0				4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0				2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	51	51	73				281	2607		19	2089	
v/s Ratio Prot							c0.28	0.22		0.01	c0.54	
v/s Ratio Perm	c0.01	0.01	0.00									
v/c Ratio	0.22	0.22	0.01				1.51	0.27		0.58	0.85	
Uniform Delay, d1	49.4	49.4	48.9				44.7	2.6		53.8	15.7	
Progression Factor	1.00	1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.8	0.0				245.1	0.1		23.8	3.5	
Delay (s)	50.2	50.2	48.9				289.8	2.6		77.7	19.2	
Level of Service	D	D	D				F	A		E	B	
Approach Delay (s)		49.8			0.0			110.5			19.6	
Approach LOS		D			A			F			B	
Intersection Summary												
HCM 2000 Control Delay			54.7				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			109.4				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			82.7%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Castro St & Hensley St

Chevron Revised EIR

2016 Baseline Plus Proposed Construction and Other Projects AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	10	10	40	0	10	10	500	164	42	1609	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.85		1.00	0.96		1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1900	1615	2501	1615		1805	3063		1805	3343	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1900	1615	2501	1615		1805	3063		1805	3343	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	11	11	43	0	11	11	538	176	45	1730	0
RTOR Reduction (vph)	0	0	11	0	10	0	0	13	0	0	0	0
Lane Group Flow (vph)	0	11	0	43	1	0	11	701	0	45	1730	0
Heavy Vehicles (%)	0%	0%	0%	40%	0%	0%	0%	14%	12%	0%	8%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)		2.6	2.6	2.4	9.0		1.0	44.9		4.3	48.2	
Effective Green, g (s)		2.6	2.6	2.4	9.0		1.0	44.9		4.3	48.2	
Actuated g/C Ratio		0.04	0.04	0.03	0.13		0.01	0.63		0.06	0.68	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)		4.0	4.0	2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		69	58	84	204		25	1931		109	2263	
v/s Ratio Prot		c0.01		c0.02	0.00		0.01	0.23		c0.02	c0.52	
v/s Ratio Perm			0.00									
v/c Ratio		0.16	0.01	0.51	0.01		0.44	0.36		0.41	0.76	
Uniform Delay, d1		33.2	33.1	33.8	27.2		34.8	6.3		32.2	7.7	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.5	0.1	2.2	0.0		4.4	0.2		0.9	1.7	
Delay (s)		34.7	33.1	36.0	27.2		39.3	6.5		33.2	9.4	
Level of Service		C	C	D	C		D	A		C	A	
Approach Delay (s)		33.9			34.2			7.0			10.0	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.8			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			71.2			Sum of lost time (s)				17.0		
Intersection Capacity Utilization			62.0%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

10: Hensley St & Richmond Pkwy

Chevron Revised EIR

2016 Baseline Plus Proposed Construction and Other Projects AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1100	72	186	250	70	10	30	30	140	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.93		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3446		1719	3308		1126	1419		1768	1619	
Flt Permitted	0.95	1.00		0.95	1.00		0.72	1.00		0.71	1.00	
Satd. Flow (perm)	1736	3446		1719	3308		855	1419		1329	1619	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	55	1209	79	204	275	77	11	33	33	154	22	33
RTOR Reduction (vph)	0	3	0	0	15	0	0	27	0	0	27	0
Lane Group Flow (vph)	55	1285	0	204	337	0	11	39	0	154	28	0
Confl. Peds. (#/hr)			2	2			2		1	1		2
Heavy Vehicles (%)	4%	2%	29%	5%	6%	4%	60%	26%	53%	2%	44%	4%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	4.8	42.3		13.8	51.3		14.7	14.7		14.7	14.7	
Effective Green, g (s)	4.8	42.3		13.8	51.3		14.7	14.7		14.7	14.7	
Actuated g/C Ratio	0.06	0.50		0.16	0.61		0.18	0.18		0.18	0.18	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)	99	1739		283	2025		149	248		233	284	
v/s Ratio Prot	0.03	c0.37		c0.12	0.10			0.03			0.02	
v/s Ratio Perm							0.01			c0.12		
v/c Ratio	0.56	0.74		0.72	0.17		0.07	0.16		0.66	0.10	
Uniform Delay, d1	38.5	16.4		33.2	7.0		28.9	29.3		32.2	29.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	1.9		7.4	0.1		0.2	0.3		6.6	0.1	
Delay (s)	42.3	18.3		40.6	7.1		29.1	29.6		38.8	29.1	
Level of Service	D	B		D	A		C	C		D	C	
Approach Delay (s)		19.3			19.4			29.5			36.3	
Approach LOS		B			B			C			D	
Intersection Summary												
HCM 2000 Control Delay			21.3			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			83.8			Sum of lost time (s)			13.0			
Intersection Capacity Utilization			68.8%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR

2016 Baseline Plus Proposed Construction and Other Projects AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	190	10	60	10	720	50	20	2604	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1275		1681	1595		1805	3223	1435	1805	3402	
Flt Permitted		0.91		0.80	0.85		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1177		1417	1387		1805	3223	1435	1805	3402	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	10	198	10	62	10	750	52	21	2712	10
RTOR Reduction (vph)	0	9	0	0	24	0	0	0	14	0	0	0
Lane Group Flow (vph)	0	21	0	139	107	0	10	750	38	21	2722	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	0%	100%	20%	2%	0%	4%	0%	12%	10%	0%	6%	20%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		17.8		17.8	17.8		1.2	93.3	93.3	3.9	96.0	
Effective Green, g (s)		17.8		17.8	17.8		1.2	93.3	93.3	3.9	96.0	
Actuated g/C Ratio		0.14		0.14	0.14		0.01	0.73	0.73	0.03	0.75	
Clearance Time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	3.1	3.1	2.0	3.1	
Lane Grp Cap (vph)		164		197	193		16	2358	1050	55	2561	
v/s Ratio Prot							0.01	0.23		c0.01	c0.80	
v/s Ratio Perm		0.02		c0.10	0.08				0.03			
v/c Ratio		0.13		0.71	0.55		0.62	0.32	0.04	0.38	1.06	
Uniform Delay, d1		48.1		52.3	51.1		62.9	6.0	4.7	60.6	15.8	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4		10.9	3.4		44.0	0.1	0.0	1.6	37.3	
Delay (s)		48.4		63.3	54.6		106.9	6.1	4.7	62.2	53.0	
Level of Service		D		E	D		F	A	A	E	D	
Approach Delay (s)		48.4			59.0			7.2			53.1	
Approach LOS		D			E			A			D	
Intersection Summary												
HCM 2000 Control Delay			43.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			127.5			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			94.2%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

Chevron Revised EIR

1: Marine St & Chevron Way

2016 Baseline Plus Proposed Construction Plus Other Projects PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	20	30	10	0	0	260
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	24	35	12	0	0	306
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1	
Volume Total (vph)	12	12	35	12	306	
Volume Left (vph)	12	12	0	0	0	
Volume Right (vph)	0	0	35	0	0	
Hadj (s)	0.50	0.50	-0.70	0.00	0.00	
Departure Headway (s)	5.7	5.7	3.2	4.3	4.0	
Degree Utilization, x	0.02	0.02	0.03	0.01	0.34	
Capacity (veh/h)	592	595	1121	820	896	
Control Delay (s)	7.6	7.6	5.1	7.3	9.0	
Approach Delay (s)	6.1			7.3	9.0	
Approach LOS	A			A	A	
Intersection Summary						
Delay			8.5			
Level of Service			A			
Intersection Capacity Utilization			78.5%	ICU Level of Service		D
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: Castro St & Tewksbury Ave

Chevron Revised EIR

2016 Baseline Plus Proposed Construction Plus Other Projects PM

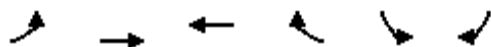
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	30	10	10	30	110	10	20	30	200	40	60
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	32	11	11	32	118	11	22	32	215	43	65
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	54	161	65	215	108							
Volume Left (vph)	11	11	11	215	0							
Volume Right (vph)	11	118	32	0	65							
Hadj (s)	-0.08	0.82	-0.13	0.58	-0.42							
Departure Headway (s)	5.1	5.8	4.9	5.8	4.8							
Degree Utilization, x	0.08	0.26	0.09	0.35	0.14							
Capacity (veh/h)	651	589	685	599	724							
Control Delay (s)	8.5	10.8	8.4	10.6	7.4							
Approach Delay (s)	8.5	10.8	8.4	9.5								
Approach LOS	A	B	A	A								
Intersection Summary												
Delay			9.6									
Level of Service			A									
Intersection Capacity Utilization			34.1%			ICU Level of Service				A		
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

3: EB I-580 Ramp & Marine St

Chevron Revised EIR

2016 Baseline Plus Proposed Construction Plus Other Projects PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	1100	0	0	280	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3			3.0	
Lane Util. Factor	1.00	1.00			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	1805	1827			3502	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	1805	1827			3502	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	12	1279	0	0	326	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	12	1279	0	0	326	0
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Turn Type	Split	NA			NA	
Protected Phases	4	4			2	
Permitted Phases						
Actuated Green, G (s)	36.1	36.1			9.2	
Effective Green, g (s)	36.1	36.1			9.2	
Actuated g/C Ratio	0.69	0.69			0.17	
Clearance Time (s)	4.3	4.3			3.0	
Vehicle Extension (s)	3.0	3.0			2.0	
Lane Grp Cap (vph)	1238	1253			612	
v/s Ratio Prot	0.01	c0.70			c0.09	
v/s Ratio Perm						
v/c Ratio	0.01	1.02			0.53	
Uniform Delay, d1	2.6	8.2			19.7	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	30.8			0.4	
Delay (s)	2.6	39.0			20.2	
Level of Service	A	D			C	
Approach Delay (s)		38.7	0.0		20.2	
Approach LOS		D	A		C	
Intersection Summary						
HCM 2000 Control Delay			35.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.92			
Actuated Cycle Length (s)			52.6		Sum of lost time (s)	7.3
Intersection Capacity Utilization			95.8%		ICU Level of Service	F
Analysis Period (min)			15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

4: Castro St & I-580 EB Ramps

2016 Baseline Plus Proposed Construction Plus Other Projects PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘↙			↗
Volume (vph)	1340	100	200	0	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	3.0			3.0
Lane Util. Factor	1.00	1.00	0.97			1.00
Frt	1.00	0.85	1.00			0.86
Flt Protected	1.00	1.00	0.95			1.00
Satd. Flow (prot)	1845	1553	3433			1611
Flt Permitted	1.00	1.00	0.95			1.00
Satd. Flow (perm)	1845	1553	3433			1611
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1523	114	227	0	0	159
RTOR Reduction (vph)	0	16	0	0	0	43
Lane Group Flow (vph)	1523	98	227	0	0	116
Heavy Vehicles (%)	3%	4%	2%	5%	0%	2%
Turn Type	NA	Perm	Prot			custom
Protected Phases	6!		5 4			5 6!
Permitted Phases		6				
Actuated Green, G (s)	56.8	56.8	23.7			65.5
Effective Green, g (s)	56.8	56.8	23.7			65.5
Actuated g/C Ratio	0.63	0.63	0.26			0.73
Clearance Time (s)	6.5	6.5				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	1164	980	904			1172
v/s Ratio Prot	c0.83		c0.07			0.07
v/s Ratio Perm		0.06				
v/c Ratio	1.31	0.10	0.25			0.10
Uniform Delay, d1	16.6	6.5	26.1			3.6
Progression Factor	1.00	1.00	1.62			1.00
Incremental Delay, d2	145.1	0.2	0.1			0.0
Delay (s)	161.7	6.7	42.5			3.6
Level of Service	F	A	D			A
Approach Delay (s)	150.9			42.5	3.6	
Approach LOS	F			D	A	
Intersection Summary						
HCM 2000 Control Delay			127.1		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.04			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.5
Intersection Capacity Utilization			97.0%		ICU Level of Service	F
Analysis Period (min)			15			
! Phase conflict between lane groups.						
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

5: Castro St & Chevron Way

2016 Baseline Plus Proposed Construction Plus Other Projects PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑↑	↗
Volume (vph)	0	0	0	1480	806	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.5	4.5
Lane Util. Factor				0.95	0.91	1.00
Frpb, ped/bikes				1.00	1.00	0.98
Flpb, ped/bikes				1.00	1.00	1.00
Frt				1.00	1.00	0.85
Flt Protected				1.00	1.00	1.00
Satd. Flow (prot)				3505	4988	1575
Flt Permitted				1.00	1.00	1.00
Satd. Flow (perm)				3505	4988	1575
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	0	1741	948	47
RTOR Reduction (vph)	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	1741	948	34
Confl. Peds. (#/hr)	7		4			7
Heavy Vehicles (%)	0%	0%	0%	3%	4%	0%
Turn Type				NA	NA	Perm
Protected Phases				Free	2	
Permitted Phases						2
Actuated Green, G (s)				90.0	65.5	65.5
Effective Green, g (s)				90.0	65.5	65.5
Actuated g/C Ratio				1.00	0.73	0.73
Clearance Time (s)					4.5	4.5
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)				3505	3630	1146
v/s Ratio Prot				0.50	0.19	
v/s Ratio Perm						0.02
v/c Ratio				0.50	0.26	0.03
Uniform Delay, d1				0.0	4.1	3.4
Progression Factor				1.00	1.00	1.00
Incremental Delay, d2				0.0	0.2	0.0
Delay (s)				0.0	4.3	3.5
Level of Service				A	A	A
Approach Delay (s)	0.0			0.0	4.3	
Approach LOS	A			A	A	
Intersection Summary						
HCM 2000 Control Delay			1.6	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			90.0	Sum of lost time (s)		7.5
Intersection Capacity Utilization			44.2%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

6: Castro St & Redwood Way/WB I-580 Ramp

2016 Baseline Plus Proposed Construction Plus Other Projects PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	30	70	130	10	340	10	1350	120	497	646	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	165	35	82	153	12	400	12	1588	141	585	760	12
RTOR Reduction (vph)	0	0	74	0	0	366	0	0	0	0	0	4
Lane Group Flow (vph)	99	101	8	83	82	34	12	1588	141	585	760	8
Heavy Vehicles (%)	0%	0%	2%	2%	0%	13%	0%	3%	4%	3%	4%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	11.4	11.4	11.4	10.4	10.4	10.4	2.4	36.0	122.6	50.1	83.9	83.9
Effective Green, g (s)	11.4	11.4	11.4	10.4	10.4	10.4	2.4	36.0	122.6	50.1	83.9	83.9
Actuated g/C Ratio	0.09	0.09	0.09	0.08	0.08	0.08	0.02	0.29	1.00	0.41	0.68	0.68
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	159	162	147	142	144	213	35	1029	1553	715	2375	1105
v/s Ratio Prot	0.06	c0.06		c0.05	0.05		0.01	c0.45		c0.33	0.22	
v/s Ratio Perm			0.00			0.01			0.09			0.01
v/c Ratio	0.62	0.62	0.05	0.58	0.57	0.16	0.34	1.54	0.09	0.82	0.32	0.01
Uniform Delay, d1	53.5	53.5	50.7	54.0	53.9	52.0	59.3	43.3	0.0	32.2	7.8	6.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	5.3	0.1	3.9	3.1	0.1	2.1	249.3	0.1	6.9	0.1	0.0
Delay (s)	58.9	58.8	50.7	57.9	57.0	52.2	61.5	292.6	0.1	39.1	7.9	6.1
Level of Service	E	E	D	E	E	D	E	F	A	D	A	A
Approach Delay (s)		56.5			53.7			267.3			21.3	
Approach LOS		E			D			F			C	
Intersection Summary												
HCM 2000 Control Delay			137.1									
HCM 2000 Volume to Capacity ratio			1.02									
Actuated Cycle Length (s)			122.6									
Intersection Capacity Utilization			86.6%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

7: Castro St & Mills St

2016 Baseline Plus Proposed Construction Plus Other Projects PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	0	72	0	0	0	20	1817	0	10	1026	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	0.95	0.95					1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.86					1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00					0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1603	1369					1543	3438		1805	3539	1524
Flt Permitted	0.76	0.98					0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1277	1345					1543	3438		1805	3539	1524
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	78	0	80	0	0	0	22	2019	0	11	1140	56
RTOR Reduction (vph)	0	78	0	0	0	0	0	0	0	0	0	15
Lane Group Flow (vph)	70	10	0	0	0	0	22	2019	0	11	1140	41
Heavy Vehicles (%)	7%	0%	14%	0%	0%	0%	17%	5%	0%	0%	2%	6%
Turn Type	Perm	NA		Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						6
Actuated Green, G (s)	10.7	10.7					2.7	72.9		1.1	71.3	71.3
Effective Green, g (s)	10.7	10.7					2.7	72.9		1.1	71.3	71.3
Actuated g/C Ratio	0.11	0.11					0.03	0.74		0.01	0.73	0.73
Clearance Time (s)	4.0	4.0					4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0					2.0	3.5		2.0	3.5	3.5
Lane Grp Cap (vph)	139	146					42	2552		20	2569	1106
v/s Ratio Prot							c0.01	c0.59		0.01	0.32	
v/s Ratio Perm	c0.05	0.01										0.03
v/c Ratio	0.50	0.07					0.52	0.79		0.55	0.44	0.04
Uniform Delay, d1	41.2	39.3					47.1	7.9		48.3	5.4	3.8
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.9	0.2					5.3	2.6		17.2	0.6	0.1
Delay (s)	44.1	39.5					52.5	10.5		65.5	6.0	3.8
Level of Service	D	D					D	B		E	A	A
Approach Delay (s)		41.5			0.0			10.9			6.4	
Approach LOS		D			A			B			A	
Intersection Summary												
HCM 2000 Control Delay			10.8		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			98.2		Sum of lost time (s)					13.5		
Intersection Capacity Utilization			63.1%		ICU Level of Service					B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

8: Castro St & General Chemical Access

2016 Baseline Plus Proposed Construction Plus Other Projects PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	383	10	443	10	0	10	10	1874	10	10	633	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		0.93		1.00	1.00		1.00	1.00	
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1698	1707	1538		1729		1357	3469		1805	3498	
Flt Permitted	0.74	0.72	1.00		0.82		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1325	1287	1538		1457		1357	3469		1805	3498	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	451	12	521	12	0	12	12	2205	12	12	745	12
RTOR Reduction (vph)	0	0	264	0	19	0	0	0	0	0	1	0
Lane Group Flow (vph)	230	233	257	0	5	0	12	2217	0	12	756	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	1%	0%	5%	0%	0%	0%	33%	4%	0%	0%	3%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	20.0	20.0	20.0		20.0		5.5	70.1		1.2	65.8	
Effective Green, g (s)	20.0	20.0	20.0		20.0		5.5	70.1		1.2	65.8	
Actuated g/C Ratio	0.19	0.19	0.19		0.19		0.05	0.67		0.01	0.63	
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	252	245	292		277		71	2315		20	2192	
v/s Ratio Prot							0.01	c0.64		c0.01	0.22	
v/s Ratio Perm	0.17	c0.18	0.17		0.00							
v/c Ratio	0.91	0.95	0.88		0.02		0.17	0.96		0.60	0.35	
Uniform Delay, d1	41.6	42.0	41.3		34.5		47.6	16.1		51.7	9.3	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	33.7	43.6	24.5		0.0		0.4	10.5		28.2	0.1	
Delay (s)	75.3	85.6	65.8		34.5		48.0	26.6		79.9	9.5	
Level of Service	E	F	E		C		D	C		E	A	
Approach Delay (s)		72.7			34.5			26.7			10.6	
Approach LOS		E			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			35.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			105.0				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			77.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

9: Castro St & Hensley St

2016 Baseline Plus Proposed Construction Plus Other Projects PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	0	113	0	36	10	2217	40	10	540	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.85		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1900		3273	1615		1805	3456		1805	3505	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1900		3273	1615		1805	3456		1805	3505	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	12	12	0	133	0	42	12	2608	47	12	635	0
RTOR Reduction (vph)	0	0	0	0	38	0	0	0	0	0	0	0
Lane Group Flow (vph)	12	12	0	133	4	0	12	2655	0	12	635	0
Confl. Peds. (#/hr)			2	2					2	2		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	4%	11%	0%	3%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	1.0	1.3		7.3	7.6		1.0	45.3		1.0	45.3	
Effective Green, g (s)	1.0	1.3		7.3	7.6		1.0	45.3		1.0	45.3	
Actuated g/C Ratio	0.01	0.02		0.10	0.11		0.01	0.63		0.01	0.63	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	25	34		332	170		25	2177		25	2208	
v/s Ratio Prot	0.01	c0.01		c0.04	0.00		c0.01	c0.77		0.01	0.18	
v/s Ratio Perm												
v/c Ratio	0.48	0.35		0.40	0.03		0.48	1.22		0.48	0.29	
Uniform Delay, d1	35.2	34.9		30.3	28.8		35.2	13.3		35.2	6.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.2	8.4		0.3	0.1		5.2	103.1		5.2	0.1	
Delay (s)	40.4	43.3		30.5	28.9		40.4	116.4		40.4	6.1	
Level of Service	D	D		C	C		D	F		D	A	
Approach Delay (s)		41.8			30.2			116.1			6.7	
Approach LOS		D			C			F			A	
Intersection Summary												
HCM 2000 Control Delay			91.2			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			71.9			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			79.9%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

10: Hensley St & Richmond Pkwy

2016 Baseline Plus Proposed Construction Plus Other Projects PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	310	20	10	900	120	56	40	155	100	20	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.88		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3441		1503	3472		1803	1793		1785	1776	
Flt Permitted	0.95	1.00		0.95	1.00		0.70	1.00		0.50	1.00	
Satd. Flow (perm)	1671	3441		1503	3472		1327	1793		948	1776	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	344	22	11	1000	133	62	44	172	111	22	67
RTOR Reduction (vph)	0	3	0	0	7	0	0	136	0	0	53	0
Lane Group Flow (vph)	11	363	0	11	1126	0	62	80	0	111	36	0
Confl. Peds. (#/hr)	1		1	1		1	2		3	3		2
Heavy Vehicles (%)	8%	3%	17%	20%	2%	1%	0%	7%	4%	1%	14%	4%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	0.9	32.6		0.9	32.6		12.3	12.3		12.3	12.3	
Effective Green, g (s)	0.9	32.6		0.9	32.6		12.3	12.3		12.3	12.3	
Actuated g/C Ratio	0.02	0.55		0.02	0.55		0.21	0.21		0.21	0.21	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)	25	1907		23	1924		277	375		198	371	
v/s Ratio Prot	0.01	0.11		c0.01	c0.32			0.04			0.02	
v/s Ratio Perm							0.05			c0.12		
v/c Ratio	0.44	0.19		0.48	0.59		0.22	0.21		0.56	0.10	
Uniform Delay, d1	28.7	6.5		28.7	8.6		19.3	19.2		20.8	18.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.4	0.1		5.6	0.6		0.4	0.3		3.3	0.1	
Delay (s)	33.1	6.6		34.3	9.3		19.7	19.5		24.2	18.9	
Level of Service	C	A		C	A		B	B		C	B	
Approach Delay (s)		7.4			9.5			19.5			21.8	
Approach LOS		A			A			B			C	
Intersection Summary												
HCM 2000 Control Delay			11.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			58.8			Sum of lost time (s)			13.0			
Intersection Capacity Utilization			58.1%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR

2016 Baseline Plus Proposed Construction Plus Other Projects PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	50	10	40	10	3119	270	40	720	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	0.99		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	0.89		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1703		1715	1550		1641	3471	1544	1805	3498	
Flt Permitted		0.90		0.81	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1559		1469	1518		1641	3471	1544	1805	3498	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	11	11	56	11	44	11	3466	300	44	800	11
RTOR Reduction (vph)	0	10	0	0	41	0	0	0	33	0	0	0
Lane Group Flow (vph)	0	23	0	50	20	0	11	3466	267	44	811	0
Confl. Peds. (#/hr)	3					3	1		2	2		1
Heavy Vehicles (%)	14%	0%	0%	0%	0%	3%	10%	4%	2%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		9.8		9.8	9.8		1.3	97.9	97.9	5.8	102.4	
Effective Green, g (s)		9.8		9.8	9.8		1.3	97.9	97.9	5.8	102.4	
Actuated g/C Ratio		0.08		0.08	0.08		0.01	0.78	0.78	0.05	0.81	
Clearance Time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	3.1	3.1	2.0	3.1	
Lane Grp Cap (vph)		121		114	118		16	2696	1199	83	2842	
v/s Ratio Prot							0.01	c1.00		c0.02	0.23	
v/s Ratio Perm		0.01		c0.03	0.01				0.17			
v/c Ratio		0.19		0.44	0.17		0.69	1.29	0.22	0.53	0.29	
Uniform Delay, d1		54.4		55.5	54.3		62.1	14.0	3.8	58.8	2.9	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.8		2.7	0.7		67.5	131.5	0.1	3.2	0.1	
Delay (s)		55.1		58.2	55.0		129.7	145.5	3.9	62.0	2.9	
Level of Service		E		E	E		F	F	A	E	A	
Approach Delay (s)		55.1			56.4			134.2			6.0	
Approach LOS		E			E			F			A	
Intersection Summary												
HCM 2000 Control Delay			108.9			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.17									
Actuated Cycle Length (s)			126.0			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			102.5%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

6: Castro St & Redwood Way/WB I-580 Ramp

Mitigation - Baseline + Prop Constr + Other PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	30	70	130	10	340	10	1350	120	497	646	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Flt Protected	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Satd. Flow (perm)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	165	35	82	153	12	400	12	1588	141	585	760	12
RTOR Reduction (vph)	0	0	75	0	0	381	0	0	0	0	0	3
Lane Group Flow (vph)	99	101	7	83	82	19	12	1588	141	585	760	9
Heavy Vehicles (%)	0%	0%	2%	2%	0%	13%	0%	3%	4%	3%	4%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	12.3	12.3	12.3	6.5	6.5	6.5	1.9	65.5	139.8	40.8	104.6	104.6
Effective Green, g (s)	12.3	12.3	12.3	6.5	6.5	6.5	1.9	65.5	139.8	40.8	104.6	104.6
Actuated g/C Ratio	0.09	0.09	0.09	0.05	0.05	0.05	0.01	0.47	1.00	0.29	0.75	0.75
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	150	153	139	78	79	116	24	1642	1553	511	2597	1208
v/s Ratio Prot	0.06	c0.06		c0.05	0.05		0.01	c0.45		c0.33	0.22	
v/s Ratio Perm			0.00			0.01			0.09			0.01
v/c Ratio	0.66	0.66	0.05	1.06	1.04	0.16	0.50	0.97	0.09	1.14	0.29	0.01
Uniform Delay, d1	61.7	61.7	58.4	66.7	66.7	64.0	68.5	36.1	0.0	49.5	5.7	4.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	8.0	0.1	120.5	112.1	0.2	5.8	15.0	0.1	86.2	0.1	0.0
Delay (s)	69.9	69.7	58.5	187.2	178.7	64.3	74.3	51.1	0.1	135.7	5.7	4.5
Level of Service	E	E	E	F	F	E	E	D	A	F	A	A
Approach Delay (s)		66.5			98.9			47.1			61.8	
Approach LOS		E			F			D			E	
Intersection Summary												
HCM 2000 Control Delay			61.0			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			139.8			Sum of lost time (s)			14.7			
Intersection Capacity Utilization			86.6%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Castro St & Hensley St

Chevron Revised EIR

Mitigation - Baseline + Prop Constr + Other PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	0	113	0	36	10	2217	40	10	540	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.85		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1900		3273	1615		1805	3456		1805	3505	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1900		3273	1615		1805	3456		1805	3505	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	12	12	0	133	0	42	12	2608	47	12	635	0
RTOR Reduction (vph)	0	0	0	0	39	0	0	0	0	0	0	0
Lane Group Flow (vph)	12	12	0	133	3	0	12	2655	0	12	635	0
Confl. Peds. (#/hr)			2	2					2	2		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	4%	11%	0%	3%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	0.7	1.5		6.1	6.9		0.7	79.9		0.7	79.9	
Effective Green, g (s)	0.7	1.5		6.1	6.9		0.7	79.9		0.7	79.9	
Actuated g/C Ratio	0.01	0.01		0.06	0.07		0.01	0.76		0.01	0.76	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	12	27		189	105		12	2624		12	2662	
v/s Ratio Prot	0.01	c0.01		c0.04	0.00		c0.01	c0.77		0.01	0.18	
v/s Ratio Perm												
v/c Ratio	1.00	0.44		0.70	0.03		1.00	1.01		1.00	0.24	
Uniform Delay, d1	52.2	51.4		48.7	46.0		52.2	12.6		52.2	3.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	259.8	15.1		9.3	0.1		259.8	20.5		259.8	0.1	
Delay (s)	312.1	66.5		58.0	46.1		312.1	33.1		312.1	3.8	
Level of Service	F	E		E	D		F	C		F	A	
Approach Delay (s)		189.3			55.1			34.4			9.5	
Approach LOS		F			E			C			A	
Intersection Summary												
HCM 2000 Control Delay			31.9			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			105.2			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			79.9%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR

Mitigation - Baseline + Prop Constr + Other PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	50	10	40	10	3119	270	40	720	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		5.5	5.5	5.5		5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00		0.91	
Frpb, ped/bikes		1.00		1.00	0.99		1.00	1.00	0.97		1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Frt		0.95		1.00	0.89		1.00	1.00	0.85		1.00	
Flt Protected		0.98		0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1703		1715	1550		1640	3471	1543		5021	
Flt Permitted		0.90		0.81	0.98		0.32	1.00	1.00		0.69	
Satd. Flow (perm)		1563		1463	1519		550	3471	1543		3471	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	11	11	56	11	44	11	3466	300	44	800	11
RTOR Reduction (vph)	0	10	0	0	1	0	0	0	29	0	0	0
Lane Group Flow (vph)	0	23	0	50	60	0	11	3466	271	0	855	0
Confl. Peds. (#/hr)	3					3	1		2	2		1
Heavy Vehicles (%)	14%	0%	0%	0%	0%	3%	10%	4%	2%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		10.3		10.3	10.3		107.1	107.1	107.1		107.1	
Effective Green, g (s)		10.3		10.3	10.3		107.1	107.1	107.1		107.1	
Actuated g/C Ratio		0.08		0.08	0.08		0.85	0.85	0.85		0.85	
Clearance Time (s)		3.5		3.5	3.5		5.5	5.5	5.5		5.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.1	3.1	3.1		3.1	
Lane Grp Cap (vph)		127		119	123		466	2941	1307		2941	
v/s Ratio Prot							c1.00					
v/s Ratio Perm		0.01		0.03	c0.04		0.02		0.18		0.25	
v/c Ratio		0.18		0.42	0.49		0.02	1.18	0.21		0.29	
Uniform Delay, d1		54.1		55.2	55.5		1.5	9.7	1.8		2.0	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.7		2.4	3.0		0.0	84.2	0.1		0.1	
Delay (s)		54.8		57.6	58.6		1.5	93.8	1.9		2.0	
Level of Service		D		E	E		A	F	A		A	
Approach Delay (s)		54.8			58.1			86.3			2.0	
Approach LOS		D			E			F			A	
Intersection Summary												
HCM 2000 Control Delay			70.3			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			126.4			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			102.5%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

Chevron Revised EIR

1: Marine St & Chevron Way

2016 Baseline Plus Proposed Construction and Other Projects and Major Turnaround AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	10	120	10	0	0	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	141	12	0	0	24
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1	
Volume Total (vph)	6	6	141	12	24	
Volume Left (vph)	6	6	0	0	0	
Volume Right (vph)	0	0	141	0	0	
Hadj (s)	0.50	0.50	-0.63	0.00	0.46	
Departure Headway (s)	5.1	5.1	3.2	4.0	4.4	
Degree Utilization, x	0.01	0.01	0.13	0.01	0.03	
Capacity (veh/h)	699	693	1121	903	811	
Control Delay (s)	6.9	6.9	5.5	7.0	7.5	
Approach Delay (s)	5.6			7.0	7.5	
Approach LOS	A			A	A	
Intersection Summary						
Delay			5.9			
Level of Service			A			
Intersection Capacity Utilization			53.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

Chevron Revised EIR

2: Castro St & Tewksbury Ave

2016 Baseline Plus Proposed Construction and Other Projects and Major Turnaround AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Sign Control		Stop			Stop			Stop				Stop
Volume (vph)	40	50	0	0	10	100	10	30	50	40	140	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	47	59	0	0	12	118	12	35	59	0	165	24
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	106	129	106	165	35							
Volume Left (vph)	47	0	12	165	0							
Volume Right (vph)	0	118	59	0	12							
Hadj (s)	0.09	-0.51	-0.31	0.60	-0.23							
Departure Headway (s)	4.9	4.3	4.5	5.8	4.9							
Degree Utilization, x	0.15	0.16	0.13	0.26	0.05							
Capacity (veh/h)	676	769	743	595	693							
Control Delay (s)	8.8	8.1	8.2	9.6	7.0							
Approach Delay (s)	8.8	8.1	8.2	9.2								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.7									
Level of Service			A									
Intersection Capacity Utilization			34.9%			ICU Level of Service			A			
Analysis Period (min)			15									

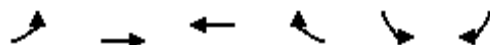
	
Movement	SBR
Lane Configurations	
Sign Control	
Volume (vph)	10
Peak Hour Factor	0.85
Hourly flow rate (vph)	12
Direction, Lane #	

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

3: EB I-580 Ramp & Marine St

2016 Baseline Plus Proposed Construction and Other Projects and Major Turnaround AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	739	0	0	30	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3			3.0	
Lane Util. Factor	1.00	1.00			0.97	
Flt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	1805	1759			3242	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	1805	1759			3242	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	821	0	0	33	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	11	821	0	0	33	0
Heavy Vehicles (%)	0%	8%	0%	0%	8%	0%
Turn Type	Split	NA			NA	
Protected Phases	4	4			2	
Permitted Phases						
Actuated Green, G (s)	36.4	36.4			2.2	
Effective Green, g (s)	36.4	36.4			2.2	
Actuated g/C Ratio	0.79	0.79			0.05	
Clearance Time (s)	4.3	4.3			3.0	
Vehicle Extension (s)	3.0	3.0			2.0	
Lane Grp Cap (vph)	1431	1394			155	
v/s Ratio Prot	0.01	c0.47			c0.01	
v/s Ratio Perm						
v/c Ratio	0.01	0.59			0.21	
Uniform Delay, d1	1.0	1.8			21.0	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.6			0.3	
Delay (s)	1.0	2.5			21.3	
Level of Service	A	A			C	
Approach Delay (s)		2.5	0.0		21.3	
Approach LOS		A	A		C	
Intersection Summary						
HCM 2000 Control Delay			3.2		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.57			
Actuated Cycle Length (s)			45.9		Sum of lost time (s)	7.3
Intersection Capacity Utilization			66.5%		ICU Level of Service	C
Analysis Period (min)			15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

4: Castro St & I-580 EB Ramps 2016 Baseline Plus Proposed Construction and Other Projects and Major Turnaround AM

	→	↘	↶	↙	←	↖	↗
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↘			↗
Volume (vph)	699	50	10	160	0	0	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		3.0			3.0
Lane Util. Factor	1.00	1.00		0.97			1.00
Frpb, ped/bikes	1.00	1.00		1.00			1.00
Flpb, ped/bikes	1.00	1.00		1.00			1.00
Frt	1.00	0.85		1.00			0.86
Flt Protected	1.00	1.00		0.95			1.00
Satd. Flow (prot)	1727	1568		3330			1627
Flt Permitted	1.00	1.00		0.36			1.00
Satd. Flow (perm)	1727	1568		1259			1627
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	813	58	12	186	0	0	244
RTOR Reduction (vph)	0	18	0	0	0	0	77
Lane Group Flow (vph)	813	40	0	198	0	0	167
Confl. Peds. (#/hr)			11				11
Heavy Vehicles (%)	10%	3%	0%	5%	17%	0%	1%
Turn Type	NA	Perm		Prot			custom
Protected Phases	6!			5 4			5 6!
Permitted Phases		6					
Actuated Green, G (s)	48.5	48.5		42.0			68.5
Effective Green, g (s)	48.5	48.5		42.0			68.5
Actuated g/C Ratio	0.48	0.48		0.42			0.68
Clearance Time (s)	6.5	6.5					
Vehicle Extension (s)	3.0	3.0					
Lane Grp Cap (vph)	837	760		528			1114
v/s Ratio Prot	c0.47						0.10
v/s Ratio Perm		0.03		c0.16			
v/c Ratio	0.97	0.05		0.38			0.15
Uniform Delay, d1	25.1	13.6		20.0			5.5
Progression Factor	1.00	1.00		1.00			1.00
Incremental Delay, d2	24.9	0.1		0.4			0.1
Delay (s)	50.0	13.7		20.4			5.6
Level of Service	D	B		C			A
Approach Delay (s)	47.5				20.4	5.6	
Approach LOS	D				C	A	
Intersection Summary							
HCM 2000 Control Delay			35.7		HCM 2000 Level of Service		D
HCM 2000 Volume to Capacity ratio			0.72				
Actuated Cycle Length (s)			100.0		Sum of lost time (s)		12.5
Intersection Capacity Utilization			67.9%		ICU Level of Service		C
Analysis Period (min)			15				
! Phase conflict between lane groups.							
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

5: Castro St & Chevron Way

2016 Baseline Plus Proposed Construction and Other Projects and Major Turnaround AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑↑	↗
Volume (vph)	0	0	0	919	600	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.5	4.5
Lane Util. Factor				0.95	0.91	1.00
Frpb, ped/bikes				1.00	1.00	1.00
Flpb, ped/bikes				1.00	1.00	1.00
Frt				1.00	1.00	0.85
Flt Protected				1.00	1.00	1.00
Satd. Flow (prot)				3406	4550	1553
Flt Permitted				1.00	1.00	1.00
Satd. Flow (perm)				3406	4550	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	999	652	120
RTOR Reduction (vph)	0	0	0	0	0	29
Lane Group Flow (vph)	0	0	0	999	652	91
Confl. Peds. (#/hr)	15					
Heavy Vehicles (%)	0%	0%	0%	6%	14%	4%
Turn Type				NA	NA	Perm
Protected Phases				Free	2	
Permitted Phases						2
Actuated Green, G (s)				100.0	75.5	75.5
Effective Green, g (s)				100.0	75.5	75.5
Actuated g/C Ratio				1.00	0.76	0.76
Clearance Time (s)					4.5	4.5
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)				3406	3435	1172
v/s Ratio Prot				0.29	0.14	
v/s Ratio Perm						0.06
v/c Ratio				0.29	0.19	0.08
Uniform Delay, d1				0.0	3.5	3.2
Progression Factor				1.00	1.00	1.00
Incremental Delay, d2				0.1	0.1	0.1
Delay (s)				0.1	3.6	3.3
Level of Service				A	A	A
Approach Delay (s)	0.0			0.1	3.6	
Approach LOS	A			A	A	
Intersection Summary						
HCM 2000 Control Delay			1.6	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.32			
Actuated Cycle Length (s)			100.0	Sum of lost time (s)		7.5
Intersection Capacity Utilization			28.7%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

6: Castro St & Redwood Way/WB 4580 Ramp

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	120	110	1212	30	699	190	730	580	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1329	1751	1615	1618	1754	2137	1805	3471	1468	1703	3167	1553
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1329	1751	1615	1618	1754	2137	1805	3471	1468	1703	3167	1553
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	10	125	115	1262	31	728	198	760	604	83
RTOR Reduction (vph)	0	0	10	0	0	1079	0	0	0	0	0	27
Lane Group Flow (vph)	9	11	0	112	128	183	31	728	198	760	604	56
Heavy Vehicles (%)	29%	0%	0%	6%	2%	33%	0%	4%	10%	6%	14%	4%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	3.4	3.4	3.4	17.3	17.3	17.3	4.2	32.9	119.1	50.8	79.7	79.7
Effective Green, g (s)	3.4	3.4	3.4	17.3	17.3	17.3	4.2	32.9	119.1	50.8	79.7	79.7
Actuated g/C Ratio	0.03	0.03	0.03	0.15	0.15	0.15	0.04	0.28	1.00	0.43	0.67	0.67
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	37	49	46	235	254	310	63	958	1468	726	2119	1039
v/s Ratio Prot	0.01	0.01		0.07	0.07		0.02	c0.21		c0.45	0.19	
v/s Ratio Perm			0.00			c0.09			c0.13			0.04
v/c Ratio	0.24	0.22	0.01	0.48	0.50	0.59	0.49	0.76	0.13	1.05	0.29	0.05
Uniform Delay, d1	56.6	56.6	56.2	46.7	46.9	47.6	56.4	39.5	0.0	34.1	8.1	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.8	0.0	0.6	0.6	2.0	2.2	3.3	0.2	46.3	0.1	0.0
Delay (s)	57.8	57.4	56.2	47.3	47.5	49.6	58.6	42.8	0.2	80.5	8.1	6.8
Level of Service	E	E	E	D	D	D	E	D	A	F	A	A
Approach Delay (s)		57.1			49.3			34.5			46.0	
Approach LOS		E			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			44.6			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			119.1			Sum of lost time (s)			14.7			
Intersection Capacity Utilization			83.1%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

7: Castro St & Mills St

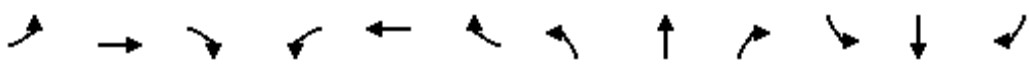
2016 Baseline Plus Proposed Construction and Other Projects and Major Turnaround AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	0	30	0	0	0	181	1671	0	0	1360	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	5.5			5.5	5.5
Lane Util. Factor	0.95	0.95					1.00	0.95			0.95	1.00
Frt	1.00	0.86					1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00					0.95	1.00			1.00	1.00
Satd. Flow (prot)	1092	860					1114	3282			3374	1056
Flt Permitted	0.76	0.99					0.95	1.00			1.00	1.00
Satd. Flow (perm)	871	851					1114	3282			3374	1056
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	0	33	0	0	0	197	1816	0	0	1478	216
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0	0	74
Lane Group Flow (vph)	20	3	0	0	0	0	197	1816	0	0	1478	142
Heavy Vehicles (%)	57%	0%	81%	0%	0%	0%	62%	10%	0%	0%	7%	53%
Turn Type	Perm	NA		Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						6
Actuated Green, G (s)	8.2	8.2					15.0	89.0			70.0	70.0
Effective Green, g (s)	8.2	8.2					15.0	89.0			70.0	70.0
Actuated g/C Ratio	0.08	0.08					0.14	0.83			0.66	0.66
Clearance Time (s)	4.0	4.0					4.0	5.5			5.5	5.5
Vehicle Extension (s)	3.0	3.0					2.0	3.5			3.5	3.5
Lane Grp Cap (vph)	66	65					156	2737			2213	692
v/s Ratio Prot							c0.18	c0.55			0.44	
v/s Ratio Perm	c0.02	0.00										0.13
v/c Ratio	0.30	0.04					1.26	0.66			0.67	0.20
Uniform Delay, d1	46.5	45.6					45.9	3.3			11.2	7.3
Progression Factor	1.00	1.00					1.00	1.00			1.00	1.00
Incremental Delay, d2	2.6	0.3					159.4	1.3			1.6	0.7
Delay (s)	49.1	45.9					205.3	4.6			12.9	8.0
Level of Service	D	D					F	A			B	A
Approach Delay (s)		47.1			0.0			24.2			12.2	
Approach LOS		D			A			C			B	
Intersection Summary												
HCM 2000 Control Delay			19.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			106.7				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			65.8%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

8: Castro St & General Chemical Access

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	0	10	0	0	0	1038	654	0	10	1566	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	5.7		4.0	5.7	
Lane Util. Factor	0.95	0.95	1.00				1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85				1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.95	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1174	1174	1346				1770	3223		1805	3295	
Flt Permitted	0.76	0.76	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)	936	936	1346				1770	3223		1805	3295	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	1.00	0.93	0.93	0.93	0.93	0.99
Adj. Flow (vph)	22	0	11	0	0	0	1038	703	0	11	1684	297
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	11	11	1	0	0	0	1038	703	0	11	1972	0
Heavy Vehicles (%)	46%	0%	20%	0%	0%	0%	2%	12%	0%	0%	8%	2%
Turn Type	Perm	NA	Perm	Perm			Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	6.0	6.0	6.0				20.0	92.0		1.3	73.3	
Effective Green, g (s)	6.0	6.0	6.0				20.0	92.0		1.3	73.3	
Actuated g/C Ratio	0.05	0.05	0.05				0.18	0.81		0.01	0.65	
Clearance Time (s)	4.0	4.0	4.0				4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0				2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	49	49	71				313	2624		20	2137	
v/s Ratio Prot							c0.59	0.22		0.01	c0.60	
v/s Ratio Perm	c0.01	0.01	0.00									
v/c Ratio	0.22	0.22	0.01				3.32	0.27		0.55	0.92	
Uniform Delay, d1	51.3	51.3	50.7				46.5	2.5		55.6	17.4	
Progression Factor	1.00	1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.8	0.0				1050.5	0.1		17.2	7.4	
Delay (s)	52.1	52.1	50.7				1097.0	2.6		72.8	24.7	
Level of Service	D	D	D				F	A		E	C	
Approach Delay (s)		51.6			0.0			655.1			25.0	
Approach LOS		D			A			F			C	
Intersection Summary												
HCM 2000 Control Delay			316.5				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.36									
Actuated Cycle Length (s)			113.0				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			124.9%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

9: Castro St & Hensley St

2016 Baseline Plus Proposed Construction and Other Projects and Major Turnaround AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	10	10	40	0	10	10	500	164	42	1820	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.85		1.00	0.96		1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1900	1615	2501	1615		1805	3063		1805	3343	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1900	1615	2501	1615		1805	3063		1805	3343	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	11	11	43	0	11	11	538	176	45	1957	0
RTOR Reduction (vph)	0	0	11	0	10	0	0	13	0	0	0	0
Lane Group Flow (vph)	0	11	0	43	1	0	11	701	0	45	1957	0
Heavy Vehicles (%)	0%	0%	0%	40%	0%	0%	0%	14%	12%	0%	8%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)		2.6	2.6	2.4	9.0		1.0	44.9		4.3	48.2	
Effective Green, g (s)		2.6	2.6	2.4	9.0		1.0	44.9		4.3	48.2	
Actuated g/C Ratio		0.04	0.04	0.03	0.13		0.01	0.63		0.06	0.68	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)		4.0	4.0	2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		69	58	84	204		25	1931		109	2263	
v/s Ratio Prot		c0.01		c0.02	0.00		0.01	0.23		c0.02	c0.59	
v/s Ratio Perm			0.00									
v/c Ratio		0.16	0.01	0.51	0.01		0.44	0.36		0.41	0.86	
Uniform Delay, d1		33.2	33.1	33.8	27.2		34.8	6.3		32.2	9.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.5	0.1	2.2	0.0		4.4	0.2		0.9	3.8	
Delay (s)		34.7	33.1	36.0	27.2		39.3	6.5		33.2	12.8	
Level of Service		C	C	D	C		D	A		C	B	
Approach Delay (s)		33.9			34.2			7.0			13.3	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			12.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			71.2			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			67.8%			ICU Level of Service			C			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

10: Hensley St & Richmond Pkwy 2016 Baseline Plus Proposed Construction and Other Projects and Major Turnaround AM

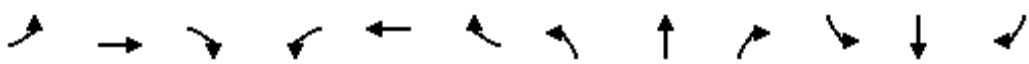
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1100	72	186	250	70	10	30	30	140	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.93		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3446		1719	3308		1126	1419		1768	1619	
Flt Permitted	0.95	1.00		0.95	1.00		0.72	1.00		0.71	1.00	
Satd. Flow (perm)	1736	3446		1719	3308		855	1419		1329	1619	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	55	1209	79	204	275	77	11	33	33	154	22	33
RTOR Reduction (vph)	0	3	0	0	15	0	0	27	0	0	27	0
Lane Group Flow (vph)	55	1285	0	204	337	0	11	39	0	154	28	0
Confl. Peds. (#/hr)			2	2			2		1	1		2
Heavy Vehicles (%)	4%	2%	29%	5%	6%	4%	60%	26%	53%	2%	44%	4%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	4.8	42.3		13.8	51.3		14.7	14.7		14.7	14.7	
Effective Green, g (s)	4.8	42.3		13.8	51.3		14.7	14.7		14.7	14.7	
Actuated g/C Ratio	0.06	0.50		0.16	0.61		0.18	0.18		0.18	0.18	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)	99	1739		283	2025		149	248		233	284	
v/s Ratio Prot	0.03	c0.37		c0.12	0.10			0.03			0.02	
v/s Ratio Perm							0.01			c0.12		
v/c Ratio	0.56	0.74		0.72	0.17		0.07	0.16		0.66	0.10	
Uniform Delay, d1	38.5	16.4		33.2	7.0		28.9	29.3		32.2	29.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	1.9		7.4	0.1		0.2	0.3		6.6	0.1	
Delay (s)	42.3	18.3		40.6	7.1		29.1	29.6		38.8	29.1	
Level of Service	D	B		D	A		C	C		D	C	
Approach Delay (s)		19.3			19.4			29.5			36.3	
Approach LOS		B			B			C			D	
Intersection Summary												
HCM 2000 Control Delay			21.3			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			83.8			Sum of lost time (s)			13.0			
Intersection Capacity Utilization			68.8%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

11: Richmond Pkwy & Gertrude Ave

2016 Baseline Plus Proposed Construction and Other Projects and Major Turnaround AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↕	↔	↔	↕	
Volume (vph)	10	10	10	190	10	60	10	720	50	20	2815	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1275		1681	1595		1805	3223	1435	1805	3402	
Flt Permitted		0.91		0.80	0.85		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1177		1417	1387		1805	3223	1435	1805	3402	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	10	198	10	62	10	750	52	21	2932	10
RTOR Reduction (vph)	0	9	0	0	24	0	0	0	14	0	0	0
Lane Group Flow (vph)	0	21	0	139	107	0	10	750	38	21	2942	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	0%	100%	20%	2%	0%	4%	0%	12%	10%	0%	6%	20%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		17.8		17.8	17.8		1.2	93.3	93.3	3.9	96.0	
Effective Green, g (s)		17.8		17.8	17.8		1.2	93.3	93.3	3.9	96.0	
Actuated g/C Ratio		0.14		0.14	0.14		0.01	0.73	0.73	0.03	0.75	
Clearance Time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	3.1	3.1	2.0	3.1	
Lane Grp Cap (vph)		164		197	193		16	2358	1050	55	2561	
v/s Ratio Prot							0.01	0.23		c0.01	c0.86	
v/s Ratio Perm		0.02		c0.10	0.08				0.03			
v/c Ratio		0.13		0.71	0.55		0.62	0.32	0.04	0.38	1.15	
Uniform Delay, d1		48.1		52.3	51.1		62.9	6.0	4.7	60.6	15.8	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4		10.9	3.4		44.0	0.1	0.0	1.6	72.0	
Delay (s)		48.4		63.3	54.6		106.9	6.1	4.7	62.2	87.7	
Level of Service		D		E	D		F	A	A	E	F	
Approach Delay (s)		48.4			59.0			7.2			87.6	
Approach LOS		D			E			A			F	
Intersection Summary												
HCM 2000 Control Delay			69.4			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.07									
Actuated Cycle Length (s)			127.5			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			100.1%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

Chevron Revised EIR

1: Marine St & Chevron Way

2016 Baseline Plus Proposed Construction Plus Other Projects and Major Turnaround PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	20	30	10	0	0	260
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	24	35	12	0	0	306
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1	
Volume Total (vph)	12	12	35	12	306	
Volume Left (vph)	12	12	0	0	0	
Volume Right (vph)	0	0	35	0	0	
Hadj (s)	0.50	0.50	-0.70	0.00	0.00	
Departure Headway (s)	5.7	5.7	3.2	4.3	4.0	
Degree Utilization, x	0.02	0.02	0.03	0.01	0.34	
Capacity (veh/h)	592	595	1121	820	896	
Control Delay (s)	7.6	7.6	5.1	7.3	9.0	
Approach Delay (s)	6.1			7.3	9.0	
Approach LOS	A			A	A	
Intersection Summary						
Delay			8.5			
Level of Service			A			
Intersection Capacity Utilization			78.5%	ICU Level of Service		D
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

Chevron Revised EIR

2: Castro St & Tewksbury Ave

2016 Baseline Plus Proposed Construction Plus Other Projects and Major Turnaround PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	30	10	10	30	110	10	20	30	200	40	60
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	32	11	11	32	118	11	22	32	215	43	65
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	54	161	65	215	108							
Volume Left (vph)	11	11	11	215	0							
Volume Right (vph)	11	118	32	0	65							
Hadj (s)	-0.08	0.82	-0.13	0.58	-0.42							
Departure Headway (s)	5.1	5.8	4.9	5.8	4.8							
Degree Utilization, x	0.08	0.26	0.09	0.35	0.14							
Capacity (veh/h)	651	589	685	599	724							
Control Delay (s)	8.5	10.8	8.4	10.6	7.4							
Approach Delay (s)	8.5	10.8	8.4	9.5								
Approach LOS	A	B	A	A								
Intersection Summary												
Delay			9.6									
Level of Service			A									
Intersection Capacity Utilization			34.1%			ICU Level of Service			A			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

3: EB I-580 Ramp & Marine St

2016 Baseline Plus Proposed Construction Plus Other Projects and Major Turnaround PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	1100	0	0	280	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3			3.0	
Lane Util. Factor	1.00	1.00			0.97	
Flt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	1805	1827			3502	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	1805	1827			3502	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	12	1279	0	0	326	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	12	1279	0	0	326	0
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Turn Type	Split	NA			NA	
Protected Phases	4	4			2	
Permitted Phases						
Actuated Green, G (s)	36.1	36.1			9.2	
Effective Green, g (s)	36.1	36.1			9.2	
Actuated g/C Ratio	0.69	0.69			0.17	
Clearance Time (s)	4.3	4.3			3.0	
Vehicle Extension (s)	3.0	3.0			2.0	
Lane Grp Cap (vph)	1238	1253			612	
v/s Ratio Prot	0.01	c0.70			c0.09	
v/s Ratio Perm						
v/c Ratio	0.01	1.02			0.53	
Uniform Delay, d1	2.6	8.2			19.7	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	30.8			0.4	
Delay (s)	2.6	39.0			20.2	
Level of Service	A	D			C	
Approach Delay (s)		38.7	0.0		20.2	
Approach LOS		D	A		C	
Intersection Summary						
HCM 2000 Control Delay			35.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.92			
Actuated Cycle Length (s)			52.6		Sum of lost time (s)	7.3
Intersection Capacity Utilization			95.8%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

4: Castro St & I-580 EB Ramps 2016 Baseline Plus Proposed Construction Plus Other Projects and Major Turnaround PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1340	100	200	0	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	3.0			3.0
Lane Util. Factor	1.00	1.00	0.97			1.00
Frt	1.00	0.85	1.00			0.86
Flt Protected	1.00	1.00	0.95			1.00
Satd. Flow (prot)	1845	1553	3433			1611
Flt Permitted	1.00	1.00	0.95			1.00
Satd. Flow (perm)	1845	1553	3433			1611
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1523	114	227	0	0	159
RTOR Reduction (vph)	0	16	0	0	0	43
Lane Group Flow (vph)	1523	98	227	0	0	116
Heavy Vehicles (%)	3%	4%	2%	5%	0%	2%
Turn Type	NA	Perm	Prot			custom
Protected Phases	6!		5 4			5 6!
Permitted Phases		6				
Actuated Green, G (s)	56.8	56.8	23.7			65.5
Effective Green, g (s)	56.8	56.8	23.7			65.5
Actuated g/C Ratio	0.63	0.63	0.26			0.73
Clearance Time (s)	6.5	6.5				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	1164	980	904			1172
v/s Ratio Prot	c0.83		c0.07			0.07
v/s Ratio Perm		0.06				
v/c Ratio	1.31	0.10	0.25			0.10
Uniform Delay, d1	16.6	6.5	26.1			3.6
Progression Factor	1.00	1.00	1.59			1.00
Incremental Delay, d2	145.1	0.2	0.1			0.0
Delay (s)	161.7	6.7	41.7			3.6
Level of Service	F	A	D			A
Approach Delay (s)	150.9			41.7	3.6	
Approach LOS	F			D	A	
Intersection Summary						
HCM 2000 Control Delay			127.1		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.04			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.5
Intersection Capacity Utilization			97.0%		ICU Level of Service	F
Analysis Period (min)			15			
! Phase conflict between lane groups.						
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

5: Castro St & Chevron Way

2016 Baseline Plus Proposed Construction Plus Other Projects and Major Turnaround PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑↑	↗
Volume (vph)	0	0	0	1480	1379	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.5	4.5
Lane Util. Factor				0.95	0.91	1.00
Frpb, ped/bikes				1.00	1.00	0.98
Flpb, ped/bikes				1.00	1.00	1.00
Frt				1.00	1.00	0.85
Flt Protected				1.00	1.00	1.00
Satd. Flow (prot)				3505	4988	1575
Flt Permitted				1.00	1.00	1.00
Satd. Flow (perm)				3505	4988	1575
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	0	1741	1622	47
RTOR Reduction (vph)	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	1741	1622	36
Confl. Peds. (#/hr)	7		4			7
Heavy Vehicles (%)	0%	0%	0%	3%	4%	0%
Turn Type				NA	NA	Perm
Protected Phases				Free	2	
Permitted Phases						2
Actuated Green, G (s)				90.0	65.5	65.5
Effective Green, g (s)				90.0	65.5	65.5
Actuated g/C Ratio				1.00	0.73	0.73
Clearance Time (s)					4.5	4.5
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)				3505	3630	1146
v/s Ratio Prot				0.50	0.33	
v/s Ratio Perm						0.02
v/c Ratio				0.50	0.45	0.03
Uniform Delay, d1				0.0	4.9	3.4
Progression Factor				1.00	1.00	1.00
Incremental Delay, d2				0.0	0.4	0.1
Delay (s)				0.0	5.3	3.5
Level of Service				A	A	A
Approach Delay (s)	0.0			0.0	5.3	
Approach LOS	A			A	A	
Intersection Summary						
HCM 2000 Control Delay			2.6	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			90.0	Sum of lost time (s)		7.5
Intersection Capacity Utilization			44.2%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

6: Castro St & Redwood Way/WB-580 Ramp

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	30	70	130	10	340	10	1350	120	640	1219	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	165	35	82	153	12	400	12	1588	141	753	1434	12
RTOR Reduction (vph)	0	0	74	0	0	366	0	0	0	0	0	4
Lane Group Flow (vph)	99	101	8	83	82	34	12	1588	141	753	1434	8
Heavy Vehicles (%)	0%	0%	2%	2%	0%	13%	0%	3%	4%	3%	4%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	11.4	11.4	11.4	10.4	10.4	10.4	2.4	36.0	122.6	50.1	83.9	83.9
Effective Green, g (s)	11.4	11.4	11.4	10.4	10.4	10.4	2.4	36.0	122.6	50.1	83.9	83.9
Actuated g/C Ratio	0.09	0.09	0.09	0.08	0.08	0.08	0.02	0.29	1.00	0.41	0.68	0.68
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	159	162	147	142	144	213	35	1029	1553	715	2375	1105
v/s Ratio Prot	0.06	c0.06		c0.05	0.05		0.01	c0.45		c0.43	0.41	
v/s Ratio Perm			0.00			0.01			0.09			0.01
v/c Ratio	0.62	0.62	0.05	0.58	0.57	0.16	0.34	1.54	0.09	1.05	0.60	0.01
Uniform Delay, d1	53.5	53.5	50.7	54.0	53.9	52.0	59.3	43.3	0.0	36.2	10.4	6.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	5.3	0.1	3.9	3.1	0.1	2.1	249.3	0.1	48.5	0.5	0.0
Delay (s)	58.9	58.8	50.7	57.9	57.0	52.2	61.5	292.6	0.1	84.8	10.9	6.1
Level of Service	E	E	D	E	E	D	E	F	A	F	B	A
Approach Delay (s)		56.5			53.7			267.3			36.1	
Approach LOS		E			D			F			D	
Intersection Summary												
HCM 2000 Control Delay	123.5			HCM 2000 Level of Service					F			
HCM 2000 Volume to Capacity ratio	1.12											
Actuated Cycle Length (s)	122.6			Sum of lost time (s)					14.7			
Intersection Capacity Utilization	94.5%			ICU Level of Service					F			
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

7: Castro St & Mills St

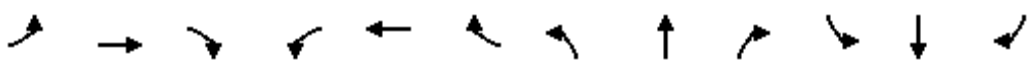
2016 Baseline Plus Proposed Construction Plus Other Projects and Major Turnaround PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	0	144	0	0	0	20	1817	0	10	1671	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0					4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	0.95	0.95					1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.86					1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00					0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1603	1361					1543	3438		1805	3539	1524
Flt Permitted	0.76	0.99					0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1277	1346					1543	3438		1805	3539	1524
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	98	0	160	0	0	0	22	2019	0	11	1857	56
RTOR Reduction (vph)	0	141	0	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	88	29	0	0	0	0	22	2019	0	11	1857	42
Heavy Vehicles (%)	7%	0%	14%	0%	0%	0%	17%	5%	0%	0%	2%	6%
Turn Type	Perm	NA		Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						6
Actuated Green, G (s)	12.1	12.1					2.7	72.9		1.1	71.3	71.3
Effective Green, g (s)	12.1	12.1					2.7	72.9		1.1	71.3	71.3
Actuated g/C Ratio	0.12	0.12					0.03	0.73		0.01	0.72	0.72
Clearance Time (s)	4.0	4.0					4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0					2.0	3.5		2.0	3.5	3.5
Lane Grp Cap (vph)	155	163					41	2516		19	2533	1090
v/s Ratio Prot							c0.01	c0.59		0.01	0.52	
v/s Ratio Perm	c0.07	0.02										0.03
v/c Ratio	0.57	0.18					0.54	0.80		0.58	0.73	0.04
Uniform Delay, d1	41.3	39.3					47.8	8.7		49.0	8.5	4.1
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.7	0.5					6.6	2.8		23.8	1.9	0.1
Delay (s)	46.0	39.8					54.4	11.5		72.9	10.4	4.2
Level of Service	D	D					D	B		E	B	A
Approach Delay (s)		41.9			0.0			12.0			10.6	
Approach LOS		D			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.1									HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			99.6									Sum of lost time (s) 13.5
Intersection Capacity Utilization			65.0%									ICU Level of Service C
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

8: Castro St & General Chemical Access

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	544	10	1088	10	0	10	10	1892	10	10	633	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		0.93		1.00	1.00		1.00	1.00	
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1698	1706	1599		1729		1357	3469		1805	3498	
Flt Permitted	0.74	0.72	1.00		0.71		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1325	1281	1599		1250		1357	3469		1805	3498	
Peak-hour factor, PHF	1.00	1.00	1.00	0.85	0.85	0.85	0.95	0.97	0.95	0.95	0.95	0.95
Adj. Flow (vph)	544	10	1088	12	0	12	11	1951	11	11	666	11
RTOR Reduction (vph)	0	0	344	0	19	0	0	0	0	0	1	0
Lane Group Flow (vph)	277	277	744	0	5	0	11	1962	0	11	676	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	33%	4%	0%	0%	3%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	20.0	20.0	20.0		20.0		5.5	70.1		1.2	65.8	
Effective Green, g (s)	20.0	20.0	20.0		20.0		5.5	70.1		1.2	65.8	
Actuated g/C Ratio	0.19	0.19	0.19		0.19		0.05	0.67		0.01	0.63	
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	252	244	304		238		71	2315		20	2192	
v/s Ratio Prot							0.01	c0.57		c0.01	0.19	
v/s Ratio Perm	0.21	0.22	c0.47		0.00							
v/c Ratio	1.10	1.14	2.45		0.02		0.15	0.85		0.55	0.31	
Uniform Delay, d1	42.5	42.5	42.5		34.5		47.5	13.4		51.6	9.1	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	85.8	98.9	661.1		0.0		0.4	3.2		17.2	0.1	
Delay (s)	128.3	141.4	703.6		34.5		47.9	16.6		68.9	9.2	
Level of Service	F	F	F		C		D	B		E	A	
Approach Delay (s)		511.7			34.5			16.7			10.1	
Approach LOS		F			C			B			B	
Intersection Summary												
HCM 2000 Control Delay			203.6				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.19									
Actuated Cycle Length (s)			105.0				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			99.9%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

9: Castro St & Hensley St

2016 Baseline Plus Proposed Construction Plus Other Projects and Major Turnaround PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	0	113	0	36	10	2397	40	10	540	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.85		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1900		3273	1615		1805	3458		1805	3505	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1900		3273	1615		1805	3458		1805	3505	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	12	12	0	133	0	42	12	2820	47	12	635	0
RTOR Reduction (vph)	0	0	0	0	38	0	0	0	0	0	0	0
Lane Group Flow (vph)	12	12	0	133	4	0	12	2867	0	12	635	0
Confl. Peds. (#/hr)			2	2					2	2		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	4%	11%	0%	3%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	1.0	1.3		7.3	7.6		1.0	45.3		1.0	45.3	
Effective Green, g (s)	1.0	1.3		7.3	7.6		1.0	45.3		1.0	45.3	
Actuated g/C Ratio	0.01	0.02		0.10	0.11		0.01	0.63		0.01	0.63	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	25	34		332	170		25	2178		25	2208	
v/s Ratio Prot	0.01	c0.01		c0.04	0.00		c0.01	c0.83		0.01	0.18	
v/s Ratio Perm												
v/c Ratio	0.48	0.35		0.40	0.03		0.48	1.32		0.48	0.29	
Uniform Delay, d1	35.2	34.9		30.3	28.8		35.2	13.3		35.2	6.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.2	8.4		0.3	0.1		5.2	145.6		5.2	0.1	
Delay (s)	40.4	43.3		30.5	28.9		40.4	158.9		40.4	6.1	
Level of Service	D	D		C	C		D	F		D	A	
Approach Delay (s)		41.8			30.2			158.4			6.7	
Approach LOS		D			C			F			A	
Intersection Summary												
HCM 2000 Control Delay	125.3			HCM 2000 Level of Service					F			
HCM 2000 Volume to Capacity ratio	1.16											
Actuated Cycle Length (s)	71.9			Sum of lost time (s)					17.0			
Intersection Capacity Utilization	84.9%			ICU Level of Service					E			
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

10: Hensley St & Richmond Pkwy 2016 Baseline Plus Proposed Construction Plus Other Projects and Major Turnaround PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	310	20	10	900	120	56	40	155	100	20	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.88		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3441		1503	3472		1803	1793		1785	1776	
Flt Permitted	0.95	1.00		0.95	1.00		0.70	1.00		0.50	1.00	
Satd. Flow (perm)	1671	3441		1503	3472		1327	1793		948	1776	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	344	22	11	1000	133	62	44	172	111	22	67
RTOR Reduction (vph)	0	3	0	0	7	0	0	136	0	0	53	0
Lane Group Flow (vph)	11	363	0	11	1126	0	62	80	0	111	36	0
Confl. Peds. (#/hr)	1		1	1		1	2		3	3		2
Heavy Vehicles (%)	8%	3%	17%	20%	2%	1%	0%	7%	4%	1%	14%	4%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	0.9	32.6		0.9	32.6		12.3	12.3		12.3	12.3	
Effective Green, g (s)	0.9	32.6		0.9	32.6		12.3	12.3		12.3	12.3	
Actuated g/C Ratio	0.02	0.55		0.02	0.55		0.21	0.21		0.21	0.21	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)	25	1907		23	1924		277	375		198	371	
v/s Ratio Prot	0.01	0.11		c0.01	c0.32			0.04			0.02	
v/s Ratio Perm							0.05			c0.12		
v/c Ratio	0.44	0.19		0.48	0.59		0.22	0.21		0.56	0.10	
Uniform Delay, d1	28.7	6.5		28.7	8.6		19.3	19.2		20.8	18.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.4	0.1		5.6	0.6		0.4	0.3		3.3	0.1	
Delay (s)	33.1	6.6		34.3	9.3		19.7	19.5		24.2	18.9	
Level of Service	C	A		C	A		B	B		C	B	
Approach Delay (s)		7.4			9.5			19.5			21.8	
Approach LOS		A			A			B			C	
Intersection Summary												
HCM 2000 Control Delay			11.7			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			58.8			Sum of lost time (s)			13.0			
Intersection Capacity Utilization			58.1%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

11: Richmond Pkwy & Gertrude Ave

2016 Baseline Plus Proposed Construction Plus Other Projects and Major Turnaround PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	50	10	40	10	3299	270	40	720	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	0.99		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	0.89		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1703		1715	1550		1641	3471	1544	1805	3498	
Flt Permitted		0.90		0.81	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1559		1469	1518		1641	3471	1544	1805	3498	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	11	11	56	11	44	11	3473	300	44	800	11
RTOR Reduction (vph)	0	10	0	0	41	0	0	0	33	0	0	0
Lane Group Flow (vph)	0	23	0	50	20	0	11	3473	267	44	811	0
Confl. Peds. (#/hr)	3					3	1		2	2		1
Heavy Vehicles (%)	14%	0%	0%	0%	0%	3%	10%	4%	2%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		9.8		9.8	9.8		1.3	97.9	97.9	5.8	102.4	
Effective Green, g (s)		9.8		9.8	9.8		1.3	97.9	97.9	5.8	102.4	
Actuated g/C Ratio		0.08		0.08	0.08		0.01	0.78	0.78	0.05	0.81	
Clearance Time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	3.1	3.1	2.0	3.1	
Lane Grp Cap (vph)		121		114	118		16	2696	1199	83	2842	
v/s Ratio Prot							0.01	c1.00		c0.02	0.23	
v/s Ratio Perm		0.01		c0.03	0.01				0.17			
v/c Ratio		0.19		0.44	0.17		0.69	1.29	0.22	0.53	0.29	
Uniform Delay, d1		54.4		55.5	54.3		62.1	14.0	3.8	58.8	2.9	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.8		2.7	0.7		67.5	132.6	0.1	3.2	0.1	
Delay (s)		55.1		58.2	55.0		129.7	146.7	3.9	62.0	2.9	
Level of Service		E		E	E		F	F	A	E	A	
Approach Delay (s)		55.1			56.4			135.3			6.0	
Approach LOS		E			E			F			A	
Intersection Summary												
HCM 2000 Control Delay			109.8			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.18									
Actuated Cycle Length (s)			126.0			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			107.5%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

8: Castro St & General Chemical Access

Mitigation - Baseline + Prop Constr + Other + Major AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	0	10	0	0	0	1038	654	0	10	1566	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	5.7		5.7	5.7	
Lane Util. Factor	0.95	0.95	1.00				0.97	1.00		1.00	0.95	
Frt	1.00	1.00	0.85				1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.95	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1174	1174	1346				3433	1696		1805	3295	
Flt Permitted	1.00	1.00	1.00				0.95	1.00		0.40	1.00	
Satd. Flow (perm)	1236	1236	1346				3433	1696		756	3295	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	1.00	0.93	0.93	0.93	0.93	0.99
Adj. Flow (vph)	22	0	11	0	0	0	1038	703	0	11	1684	297
RTOR Reduction (vph)	0	0	7	0	0	0	0	0	0	0	10	0
Lane Group Flow (vph)	11	11	4	0	0	0	1038	703	0	11	1971	0
Heavy Vehicles (%)	46%	0%	20%	0%	0%	0%	2%	12%	0%	0%	8%	2%
Turn Type	Perm	NA	pm+ov	Perm			Prot	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)	4.0	4.0	49.0				45.0	136.3		87.3	87.3	
Effective Green, g (s)	4.0	4.0	49.0				45.0	136.3		87.3	87.3	
Actuated g/C Ratio	0.03	0.03	0.33				0.30	0.91		0.58	0.58	
Clearance Time (s)	4.0	4.0	4.0				4.0	5.7		5.7	5.7	
Vehicle Extension (s)	2.0	2.0	2.0				2.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	32	32	475				1029	1541		439	1917	
v/s Ratio Prot			0.00				c0.30	0.41			c0.60	
v/s Ratio Perm	c0.01	0.01	0.00							0.01		
v/c Ratio	0.34	0.34	0.01				1.01	0.46		0.03	1.03	
Uniform Delay, d1	71.7	71.7	34.1				52.5	1.1		13.3	31.4	
Progression Factor	1.00	1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	2.3	0.0				30.2	0.3		0.0	28.2	
Delay (s)	74.0	74.0	34.1				82.7	1.4		13.3	59.5	
Level of Service	E	E	C				F	A		B	E	
Approach Delay (s)		60.7			0.0			49.9			59.3	
Approach LOS		E			A			D			E	
Intersection Summary												
HCM 2000 Control Delay			54.9				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			97.0%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR

Mitigation - Baseline + Prop Constr + Other + Major AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	190	10	60	10	720	50	20	2815	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		5.5	5.5	5.5		5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00		0.91	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	0.98		1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Frt		0.95		1.00	0.93		1.00	1.00	0.85		1.00	
Flt Protected		0.98		0.95	0.98		0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1275		1681	1595		1805	3223	1435		4889	
Flt Permitted		0.91		0.81	0.85		0.04	1.00	1.00		0.93	
Satd. Flow (perm)		1178		1429	1388		79	3223	1435		4548	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	10	198	10	62	10	750	52	21	2932	10
RTOR Reduction (vph)	0	3	0	0	27	0	0	0	11	0	0	0
Lane Group Flow (vph)	0	27	0	139	104	0	10	750	41	0	2963	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	0%	100%	20%	2%	0%	4%	0%	12%	10%	0%	6%	20%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		17.4		17.4	17.4		95.7	95.7	95.7		95.7	
Effective Green, g (s)		17.4		17.4	17.4		95.7	95.7	95.7		95.7	
Actuated g/C Ratio		0.14		0.14	0.14		0.78	0.78	0.78		0.78	
Clearance Time (s)		3.5		3.5	3.5		5.5	5.5	5.5		5.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.1	3.1	3.1		3.1	
Lane Grp Cap (vph)		167		203	197		61	2526	1124		3564	
v/s Ratio Prot								0.23				
v/s Ratio Perm		0.02		c0.10	0.08		0.13		0.03		c0.65	
v/c Ratio		0.16		0.68	0.53		0.16	0.30	0.04		0.83	
Uniform Delay, d1		45.9		49.7	48.6		3.3	3.7	2.9		8.2	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.4		9.2	2.7		1.3	0.1	0.0		1.8	
Delay (s)		46.4		58.9	51.3		4.6	3.8	3.0		10.0	
Level of Service		D		E	D		A	A	A		A	
Approach Delay (s)		46.4			55.2			3.7			10.0	
Approach LOS		D			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			12.0			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			122.1			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			90.3%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

6: Castro St & Redwood Way/WB I-580 Ramp

Mitigation - Baseline + Prop Constr + Other + Major PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	30	70	130	10	340	10	1350	120	640	1219	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Flt Protected	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Satd. Flow (perm)	1715	1748	1583	1681	1702	2515	1805	3505	1553	1752	3471	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	165	35	82	153	12	400	12	1588	141	753	1434	12
RTOR Reduction (vph)	0	0	75	0	0	381	0	0	0	0	0	3
Lane Group Flow (vph)	99	101	7	83	82	19	12	1588	141	753	1434	9
Heavy Vehicles (%)	0%	0%	2%	2%	0%	13%	0%	3%	4%	3%	4%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	12.3	12.3	12.3	6.5	6.5	6.5	1.9	60.5	139.8	45.8	104.6	104.6
Effective Green, g (s)	12.3	12.3	12.3	6.5	6.5	6.5	1.9	60.5	139.8	45.8	104.6	104.6
Actuated g/C Ratio	0.09	0.09	0.09	0.05	0.05	0.05	0.01	0.43	1.00	0.33	0.75	0.75
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	150	153	139	78	79	116	24	1516	1553	573	2597	1208
v/s Ratio Prot	0.06	c0.06		c0.05	0.05		0.01	c0.45		c0.43	0.41	
v/s Ratio Perm			0.00			0.01			0.09			0.01
v/c Ratio	0.66	0.66	0.05	1.06	1.04	0.16	0.50	1.05	0.09	1.31	0.55	0.01
Uniform Delay, d1	61.7	61.7	58.4	66.7	66.7	64.0	68.5	39.7	0.0	47.0	7.6	4.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	8.0	0.1	120.5	112.1	0.2	5.8	36.6	0.1	153.5	0.3	0.0
Delay (s)	69.9	69.7	58.5	187.2	178.7	64.3	74.3	76.3	0.1	200.5	7.8	4.5
Level of Service	E	E	E	F	F	E	E	E	A	F	A	A
Approach Delay (s)		66.5			98.9			70.1			73.8	
Approach LOS		E			F			E			E	
Intersection Summary												
HCM 2000 Control Delay			75.0			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.11									
Actuated Cycle Length (s)			139.8			Sum of lost time (s)			14.7			
Intersection Capacity Utilization			94.5%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

Chevron Revised EIR

8: Castro St & General Chemical Access

Mitigation - Baseline + Prop Constr + Other + Major PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	544	10	1088	10	0	10	10	1892	10	10	633	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		5.7	5.7		5.7	5.7	
Lane Util. Factor		1.00	0.88		1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.93		1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	2814		1729		1357	3469		1805	3498	
Flt Permitted		0.71	1.00		0.74		0.35	1.00		0.06	1.00	
Satd. Flow (perm)		1341	2814		1304		494	3469		113	3498	
Peak-hour factor, PHF	1.00	1.00	1.00	0.85	0.85	0.85	0.95	0.97	0.95	0.95	0.95	0.95
Adj. Flow (vph)	544	10	1088	12	0	12	11	1951	11	11	666	11
RTOR Reduction (vph)	0	0	239	0	15	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	554	849	0	9	0	11	1962	0	11	676	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	33%	4%	0%	0%	3%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		47.0	47.0		47.0		67.0	67.0		67.0	67.0	
Effective Green, g (s)		47.0	47.0		47.0		67.0	67.0		67.0	67.0	
Actuated g/C Ratio		0.38	0.38		0.38		0.54	0.54		0.54	0.54	
Clearance Time (s)		4.0	4.0		4.0		5.7	5.7		5.7	5.7	
Vehicle Extension (s)		2.0	2.0		2.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)		509	1069		495		267	1878		61	1894	
v/s Ratio Prot								c0.57				0.19
v/s Ratio Perm		c0.41	0.30		0.01		0.02			0.10		
v/c Ratio		1.09	0.79		0.02		0.04	1.04		0.18	0.36	
Uniform Delay, d1		38.4	34.1		23.9		13.3	28.4		14.4	16.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		66.0	3.9		0.0		0.1	33.5		1.9	0.2	
Delay (s)		104.4	37.9		24.0		13.4	61.8		16.3	16.3	
Level of Service		F	D		C		B	E		B	B	
Approach Delay (s)		60.3			24.0			61.6			16.3	
Approach LOS		E			C			E			B	
Intersection Summary												
HCM 2000 Control Delay			53.7				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			123.7				Sum of lost time (s)			9.7		
Intersection Capacity Utilization			98.0%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Castro St & Hensley St

Chevron Revised EIR

Mitigation - Baseline + Prop Constr + Other + Major PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	0	113	0	36	10	2397	40	10	540	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.85		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1900		3273	1615		1805	3457		1805	3505	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1900		3273	1615		1805	3457		1805	3505	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	12	12	0	133	0	42	12	2820	47	12	635	0
RTOR Reduction (vph)	0	0	0	0	39	0	0	0	0	0	0	0
Lane Group Flow (vph)	12	12	0	133	3	0	12	2867	0	12	635	0
Confl. Peds. (#/hr)			2	2					2	2		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	4%	11%	0%	3%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	0.7	1.5		6.1	6.9		0.7	79.9		0.7	79.9	
Effective Green, g (s)	0.7	1.5		6.1	6.9		0.7	79.9		0.7	79.9	
Actuated g/C Ratio	0.01	0.01		0.06	0.07		0.01	0.76		0.01	0.76	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	12	27		189	105		12	2625		12	2662	
v/s Ratio Prot	0.01	c0.01		c0.04	0.00		c0.01	c0.83		0.01	0.18	
v/s Ratio Perm												
v/c Ratio	1.00	0.44		0.70	0.03		1.00	1.09		1.00	0.24	
Uniform Delay, d1	52.2	51.4		48.7	46.0		52.2	12.6		52.2	3.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	259.8	15.1		9.3	0.1		259.8	48.4		259.8	0.1	
Delay (s)	312.1	66.5		58.0	46.1		312.1	61.0		312.1	3.8	
Level of Service	F	E		E	D		F	E		F	A	
Approach Delay (s)		189.3			55.1			62.1			9.5	
Approach LOS		F			E			E			A	
Intersection Summary												
HCM 2000 Control Delay			53.4				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			105.2				Sum of lost time (s)			17.0		
Intersection Capacity Utilization			84.9%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR

Mitigation - Baseline + Prop Constr + Other + Major PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	50	10	40	10	3299	270	40	720	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		5.5	5.5	5.5		5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00		0.91	
Frpb, ped/bikes		1.00		1.00	0.99		1.00	1.00	0.97		1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Frt		0.95		1.00	0.89		1.00	1.00	0.85		1.00	
Flt Protected		0.98		0.95	1.00		0.95	1.00	1.00		1.00	
Satd. Flow (prot)		1703		1715	1550		1640	3471	1543		5021	
Flt Permitted		0.90		0.81	0.98		0.32	1.00	1.00		0.69	
Satd. Flow (perm)		1563		1463	1519		550	3471	1543		3471	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	11	11	56	11	44	11	3473	300	44	800	11
RTOR Reduction (vph)	0	10	0	0	1	0	0	0	29	0	0	0
Lane Group Flow (vph)	0	23	0	50	60	0	11	3473	271	0	855	0
Confl. Peds. (#/hr)	3					3	1		2	2		1
Heavy Vehicles (%)	14%	0%	0%	0%	0%	3%	10%	4%	2%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		10.3		10.3	10.3		107.1	107.1	107.1		107.1	
Effective Green, g (s)		10.3		10.3	10.3		107.1	107.1	107.1		107.1	
Actuated g/C Ratio		0.08		0.08	0.08		0.85	0.85	0.85		0.85	
Clearance Time (s)		3.5		3.5	3.5		5.5	5.5	5.5		5.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.1	3.1	3.1		3.1	
Lane Grp Cap (vph)		127		119	123		466	2941	1307		2941	
v/s Ratio Prot							c1.00					
v/s Ratio Perm		0.01		0.03	c0.04		0.02		0.18		0.25	
v/c Ratio		0.18		0.42	0.49		0.02	1.18	0.21		0.29	
Uniform Delay, d1		54.1		55.2	55.5		1.5	9.7	1.8		2.0	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.7		2.4	3.0		0.0	85.2	0.1		0.1	
Delay (s)		54.8		57.6	58.6		1.5	94.9	1.9		2.0	
Level of Service		D		E	E		A	F	A		A	
Approach Delay (s)		54.8			58.1			87.2			2.0	
Approach LOS		D			E			F			A	
Intersection Summary												
HCM 2000 Control Delay			71.1			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			126.4			Sum of lost time (s)			9.0			
Intersection Capacity Utilization			107.5%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

Chevron Revised EIR

1: Marine St & Chevron Way

AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	10	120	10	0	0	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	12	141	12	0	0	24
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1	
Volume Total (vph)	6	6	141	12	24	
Volume Left (vph)	6	6	0	0	0	
Volume Right (vph)	0	0	141	0	0	
Hadj (s)	0.50	0.50	-0.63	0.00	0.46	
Departure Headway (s)	5.1	5.1	3.2	4.0	4.4	
Degree Utilization, x	0.01	0.01	0.13	0.01	0.03	
Capacity (veh/h)	699	693	1121	903	811	
Control Delay (s)	6.9	6.9	5.5	7.0	7.5	
Approach Delay (s)	5.6			7.0	7.5	
Approach LOS	A			A	A	
Intersection Summary						
Delay			5.9			
Level of Service			A			
Intersection Capacity Utilization			58.6%	ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: Castro St & Tewksbury Ave

Chevron Revised EIR
AM Peak Hour

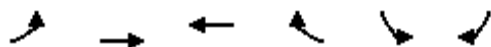
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Sign Control		Stop			Stop			Stop				Stop
Volume (vph)	50	50	0	0	10	120	10	50	60	40	160	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	59	59	0	0	12	141	12	59	71	0	188	24
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	118	153	141	188	35							
Volume Left (vph)	59	0	12	188	0							
Volume Right (vph)	0	141	71	0	12							
Hadj (s)	0.10	-0.52	-0.28	0.60	-0.23							
Departure Headway (s)	5.2	4.5	4.7	5.9	5.1							
Degree Utilization, x	0.17	0.19	0.19	0.31	0.05							
Capacity (veh/h)	640	730	711	578	670							
Control Delay (s)	9.2	8.6	8.8	10.4	7.1							
Approach Delay (s)	9.2	8.6	8.8	9.9								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			9.2									
Level of Service			A									
Intersection Capacity Utilization			41.6%		ICU Level of Service				A			
Analysis Period (min)			15									

												
Movement	SBR											
Lane Configurations												
Sign Control												
Volume (vph)	10											
Peak Hour Factor	0.85											
Hourly flow rate (vph)	12											
Direction, Lane #												

HCM Signalized Intersection Capacity Analysis

3: EB I-580 Ramp & Marine St

Chevron Revised EIR
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	843	0	0	30	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3			3.0	
Lane Util. Factor	1.00	1.00			0.97	
Flt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	1805	1759			3242	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	1805	1759			3242	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	937	0	0	33	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	11	937	0	0	33	0
Heavy Vehicles (%)	0%	8%	0%	0%	8%	0%
Turn Type	Split	NA			NA	
Protected Phases	4	4			2	
Permitted Phases						
Actuated Green, G (s)	46.0	46.0			2.5	
Effective Green, g (s)	46.0	46.0			2.5	
Actuated g/C Ratio	0.82	0.82			0.04	
Clearance Time (s)	4.3	4.3			3.0	
Vehicle Extension (s)	3.0	3.0			2.0	
Lane Grp Cap (vph)	1487	1450			145	
v/s Ratio Prot	0.01	c0.53			c0.01	
v/s Ratio Perm						
v/c Ratio	0.01	0.65			0.23	
Uniform Delay, d1	0.9	1.8			25.7	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.0			0.3	
Delay (s)	0.9	2.8			26.0	
Level of Service	A	A			C	
Approach Delay (s)		2.8	0.0		26.0	
Approach LOS		A	A		C	
Intersection Summary						
HCM 2000 Control Delay		3.6		HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio		0.62				
Actuated Cycle Length (s)		55.8		Sum of lost time (s)		7.3
Intersection Capacity Utilization		72.0%		ICU Level of Service		C
Analysis Period (min)		15				

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

4: Castro St & I-580 EB Ramps

Chevron Revised EIR
AM Peak Hour

							
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations				 			
Volume (vph)	773	70	10	160	0	0	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		3.0			3.0
Lane Util. Factor	1.00	1.00		0.97			1.00
Frpb, ped/bikes	1.00	1.00		1.00			1.00
Flpb, ped/bikes	1.00	1.00		1.00			1.00
Frt	1.00	0.85		1.00			0.86
Flt Protected	1.00	1.00		0.95			1.00
Satd. Flow (prot)	1727	1568		3332			1627
Flt Permitted	1.00	1.00		0.33			1.00
Satd. Flow (perm)	1727	1568		1162			1627
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	899	81	12	186	0	0	302
RTOR Reduction (vph)	0	23	0	0	0	0	95
Lane Group Flow (vph)	899	58	0	198	0	0	207
Confl. Peds. (#/hr)			11				11
Heavy Vehicles (%)	10%	3%	0%	5%	17%	0%	1%
Turn Type	NA	Perm		Prot			custom
Protected Phases	6!			5 4			5 6!
Permitted Phases		6					
Actuated Green, G (s)	48.5	48.5		42.0			68.5
Effective Green, g (s)	48.5	48.5		42.0			68.5
Actuated g/C Ratio	0.48	0.48		0.42			0.68
Clearance Time (s)	6.5	6.5					
Vehicle Extension (s)	3.0	3.0					
Lane Grp Cap (vph)	837	760		488			1114
v/s Ratio Prot	c0.52						0.13
v/s Ratio Perm		0.04		c0.17			
v/c Ratio	1.07	0.08		0.41			0.19
Uniform Delay, d1	25.8	13.8		20.3			5.7
Progression Factor	1.00	1.00		1.00			1.00
Incremental Delay, d2	53.0	0.2		0.5			0.1
Delay (s)	78.7	14.0		20.8			5.8
Level of Service	E	B		C			A
Approach Delay (s)	73.4				20.8	5.8	
Approach LOS	E				C	A	
Intersection Summary							
HCM 2000 Control Delay			52.5		HCM 2000 Level of Service		D
HCM 2000 Volume to Capacity ratio			0.79				
Actuated Cycle Length (s)			100.0		Sum of lost time (s)		12.5
Intersection Capacity Utilization			74.8%		ICU Level of Service		D
Analysis Period (min)			15				
! Phase conflict between lane groups.							
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis

5: Castro St & Chevron Way

Chevron Revised EIR
AM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑↑	↗
Volume (vph)	0	0	0	1043	677	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.5	4.5
Lane Util. Factor				0.95	0.91	1.00
Frpb, ped/bikes				1.00	1.00	1.00
Flpb, ped/bikes				1.00	1.00	1.00
Frt				1.00	1.00	0.85
Flt Protected				1.00	1.00	1.00
Satd. Flow (prot)				3406	4550	1553
Flt Permitted				1.00	1.00	1.00
Satd. Flow (perm)				3406	4550	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1134	736	130
RTOR Reduction (vph)	0	0	0	0	0	32
Lane Group Flow (vph)	0	0	0	1134	736	98
Confl. Peds. (#/hr)	15					
Heavy Vehicles (%)	0%	0%	0%	6%	14%	4%
Turn Type				NA	NA	Perm
Protected Phases				Free	2	
Permitted Phases						2
Actuated Green, G (s)				100.0	75.5	75.5
Effective Green, g (s)				100.0	75.5	75.5
Actuated g/C Ratio				1.00	0.76	0.76
Clearance Time (s)					4.5	4.5
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)				3406	3435	1172
v/s Ratio Prot				0.33	0.16	
v/s Ratio Perm						0.06
v/c Ratio				0.33	0.21	0.08
Uniform Delay, d1				0.0	3.6	3.2
Progression Factor				1.00	1.00	1.00
Incremental Delay, d2				0.1	0.1	0.1
Delay (s)				0.1	3.7	3.3
Level of Service				A	A	A
Approach Delay (s)	0.0			0.1	3.7	
Approach LOS	A			A	A	
Intersection Summary						
HCM 2000 Control Delay			1.7	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.36			
Actuated Cycle Length (s)			100.0	Sum of lost time (s)		7.5
Intersection Capacity Utilization			32.2%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

6: Castro St & Redwood Way/WB I-580 Ramp

Chevron Revised EIR

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	140	180	567	30	723	290	814	647	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1329	1751	1615	1618	1758	2137	1805	3471	1468	1703	3167	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1329	1751	1615	1618	1758	2137	1805	3471	1468	1703	3167	1553
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	10	146	188	591	31	753	302	848	674	83
RTOR Reduction (vph)	0	0	10	0	0	501	0	0	0	0	0	28
Lane Group Flow (vph)	9	11	0	131	203	90	31	753	302	848	674	55
Heavy Vehicles (%)	29%	0%	0%	6%	2%	33%	0%	4%	10%	6%	14%	4%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	3.4	3.4	3.4	18.6	18.6	18.6	4.4	35.3	122.4	50.4	81.5	81.5
Effective Green, g (s)	3.4	3.4	3.4	18.6	18.6	18.6	4.4	35.3	122.4	50.4	81.5	81.5
Actuated g/C Ratio	0.03	0.03	0.03	0.15	0.15	0.15	0.04	0.29	1.00	0.41	0.67	0.67
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	36	48	44	245	267	324	64	1001	1468	701	2108	1034
v/s Ratio Prot	0.01	0.01		0.08	c0.12		0.02	c0.22		c0.50	0.21	
v/s Ratio Perm			0.00			0.04			c0.21			0.04
v/c Ratio	0.25	0.23	0.01	0.53	0.76	0.28	0.48	0.75	0.21	1.21	0.32	0.05
Uniform Delay, d1	58.3	58.2	57.9	47.9	49.8	45.9	57.9	39.6	0.0	36.0	8.7	7.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.9	0.0	1.1	10.9	0.2	2.1	3.1	0.3	107.4	0.1	0.0
Delay (s)	59.6	59.1	57.9	49.0	60.6	46.1	60.0	42.7	0.3	143.4	8.8	7.1
Level of Service	E	E	E	D	E	D	E	D	A	F	A	A
Approach Delay (s)		58.8			49.7			31.4			79.8	
Approach LOS		E			D			C			E	
Intersection Summary												
HCM 2000 Control Delay			57.6									
HCM 2000 Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			122.4									
Intersection Capacity Utilization			90.8%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Castro St & Mills St

Chevron Revised EIR

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	0	32	20	0	3	33	1093	53	44	1490	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.86			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1092	865			1805	1615	1114	3273		1805	3374	1056
Flt Permitted	0.74	0.98			0.73	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	854	852			1389	1615	1114	3273		1805	3374	1056
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	0	35	22	0	3	36	1188	58	48	1620	30
RTOR Reduction (vph)	0	35	0	0	0	3	0	2	0	0	0	8
Lane Group Flow (vph)	26	3	0	0	22	0	36	1244	0	48	1620	22
Heavy Vehicles (%)	57%	0%	81%	0%	0%	0%	62%	10%	0%	0%	7%	53%
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						6
Actuated Green, G (s)	8.8	8.8			8.8	8.8	5.4	71.9		6.0	72.5	72.5
Effective Green, g (s)	8.8	8.8			8.8	8.8	5.4	71.9		6.0	72.5	72.5
Actuated g/C Ratio	0.09	0.09			0.09	0.09	0.05	0.72		0.06	0.72	0.72
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0	2.0	3.5		2.0	3.5	3.5
Lane Grp Cap (vph)	75	74			121	141	60	2348		108	2441	764
v/s Ratio Prot							c0.03	0.38		0.03	c0.48	
v/s Ratio Perm	c0.03	0.00			0.02	0.00						0.02
v/c Ratio	0.35	0.05			0.18	0.00	0.60	0.53		0.44	0.66	0.03
Uniform Delay, d1	43.0	41.9			42.4	41.7	46.3	6.4		45.5	7.4	3.9
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	0.3			0.7	0.0	10.3	0.9		1.1	1.4	0.1
Delay (s)	45.8	42.1			43.1	41.7	56.6	7.3		46.6	8.8	4.0
Level of Service	D	D			D	D	E	A		D	A	A
Approach Delay (s)		43.6			42.9			8.7			9.8	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay	10.3			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.63											
Actuated Cycle Length (s)	100.2			Sum of lost time (s)			13.5					
Intersection Capacity Utilization	57.5%			ICU Level of Service			B					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Castro St & General Chemical Access

Chevron Revised EIR
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	0	10	0	0	0	31	1092	0	10	1552	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0				4.0	5.7		4.0	5.7	
Lane Util. Factor	0.95	0.95	1.00				1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85				1.00	1.00		1.00	1.00	
Flt Protected	0.95	0.95	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1174	1174	1346				1530	3223		1805	3323	
Flt Permitted	0.76	0.76	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)	936	936	1346				1530	3223		1805	3323	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	22	0	11	0	0	0	33	1174	0	11	1669	46
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	11	11	1	0	0	0	33	1174	0	11	1714	0
Heavy Vehicles (%)	46%	0%	20%	0%	0%	0%	18%	12%	0%	0%	8%	15%
Turn Type	Perm	NA	Perm	Perm			Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	5.8	5.8	5.8				6.6	63.4		1.0	57.8	
Effective Green, g (s)	5.8	5.8	5.8				6.6	63.4		1.0	57.8	
Actuated g/C Ratio	0.07	0.07	0.07				0.08	0.76		0.01	0.69	
Clearance Time (s)	4.0	4.0	4.0				4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0				2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	64	64	93				120	2435		21	2289	
v/s Ratio Prot							c0.02	c0.36		0.01	c0.52	
v/s Ratio Perm	c0.01	0.01	0.00									
v/c Ratio	0.17	0.17	0.01				0.28	0.48		0.52	0.75	
Uniform Delay, d1	36.8	36.8	36.4				36.4	3.9		41.2	8.4	
Progression Factor	1.00	1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.5	0.0				0.5	0.2		10.4	1.5	
Delay (s)	37.3	37.3	36.4				36.9	4.1		51.6	9.9	
Level of Service	D	D	D				D	A		D	A	
Approach Delay (s)		37.0			0.0			5.0			10.1	
Approach LOS		D			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			8.4				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			83.9				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			55.7%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Castro St & Hensley St

Chevron Revised EIR

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	10	10	70	0	19	10	752	349	94	1525	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.85		1.00	0.95		1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1900	1615	2501	1615		1805	3033		1805	3343	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1900	1615	2501	1615		1805	3033		1805	3343	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	11	11	75	0	20	11	809	375	101	1640	0
RTOR Reduction (vph)	0	0	11	0	17	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	11	0	75	3	0	11	1158	0	101	1640	0
Heavy Vehicles (%)	0%	0%	0%	40%	0%	0%	0%	14%	12%	0%	8%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)		2.6	2.6	5.7	12.3		1.0	47.3		7.2	53.5	
Effective Green, g (s)		2.6	2.6	5.7	12.3		1.0	47.3		7.2	53.5	
Actuated g/C Ratio		0.03	0.03	0.07	0.15		0.01	0.59		0.09	0.67	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)		4.0	4.0	2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		61	52	178	248		22	1797		162	2241	
v/s Ratio Prot		c0.01		c0.03	0.00		0.01	0.38		c0.06	c0.49	
v/s Ratio Perm			0.00									
v/c Ratio		0.18	0.01	0.42	0.01		0.50	0.64		0.62	0.73	
Uniform Delay, d1		37.6	37.4	35.5	28.6		39.2	10.7		35.0	8.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.9	0.1	0.6	0.0		6.4	0.9		5.3	1.3	
Delay (s)		39.5	37.4	36.1	28.6		45.5	11.6		40.3	9.9	
Level of Service		D	D	D	C		D	B		D	A	
Approach Delay (s)		38.5			34.5			11.9			11.6	
Approach LOS		D			C			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			79.8			Sum of lost time (s)				17.0		
Intersection Capacity Utilization			65.0%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

10: Hensley St & Richmond Pkwy

Chevron Revised EIR
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1380	134	444	360	100	19	40	85	150	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.90		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3406		1719	3308		1126	1328		1768	1619	
Flt Permitted	0.95	1.00		0.95	1.00		0.72	1.00		0.59	1.00	
Satd. Flow (perm)	1736	3406		1719	3308		855	1328		1098	1619	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	77	1516	147	488	396	110	21	44	93	165	22	33
RTOR Reduction (vph)	0	6	0	0	15	0	0	75	0	0	27	0
Lane Group Flow (vph)	77	1657	0	488	491	0	21	62	0	165	28	0
Confl. Peds. (#/hr)			2	2			2		1	1		2
Heavy Vehicles (%)	4%	2%	29%	5%	6%	4%	60%	26%	53%	2%	44%	4%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	7.3	41.0		20.1	53.8		17.7	17.7		17.7	17.7	
Effective Green, g (s)	7.3	41.0		20.1	53.8		17.7	17.7		17.7	17.7	
Actuated g/C Ratio	0.08	0.45		0.22	0.59		0.19	0.19		0.19	0.19	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)	138	1521		376	1938		164	256		211	312	
v/s Ratio Prot	0.04	c0.49		c0.28	0.15			0.05			0.02	
v/s Ratio Perm							0.02			c0.15		
v/c Ratio	0.56	1.09		1.30	0.25		0.13	0.24		0.78	0.09	
Uniform Delay, d1	40.7	25.4		35.8	9.2		30.7	31.4		35.2	30.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.8	51.5		152.4	0.1		0.3	0.4		16.8	0.1	
Delay (s)	43.5	76.9		188.2	9.4		31.0	31.8		52.0	30.6	
Level of Service	D	E		F	A		C	C		D	C	
Approach Delay (s)		75.4			97.2			31.7			46.6	
Approach LOS		E			F			C			D	
Intersection Summary												
HCM 2000 Control Delay			78.1			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.07									
Actuated Cycle Length (s)			91.8			Sum of lost time (s)			13.0			
Intersection Capacity Utilization			97.4%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	190	10	60	10	1111	80	20	2684	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1275		1681	1595		1805	3223	1435	1805	3402	
Flt Permitted		0.91		0.80	0.85		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1177		1417	1387		1805	3223	1435	1805	3402	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	10	10	198	10	62	10	1157	83	21	2796	10
RTOR Reduction (vph)	0	9	0	0	24	0	0	0	22	0	0	0
Lane Group Flow (vph)	0	21	0	139	107	0	10	1157	61	21	2806	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	0%	100%	20%	2%	0%	4%	0%	12%	10%	0%	6%	20%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		17.8		17.8	17.8		1.2	93.3	93.3	3.9	96.0	
Effective Green, g (s)		17.8		17.8	17.8		1.2	93.3	93.3	3.9	96.0	
Actuated g/C Ratio		0.14		0.14	0.14		0.01	0.73	0.73	0.03	0.75	
Clearance Time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	3.1	3.1	2.0	3.1	
Lane Grp Cap (vph)		164		197	193		16	2358	1050	55	2561	
v/s Ratio Prot							0.01	0.36		c0.01	c0.82	
v/s Ratio Perm		0.02		c0.10	0.08				0.04			
v/c Ratio		0.13		0.71	0.55		0.62	0.49	0.06	0.38	1.10	
Uniform Delay, d1		48.1		52.3	51.1		62.9	7.2	4.8	60.6	15.8	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4		10.9	3.4		44.0	0.2	0.0	1.6	50.0	
Delay (s)		48.4		63.3	54.6		106.9	7.3	4.8	62.2	65.7	
Level of Service		D		E	D		F	A	A	E	E	
Approach Delay (s)		48.4			59.0			8.0			65.7	
Approach LOS		D			E			A			E	
Intersection Summary												
HCM 2000 Control Delay			48.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			127.5			Sum of lost time (s)			12.5			
Intersection Capacity Utilization			96.5%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

Chevron Revised EIR

1: Marine St & Chevron Way

Cumulative PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	20	30	10	0	0	260
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	24	35	12	0	0	306
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1	
Volume Total (vph)	12	12	35	12	306	
Volume Left (vph)	12	12	0	0	0	
Volume Right (vph)	0	0	35	0	0	
Hadj (s)	0.50	0.50	-0.70	0.00	0.00	
Departure Headway (s)	5.7	5.7	3.2	4.3	4.0	
Degree Utilization, x	0.02	0.02	0.03	0.01	0.34	
Capacity (veh/h)	592	595	1121	820	896	
Control Delay (s)	7.6	7.6	5.1	7.3	9.0	
Approach Delay (s)	6.1			7.3	9.0	
Approach LOS	A			A	A	
Intersection Summary						
Delay			8.5			
Level of Service			A			
Intersection Capacity Utilization			94.2%	ICU Level of Service		F
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 2: Castro St & Tewksbury Ave

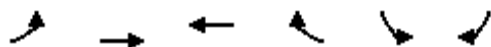
Chevron Revised EIR
Cumulative PM

																			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR							
Lane Configurations																			
Sign Control		Stop			Stop			Stop			Stop								
Volume (vph)	10	30	10	10	30	110	10	20	40	210	50	60							
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93							
Hourly flow rate (vph)	11	32	11	11	32	118	11	22	43	226	54	65							
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2														
Volume Total (vph)	54	161	75	226	118														
Volume Left (vph)	11	11	11	226	0														
Volume Right (vph)	11	118	43	0	65														
Hadj (s)	-0.08	0.82	-0.19	0.58	-0.38														
Departure Headway (s)	5.1	5.8	4.9	5.8	4.8														
Degree Utilization, x	0.08	0.26	0.10	0.36	0.16														
Capacity (veh/h)	639	581	688	598	716														
Control Delay (s)	8.6	10.9	8.5	10.9	7.5														
Approach Delay (s)	8.6	10.9	8.5	9.7															
Approach LOS	A	B	A	A															
Intersection Summary																			
Delay				9.8															
Level of Service				A															
Intersection Capacity Utilization				34.7%	ICU Level of Service	A													
Analysis Period (min)				15															

HCM Signalized Intersection Capacity Analysis

3: EB I-580 Ramp & Marine St

Chevron Revised EIR
Cumulative PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	10	1399	0	0	280	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.3	4.3			3.0	
Lane Util. Factor	1.00	1.00			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	1805	1827			3502	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	1805	1827			3502	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	12	1627	0	0	326	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	12	1627	0	0	326	0
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Turn Type	Split	NA			NA	
Protected Phases	4	4			2	
Permitted Phases						
Actuated Green, G (s)	36.1	36.1			9.2	
Effective Green, g (s)	36.1	36.1			9.2	
Actuated g/C Ratio	0.69	0.69			0.17	
Clearance Time (s)	4.3	4.3			3.0	
Vehicle Extension (s)	3.0	3.0			2.0	
Lane Grp Cap (vph)	1238	1253			612	
v/s Ratio Prot	0.01	c0.89			c0.09	
v/s Ratio Perm						
v/c Ratio	0.01	1.30			0.53	
Uniform Delay, d1	2.6	8.2			19.7	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	140.3			0.4	
Delay (s)	2.6	148.6			20.2	
Level of Service	A	F			C	
Approach Delay (s)		147.5	0.0		20.2	
Approach LOS		F	A		C	

Intersection Summary

HCM 2000 Control Delay	126.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	7.3
Intersection Capacity Utilization	111.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

4: Castro St & I-580 EB Ramps

Chevron Revised EIR
Cumulative PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1949	120	200	0	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	3.0			3.0
Lane Util. Factor	1.00	1.00	0.97			1.00
Frt	1.00	0.85	1.00			0.86
Flt Protected	1.00	1.00	0.95			1.00
Satd. Flow (prot)	1845	1553	3433			1611
Flt Permitted	1.00	1.00	0.95			1.00
Satd. Flow (perm)	1845	1553	3433			1611
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	2215	136	227	0	0	159
RTOR Reduction (vph)	0	13	0	0	0	43
Lane Group Flow (vph)	2215	123	227	0	0	116
Heavy Vehicles (%)	3%	4%	2%	5%	0%	2%
Turn Type	NA	Perm	Prot			custom
Protected Phases	6!		5 4			5 6!
Permitted Phases		6				
Actuated Green, G (s)	56.8	56.8	23.7			65.5
Effective Green, g (s)	56.8	56.8	23.7			65.5
Actuated g/C Ratio	0.63	0.63	0.26			0.73
Clearance Time (s)	6.5	6.5				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	1164	980	904			1172
v/s Ratio Prot	c1.20		c0.07			0.07
v/s Ratio Perm		0.08				
v/c Ratio	1.90	0.13	0.25			0.10
Uniform Delay, d1	16.6	6.6	26.1			3.6
Progression Factor	1.00	1.00	1.63			1.00
Incremental Delay, d2	409.5	0.3	0.1			0.0
Delay (s)	426.1	6.9	42.7			3.6
Level of Service	F	A	D			A
Approach Delay (s)	401.9			42.7	3.6	
Approach LOS	F			D	A	
Intersection Summary						
HCM 2000 Control Delay			349.0		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.47			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.5
Intersection Capacity Utilization			120.0%		ICU Level of Service	H
Analysis Period (min)			15			
! Phase conflict between lane groups.						
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

5: Castro St & Chevron Way

Chevron Revised EIR
Cumulative PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑↑	↗
Volume (vph)	0	0	0	2089	666	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.5	4.5
Lane Util. Factor				0.95	0.91	1.00
Frpb, ped/bikes				1.00	1.00	0.98
Flpb, ped/bikes				1.00	1.00	1.00
Frt				1.00	1.00	0.85
Flt Protected				1.00	1.00	1.00
Satd. Flow (prot)				3505	4988	1575
Flt Permitted				1.00	1.00	1.00
Satd. Flow (perm)				3505	4988	1575
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	0	2458	784	82
RTOR Reduction (vph)	0	0	0	0	0	22
Lane Group Flow (vph)	0	0	0	2458	784	60
Confl. Peds. (#/hr)	7		4			7
Heavy Vehicles (%)	0%	0%	0%	3%	4%	0%
Turn Type				NA	NA	Perm
Protected Phases				Free	2	
Permitted Phases						2
Actuated Green, G (s)				90.0	65.5	65.5
Effective Green, g (s)				90.0	65.5	65.5
Actuated g/C Ratio				1.00	0.73	0.73
Clearance Time (s)					4.5	4.5
Vehicle Extension (s)					3.0	3.0
Lane Grp Cap (vph)				3505	3630	1146
v/s Ratio Prot				0.70	0.16	
v/s Ratio Perm						0.04
v/c Ratio				0.70	0.22	0.05
Uniform Delay, d1				0.0	4.0	3.5
Progression Factor				1.00	1.00	1.00
Incremental Delay, d2				0.1	0.1	0.1
Delay (s)				0.1	4.1	3.6
Level of Service				A	A	A
Approach Delay (s)	0.0			0.1	4.0	
Approach LOS	A			A	A	
Intersection Summary						
HCM 2000 Control Delay			1.1	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.77			
Actuated Cycle Length (s)			90.0	Sum of lost time (s)		7.5
Intersection Capacity Utilization			61.1%	ICU Level of Service		B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

6: Castro St & Redwood Way/WB I-580 Ramp

Chevron Revised EIR
Cumulative PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	30	70	140	10	418	10	1919	160	775	526	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5	4.0	3.2	4.5	4.5
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1715	1748	1583	1681	1701	2515	1805	3505	1553	1752	3471	1615
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1715	1748	1583	1681	1701	2515	1805	3505	1553	1752	3471	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	165	35	82	165	12	492	12	2258	188	912	619	12
RTOR Reduction (vph)	0	0	74	0	0	448	0	0	0	0	0	4
Lane Group Flow (vph)	99	101	8	87	90	44	12	2258	188	912	619	8
Heavy Vehicles (%)	0%	0%	2%	2%	0%	13%	0%	3%	4%	3%	4%	0%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			Free			6
Actuated Green, G (s)	11.5	11.5	11.5	11.0	11.0	11.0	2.4	35.9	123.3	50.2	83.9	83.9
Effective Green, g (s)	11.5	11.5	11.5	11.0	11.0	11.0	2.4	35.9	123.3	50.2	83.9	83.9
Actuated g/C Ratio	0.09	0.09	0.09	0.09	0.09	0.09	0.02	0.29	1.00	0.41	0.68	0.68
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	4.5		3.2	4.5	4.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5		2.0	3.5	3.5
Lane Grp Cap (vph)	159	163	147	149	151	224	35	1020	1553	713	2361	1098
v/s Ratio Prot	0.06	c0.06		0.05	c0.05		0.01	c0.64		c0.52	0.18	
v/s Ratio Perm			0.00			0.02			0.12			0.01
v/c Ratio	0.62	0.62	0.05	0.58	0.60	0.20	0.34	2.21	0.12	1.28	0.26	0.01
Uniform Delay, d1	53.8	53.8	50.9	54.0	54.0	52.1	59.7	43.7	0.0	36.5	7.7	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	4.9	0.1	3.7	4.2	0.2	2.1	549.4	0.2	136.3	0.1	0.0
Delay (s)	59.2	58.7	51.0	57.7	58.2	52.2	61.8	593.1	0.2	172.8	7.7	6.3
Level of Service	E	E	D	E	E	D	E	F	A	F	A	A
Approach Delay (s)		56.6			53.7			545.1			105.3	
Approach LOS		E			D			F			F	
Intersection Summary												
HCM 2000 Control Delay			313.9				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.45									
Actuated Cycle Length (s)			123.3				Sum of lost time (s)		14.7			
Intersection Capacity Utilization			117.7%				ICU Level of Service		H			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Castro St & Mills St

Chevron Revised EIR

Cumulative PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	0	33	182	0	23	22	2448	9	17	1097	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.90			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.98			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1603	1426			1805	1615	1543	3437		1805	3539	1524
Flt Permitted	0.41	0.89			0.72	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	684	1283			1368	1615	1543	3437		1805	3539	1524
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	76	0	37	202	0	26	24	2720	10	19	1219	63
RTOR Reduction (vph)	0	44	0	0	0	21	0	0	0	0	0	22
Lane Group Flow (vph)	59	10	0	0	202	5	24	2730	0	19	1219	41
Heavy Vehicles (%)	7%	0%	14%	0%	0%	0%	17%	5%	0%	0%	2%	6%
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						6
Actuated Green, G (s)	20.3	20.3			20.3	20.3	4.1	73.0		2.6	71.5	71.5
Effective Green, g (s)	20.3	20.3			20.3	20.3	4.1	73.0		2.6	71.5	71.5
Actuated g/C Ratio	0.19	0.19			0.19	0.19	0.04	0.67		0.02	0.65	0.65
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0	2.0	3.5		2.0	3.5	3.5
Lane Grp Cap (vph)	126	238			253	299	57	2293		42	2312	996
v/s Ratio Prot							c0.02	c0.79		0.01	0.34	
v/s Ratio Perm	0.09	0.01			c0.15	0.00						0.03
v/c Ratio	0.47	0.04			0.80	0.02	0.42	1.19		0.45	0.53	0.04
Uniform Delay, d1	39.7	36.6			42.6	36.4	51.5	18.2		52.7	10.0	6.7
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.7	0.1			16.0	0.0	1.8	90.4		2.8	0.9	0.1
Delay (s)	42.5	36.6			58.6	36.4	53.3	108.6		55.5	10.9	6.8
Level of Service	D	D			E	D	D	F		E	B	A
Approach Delay (s)		39.7			56.0			108.1			11.3	
Approach LOS		D			E			F			B	
Intersection Summary												
HCM 2000 Control Delay			75.0									
HCM 2000 Volume to Capacity ratio			1.09									
Actuated Cycle Length (s)			109.4									
Intersection Capacity Utilization			92.6%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: Castro St & General Chemical Access

Chevron Revised EIR

Cumulative PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	293	10	81	10	0	10	10	2518	10	10	1080	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		0.93		1.00	1.00		1.00	1.00	
Flt Protected	0.95	0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1698	1709	1538		1729		1357	3469		1805	3501	
Flt Permitted	0.74	0.72	1.00		0.85		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1325	1293	1538		1512		1357	3469		1805	3501	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	345	12	95	12	0	12	12	2962	12	12	1271	12
RTOR Reduction (vph)	0	0	65	0	20	0	0	0	0	0	0	0
Lane Group Flow (vph)	179	178	30	0	4	0	12	2974	0	12	1283	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	1%	0%	5%	0%	0%	0%	33%	4%	0%	0%	3%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	17.8	17.8	17.8		17.8		5.5	70.2		1.2	65.9	
Effective Green, g (s)	17.8	17.8	17.8		17.8		5.5	70.2		1.2	65.9	
Actuated g/C Ratio	0.17	0.17	0.17		0.17		0.05	0.68		0.01	0.64	
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	5.7		4.0	5.7	
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	229	223	266		261		72	2366		21	2242	
v/s Ratio Prot							0.01	c0.86		c0.01	0.37	
v/s Ratio Perm	0.14	c0.14	0.02		0.00							
v/c Ratio	0.78	0.80	0.11		0.02		0.17	1.26		0.57	0.57	
Uniform Delay, d1	40.7	40.8	35.9		35.3		46.5	16.4		50.6	10.5	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.7	16.7	0.1		0.0		0.4	119.2		21.2	0.4	
Delay (s)	55.4	57.5	36.0		35.3		46.9	135.5		71.8	10.9	
Level of Service	E	E	D		D		D	F		E	B	
Approach Delay (s)		52.2			35.3			135.2			11.5	
Approach LOS		D			D			F			B	
Intersection Summary												
HCM 2000 Control Delay			93.1				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.16									
Actuated Cycle Length (s)			102.9				Sum of lost time (s)			13.7		
Intersection Capacity Utilization			92.5%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

9: Castro St & Hensley St

Chevron Revised EIR

Cumulative PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	0	316	0	96	10	2696	115	24	785	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.85		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1900		3273	1615		1805	3437		1805	3505	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1900		3273	1615		1805	3437		1805	3505	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	12	12	0	372	0	113	12	3172	135	28	924	0
RTOR Reduction (vph)	0	0	0	0	94	0	0	1	0	0	0	0
Lane Group Flow (vph)	12	12	0	372	19	0	12	3306	0	28	924	0
Confl. Peds. (#/hr)			2	2					2	2		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	4%	11%	0%	3%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	0.9	1.2		12.5	12.8		0.9	42.0		2.3	43.4	
Effective Green, g (s)	0.9	1.2		12.5	12.8		0.9	42.0		2.3	43.4	
Actuated g/C Ratio	0.01	0.02		0.17	0.17		0.01	0.56		0.03	0.58	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	21	30		545	275		21	1924		55	2028	
v/s Ratio Prot	0.01	c0.01		c0.11	0.01		0.01	c0.96		c0.02	0.26	
v/s Ratio Perm												
v/c Ratio	0.57	0.40		0.68	0.07		0.57	1.72		0.51	0.46	
Uniform Delay, d1	36.9	36.5		29.4	26.1		36.9	16.5		35.8	9.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	21.2	11.5		2.8	0.1		21.2	325.4		2.7	0.2	
Delay (s)	58.1	48.1		32.2	26.3		58.1	341.9		38.5	9.3	
Level of Service	E	D		C	C		E	F		D	A	
Approach Delay (s)		53.1			30.8			340.9			10.1	
Approach LOS		D			C			F			B	
Intersection Summary												
HCM 2000 Control Delay	242.1			HCM 2000 Level of Service					F			
HCM 2000 Volume to Capacity ratio	1.42											
Actuated Cycle Length (s)	75.0			Sum of lost time (s)					17.0			
Intersection Capacity Utilization	101.4%			ICU Level of Service					G			
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

10: Hensley St & Richmond Pkwy

Chevron Revised EIR
Cumulative PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	480	44	77	1310	170	116	50	463	140	30	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.86		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3415		1504	3473		1802	1761		1786	1788	
Flt Permitted	0.95	1.00		0.95	1.00		0.69	1.00		0.17	1.00	
Satd. Flow (perm)	1671	3415		1504	3473		1313	1761		320	1788	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	533	49	86	1456	189	129	56	514	156	33	67
RTOR Reduction (vph)	0	6	0	0	8	0	0	278	0	0	41	0
Lane Group Flow (vph)	22	576	0	86	1637	0	129	292	0	156	59	0
Confl. Peds. (#/hr)	1		1	1		1	2		3	3		2
Heavy Vehicles (%)	8%	3%	17%	20%	2%	1%	0%	7%	4%	1%	14%	4%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	2.6	34.5		8.2	40.1		35.1	35.1		35.1	35.1	
Effective Green, g (s)	2.6	34.5		8.2	40.1		35.1	35.1		35.1	35.1	
Actuated g/C Ratio	0.03	0.38		0.09	0.44		0.39	0.39		0.39	0.39	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)	47	1297		135	1533		507	680		123	691	
v/s Ratio Prot	0.01	0.17		c0.06	c0.47			0.17			0.03	
v/s Ratio Perm							0.10			c0.49		
v/c Ratio	0.47	0.44		0.64	1.07		0.25	0.43		1.27	0.09	
Uniform Delay, d1	43.4	21.0		39.9	25.3		18.9	20.5		27.8	17.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	0.4		7.0	43.4		0.2	0.4		169.9	0.0	
Delay (s)	46.1	21.4		46.9	68.8		19.2	20.9		197.7	17.7	
Level of Service	D	C		D	E		B	C		F	B	
Approach Delay (s)		22.3			67.7			20.6			127.4	
Approach LOS		C			E			C			F	
Intersection Summary												
HCM 2000 Control Delay			54.0			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			1.15									
Actuated Cycle Length (s)			90.8			Sum of lost time (s)			13.0			
Intersection Capacity Utilization			98.4%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

11: Richmond Pkwy & Gertrude Ave

Chevron Revised EIR
Cumulative PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	50	10	40	10	4559	400	60	1023	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	0.99		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	0.89		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1703		1715	1550		1641	3471	1543	1805	3500	
Flt Permitted		0.90		0.81	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1559		1467	1518		1641	3471	1543	1805	3500	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	11	11	56	11	44	11	5066	444	67	1137	11
RTOR Reduction (vph)	0	10	0	0	41	0	0	0	33	0	0	0
Lane Group Flow (vph)	0	23	0	50	20	0	11	5066	411	67	1148	0
Confl. Peds. (#/hr)	3					3	1		2	2		1
Heavy Vehicles (%)	14%	0%	0%	0%	0%	3%	10%	4%	2%	0%	3%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		9.9		9.9	9.9		1.3	97.9	97.9	6.2	102.8	
Effective Green, g (s)		9.9		9.9	9.9		1.3	97.9	97.9	6.2	102.8	
Actuated g/C Ratio		0.08		0.08	0.08		0.01	0.77	0.77	0.05	0.81	
Clearance Time (s)		3.5		3.5	3.5		3.5	5.5	5.5	3.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	3.1	3.1	2.0	3.1	
Lane Grp Cap (vph)		122		114	118		16	2686	1194	88	2844	
v/s Ratio Prot							0.01	c1.46		c0.04	0.33	
v/s Ratio Perm		0.01		c0.03	0.01				0.27			
v/c Ratio		0.19		0.44	0.17		0.69	1.89	0.34	0.76	0.40	
Uniform Delay, d1		54.5		55.6	54.5		62.4	14.3	4.4	59.4	3.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.7		2.7	0.7		67.5	400.2	0.2	28.8	0.1	
Delay (s)		55.3		58.3	55.2		129.9	414.5	4.6	88.2	3.4	
Level of Service		E		E	E		F	F	A	F	A	
Approach Delay (s)		55.3			56.6			380.9			8.1	
Approach LOS		E			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		308.3					HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio		1.70										
Actuated Cycle Length (s)		126.5					Sum of lost time (s)		12.5			
Intersection Capacity Utilization		142.3%					ICU Level of Service		H			
Analysis Period (min)		15										
c Critical Lane Group												

Appendix C

Detailed Project Trip Generation

Appendix C

Chevron Richmond Refinery Modernization Project, Other Projects, Major Turnarounds, Detailed Daily Trip Generation, By Quarter

Year Quarter	2015				2016				2017				Source	
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th		
Worker Vehicles														
Proposed Project Construction														
Craft labor vehicle traffic														
A. Hydrogen Plant Replacement					740	740	740	500	300					Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 6
B. Sulfur Removal Improvements					950	950	350	350	350	350	350	350	350	Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 6
C. Hydrogen Plant Tie-Ins					250	250	250							Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 6
D. Storage Tank Domes					12									Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 7
E. Water Reuse Project					28									Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 8
F. FCC CWT Motor Upgrade					20									Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 9
G. Ex Hydrogen Plant Dismantling										20	20	20	20	Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 10
Total Craft labor vehicle traffic					2,000	1,940	1,340	850	650	370	370	370	370	
Construction support ²					34	34	34	20	20	10	10	10	10	Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 6
Total Proposed Project Autos per day ³	0	0	0	0	2,034	1,974	1,374	870	670	380	380	380	380	
Other Projects														
Craft labor vehicle traffic														
A. Long Wharf Maintenance & Efficiency Project		20	20	20	20	20	20	20	20	20	20			Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
B. Storage Tank Replacement Project	14	14	14											Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
C. Maintenance Shops Building	16	16	16	16	16									Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
D. 250-Ft Channel Project	40	40	40	40										Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
E. Sulfur Loading Rack Replacement	20	20	20											Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
F. Sulfur Tank Replacement	12	12												Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
G. Hensley Street and Kelham Warehouse Redevelopment Projects	1,313	1,313	1,313	1,313	1,313	1,313	1,313	1,313						Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
Craft labor vehicle traffic	1,415	1,435	1,423	1,389	1,349	1,333	1,333	1,333	20	20	20	0	0	
Total Other Project Autos per day	1,415	1,435	1,423	1,389	1,349	1,333	1,333	1,333	20	20	20	0	0	
Major Refinery Turnarounds ⁴														
Craft labor vehicle traffic					3,550									Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 9
Miscellaneous turnaround support ²					32									Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 9
Total Turnaround Autos per day					3,582									
Total Auto Vehicle one-way trips per day	1,415	1,435	1,423	1,389	6,965	3,307	2,707	2,203	690	400	400	380	380	
Vehicle Summary By Refinery Gate														
Gate 91 (construction and turnaround contractors)	92	110	99	68	5,087	1,795	1,255	801	621	360	360	342	342	
Gate 31 (construction and turnaround support)	10	12	11	8	565	199	139	89	69	40	40	38	38	
Kelham Warehouse Trips	274	274	274	274	274	274	274	274						
Hensley Warehouse Trips	1,039	1,039	1,039	1,039	1,039	1,039	1,039	1,039						
Trucks														
Proposed Project Construction														
Materials traffic (one-way truck trips)														
A. Hydrogen Plant Replacement					20	8	8	8	0					Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 6
B. Sulfur Removal Improvements					14	14	14	4	4	4	4	4	4	Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 6
C. Hydrogen Plant Tie-Ins					0	0	0							Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 6
D. Storage Tank Domes					10									Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 7
E. Water Reuse Project					10									Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 8
F. FCC CWT Motor Upgrade					1									Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 9
G. Ex Hydrogen Plant Dismantling										150	150	150	150	Chevron Data Transmittal #360 (Rev#3), 2014 - Attachment 10
Total Proposed Project PCE per day ^{3,5}	0	0	0	0	110	44	44	24	8	308	308	308	308	
Other Projects														
Materials traffic (one-way truck trips) ¹														
A. Long Wharf Maintenance & Efficiency Project		8	8	8	8	8	8	8	8	8	8			Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
B. Storage Tank Replacement Project	2	2	2											Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
C. Maintenance Shops Building	4	4	4	4	4									Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
D. 250-Ft Channel Project	20	20												Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
E. Sulfur Loading Rack Replacement	4	4	4											Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
F. Sulfur Tank Replacement	2	2												Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
G. Hensley Street and Kelham Warehouse Redevelopment Projects	162	162	162	162	162	162	162	162						Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 1
Total Other Projects PCE per day ⁵	388	404	360	348	348	340	340	340	16	16	16	0	0	

Appendix C

Chevron Richmond Refinery Modernization Project, Other Projects, Major Turnarounds, Detailed Daily Trip Generation, By Quarter

Year Quarter	2015				2016				2017				Source
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	
<i>Major Refinery Turnarounds</i> ⁴													Chevron Data Transmittal #5 (Rev#3), 2014 - Attachment 9
Materials traffic (one-way truck trips)					40								
Total Turnaround PCE per day ⁵					80								
<i>Total Truck one-way PCE per day</i>	388	404	360	348	538	384	384	364	24	324	324	308	
Truck (PCE) Summary By Refinery Gate													
Gate 31 (construction and turnaround materials, and refinery operation deliveries)	226	242	198	186	376	222	222	202	24	324	324	308	
Gate 67 (Castro Cove remediation)													
Kelham Warehouse Trips	34	34	34	34	34	34	34	34					
Hensley Warehouse Trips	128	128	128	128	128	128	128	128					
Total Proposed Project Construction PCE Volumes³	0	0	0	0	2,144	2,018	1,418	894	678	688	688	688	
Total Volumes	1,803	1,839	1,783	1,737	7,503	3,691	3,091	2,567	714	724	724	688	

1. All vehicle and truck trips are shown as one-way trips per day. A round trip equals two trips.

2. Miscellaneous construction support include lunch wagons, fueling, parts runs, etc.

3. Construction related trips (either vehicle or PCE) equals ONLY Project traffic. **This is the basis for traffic impact evaluations and is shown reversed above.**

4. Major Turnarounds are shown to provide an idea of total variability in refinery traffic and do not result from the Modernization Project. Totals reflect peak periods, and therefore are not at these levels for the entire quarter. Estimated durations of turnarounds vary from 18 to 38 days per turnaround. 2010-2012 period shows selected peak future quarters with projected turnaround activity and Renewal Project in operation. Turnaround schedules are subject to change (estimated traffic is based on Richmond Refinery Long Range Shut Down Schedule, as of January 29, 2007). This analysis assumes that peak turnaround would coincide with peak activity generated by the Project Construction and Other Projects.

5. Passenger Car Equivalent (PCE) factor of 2.0 used per HCM 2000.

APPENDIX 4.17

Water Supply Assessment

March 11, 2014

Lina Velasco, Senior Planner
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804-1630

Re: Validation of Water Supply Assessment for the Richmond Refinery Modernization Project

Dear Ms. Velasco:

This letter is in response to your request dated February 11, 2014 for water agency consultation concerning the validation of a Water Supply Assessment (WSA) for the Richmond Refinery Modernization Project, formerly the Chevron Energy and Hydrogen Renewal Project. East Bay Municipal Utility District (EBMUD) appreciates the opportunity to provide this response.

On April 17, 2007, EBMUD received a request from the City of Richmond (City) for a WSA for the Chevron Energy and Hydrogen Renewal Project which consisted of modifying or replacing existing equipment and installing new refining equipment within the existing refinery footprint. Pursuant to the California Water Code, EBMUD approved the WSA and provided the City with a written response to the WSA on April 24, 2007 which was attached to your request.

The estimated demand for the Chevron Energy and Hydrogen Renewal Project in the approved WSA was about 12.7 million gallons per day (mgd). Per the City's current request, the water demand for the Richmond Refinery Modernization Project is estimated to be about 12.7 mgd. The projected water demand is based on current consumption rates, and a foreseeable increase in recycled water usage from the North Richmond Water Reclamation Plant (NRWRP) and the Richmond Advanced Recycled Expansion (RARE) Project and associated potable water usage.

EBMUD concludes that the WSA approved by EBMUD on April 24, 2007 is still valid and a second WSA is not required for the Richmond Refinery Modernization Project.

Please note that the current recycled water supply from the NRWRP and RARE Project is about 4.0 mgd and 3.5 mgd, respectively, which are consistent with the City's baseline average demands. EBMUD has future plans to expand the available supply from NRWRP by 1.0 mgd by 2025 and RARE by 0.5 mgd in 2020, which match the City's 100 percent utilization scenario with a total projection of 9.0 mgd of recycled water. The NRWRP and RARE Project and expansions are reflected in EBMUD's recycled water program goal and in the 2010 Urban Water Management Plan; the current schedule is based on available supply and funding options which could accelerate or delay implementation. EBMUD recommends that the City and Chevron

Lina Velasco, Senior Planner
March 11, 2014
Page 2

maintain close and continued coordination and consultation with EBMUD as they plan and implement the Richmond Refinery Modernization Project regarding the supply from the NRWPR and RARE Project.

If you have any questions concerning this response, please contact David J. Rehnstrom, Senior Civil Engineer, at (510) 287-1365.

Sincerely,

A handwritten signature in black ink, appearing to read 'W.R. Kirkpatrick', with a stylized flourish at the end.

William R. Kirkpatrick
Manager of Water Distribution Planning Division

WRK:KSG:sb
sb14_063.docx
